OFFICIAL RECORDS
OF THE
WORLD HEALTH ORGANIZATION
No. 139

THE WORK OF WHO
1964

ANNUAL REPORT OF THE DIRECTOR-GENERAL
TO THE
WORLD HEALTH ASSEMBLY
AND TO THE
UNITED NATIONS

The Financial Report, 1 January—31 December 1964, which constitutes a supplement to this volume, is published separately as Official Records No. 142.

WORLD HEALTH ORGANIZATION
GENEVA

March 1965
The following abbreviations are used in the Official Records of the World Health Organization:

ACABQ — Advisory Committee on Administrative and Budgetary Questions
ACC — Administrative Committee on Co-ordination
CCTA — Commission for Technical Co-operation in Africa
CIOMS — Council for International Organizations of Medical Sciences
ECA — Economic Commission for Africa
ECAFE — Economic Commission for Asia and the Far East
ECE — Economic Commission for Europe
ECLA — Economic Commission for Latin America
EPTA — Expanded Programme of Technical Assistance
FAO — Food and Agriculture Organization
IAEA — International Atomic Energy Agency
ICAO — International Civil Aviation Organization
ILO — International Labour Organisation (Office)
IMCO — Inter-Governmental Maritime Consultative Organization
ITU — International Telecommunication Union
MESA — Malaria Eradication Special Account
OIHP — Office International d’Hygiène Publique
PAHO — Pan American Health Organization
PASB — Pan American Sanitary Bureau
TAB — Technical Assistance Board
TAC — Technical Assistance Committee
UNESCO — United Nations Educational, Scientific and Cultural Organization
UNICEF — United Nations Children’s Fund
UNRWA — United Nations Relief and Works Agency for Palestine Refugees in the Near East
UNSCEAR — United Nations Scientific Committee on the Effects of Atomic Radiation
WFUNA — World Federation of United Nations Associations
WMO — World Meteorological Organization

© World Health Organization 1965

Publications of the World Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. Nevertheless governmental agencies or learned and professional societies may reproduce data or excerpts or illustrations from them without requesting an authorization from the World Health Organization.

For rights of reproduction or translation of WHO publications in toto, application should be made to the Division of Editorial and Reference Services, World Health Organization, Geneva, Switzerland. The World Health Organization welcomes such applications.

PRINTED IN SWITZERLAND
CONTENTS

Introduction .............................................................................................................. v

PART I — GENERAL REVIEW

Chapter 1. Malaria Eradication ............................................................................. 3
Chapter 2. Communicable Diseases
Tuberculosis — Endemic Treponematoses and Venereal Infections — Veterinary Public
Health — Virus Diseases — Parasitic Diseases — Bacterial Diseases — Leprosy —
International Quarantine ...................................................................................... 6
Chapter 3. Environmental Health
Community Water Supply — Wastes Disposal — Environmental Pollution — Sanitation
Services and Housing — Environmental Biology — Vector Control and Insecticide
Resistance ............................................................................................................. 27
Chapter 4. Public Health Services
Public Health Administration — National Health Planning — Organization of Medical
Care — Health Laboratory Services — Nursing — Health Education — Maternal and
Child Health ....................................................................................................... 35
Chapter 5. Health Protection and Promotion
Cancer — Cardiovascular Diseases — Dental Health — Human Genetics — Mental
Health — Nutrition — Radiation and Isotopes — Social and Occupational Health . 42
Chapter 6. Education and Training ....................................................................... 51
Chapter 7. Medical Research .................................................................................. 55
Chapter 8. Health Statistics .................................................................................... 57
Chapter 9. Biology and Pharmacology
Pharmacology and Toxicology — Biological Standardization — Immunology —
Pharmaceuticals ................................................................................................... 59
Chapter 10. Publications and Reference Services .................................................. 63
Chapter 11. Public Information ............................................................................. 65
Chapter 12. Constitutional, Financial and Administrative Developments
Constitutional and Legal — The Financial Position — Administration ................. 67
Chapter 13. Co-operation with other Organizations ............................................. 71

PART II — THE REGIONS

Chapter 14. African Region ................................................................................... 79
Chapter 15. Region of the Americas ..................................................................... 86
Chapter 16. South-East Asia Region .................................................................... 97
Chapter 17. European Region ............................................................................... 103
Chapter 18. Eastern Mediterranean Region .......................................................... 108
Chapter 19. Western Pacific Region .................................................................... 116
PART III — PROJECT LIST

<table>
<thead>
<tr>
<th>Projects in Operation in 1964</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>126</td>
</tr>
<tr>
<td>The Americas</td>
<td>127</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>137</td>
</tr>
<tr>
<td>Europe</td>
<td>156</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>168</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>178</td>
</tr>
<tr>
<td>Inter-regional</td>
<td>191</td>
</tr>
</tbody>
</table>

ANNEXES

1. Members and Associate Members of the World Health Organization ........................................... 211
2. Membership of the Executive Board .......................................................................................... 212
3. Expert Advisory Panels and Committees ................................................................................. 213
4. Organizational Meetings and Meetings of Expert Committees and Advisory Groups .......... 221
5. Tentative Schedule of WHO Organizational Meetings in 1965 .................................................. 225
6. Non-governmental Organizations in Official Relations with WHO ......................................... 226
7. Regular Budget for 1964 .......................................................................................................... 227
8. Structure of the Headquarters Secretariat ............................................................................... 228
9. Numbers and Distribution of the Staff ...................................................................................... 229
10. Composition of the Staff by Nationality ................................................................................ 231
11. Status of Malaria Eradication .................................................................................................. 232
12. Fellowships awarded, by Subject of Study and by Region ...................................................... 233
13. WHO Collaborative Research Projects .................................................................................... 235
15. WHO International and Regional Reference Centres, and Institutions where they are located 237

MAP

1. WHO Regional Offices and the Areas they serve ................................................................. 78

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Director-General of the World Health Organization concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.
INTRODUCTION

SEVENTEEN years after the creation of the World Health Organization the control of communicable diseases is still the most important health challenge facing mankind. For example, the quarantinable diseases, which many people think of as scourges of the past, are still daily realities. The incidence of plague is increasing in certain areas; cholera has taken the lives of thousands of people in recent years; smallpox continues to be a major hazard to all nations with the number of cases reported in Africa, Latin America and South-East Asia running into tens of thousands a year.

Malaria is far from being eradicated. Tuberculosis remains one of the most widespread infectious diseases in both the developing and the developed parts of the world. There has been a definite up-surge in the incidence of syphilis and gonorrhoea. Yaws still constitutes a major public health hazard in many parts of the tropical and sub-tropical belts. Gastro-intestinal disorders are among the outstanding causes of morbidity, as well as of mortality, especially among infants and young children. In respect of some diseases—for instance bilharziasis, filariasis and other helminthiasis—progress is severely handicapped by lack of knowledge. In other cases, for example malaria eradication, international assistance in the financing and the organizing of campaigns has not yet reached the desired level. The most formidable obstacle to bringing communicable diseases under control, however, is that most of the countries concerned do not yet have an adequately functioning public health service.

*

The need for emphasis to be laid on the strengthening of health services became evident early in WHO's history. It was clear that the organization and administration of health services at both the local and national levels was an essential pre-condition for the lasting success of all public health activities. And indeed, quite a number of WHO programmes have been, and are being, carried out with this aim in view. The accumulated experience acquired has shown that while piecemeal and dispersed efforts are undeniably useful in breaking the vicious circle of disease, low productivity and poverty, the ultimate goal must be the establishment of permanent, well-staffed and effective health services. There is no doubt that this task can better be accomplished within the framework of national health plans conceived as an integral part of an overall scheme for the economic and social development of the country.

*

It is against this background that the Organization's efforts in the field of national health planning over the last few years should be viewed. The task has not been an easy one. Statistics, an essential tool in all planning, are incomplete in most of the countries concerned. While this component of long-term programmes is being developed, one has to be satisfied with project proposals for dealing with specific problems. Planning is the product of a creative state of mind and a mature approach to needs and the
ways to satisfy them. It calls for the ability to discern an order of priorities and therefore to renounce immediate possibilities for the sake of essential and lasting results. Thus a sustained educational process preparing those responsible for health planning in their respective countries is as necessary as the various types of technical training. Despite a gratifying amount of goodwill and, in some countries, even enthusiasm for this arduous task, it will be a long time before the developing areas can fully enjoy the advantages to be derived from national plans for economic and social development. Such schemes will have to incorporate the country’s efforts towards improvement of human resources, the increase of economic opportunities by raising the general levels of health, and the expansion of facilities for technical education and training.

Meanwhile, however, some promising advances can be recorded. The ever-growing interest of countries in this fundamental aspect of WHO’s work is shown by the fact that roughly one half of the Members of the Organization are involved in some form of health planning and that every regional office is associated with the movement. In the Americas, the Regional Office has for several years been sponsoring a number of national health plans. The Johns Hopkins University, Baltimore, again held a course on health planning of which the Organization took full advantage. Training of health planners is also being carried out in co-operation with the Latin American Institute for Economic and Social Planning. This close association has helped to foster understanding between those who are responsible for the promotion of health and those involved in general development work.

The experience already gained in this region points to an important by-product of comprehensive health planning: in a number of countries, the nation-wide technical reviews inherent in the planning process have helped to identify priority needs which previously had been overlooked, and this has invariably led to a more efficient deployment of health activities.

The distribution of health facilities in the Americas, as in other regions, shows an excessive concentration in urban areas and a corresponding dearth or even absence in rural areas. The training of fully-qualified health personnel for all essential sectors of public health is bound to be a long-term undertaking. The temporary, or even permanent, solution of this problem as it is now being worked out in Latin America and elsewhere lies in the creation of services run by auxiliary health personnel carefully supervised by fully-trained staff.

In the Eastern Mediterranean Region an increasing number of countries are drawing up health plans to be incorporated in overall development plans. Three of them—Iran, Pakistan and the United Arab Republic—have very well established plans. Somalia is in the process of evolving a national health plan under WHO guidance. Other countries are receiving assistance from the Organization in the preparation of such health plans.

In the South-East Asia Region progress is being made in the amalgamation of specialized mass campaigns with general health services. The original tendency to attack each disease through a specialized campaign is now generally being avoided. These campaigns should from the very beginning be carried out as an additional activity of the basic health services and developed gradually from the peripheral health activities as an integral part of their functioning.

Interest in long-range health planning has increased in the Western Pacific Region also. A seminar organized in 1964 has helped to provide stimulation. Taiwan has already produced a plan but, unfortunately, only a few countries in this region have the necessary trained staff for permanent health planning units at a national level. Malaysia is not far from fulfilling these conditions, but still many States in the Western Pacific Region are at the stage where the next step is to establish health planning units at various governmental levels.
In Africa, for reasons mentioned, national health plans would considerably speed up health progress. There is an additional note of urgency in the case of this continent: assistance is being offered from many sources to the newly independent States, and co-ordination, which can be best provided by comprehensive health plans, is essential if national and international resources are to be utilized to maximum advantage.

The greatest handicap to planning is the dearth of personnel at the professional, middle and auxiliary levels. This impedes the two processes of planning and implementation, for even the most modest plans, once established, cannot be fulfilled in the absence of the minimum necessary staff. An additional handicap is the lack of data on the financial resources, internal and external, present and prospective.

However, the co-operative attitude shown in several countries by members of the overall planning units towards their colleagues in the health team augurs well for the future. Another encouraging factor is that there is a much better understanding than in the past of the relationship between capital development and current expenditure.

There has been a tendency in some countries to go ahead with initial investment for the building of hospitals and for other health facilities without taking into consideration the amounts that will be needed for the running of the services and the maintenance and repair costs involved. The possibility of such doubtful commitments is of course greatly reduced when decisions concerning capital investments are examined within the framework of a comprehensive long-term plan.

The national health plans completed during 1964 for Gabon, Mali, Niger and Sierra Leone are important achievements for the promotion of health in Africa. Beside the intrinsic value for the nations concerned, these plans have yielded useful experience for WHO in its search for solutions to the complex problems planning poses in all countries. Health planning is indeed a serious administrative exercise calling for patience and ingenuity. It is also a highly rewarding one.

The tremendous role the science of immunology is playing in the control of communicable diseases need not be emphasized. Recently the scope of immunological research has been extended to many areas beyond the field of infectious conditions — for example, to allergy, autoimmune diseases, cancer, the transplantation of tissues, and genetics. We can safely say that many of the public health problems which have long been puzzling us will probably find a solution thanks in part to the discoveries of immunology.

An illustration of the importance of immunology research in the field of the parasitic diseases comes from the Pasteur Institute in Dakar, Senegal, where an agar gel immunodiffusion test was recently developed for the diagnosis of human trypanosomiasis. This test, which detects the increased concentration of heavy immunoglobulins in the serum, is specific enough to identify cases of non-apparent human trypanosomiasis. With WHO support, the test is being applied to 15,000 inhabitants of the country. The preliminary results of 7000 cases are available and are clearly of value in that a significant number of trypanosomiasis cases were found which had not been detected by conventional diagnostic measures. This development indicates the need for an increasingly close working relationship between immunologists and parasitologists.
This was also one of the main conclusions reached by the Expert Committee on Immunology of Parasitic Diseases which met in Ibadan, Nigeria, in 1964. The report of the Committee contains a useful outline for research developments considered essential for future progress in the as yet largely unexplored area of immunization against parasites. There is no doubt that a close relationship between parasitologists and immunologists will bring benefits similar to those bacteriology and virology have gained from their association with immunology.

Conceived in 1962, the WHO programme on immunology got under way in 1963. It is therefore too soon to evaluate the work accomplished so far. A few developments do, however, deserve to be mentioned.

The new nomenclature for human immunoglobulins recommended as a result of a meeting convened by WHO in Prague in May 1964 has already had a very wide acceptance throughout the scientific world. A WHO Reference Centre for Immunoglobulins is now established at the Institut de Biochimie in Lausanne, Switzerland. It provides reference preparations of immunoglobulins for research. It will also help to apply new knowledge about the structure and functions of antibody molecules to the preparation and use of hyperimmune human gammaglobulins. The WHO Reference Laboratory for the Serology of Autoimmune Disorders at the Middlesex Hospital in London provides sera and standardized methods for a growing number of serological tests associated with both diagnosis and research.

WHO is also expanding the assistance many developing countries require in this field. The first WHO Immunology Research and Training Centre, established at Ibadan University, will serve as a model for similar ones in other developing countries. This is part of a plan to bring eminent scientists to work in training and research programmes in these centres, thus making available the highest quality instruction and experience to their colleagues and at the same time helping to increase the number of immunologists trained to work on problems applicable to the health needs of their own countries.

* 

Vector control programmes can be viewed as integral parts of WHO's total effort aimed at the reduction or elimination of communicable diseases. In 1964 further steps were taken in the evaluation and testing of new insecticides to be used where resistance to older ones has developed. Alternatives are being examined for practically every vector of medical importance. For certain species—the body louse, for instance—it is possible to foresee effective control for periods of up to fifteen years using a series of compounds in sequence. Three insecticides of potential value to malaria eradication campaigns have been given extensive trials. One compound, it is gratifying to report, has shown itself effective on all surfaces of a cellulose base, and will shortly be available for operational programmes. The second—an organophosphorus compound—is being tested in Nigeria to determine its role in interrupting the transmission of the disease. The third one, a carbamate, has been tested on a village scale in different ecological situations. Results at hand seem to justify further testing on a larger scale.

Experiments carried out in 1964 have established the value of control operations aimed at the larval forms of mosquitos. The method seems to be particularly useful in areas where an abundant population of Culex pipiens fatigans is responsible for a high incidence of bancroftian filariasis and where there is unrestricted breeding of Aedes aegypti. This latter mosquito has been incriminated in the transmission of haemorrhagic fever, which is an increasingly serious public health hazard in several
countries of the Eastern Mediterranean, South-East Asia and Western Pacific Regions. Toxicological investigations are being conducted to determine to what extent the larvicides used for the control of Aedes aegypti affect the drinking quality of the water.

An inter-regional seminar in 1964 contributed greatly to the clarification of a number of problems relating to the ecology, biology and control of the vectors of bancroftian filariasis. The seminar proposed a long-term WHO research programme aimed at improving control methods.

Another meeting during the year reviewed ten years of WHO's work in vector control. The conclusions of the review are very useful for the future. In recording the progress made by WHO in the study of the resistance mechanism, the group envisaged with optimism the outcome of the vector-borne disease control programmes scheduled for the years to come. Research is clearly the key to success. It will have to be pursued in many directions, including the genetic, biochemical and physiological basis of resistance, and the mode of action of insecticides with special emphasis on their effect on the health of man and on the ecology and behaviour of vectors.

The WHO research programme related to malaria continued to make progress during 1964. As in previous years, projects covered a wide range of subjects from quantitative epidemiology to improvements in spraying equipment. Priority continues to be given to applied research dealing with the problems which will have to be solved if existing obstacles to malaria eradication are to be overcome. Nevertheless some areas of basic research are not neglected and they may arise at times from what began as an applied research. Thus the new fundamental knowledge of insect genetics arose from testing some malaria vectors for their resistance to insecticides.

Studies on simian malaria are being carried out in Brazil, Ceylon, India and Taiwan, and have greatly enriched our knowledge of plasmodial infections of primates. The important question is to what extent simian malaria is a reservoir of infection for man. On the basis of available data it appears that a focus of simian malaria is unlikely to create an obstacle to malaria eradication in any large area.

Other subjects of research concern the finding and application of improved methods for the detection of malaria infection and the measurement of the immune response in man. The relation of the gammaglobulin fractions to malarial immunity is an important field of investigation which may perhaps lead to the development of a malaria vaccine. Modern methods of immunofluorescence and haemagglutination are of much promise for the detection of malaria infections and for the quantitative measurement of the immune response in man.

The development of new antimalarial compounds and field trials of these drugs constitute a third essential aspect of the world-wide research effort WHO is organizing to eradicate this age-old scourge. Recent reports on resistance of the malaria parasite to existing drugs have given new stimulus to the search for other antimalarial compounds. Three new and promising therapeutic compounds are under investigation.

Progress in the genetics of resistance is the fourth major development in the research programme on malaria. It is known now that resistance is dependent on a single genetic factor, semi-dominant or dominant in the case of the dieldrin/HCH group, and recessive for the DDT group of insecticides. This explains why DDT can be applied with success in many programmes even if there is an increase of the tolerance level of mosquitoes to this compound. This discovery has, of course, an important
practical value for the malaria eradication campaigns. But an elucidation of the laws of inheritance of insecticide resistance in malaria vectors is bound to have wider implications for biology and medicine.

Gains made during 1964 in the world-wide malaria eradication campaign are encouraging. The increased population in the maintenance phase amounts to 98.1 million, a figure nearly 30 per cent. higher than in 1963. Much of this increase is due to the success of the Indian programme, but substantial gains have been also recorded from Israel, Jordan, Lebanon and Syria. Ceylon, with a population of about eleven million, is the first country in the South-East Asia Region where the whole population is in the consolidation phase. Since this country has a sound network of basic health services, the prospects for the total elimination of the disease are bright.

WHO is on the point of officially certifying that malaria has been eradicated from Taiwan. In the Ryukyu Islands the detection system has reported no new incidence of malaria, while reports on the pre-eradication programmes in Brunei and the Republic of Korea are encouraging.

All in all, throughout the world, 116 million people were added to those living in areas where transmission of the disease is arrested. This amounts to an increase of 16.16 per cent. The number of countries engaged in pre-eradication programmes has risen from nineteen to twenty-four. Among these are eleven countries in the African Region.

* *

In 1964, World Health Day was devoted to the unrelenting effort countries must make to contend with tuberculosis. Practically all Members and Associate Members participated in arrangements calling the attention of their people to this great public health hazard which is common to both the developing and developed areas of the world.

The recommendations of the Expert Committee on Tuberculosis which met in 1964 were based on the extensive experience gained by WHO in the long series of research and field projects the Organization has been supporting ever since its inception. The Committee's outstanding conclusion was that both in prevention and in treatment specific means are now available to plan and execute effective antituberculosis programmes under practically any epidemiological and social conditions.

As to treatment, the experts recommended that priority should be given to the active carriers of bacilli, since it is they who are responsible for the transmission of the infection. The Committee also concluded that hospital treatment as compared to appropriate ambulatory care did not present any special advantages. It is therefore the Organization's policy to advocate for developing countries the maximum utilization of resources and manpower for ambulatory services.

Several new findings in connexion with BCG vaccination should make prevention more economical for those countries. When a high infection rate pertained, early vaccination was always considered a useful—and indeed essential—preventive measure. It is still, but while in the past a second vaccination before school-leaving age was recommended, this is no longer considered necessary, since we know now that the protection afforded by BCG is of longer duration than had been previously supposed. For countries with a low infection rate, one vaccination at school-leaving age may be sufficient for life. Recent studies should also allow for a more extensive use of BCG in economically handicapped countries. I refer to direct vaccination—that is vaccination without a prior tuberculin test—and also to simultaneous smallpox and BCG vaccination.

*
During the year classical cholera and cholera El Tor continued to present a big problem in the South-East Asia and Western Pacific Regions, causing the loss of many lives and hampering international trade and traffic. Consequently, the Organization increased its activities in the field of cholera by the promotion of cholera research with special emphasis on studies of effective control measures.

The Scientific Group on Cholera Research, which met in Manila towards the end of the year, gave impetus to the research which has been carried out since the meeting of a similar group in 1962. The creation in 1964 of an International Reference Centre for Vibrio Phage Typing at Calcutta should improve epidemiological and bacteriological studies of the disease. The various studies and field trials have been conducted in India and the Philippines in order to determine the effectiveness of cholera vaccines, but further investigations are called for. There is also a need to know more about the role played by carriers in the transmission of cholera, and research on the genetics of vibrios should be developed.

* 

Directors of the WHO virus reference centres met in July and designated over 130 strains for reference purposes. These can be made available to national laboratories.

Studies were undertaken on antiserum for the identification of the respiratory viruses, enteroviruses, as well as for some of the arboviruses. Those which have been tested extensively are being put at the disposal of the centres. Antiserum are provided by the National Institutes of Health in Bethesda and by the Communicable Disease Center of the United States Public Health Service. Contributions are also expected from research institutions in Moscow.

Following the 1963 report on measles vaccine, field and laboratory investigations were completed in six countries during 1964. A comparative study is now in process on reactions caused by various live vaccines and also on the levels of antibody stimulated by the vaccines.

The question of a possible association between viruses and human cancers was taken up by a scientific group. While no positive proof exists of this link, it appeared clear that a study of the effect of infections with viruses on cells is of great potential significance in elucidating at least some of the problems. Childhood cancers seem to offer the best field for the study of a possible viral etiology and should therefore receive additional attention on the part of WHO.

* 

Developments in 1964 indicate that the smallpox eradication campaign is making less headway than was expected. To accelerate progress, WHO has produced new guidelines designed to help both national health administrations and WHO personnel in organizing eradication campaigns. The document incorporates information on the recent scientific advances discussed by the Expert Committee on Smallpox which met at the beginning of the year.

One of the difficulties in the elimination of smallpox is the persistence of foci of the disease. It must be constantly borne in mind that a single focus of infection can cause serious, widespread recurrences of a contagious disease not only in adjacent but also in distant areas where the disease had previously been completely eliminated. The conclusion is obvious. The only solution lies in an intensive programme of vaccination aimed at world-wide eradication followed by continuous vigilance and periodic revaccination.
It is encouraging to be able to report that several countries in the South-East Asia Region have succeeded in the production of freeze-dried vaccines. With assistance from UNICEF and WHO, the Region may become self-sufficient in smallpox vaccines.

* *

Basic to any improvements to health in all regions is the provision of adequate and safe water for both urban and rural communities.

A great effort is being made, especially in the Americas, in the field of rural environmental health. It is part of a long-term inter-regional programme for the construction of water supply systems, self-financing through the establishment of rational rates, well organized and efficiently administered.

In Africa, community development schemes appear to be the most valuable means of promoting regular water supplies for the rural areas.

Water supplies are also receiving greater attention in the Eastern Mediterranean Region. Pakistan, for example, has been assisted by WHO in the preliminary work leading to a large bilateral loan for the construction of new urban water supplies. Other types of assistance are being rendered to eight countries in the same region. One of the great handicaps to overcome is the shortage of well-trained water supply personnel.

In 1963 WHO, at the Government’s request, established pilot projects in the field of water supply and sewage disposal in two towns in Turkey. The Turkish Government, aware of the beneficial effect of such projects on industry and the tourist trade, has asked the Organization to study the problem of water supplies in the greater Istanbul region. WHO assisted the Government to prepare a request for a master plan for water supply and sewerage for Istanbul which has been submitted to the United Nations Special Fund as a pre-investment project.

In the South-East Asia Region, the Special Fund/WHO project for the provision of water supplies to greater Calcutta was further advanced during the year.

In the Western Pacific Region a project to provide piped water to villages and schools in Tonga has been so successful that it has aroused interest in similar undertakings on other islands. Good results in Tonga are accredited not only to the international assistance provided by UNICEF and WHO but also to the willingness of villages to contribute cash and labour.

* *

A second group of about fifty assistants médicaux from the Democratic Republic of the Congo finished their studies as WHO fellows at French universities during 1964 and returned to their country as fully qualified doctors. These, added to the group that graduated in 1963, make the total number of Congolese assistants médicaux who have so far completed their full medical course with success 106.

Many of the assistants médicaux have indeed achieved outstanding results in their examinations, and one of them has been awarded the “Le Dantec” Prize by the School of Medicine of Bordeaux University.

All fellows recently graduated have, in addition to their regular studies, taken two courses — one in tropical medicine and one in emergency surgery. Two of them have been so successful in their work
that they were given fellowships in surgery. After one year of practice in their country they are expected to return to Europe for further study in this discipline.

*

An ever-recurring problem for WHO is the adaptation of medical education to the needs of the developing countries. An inter-regional conference studied this question and provided opportunity for exchange of experience gained through the various types of assistance.

The Organization also sought the opinion of an international group of experts and UNESCO on the basic minimum knowledge required for students embarking on medical education. Here again the specific conditions of the developing countries were kept in mind. The Expert Committee on the Teaching of Sciences in Premedical Courses of Study made a number of suggestions to reconcile a realistic approach to present and future facilities available to the developing countries with the wholly justified concern that all countries maintain certain standards of quality.

During the year, a report of consultants was prepared on an aspect of medical studies that is of considerable interest to all countries: to what extent should other public health institutions, in addition to hospitals, serve as a training ground for medical students?

A study group took up another issue of immediate importance to the emerging nations, namely the carrying out of higher administrative responsibilities by personnel who have not had the benefit of regular basic public health training, but who, nevertheless, are called upon to take responsible decisions.

*

In 1964, for the first time in WHO's history, an expert committee discussed the health problems of adolescence. This age-group has been largely ignored so far by the public health authorities and the time has no doubt come for a thorough study at both national and international levels of their specific health needs. The questions studied by the expert committee included problems relating to growth and development as well as those connected with the employment of young people. In addition to promoting health measures beneficial to adolescents, the report of the committee is expected to encourage training institutions to introduce the study of health problems of adolescence in their curricula.

*

A new programme aimed at exploring the various medical aspects of the broad subject of human reproduction started at the end of 1963 and gathered momentum in 1964. As in other branches of WHO's work, an expert advisory panel has been appointed to advise the Organization on the policy to be followed in this field.

Four scientific groups met in Geneva to map out future work in main areas of research: the physiology of lactation, the effects of labour on the foetus and the new-born, neuroendocrinology and human reproduction, and the mechanism of action of sex hormones and analogous substances, especially the orally active progestogens.

A bibliography on ethnic and geographic variations in human reproduction is in the course of preparation, as is a critical review of the available literature on that subject. It is expected that they will be completed and available for distribution by mid-1966. The Organization also gave financial
support to a symposium on comparative aspects of reproduction which met in London in November 1964. Another project with which the Organization is concerned is the establishment of collections of human pituitaries to assist research workers throughout the world.

* *

The question of the creation of a World Health Research Centre was discussed by the Executive Board at its thirty-third session and by the Seventeenth World Health Assembly. On the recommendation of the Assembly, the proposal was examined in detail by the Advisory Committee on Medical Research. During the second part of the year, meetings attended by scientists outstanding in their special fields studied respectively the three aspects of the proposed centre: communications science, biomedical research, and epidemiology. One of the main conclusions of the groups was that the three disciplines should be considered as integral components of the work to be carried out by the Centre. They also stressed the need for applying mathematical skills and technology to biomedical and health problems. The potential value of these new and powerful techniques in the manifold problems of epidemiology, communications and toxicology was strongly emphasized by the groups. Development along these lines is, I believe, essential if WHO is to help to set up monitoring systems both nationally and internationally for communicable diseases as well as for non-communicable conditions which are threatening health.

* *

During the year Tanganyika and Zanzibar united under the name of the United Republic of Tanzania, and it is pleasing to report that the World Health Assembly admitted four new Associate Members: Malta, Northern Rhodesia, Nyasaland and Qatar. It also took note of the revival of the associate membership of Southern Rhodesia, which the latter held before joining the Federation of Rhodesia and Nyasaland, the Federation having dissolved at the end of 1963. Three of these Associate Members celebrated their independence during 1964: Malawi (formerly Nyasaland), Malta and Zambia (formerly Northern Rhodesia).

[Signature]

Director-General
PART 1

GENERAL REVIEW
CHAPTER 1

MALARIA ERADICATION

Progress of Malaria Eradication

Advances have continued to be recorded in the world-wide malaria eradication programme, notably in the South-East Asia Region. In India, for the third successive year, new areas populated by tens of millions of people reached the consolidation phase,¹ the transmission of malaria having ceased for long enough for spraying operations to be stopped. Thus, about three-quarters of the population of India live in areas now in the consolidation phase and during the year the programme covering over ninety million of them had reached the maintenance phase. The whole island of Ceylon is now in the consolidation phase. In Indonesia, the first areas—with a population of some fifteen million—have reached the consolidation phase. In Afghanistan also further areas have advanced to the consolidation phase.

Progress in the Eastern Mediterranean Region is illustrated by the results in Jordan, Lebanon, and Syria, in each of which over two-thirds of the population is in the maintenance phase. In Israel over 95 per cent. of the population is in the maintenance phase, the remainder being in the consolidation phase.

All the originally malarious areas of continental Europe are in the consolidation or the maintenance phase; the remaining zone in the consolidation phase in Bulgaria and further areas in Greece and Romania reached the maintenance phase during 1964. Hungary and Spain have been placed on the official register of countries where eradication of malaria has been achieved.

In the Americas, the programme in Brazil has been re-assessed and certain areas previously in the maintenance phase have been placed back in the consolidation phase. In Argentina, further areas have been moved from the attack phase to consolidation, and progress has been made in Venezuela in eliminating areas of refractory malaria. In the Caribbean, Grenada and St Lucia, where malaria eradication was certified in 1962, and Trinidad, Jamaica (see page 93) and Dominica have all remained free from endemic malaria. In the Western Pacific Region, an evaluation team went to China (Taiwan) in November 1964 to make a final assessment before certifying that malaria had been eradicated.

Pre-eradication programmes have been further developed for countries lacking the facilities necessary for the operation of full malaria eradication programmes. This is in keeping with resolution WHA17.22 in which the Seventeenth World Health Assembly urged the governments of countries that cannot at present undertake eradication programmes with prospects of success to make every effort to reach the attack phase as quickly as possible, and to this end to establish pre-eradication programmes including appropriate antimalaria measures to reduce mortality and morbidity, particularly in children. By the end of 1964 there were pre-eradication programmes in twenty-four countries, sixteen of them in Africa.

The countries engaged in malaria eradication programmes at 31 December 1964 and those undertaking pre-eradication programmes and other antimalaria operations with assistance from WHO are listed in Annex 11.

A number of the malaria eradication programmes are receiving assistance also from UNICEF and from bilateral agencies. Supplies were provided by UNICEF for thirty-one programmes, twenty of them in the Americas, and the United States Agency for International Development gave assistance to eighteen programmes and to the international malaria eradication training centre at Manila.

A detailed progress report on the malaria programme covering the calendar year 1964 will be presented to the Eighteenth World Health Assembly in May 1965.²

General Health Services and Malaria Eradication Programmes

As malaria eradication campaigns progress, it becomes increasingly important to assure the active participation of the various general health services in the continued surveillance for malaria. In the

¹ The successive phases of a malaria eradication programme are: preparatory, attack, consolidation, maintenance.
² The corresponding report for 1963 has been published in Official Records No. 135, Annex 6.
Americas, for example, PAHO is organizing two seminars on the problems encountered in co-ordinating the work of the malaria services with that of the local health services. The first of these, for the countries of South America, was held at Poços de Caldas, Brazil, in July 1964, and was attended by ministers of health, senior public health officials and directors of the national malaria services. The second meeting, for countries of Central America, Mexico, Panama and the Caribbean area, is planned to take place in February 1965.

In India, arrangements were made for the transfer of responsibilities from the national malaria eradication service to the state health services for those areas entering the maintenance phase, and for the staff of the national malaria eradication service to be incorporated into the epidemiological sections of the state public health services.

Training for Malaria Eradication

The international malaria eradication training centres in São Paulo, Lagos, Manila and Maracay have continued to train staff for the many malaria eradication and pre-eradication programmes in various parts of the world. The first three of these centres are receiving assistance from either PAHO or WHO. A new WHO-assisted international training centre for French-speaking trainees was opened at Lomé, Togo, in February 1964 (see page 83). As malaria has been eradicated from Jamaica, and there is thus no scope for the practical demonstration of techniques in that country, the international training centre at Kingston was closed at the end of 1963. Twenty-four courses held at the centre since it was opened in April 1958 were attended by 405 trainees from sixty-nine countries—135 physicians, 64 entomologists, 39 engineers, 75 sanitarians, and 92 of other disciplines.

The national training centres in Ethiopia, India, Indonesia, Iran, East and West Pakistan and Sudan have continued their work in close co-operation with WHO.

The series of refresher courses on advanced malaria epidemiology and epidemiological methodology, which was started in Geneva in 1963, was continued in 1964 by courses for senior WHO malarialogists in the South-East Asia and Western Pacific Regions. The course in Delhi was followed by a similar one for national malaria officers from Ceylon, India, Nepal and Thailand, and from Iran and Pakistan.

Evaluation and Problem Areas

It has become a standard practice for malaria programmes to be evaluated by independent assessment teams. During the period of this report, such evaluation has been undertaken in Afghanistan, Ceylon, Iran and Thailand. In the last two countries, the United States Agency for International Development participated in the independent assessment team.

In some programmes considerable difficulty is being experienced in interrupting the transmission of malaria. Sometimes the cause of the difficulty is administrative, and due to such factors as poor coverage or lack of funds. However, in a number of areas normal methods of attack by residual insecticides have not proved effective. The situation is particularly serious in Central America; “problem areas” exist in El Salvador, Guatemala, Honduras, Nicaragua, and also in Mexico. They also occur in southern Iran, and to some extent in Iraq, where a large epidemic of malaria broke out during 1963 in an area in the southern part of the country that was previously in the consolidation phase. Forceful measures, including reversion to the attack phase, chemotherapy and larviciding, may have overcome this re-invasion of the area. Intensive studies are being made to discover the reasons for these problems and the methods of dealing with them.

Research

Insecticides which have successfully passed through the various screening processes (see Chapter 3, page 32), and which are considered particularly suitable for use in malaria eradication, have been subjected to field trials in Central America, Iran, Nigeria and Uganda. In Nigeria, the field trial of dichlorvos, a fumigant insecticide, was discontinued at the end of 1963 as it was found that in this particular situation interruption of malaria transmission was not being obtained. A further field trial using folithion (OMS-43), a residual organophosphorus insecticide, was started in the same area in July 1964. In Uganda, the trial with malathion commenced in 1963 is continuing, and a special epidemiological study of the results was being made at the end of 1964.

In addition to field trials of insecticides, the Organization is by its assistance to research on malaria promoting studies on new drugs and new attack methods. Trials of the injectable antimalarial drug cycloguanil have been undertaken in the United Republic of Tanzania and in the Territory of Papua and New Guinea. In the first trial, the drug was found to prevent patent parasitaemia in children for more than 120 days and in adults for more than 240 days. A further trial covering 1200 people has been started in the Central Province of Tanganyika. In a number of other projects, various aspects of drug resistance are being studied.
Other aspects of research stimulated and co-ordinated by the Organization are those of simian malaria, transfusion malaria, the differentiation of sporozoites of human and animal malarias, the development of a specific haemagglutination test which is now being subjected to a field trial, behaviour of malaria vectors, genetics and biochemistry of resistance to insecticides, and other entomological problems.

**Expert Committee and other Meetings, and Publications**

The Expert Committee on Malaria, which met in Geneva in June 1964, dealt principally with entomology in malaria eradication. It carried out an appraisal of current entomological methods and interpretation of results in the main phases of malaria eradication programmes, and discussed the integration of entomological and epidemiological studies, the non-response of vectors to insecticides, and also new insecticides and other measures for mosquito control which could be used in malaria eradication. It also studied specific aspects of training of entomologists and of epidemiologists for eradication activities and reviewed the entomological research programme for malaria eradication.

A Scientific Group on Drug Resistance of Malaria Parasites met in Geneva in October 1964 and assessed the present situation with regard to the reported cases of resistance of malaria parasites to 4-aminoquinolines, and also to pyrimethamine and proguanil. A procedure for assessing the response of malaria parasites to treatment was recommended, and also the definition of the criteria of drug resistance. The present and possible future impact of drug resistance in malaria eradication was evaluated, and proposals were made for counter-measures when drug resistance was confirmed.

An inter-regional conference on malaria eradication for countries of the Eastern Mediterranean and European Regions was held in Tripoli, Libya, in November and December 1964, and was followed by a meeting of a working group on epidemiology.

Other meetings that took place during the period covered by this report included the Antimalaria Co-ordination Board (South-East Asia and Western Pacific Regions), at Saigon, the twelfth meeting of Directors of National Malaria Eradication Services of Central America, Mexico, Panama and the Caribbean Islands, and the fourth meeting of Directors of National Malaria Eradication Services of South America, which followed the seminar on malaria eradication and public health services in Brazil. In addition there were eleven inter-country border meetings (see Annex 4) and malaria eradication co-ordination conferences were again held between Burma, India and Pakistan.

The French and Spanish editions of *Terminology of Malaria and of Malaria Eradication* were published. A Russian edition, prepared in Moscow, appeared at the end of the year. A special number of the *Bulletin* was issued on malaria and pesticides, and another on malaria and insecticides.

Tables showing the epidemiological status of malaria in areas in the consolidation and maintenance phases are published twice yearly in the *Weekly Epidemiological Record* for the information of public health workers. A map showing the epidemiological assessment of malaria appears in the same publication once a year.

---

CHAPTER 2

COMMUNICABLE DISEASES

With the vast changes and developments that are taking place in many countries, and parallel with the progress made in the control of some communicable diseases based mainly on advances in microbiology, use of antibiotics and insecticides, the public health and economic importance of diseases is changing. While the risk and importance of some diseases is decreasing, the importance of others still continues to increase and new problems appear.

Cholera El Tor and haemorrhagic fever, which are spreading to new areas in South-East Asia, the Western Pacific and Eastern Mediterranean Regions, are examples of diseases of increasing importance.

For diseases such as tuberculosis, poliomyelitis and non-venereal treponematoses, which in some areas are under control or in the process of being eliminated, new epidemiological methods became necessary and are being developed.

Expanding international trade and transport of live animals and food products, and agricultural and industrial development in virgin areas increase the importance of communicable diseases (diseases with natural foci or parasitic diseases) in different parts of the world.

In view of this challenge, especially in developing areas, further assistance has been given to the establishment of the epidemiological units at the central health administrations. Training facilities in epidemiology at the national and international levels have also been given assistance.

Arrangements have been made to promote at WHO headquarters global epidemiological surveillance of communicable diseases of international importance. This should facilitate the immediate recognition and follow-up of the epidemiological situations and the establishment of effective control measures.

Tuberculosis

Expert Committee on Tuberculosis

The slowness of the decline of tuberculosis in many countries is due mainly to insufficient realism in selecting priorities, lack of national planning, coordination and evaluation, inadequacy of epidemiological and operational data and failure to apply existing knowledge. These were among the conclusions of the Expert Committee on Tuberculosis, which met in August 1964.

Focusing its attention mainly on the control of pulmonary tuberculosis, particularly in those countries where tuberculosis is a serious public health problem, the Committee made a number of recommendations based on a considerable extent upon knowledge and experience gained in WHO-assisted research and service projects. In discussing the epidemiological indices for measuring the extent of tuberculosis, the Committee agreed that the prevalence of pulmonary tuberculosis proved bacteriologically by microscopy of a single sputum specimen is the best available index of the size of the infectious pool in a community. It recommended that where resources are meagre, these should be used in the first instance for treating infectious persons, and that case-finding methods should be adjusted accordingly. The Committee also recommended that all infectious cases diagnosed should be provided with drugs free of cost over a sufficiently long period, in a treatment programme predominantly based on ambulatory and domiciliary services, and it indicated how the regimen for the administration of the drugs might be adjusted in areas where supplies were severely limited.

After reviewing the results of a number of studies, the Committee felt that, at the present stage of knowledge, it could not recommend secondary chemoprophylaxis for mass application but only for individuals and groups at special risk.

The Committee reaffirmed the efficacy of BCG as an immunizing agent, and recommended direct BCG vaccination without prior tuberculin testing in countries where cost is of major importance, where vaccination is essential for effective tuberculosis control and where prior tuberculin testing would reduce coverage considerably. It also saw no objection to the simultaneous application of BCG and smallpox vaccination in countries where these procedures would lead to substantial economies. In discussing the organization of national tuberculosis programmes within the public health services, the Committee stressed the importance of national planning, coordination and evaluation.

Field Studies and Research

The WHO-assisted research programme in the fields of epidemiology, immunization, chemotherapy, chemoprophylaxis and the sociological aspects of tuberculosis control has yielded important results, examples of which are given in two special numbers of the Bulletin dealing with tuberculosis\(^1\) and tuberculosis epidemiology.\(^2\)

Studies carried out in India, Kenya, Mauritania and Dahomey to ascertain the feasibility of mass BCG vaccination without a preliminary tuberculin test failed to reveal any local, regional, focal, or general complications detrimental to the health of the tuberculin reactors among the vaccinated; nor is there any indication that this procedure has reduced the acceptability of BCG vaccination by the public. Studies in Taiwan and Burma gave no evidence of contra-indications to the simultaneous application of smallpox and BCG vaccination.

A follow-up of the trial of BCG vaccination on a South Indian rural population—the first controlled trial undertaken in an Asian population—demonstrated a statistically significant degree of protection in an area with a high prevalence of non-specific tuberculin sensitivity.\(^3\)

Data became available from the WHO-assisted Tuberculosis Chemotherapy Centre in Madras on the efficacy of intermittent, twice-weekly administration of isoniazid and streptomycin. In a chemoprophylaxis trial in Kenya among contacts of infectious tuberculous patients, an appreciable reduction in new cases among the isoniazid group as compared to the control group was observed in spite of a high degree of irregularity in drug-taking.

The value of different epidemiological indices was dealt with in another Bulletin article, on the subject "Tuberculosis in tropical Africa".\(^4\) It stated that an analysis of the data collected over a number of years during tuberculosis prevalence surveys in Africa has shown that less than half of all radiological shadows in Africans are due to tuberculosis.

Reports on two sociological studies carried out in South India in connexion with the work of the National Tuberculosis Institute, in Bangalore, were also published in the Bulletin.\(^5\) These studies revealed the economic and administrative implications, for tuberculosis control and for public health in general, of patients' behaviour prior to the diagnosis of their condition and under specific treatment.

A number of new research projects were implemented, among them an epidemiological survey in Africa to measure the community impact of different control programmes, several controlled trials in South America and Asia to determine the optimal application of intermittent chemotherapy and a prevention trial in Asia to determine the response to varying doses of BCG and to establish international BCG reference strains.

Two scientific meetings relevant to WHO's research programme in tuberculosis were held in 1964. At a meeting in April, WHO advisers on immunogenic agents in tuberculosis recommended lines for a programme of basic and applied research in tuberculosis immunology. In June, a symposium was organized by the WHO Tuberculosis Diagnostic Reference Laboratory in Prague, to discuss the isolation, classification, and world-wide distribution of mycobacteria. It recommended that findings of unclassified mycobacteria—especially those causing disease in man—should be reported from all countries, that tuberculintesting trials using tuberculin prepared from such mycobacteria should be carried out on random samples of the population, and that a more rational classification of mycobacteria should be evolved.

Direct Assistance and Training in Tuberculosis Control

Most of WHO's activities were, however, directly related to the effective application of existing knowledge. By providing medical officers, sociologists, statisticians, public health nurses, and laboratory and X-ray technicians for varying periods, WHO helped thirty-nine countries to assess the extent of their tuberculosis problem, to plan and test nationally applicable control programmes and to train key personnel. The following examples may serve to illustrate WHO's contribution to training—often the key feature of assistance provided. In Indonesia medical students from Gadjah Mada University were sent in groups of about five to the WHO-assisted tuberculosis control project in Jogjakarta for two weeks' practical training in the epidemiology and control of tuberculosis. In Kenya, nearly fifty BCG teams were trained by the WHO-assisted tuberculosis chemotherapy and BCG centre in Nairobi. The National Tuberculosis Institute, India, increased its training capacity considerably in 1964: fifty-five new tuberculosis control teams completed their course, as compared with twenty-two teams in 1963, bringing to over 600 the total of doctors, treatment organizers,
X-ray and laboratory technicians, BCG team leaders, and statisticians trained so far by this WHO-assisted project.

As in previous years, international training courses in the epidemiology and control of tuberculosis were held in Prague and Rome (in English and French respectively) under WHO sponsorship. They were attended by twenty-two fellows from twenty-one countries. About sixty participants attended an inter-regional tuberculosis seminar which was held in Kuala Lumpur in November 1964 and was followed by study tours to the national tuberculosis programmes in India and Thailand. Observers from UNICEF and the International Union against Tuberculosis and several national tuberculosis associations also took part in the seminar, which reviewed WHO-assisted tuberculosis control projects and discussed whether the technical knowledge available is applied to the best advantage, with priorities established according to local resources, and whether these projects are likely to lead to the setting-up of national control programmes within a reasonable time. It was agreed that, with an objective selection of technical priorities and their systematic programming according to the exigencies of the local situation, great progress could be made over the next few years in tuberculosis control under practically any social and economic conditions.

Technical guides on the planning, operation and assessment of national tuberculosis control programmes and on standard records and reporting procedures for such programmes were issued in a series of mimeographed information circulars.

World Health Day

"No Truce for Tuberculosis" was the slogan chosen for World Health Day in 1964. Radio and television programmes, meetings, posters and other media brought home to many people the fact that tuberculosis is still a serious health menace claiming millions of lives each year (see also page 65). Tuberculosis was the subject of the technical discussions at the sixteenth session of the Regional Committee for the Americas/XV meeting of the Directing Council of PAHO in September 1964 (see Chapter 15).

Endemic Treponematoses and Venereal Infections

A comprehensive report on the Organization's programme in endemic treponematoses and venereal infections since 1948 was presented to the Executive Board at its thirty-fourth session in May 1964.¹ This was the second specific activity to be considered in detail by the Board since its decision in 1963 to review one aspect of the Organization's programme at each session. In its resolution (EB34.R25) on this report the Board urged Member States "to exert a determined effort to maintain adequate and effective measures to reduce the incidence of the endemic treponematoses (particularly those of childhood) and the venereal diseases, and, where indicated, to increase their efforts to combat the recrudescence of these infections." It further requested Member States "to report to the Organization the extent of present programmes and the nature of planned activities to achieve these objectives". During the period under review WHO continued to provide assistance to a number of countries in the control of endemic treponematoses, in particular yaws; in a few instances, assistance was requested in strengthening national venereal disease control services.

Endemic Treponematoses

The main objectives of rural mass campaigns in developing countries against endemic treponematoses of childhood (yaws, pinta and endemic non-venereal syphilis) have been: to eliminate the source of disease and to halt transmission of infection, and eventually to achieve eradication, as defined by the Expert Committee on Venereal Infections and Treponematoses which met in 1959;² secondly, once the prevalence has been reduced to a low level by the wide application of long-acting penicillin, to integrate continued epidemiological surveillance into the normal work of the rural health services.

Between 1948 and 1963 WHO has provided assistance in yaws control to forty-five countries in mass campaigns covering 134 million people. In most of these, clinical manifestations of the disease regressed to a low level. The use of more refined testing methods has gradually become necessary, and laboratory examinations are required for the continued evaluation and study of the nature and extent of yaws, its immunological patterns and the surveillance required in the field, particularly as the extent to which endemic yaws may recur in relation to changing environmental conditions is not known.

In view of the tendency for many false positive reactors to lipoidal antigens to occur in rural tropical areas, particularly in the young age-groups, WHO is continuing work on the development of valid sampling methods and specific serological testing procedures. This work has been further developed in 1964 by the WHO inter-regional treponematoses advisory team.


in Eastern Nigeria, the Philippines, Thailand and Togo, working in co-operation with the WHO serological reference centres in Paris and Copenhagen. Regional assessment teams have been set up in the African and Western Pacific Regions. Apart from their immediate purpose in assessing the extent and transmission of yaws following mass campaigns, the data obtained are valuable for the study of the epidemiology of receding infectious diseases in general.

The current studies and those planned in Northern and Western Nigeria, Western Samoa, the Solomon Islands and other Western Pacific islands also form part of the WHO epidemiological study programme on yaws. Random serum samples are being deposited at the serum reference banks for antibody investigations of immunological and pathological conditions other than treponematoses. By the end of 1964 the inter-regional treponematoses advisory team had deposited some 30,000 serum samples referable to large populations— with corresponding individual information cards—for aliquot lyophilization and storage at the WHO serum reference banks (see page 15).

The research into epidemiological and serological patterns in endemic treponematoses has led to the development of new and effective equipment for the long-distance transport of serum under adverse conditions. The work on the development of inexpensive deep-freeze liquid nitrogen refrigerator-transporters maintaining sera at -196°C was completed in 1964, making it possible to obtain "base-line" results of treponemal and other antibodies (fluorescent treponemal antibody (FTA) and Treponema pallidum immobilization (TPI) tests) at distant reference laboratories without risk of infection of specimens or decay of antibody content. The usefulness of the "rondelle" eluent method (finger-prick blood absorbed and dried on blotting paper discs which can then be sent through the post) in immuno-fluorescent antibody determination has been confirmed; experiments with this technique are also being made in other fields, inter alia in relation to the surveillance for poliomyelitis.

In a yaws eradication campaign there is, on the one hand, the need for immediate steps to make available the benefits of medical progress for the relief of suffering, and, on the other, the long-term need for the provision of permanent preventive and curative health services in developing rural communities, for which mass campaigns can serve as bridgeheads. An example of the successful integration of yaws surveillance activities into the general health services is to be found in Thailand, where the yaws programme had by 1964 become extensively integrated into the strengthened rural health services of more than forty provinces, this surveillance being supplemented by periodic assessment, as part of the school health programme, of young age-groups at particular risk of infection.

Recent developments in knowledge about and methods of control of yaws made a bibliography of world literature on the subject desirable, in order both to acquaint workers in the field with what has been done and to provide a basis for further advances. At the end of 1963 the Organization published such a bibliography, containing more than 1700 references covering material published between 1905 and 1962.1

Several papers on the various epidemiological and laboratory aspects of venereal diseases and treponematoses were published in the WHO Bulletin.8

### Venereal Infections

The rising trend in the incidence of venereal syphilis and gonococcal infections, which has been mentioned in previous annual reports, has continued in some countries. In spite of the existence of highly effective drugs for individual treatment, it has apparently not been possible, either in developed or developing countries, to apply community-wide case-finding and treatment simultaneously to a sufficient number of infected individuals to achieve control. A detailed review of this situation appears in the report to the Board mentioned above, which also indicates the need for intensified immunological, biochemical and other research on this subject.3 Some aspects of the research programme mentioned in relation to endemic treponematoses are also relevant to venereal syphilis, and information is beginning to become available on the microbiology, biochemistry and immunopathology of treponematoses.

Emphasis has been placed on investigations to elucidate enzymic, gaseous and other requirements believed to be of importance to survival and growth of pathogenic treponemes in vitro. A commensal growth factor which enhances the life of Treponema pallidum has recently been isolated and experiments attempting to dissociate virulence and antigenicity in pathogenic treponemes by gamma irradiation are new approaches to the possible development of an immunoprophylactic agent in this field.

At their meetings during 1962, the Scientific Groups on General and Applied Immunological Research 4

---

and the Expert Committee on Gonococcal Infections had stressed the need for mass treatment and some type of immunoprophylaxis in order to control gonorrhoea, and had recommended further research on the immunological aspects of gonococcal infections. Accordingly, a meeting of scientific advisers on Neisseria research was convened during September 1964 to study possible further joint research by experts in the field of N. gonorrhoea and N. meningitidis, in view of the close microbiological, serological and other relationships of these organisms.

WHO is planning trials of a new serological micro-precipitation test, developed in the United States of America, for diagnosing what appears to be a large proportion of the asymptomatic or latent female carriers of N. gonorrhoea—cases that can otherwise only be suspected on the basis of indirect and sometimes uncertain epidemiological information.

Veterinary Public Health

The main work in veterinary public health has again been in the field of important zoonoses (brucellosis, rabies, leptospirosis, hydatidosis), comparative studies on chronic degenerative diseases of animals in relation to those of man, the characterization and classification of viruses isolated from animals other than primates, and the hygiene of edible animal products. Studies were expanded on animal influenzas in relation to human influenza.

Brucellosis

Vaccine safety trials in volunteers had shown that strain 19-BA was usually safe when administered by scarification. A field trial with this living attenuated vaccine has been undertaken in an area in Mongolia where the disease is highly endemic and certain population groups (shepherds, farmers, etc.) run a high risk of infection during the lambing season. Clinical and bacteriological examination of vaccinated and control groups is being carried out. The results are expected to provide useful information in connexion with further field application of this vaccine.

The results of vaccination experiments in sheep and goats, including recent field trials in Iran, Israel and Malta, were among the subjects examined by the Joint FAO/WHO Expert Committee on Brucellosis which met in December 1963. The Committee concluded that the living attenuated Brucella melitensis vaccine Rev. 1 and the vaccine consisting of formalin-killed Br. melitensis incorporated in oil-water adjuvant have been shown to confer a significant degree of protection. Both vaccines have been recommended for field use, but with the warning that they should be given a limited trial in the local breeds and prevailing conditions in the country before being brought into general use. Also, the adjuvant vaccine is apt to produce local reactions at the site of inoculation. Rev. 1 vaccine was found to reduce sixfold the number of excretors of Brucella in milk in a naturally infected flock of goats. Further studies have been started on the length of immunity induced by this vaccine and its behaviour during passage in pregnant sheep and goats. A large field trial with this vaccine has been undertaken in Mongolia, in a different area from the one in which the human vaccination trial mentioned above has been started.

Comparative studies carried out in southern France on four vaccines in cattle showed that formalin-killed Br. melitensis strain H38 with adjuvant afforded significant protection against Br. abortus infection. This immunity appeared to be stronger than that afforded by living attenuated vaccines.

A paper describing studies testing the relative immunogenicity of Br. abortus strain 19-BA and Br. melitensis strain Rev. 1 was published in the WHO Bulletin.

FAO and WHO have standardized the agglutination test for the diagnosis of brucellosis and have made available a standard serum and suitable strain for the production of antigen. A collaborative study has now been started to standardize the complement fixation test using the existing standard serum.

A joint FAO/WHO meeting on the control of brucellosis in the Mediterranean Region was held during June in Valletta, Malta, to discuss the newer methods of brucellosis control with special reference to countries where Br. melitensis infection is endemic in sheep and goat flocks. Participants from seventeen countries discussed the implementation of the recommendations of the Joint FAO/WHO Expert Committee on Brucellosis under the conditions prevailing in their respective countries.

A new WHO brucellosis centre has been designated at the Gamaleja Institute of Epidemiology and Microbiology, in Moscow, to provide reference services and training facilities to workers in the Soviet Union and other countries.

Rabies

During the last few years three trials of different serum-vaccine schedules have been undertaken in volunteers to determine the best combinations of

serum and vaccine, as shown in the antibody levels produced, for use after exposure to rabies infections. The fourth serum-vaccine trial in volunteers has now been concluded and the results analysed. The trial showed that antirabies serum given on the first day with vaccine caused a marked interference with antibody production, and that a booster dose of vaccine was required to overcome it. However, a second booster dose administered shortly after the first caused no further improvement in the antibody level in vaccinated persons. These results have an important bearing on the plan of treatment of persons who have been bitten by rabid animals and need to be inoculated with serum before starting a course of vaccination.

A meeting of rabies research workers was convened in October 1963 to review the progress that had been made in research co-ordinated by WHO since May 1961, when a similar meeting was held. The group found that the tissue culture techniques are now capable of yielding virus suspensions of sufficiently high titre to be used in improved vaccine production and in fundamental studies on the biochemical and physical nature of the virus; tissue culture systems can also be used for serum neutralization tests and for diagnostic purposes. It planned collaborative studies with a view to making full use of these techniques and of the fluorescent antibody technique in solving practical problems in diagnosis, immunization, therapy and field control.

Promising experimental results in monkeys have been obtained from a tissue culture vaccine, and trials of this vaccine in man are planned.

The results of a study undertaken by one of the collaborating laboratories in the United States of America on the pathogenesis of rabies in various animal species were published in the WHO Bulletin.1

Studies were continued on the use of suckling rats and mice as virus producers for preparation of vaccines free from the paralytic factor. A laboratory in Chile reported the use in man of an inactivated vaccine prepared from ultra-violet-irradiated brains of suckling mice.2 In limited experimental use in thirty-one children a 14-dose course of this vaccine produced a high level antibody response even when used at 1 per cent. tissue concentration. There was no evidence of any untoward reaction.

A collaborating laboratory in India reported 3 that duck-embryo and high-egg-passage Flury vaccine produced a somewhat poor response in guinea-pigs when used in doses comparable with those recommended so far for human treatment.

A new lot of dried rabies vaccine has been received for possible use as an international reference preparation. In preliminary tests it has proved to be quite stable when subjected to prolonged but moderate heat (37 C). It is being tested further by four collaborating laboratories in France, India, the Soviet Union and the United States of America.

The latest laboratory techniques in rabies were taught and advances in epidemiology and control methods were discussed at a two-week seminar and training course held in Moscow in June, intended primarily for persons concerned with the production and potency testing of antirabies vaccines and serum, diagnosis and field control. The course was attended by twenty rabies workers from nineteen countries in Africa, Asia and South America.

**Leptospirosis**

In leptospirosis, work continued on the preparation of sera against recognized serotypes, with a view to their use as reference sera in the identification of unknown strains. Seven more were prepared to replace or supplement existing sera.

Collaborators in laboratories in different parts of the world have prepared a list of recognized leptosiral serotypes, showing their classification, geographical distribution, and hosts, along with a review of current taxonomy of leptospires, recommended methods of typing, and diagnostic procedures.

While the vaccination of animals may protect them from clinical illness it does not prevent them from becoming symptomless excretors of leptospires. In order to promote further investigation on the public health implications, particularly with regard to the excretion of leptospires by vaccinated animals, WHO has supported a project being undertaken jointly by an Italian and an Argentinian laboratory, for the experimental field vaccination of Argentinian cattle.

A new WHO leptospirosis reference laboratory has been designated at the Gamaleja Institute of Epidemiology and Microbiology in Moscow.

**Parasitic Zoonoses**

Further work, assisted by WHO, on the immunization of dogs against *Echinococcus granulosus* showed that 2000 activated embryos of *Taenia hydatigena*...
given as a single injection to a dog produce a significant degree of protection for six months. This result suggests that it may be possible to develop a vaccine for field application.

One of the collaborating laboratories in Lebanon has reported successful development of fertile secondary hydatid cysts in mice and gerbils inoculated intraperitoneally with scoles from hydatid cysts of sheep. Hitherto it had been thought that only infertile cysts developed in this way. The new technique makes it possible to maintain the cysts easily and cheaply in the laboratory for experimental study of the therapy and serology of hydatidosis.

WHO continued to support work on the preparation and testing of sera against hydatidosis, trichinosis and toxoplasmosis with a view to their possible establishment as international reference preparations. The last two have been tested, and the results are being examined. The work on trypanosomiasis is mentioned under parasitic diseases on page 21.

Comparative Virology

Work continued on the characterization and classification of viruses isolated from animals other than primates. A meeting of the Eastern Hemisphere Committee on Animal Virus Characterization, constituted in 1963, was held in Geneva in February, and during July representatives of the committees for both the Eastern and Western Hemispheres attended the meeting of directors of WHO virus reference centres (see also page 14). In the collection and cataloguing of existing data of viruses of veterinary importance, it is becoming increasingly apparent that the absence of specific reference sera for the identification of strains is an important handicap. Arrangements have therefore been made to prepare and test antisera against selected strains of bovine and swine enteric viruses. The workers concerned have agreed upon the strains to be used and the technique to be adopted, and another five viruses have been selected for the preparation of reference sera in the second stage of this work.

Investigations on the role of animals and animal influenza strains of virus in the epidemiology of human influenza was continued. The reported isolation of human influenza viruses A2 from sheep and S/15 from cattle in Hungary and Romania was studied. Although positive reactions by haemagglutination inhibition and by complement-fixation to human and animal influenza virus strains were noticed in cattle and sheep elsewhere also, there is no conclusive evidence that these reactions were specific. Among the animal myxoviruses, a new strain of equine influenza virus (A2-Equine) was described and studied in the United States of America. It is different from the equine influenza virus described from Czechoslovakia in 1956 (A 1-Equine) and, although its presence on the east coast of South America has been suspected, it is so far restricted to the United States. Several laboratories made serological studies of equine influenza in Czechoslovakia, France, Switzerland, the Soviet Union, and the United Kingdom. Evidence of infection with A1-Equine was found in all these countries; apparently A2-Equine has not so far reached Europe although it has been suspected but not proved in Switzerland. Workers on animal influenza, at a meeting held in Geneva in July 1964, reviewed these reports and studies on the antigenic structure of animal influenza strains. Further epidemiological studies in domestic and wild animals were planned, in order to clarify their possible role in the epidemiology of human infection.

Cardiovascular Diseases in Animals

In a collaborative study, 1650 swine aortas, collected in five European countries and the United States of America, were examined for atherosclerosis. A statistical analysis of the data showed a positive correlation between the age of the animal and the amount of atherosclerosis in the abdominal aorta: the percentage of fatty streaks and of fibrous plaques increases with increasing age. The study revealed significant differences in the prevalence of atherosclerosis in groups of young swine—an observation to be investigated in future collaborative work. In this connexion studies have been planned to compare the severity of atherosclerosis in animals receiving hard or soft water, and in those with varying degrees of physical exercise.

Medical and veterinary pathologists, at a meeting convened by WHO in Brussels in January 1964, defined the various components of the atherosclerotic lesion, tabulated their occurrence in aortic atherosclerosis of primates, birds, swine and dogs, and compared this incidence with the components of the human lesion. They concluded that in primates the lesion is similar to that in man, and the common type is equivalent, in nature and distribution, to fatty streaking. In birds, the lesions of the posterior aorta compare well with those of man, and the common type is fatty streaking; the structural difference of the anterior aorta makes comparison with man difficult. The swine lesion is closely similar in nature and distribution to the uncomplicated lesion in man. In the dog, the lesions rarely contain lipid, and only partially resemble the human lesion. The group of pathologists also found that the medial lesions commonly found in herbivorous animals had nothing
to do with atherosclerosis, but were interesting in their own right, and could be usefully studied in relation to medial necrosis of the human aorta, which is often unassociated with any degree of atherosclerosis.

On the basis of the foregoing comparisons the group agreed that the non-human primate, to a lesser extent the bird and pig, and to a still lesser extent the dog, will all be useful animals in the study of the etiology of atherosclerosis.

Other studies are being made on the etiology of atherosclerosis in turkeys, genetic factors in the incidence of congenital heart disease in swine and birds, and the occurrence of atherosclerosis in relation to ovarian function in swine. Atherosclerosis in turkeys often leads to the rupture of aorta and appears to be related to nutritional factors, as the disease is much reduced when soya bean flour is added to the diet.

Comparative Oncology

WHO has continued to support co-ordinated research on the neoplastic diseases of animals that may throw light on similar diseases in man. Such research includes the studies on the possible viral etiology, genetic association, haematology and herd distribution of bovine leukaemia being carried out in collaborating laboratories in Israel, Sweden, and the United States of America. What appears to be transmission to young animals by experimental inoculation has been mentioned in a preliminary report from Sweden, and in the United States of America a collaborating group in New Jersey and Pennsylvania has found evidence of a viral agent resembling that of mouse leukaemia and occurring in high concentration in the milk of leukaemic cattle. Significant group aggregations of the natural disease have been found in multiple-case herds. They could be due to genetic factors and/or vertical transmission of an infective agent.

Transmission of the malignant lymphoma of children to suckling African green monkeys has been reported. Monkeys inoculated with fresh biopsy material from a child seemed to develop lymphoma of the bone marrow and cystic bone disease. A relatively high incidence of such an osteodystrophic disease has been known to occur in South American primates of the families Cebidae and Hapalidae. Re-examination of the material in a collaborating laboratory in England showed that this disease is probably lymphomatous and closely resembles the experimental lesion in the green monkey. The distribution of the primate disease in a hot and humid belt in South America resembles the distribution of the malignant lymphoma in children in Africa.

Over 1500 tumour specimens have been studied by two laboratories in England and the Federal Republic of Germany in a collaborative research of spontaneous skin tumours of animals. The aim is to reach agreement on a basic classification and to prepare an atlas. Studies on the pathogenesis of melanomas and transfer of mast-cell tumours to tissue culture were also in progress.

Studies on the epidemiology and etiology of bovine bladder cancer continued in three laboratories in Bulgaria, Turkey and Yugoslavia, where this neoplasm is endemic in certain areas. One of the laboratories reported evidence pointing to the role of food plants and soil as predisposing factors, and the possibility of carcinogenic factors being present in the urine of affected cattle. Efforts are being made to ascertain whether, in other countries where enzootic bovine haematuria occurs, it is due to neoplasm of the bladder.

Other studies in comparative oncology which are in progress include epidemiology of multiple myeloma of swine associated with radiation and the pathology and etiology of venereal tumours and mammary tumours of dogs. A paper on canine neoplasia, a prototype for human cancer study, appeared in the Bulletin.

Hygiene of Food Products of Animal Origin

Work on food hygiene has included advice to certain African countries on the administrative and scientific methods of food control.

With regard to the continued studies on milk hygiene in warm climates, support was given to an experimental project in Kenya on economical heating units and the possible use of hydrogen peroxide to control bacteria.

Much of the work on food hygiene has been undertaken with other organizations. For example, WHO has participated in the activity of the joint FAO/WHO Codex Alimentarius Commission on food standards (see page 47) and has been in touch with the International Association of Microbiological Societies' International Committee on Microbiological Specifications for Foods with regard to the reporting of outbreaks of food-borne infections, with special reference to salmonellosis.

Joint meetings have included the FAO/OIE/WHO Meeting on Basic Principles for the Control of International Traffic in Animals and Animal Products, held in October and attended by government representatives from forty-five countries; and a meeting of

the FAO/UNICEF/WHO Inter-Agency Working Group on Milk and Milk Products, which planned future activities in milk production and hygiene in developing countries. A joint FAO/WHO training course on abattoir management and operation was held for six weeks during July and August in Copenhagen and was attended by twenty-seven participants from nineteen countries. The demand for this type of training is increasing, and further courses in this subject and on the control of meat and meat products are being planned.

Virus Diseases

The activities of WHO in its collaborative programme with virus laboratories in many countries was further developed.

At the end of 1964 there were twenty-seven international and regional reference centres—two for influenza, seven for respiratory virus diseases other than influenza, seven for enteroviruses, nine for arthropod-borne viruses, one for rickettsiae and one for trachoma. There were also seventy-three national influenza centres. Five new virus reference centres were designated during the year: the Department of Epidemiology and Public Health, Yale University School of Medicine, New Haven, United States of America, as a WHO International Reference Centre for Arthropod-borne Viruses; the Institut Pasteur, Dakar, Senegal, as a WHO Regional Reference Centre for Arthropod-borne Viruses; the Section de Virologie, Laboratoire national de la Santé publique, Lyons, France, as a WHO Regional Reference Centre for Enteroviruses; the Rocky Mountain Laboratory, Hamilton, Montana, United States, as the first WHO Regional Reference Centre for Human Rickettsiosis; and the Francis I. Proctor Foundation for Research in Ophthalmology, San Francisco, United States, as the first WHO International Reference Centre for Trachoma. The Institute of Virology at Córdoba, Argentina, the National Institute of Virology in Mexico City, the Institute of Hygiene at Montevideo, Uruguay, the National Institute of Hygiene at Caracas, Venezuela, the Government Epidemiological and District Laboratory, Tel Aviv, Israel, and the Virus Laboratory of the Institute of Medicine, Jassy, Romania, were recognized as WHO national influenza centres.

During a meeting of the directors of the WHO virus reference centres, held in Geneva in July 1964, it became clear that great progress has been made on the provision and testing of viral reagents. Agreement was reached on over 130 strains of viruses to be designated as WHO reference strains. These strains are now available, or will shortly be available, in the enterovirus and respiratory virus reference centres for distribution to competent national laboratories requesting them.

Because of the hazards of distributing arthropod-borne viruses to laboratories in regions where the viruses do not exist in nature, arbovirus reference strains are not being made generally available, but the Research Institute of Virus Preparations, in Moscow, has donated to the Organization a non-infectious tick-borne encephalitis antigen for distribution.

The Research Reference Reagents Branch of the United States National Institute of Allergy and Infectious Diseases, Bethesda, has agreed to provide to the Organization highly specific and exhaustively tested antisera for thirty-six enteroviruses for distribution as reference antisera to the WHO virus reference centres, and for consideration by the Expert Committee on Biological Standardization for designation as international reference preparations. The Communicable Disease Center at Atlanta, Georgia, United States of America, has agreed to provide antisera for most of the adenoviruses for similar purposes.

Under the sponsorship of the United States National Institutes of Health, at Bethesda, the Director of the WHO International Reference Centre for Enteroviruses at Baylor University College of Medicine, Houston, Texas, has undertaken an extensive programme for the production in horses of large quantities of hyperimmune antisera for all the enteroviruses. These sera are primarily intended for laboratories in the United States and laboratories carrying out projects for the National Institutes of Health and similar bodies, but supplies are being made available to WHO reference centres, eight of which are engaged in a collaborative study of the specificity and titres of these sera. The adenovirus sera donated by the Communicable Disease Center at Atlanta were subjected to similar studies in the WHO reference centres.

Co-operative studies are also in progress for the preparation in suitable animals and the testing of antisera for the newer respiratory viruses and for Mycoplasma pneumoniae.

The WHO Regional Reference Centre for Arthropod-borne Viruses at the Communicable Disease Center, Atlanta, has prepared Group B arbovirus antisera in rhesus monkeys, and tests of these are being made in seven of the reference centres. Studies of sera from larger animals are being planned. Antisera for reoviruses types 1, 2 and 3, and for coxsackie virus type A7, are being prepared in the Institute of Poliomyelitis and Virus Encephalitis, Moscow, for distribution to the centres for testing.

With regard to the distribution to national laboratories of reference strains of viruses and of the antisera
available, it was agreed at the meeting of directors in July that countries with a reasonable number of virus laboratories should be expected to produce their own working reagents, and for this purpose need only be provided with the WHO reference strains. In countries with a single virus laboratory, or with only a small number of virus laboratories, an inordinate amount of the time of the trained virologist has to be devoted to the preparation of antisera, and the reference centres should use their available resources to assist such laboratories with both strains and antisera.

Laboratories participating in the pilot scheme set up by WHO for the collection and dissemination of information on virus infections diagnosed in the WHO reference centres and in certain national virus laboratories agreed that the scheme was useful and should be continued. Laboratories will report monthly to WHO; a summary of the information will be circulated every quarter to the reporting laboratories, and once a year a more comprehensive report will be prepared and circulated. More national laboratories will be invited to take part, and those laboratories that receive substantial assistance from the centres in the form of reagents will be asked to provide information in return for the reagents supplied. Over 120 laboratories are now contributing directly or indirectly to this exchange of information. A list of national virus laboratories throughout the world was prepared and is to be circulated to virus reference centres and other interested laboratories.

Serum Reference Banks

The work of the three WHO serum reference banks—situated at Yale University, New Haven, the Institute of Epidemiology and Microbiology, Prague, and the South African Institute for Medical Research, Johannesburg—was discussed at a meeting of their directors, held in Geneva in July.

The banks have completed a three-year study of the effects of different methods of serum storage on levels of antibody and on other components of sera. Tests were made for a variety of viral and bacterial antibodies and for toxoplasma antibodies and antistreptolysin O. The general outcome of the studies was that antibodies were stable when sera were stored frozen at \(-20^\circ\text{C}\) and \(-70^\circ\text{C}\); lyophilized samples gave variable results. It was also possible at Yale to examine for poliovirus antibody two lots of sera, stored at \(-20^\circ\text{C}\). One had been collected and first tested six years earlier, and one fourteen years earlier. The antibody levels remained high.

Studies in progress in the reference bank at Yale University include surveys of antibody levels as a means of measuring the immunity of populations in different regions to various infectious diseases and as a guide to future vaccination programmes; comparison of serological findings in similar populations living in different regions (e.g. Cape Verde islanders in the Islands and in the United States of America); collection of samples of sera from groups of persons about to go abroad and from the same persons on their return, to determine changes in antibody patterns.

Studies at the serum reference bank in Prague include surveys of poliomyelitis, pertussis and influenza antibody levels in Czechoslovakia; collection of serial specimens from hospital patients with infectious hepatitis (taken at the acute and convalescent stages); collection of specimens from cases and persons at risk in a large water-borne epidemic of infectious hepatitis; a survey of poliovirus antibodies in Cuba before and after poliovaccination; collection of specimens from the current survey of prevailing communicable diseases in Mongolia; tests of antibody levels in sera collected during treponematoses surveys (see page 9) from blotting paper "rondelles" soaked in blood and dried; the reception and storage of some 8000 specimens of serum from random samples of rural populations in Thailand and the Philippines. (These sera were collected by the treponematoses advisory team and the aliquots remaining after the treponematoses tests had been completed were sent to the bank; similar collections are currently being received from Togo.)

Studies at the serum reference bank at Johannesburg include examination of measles antibodies in sera collected in WHO measles vaccine field trials; examination of sera collected in different parts of South and Central Africa for antibodies for arboviruses, polioviruses, respiratory viruses, rickettsiae and bilharzia; preparation of specially designed maps to show by colour codes the distribution of antibodies to arboviruses and other microbes in South and Central Africa.

In future the banks are to concentrate more on obtaining, for current examination and for re-examination in the future as new disease agents are identified,
serial specimens from patients or groups of patients with illnesses such as mononucleosis, infectious hepatitis, some forms of cancer, and other conditions of uncertain etiology. Sera from patients with helminth infections will also be collected. The preparation of maps similar to those being drawn up in the present programme of the serum reference bank in Johannesburg is to be studied and the recording of background information in relation to surveys is to be further developed as a means of increasing knowledge of global pathology.

Measles

One of the main recommendations contained in the report of the Scientific Group on Measles Vaccine Studies, published during 1963, was that WHO should sponsor studies for the comparison of the severity of the reactions and the level of antibody produced by the various measles virus vaccine strains at present available. Field trials organized for this purpose have been completed in Canada, Czechoslovakia, Nigeria, Switzerland, the Union of Soviet Socialist Republics and Yugoslavia. In each of these about 500 children were included, and the vaccines used were made from the Enders Edmonston B, Schwarz, Milovanović, Beckenham 20, and Smorodineev strains. The results are being analysed. The reports on earlier field trials were published in the Bulletin. Long-term studies of the degree of protection afforded by a regimen in which one dose of inactivated vaccine is followed by one dose of live vaccine have been set up in India, Switzerland and the USSR.

Respiratory Viruses

Small outbreaks of influenza due to virus A2 occurred at the end of 1963 in the Philippines and Thailand; in 1964 similar outbreaks occurred in Europe, as well as in China (Taiwan) and in Australia and New Zealand, and fairly large outbreaks were reported from the Pacific coast of Canada and the United States of America, and from Yugoslavia. A large outbreak due to influenza virus B occurred in Japan, and a small outbreak in Singapore. The strains of influenza virus B examined at the WHO international influenza centres in London and Atlanta were antigenically similar to the strains which have been the usual cause of outbreaks in previous years. The influenza virus A2 strains, however, continued to show slight antigenic differences from the classical strains, and in Europe a number of small outbreaks were due to a strain which differed significantly from earlier strains. The antigenic instability of the A2 strain makes it especially important that national influenza centres should seek to isolate viruses from outbreaks of influenza-like disease and should have the strains sent quickly to the international influenza centres for characterization so that early warning may be obtained of the appearance of strains potentially capable of producing new pandemics.

The lack of a uniform system for the designation of the antigenically different influenza viruses isolated from man and animals is causing increasing confusion and the development of a satisfactory scheme is hampered by lack of knowledge of some of the antigenic relationships between strains. Through the virus reference centres an intensive laboratory study of the problems is being undertaken.

There is growing evidence that in many different parts of the world respiratory syncytial virus (RS virus) is one of the commonest causes of bronchiolitis and pneumonia in infants. The para-influenza viruses are now well known to be important respiratory pathogens in the very young, and are often associated with croup. Outbreaks due to all four types were reported through the WHO virus reference centres. The role of the adenoviruses in respiratory disease has been further elucidated. Preliminary studies by workers in the United States of America show that young soldiers given the virus in coated capsules were subsequently immune to natural infections: the capsules ensured the safe passage of the virus through the stomach, and when liberated in the alkaline medium of the gut the viruses multiplied and induced immunity without causing any infection in unvaccinated persons in close contact with them.

As a result of a seminar on respiratory virus diseases held in Moscow in October 1963, a study has been set up in Hong Kong, India, Jamaica, Lebanon, Malaysia, Nigeria, Peru, Portugal, South Africa, United Republic of Tanzania, Turkey, and the United Arab Republic: samples of serum taken in the acute and convalescent stages of illness in young children admitted to hospital with severe respiratory disease will be examined at the WHO International Reference Centre for Respiratory Virus Diseases other than Influenza, Bethesda, to determine the commonest viral causes of such illnesses in these countries.

Enteroviruses

Reports from many sources show that in countries which carried out effective mass vaccination campaigns the incidence of paralytic poliomyelitis has reached remarkably low levels. WHO virus reference centres have found, however, that in most countries the polioviruses are still present and infection continues to
smoulder. This points to the necessity for maintaining immunity in these populations, especially through the vaccination of infants born into the communities since the mass campaigns were completed.

Poliomyelitis vaccination has not decreased the incidence of other enterovirus infections, and in some areas increased incidence of these infections is reported, due perhaps to increasing facilities for their recognition. Plans are being made, in association with the International Reference Centre for Enteroviruses, for a study in more than one part of the world on the importance of enteroviruses as causes of diarrhoea.

**Viral Hepatitis**

An expert committee was convened in Geneva in December 1963 to deal with the two diseases frequently described as infectious hepatitis and serum hepatitis. It examined the results of an analysis made under WHO auspices in countries in East and West Europe of long-term trends, geographical, age and seasonal distribution of the diseases in Europe, and the effects of socio-economic conditions. It also had before it the replies from experts from eleven countries in Africa, America, Asia and Europe to questionnaires on clinical, pathological and virological aspects of the disease. The committee considered that apparent increases in incidence were probably due to improved reporting, though cyclic variations occurred in many countries, and advocated compulsory notification and the current analysis of the data obtained so that health officers might be alerted to unusual occurrences. It considered that the relationship between hepatitis and cirrhosis and other possible long-term sequelae should be studied further, in spite of the difficulties in obtaining sound data. The final section of the committee’s report \(^1\) lists control and preventive measures for infectious and serum hepatitis, including recommendations on the use and dosage of gamma-globulin. It points out, however, that serum hepatitis control depends primarily on control of blood products and the use of sterile, preferably disposable, medical and dental equipment.

**Viruses and Cancer**

There is no clear proof that viruses play a role in human cancerogenesis, but there is increasing interest in the possibility that they may do so. There are several reasons for this.

Developments in molecular biology and cyto- genetics have shown viruses to be capable of imposing altered genetic information on cells. Observations on African lymphoma suggest that an agent transmitted by arthropods might explain its geographical and age distribution. Virus-like particles are sometimes observed in cells from leukaemia patients, and viruses have been isolated from cells of leukaemia patients (though the real significance of this is not yet known). Three commonly isolated human adenoviruses (types 12 and 18 and some strains of type 7) can cause tumours when injected into baby hamsters. Perhaps the most important reason for suspecting an association between viruses and certain human cancers is the very clear association between viruses and animal cancers.

Information is accumulating rapidly in this field, and in October 1964 a scientific group on viruses and cancer was convened to review current knowledge, to suggest future lines of investigation and to advise on the role WHO could most usefully play at the present stage. The group’s report \(^2\) gives a comprehensive and critical account of the problem, and deals with the animal oncogenic viruses, the “transformation” of cells by viruses, the methods used in the quest for viruses in human cancer, and the recent and very important work on the immunology of cancer. In suggesting lines for further research, the group recommended that, in its programme on viruses and cancer, WHO should concentrate on the cancers of childhood as being the most promising field of study.

**Trachoma**

Despite intensive research over the past six years in many parts of the world, none of the laboratories working on trachoma vaccines has yet produced a wholly satisfactory antigen. The results of several independent field trials, however, are sufficiently encouraging to warrant further study. In the meantime, antibiotic treatment remains the principal weapon in trachoma control projects, sixteen of which are receiving support and material assistance from WHO.

A scientific group on trachoma research met in December 1963 to review the current status of research and to advise on future studies. Among studies supported by WHO during 1964 are those related to improvements in techniques for the laboratory

---

diagnosis and differentiation of trachoma and inclusion conjunctivitis virus strains and to the simplification of mass treatment methods. There is evidence of encouraging developments in both these fields.

Three papers describing trachoma studies carried out in Tunisia were published in the WHO Bulletin: 1 on the effect of antibiotics on cultivated virus; on the growth of virus in the chick embryo allantoic cavity; and on further experimental inoculation with cultivated virus to assess the relationship between trachoma and inclusion conjunctivitis.

Smallpox

The smallpox situation in the world and the development of the eradication programme were reviewed by the Expert Committee on Smallpox 2 at its meeting in Geneva in January 1964. The Committee stated that global eradication was feasible because the only reservoir was man, infection was manifest, carriers did not exist and successful Jennerian vaccination provided effective immunity. It expressed its conviction that smallpox eradication would be achieved by sustained application of the Organization's programme in the major endemic areas, and stressed the need for a concurrent independent evaluation of all vaccination programmes. It considered that the use of freeze-dried vaccine was essential in hot climates and under conditions of difficult communications. It also pointed out that, especially for revaccination, a vaccine of high potency was necessary in order to ensure adequate protection of the population.

The Committee was of the opinion that campaigns would be likely to proceed with greater success if separated into three definite phases—preparatory, attack, and maintenance or control. It also reviewed and made recommendations on many technical points related to vaccine production, laboratory diagnosis, vaccination methods, interpretation of the reaction caused by vaccination, prevention of complications of vaccination and the organization of comparative field studies on the chemoprophylactic and chemotherapeutic action of certain drugs. Its recommendations with regard to the International Certificate of Vaccination or Revaccination against Smallpox are mentioned on page 25.

A document on the organization of smallpox eradication campaigns was prepared by WHO for the guidance of interested countries.

The regular development of the programme is being hampered by the great scarcity of donated freeze-dried vaccine. An appeal was made to Member countries to donate to the Organization this type of vaccine. Several donations have been received but the amounts of vaccine available are still far below the estimated requirements.

In South-East Asia intensive vaccination programmes are being developed, especially in Afghanistan, India and Burma. Assistance has been provided by WHO for freeze-dried vaccine production in India, Indonesia and Thailand (see page 100).

In the African Region the eradication programme moves more slowly: WHO is helping countries in West Africa that have not yet begun campaigns to draw up lists of their needs and cost estimates, and to co-ordinate their smallpox activities. In countries where basic health services are sufficiently well established, efforts are being made to set up epidemiological units, which will deal with several diseases but give priority to work on smallpox. Assistance has been given to three laboratories in the Region with a view to intensifying the production of freeze-dried vaccine.

In the Eastern Mediterranean Region, smallpox eradication campaigns progressed in Sudan and in East Pakistan, where extensive vaccination programmes have been carried out: smallpox eradication in West Pakistan is due to start in 1965.

Good progress is being made in vaccination programmes in the Americas (see also page 91). The shortage of vaccine is not a major problem in this region as the laboratories preparing freeze-dried vaccine are able to meet the needs of their own countries and to supply vaccine to countries that do not produce it locally.

WHO is sponsoring a number of studies relating to smallpox. They include investigations on the success rate of repeated revaccination with successive and simultaneous inoculation, and on the success rate of primary vaccinations and revaccinations carried out with a jet-injector. Studies have been started on the variations in strains of variola virus from different parts of Africa.

Yellow Fever

The WHO-assisted studies on yellow fever started in Ethiopia in 1961 were continued in 1964. Entomological and serological surveys were carried out in some parts of the country not previously covered. More than three thousand specimens of human sera were collected, on which more than 30,000 tests were carried out at the five collaborating laboratories located at Addis Ababa, Entebbe, Paris, Dakar and New York. Sera positive for antigens of the groups A, B and Bunyanwera arboviruses were found distributed

in different proportions in the various parts of the country. In the areas where yellow fever had occurred, a great proportion of sera had antibodies against yellow fever virus but a low proportion were positive against other group B viruses. In areas where the disease had not occurred, positive sera against yellow fever antigen were scanty or absent while a great percentage of sera were positive against other group B antigens.

One strain of virus tentatively identified as yellow fever by one of the collaborating laboratories was isolated from the brain of a bat. Strains of yellow fever virus have also been isolated from human beings and mosquitoes. The comparative studies that have been carried out at one of the collaborating laboratories with yellow fever strains isolated in different parts of the world seem to indicate that Ethiopian strains are different from a South American strain and also from the West African Asibi strain.

Entomological studies in one area of Ethiopia determined that Aedes africanus came from the forest during the day to bite man in the cotton fields. This may have great importance for investigations into the causes of epidemics of yellow fever.

A meeting of arbovirus experts from the laboratories participating in the Ethiopian studies took place in Geneva in July. The group analysed the results obtained in the studies carried out during the last three years and made recommendations on further laboratory studies with the sera and virus strains collected so far.

A paper summarizing the results of the studies carried out from 1960 to 1962 on the epidemic of yellow fever in Ethiopia was published in the Bulletin.¹

Other Arthropod-borne Viruses

WHO has continued to support studies in several regions of the world on arthropod-borne viruses other than yellow fever. The regional reference centre in Tokyo carried out intensive studies on Japanese encephalitis, the most important virus disease in Japan and possibly in other countries in that part of Asia. The incidence of the disease changes yearly in the different areas. The seasonal occurrence corresponds with the abundance of Culex tritaeniorhynchus mosquito. Several strains of Japanese encephalitis virus as well as of other arboviruses belonging to the groups A, B and Simbu were isolated from mosquitoes and small animals. Studies are being developed on the efficacy of different vaccines against Japanese encephalitis.

The regional reference centre in Moscow carried out comparative studies on the relationships between strains of tick-borne arboviruses isolated in different parts of the world. Research was also carried out on the part played by birds migrating from Siberia to India and vice versa in the spread of arbovirus infections.

In Czechoslovakia the regional reference centre in Bratislava carried out epidemiological studies on tick-borne encephalitis in central Slovakia. Several viruses were isolated from ticks. One of them isolated from Ixodes ricinus has been identified as a new virus, the Tribec virus.

The regional reference centre at Dakar has investigated arbovirus infections in bats. Forty-two isolations have been made from more than 3000 bats (Scotophilus and Tadarida) captured in Senegal. A strain of O'nyong nyong or a very closely related virus was isolated from "sentinel" mice in the Bandia forest. This is the first indication that this virus may be present in West Africa.

In East Africa the regional reference centre at Entebbe continued the epidemiological studies on O'nyong nyong started in previous years. Sera received from Mozambique indicated that the epidemic has reached that country. Several arboviruses and some yet unidentified viruses were isolated from patients with febrile diseases. After finding that a very high percentage of Tadarida sp. bats had antibodies to group B viruses, virus isolations from these animals were tried. Several isolations of group B viruses have been made. Bats may therefore play an important role in the natural cycle of some arboviruses.

Epidemiological studies on African lymphoma have shown that this disease tends to occur in settlements close to water and usually with heavy vegetation in the vicinity. Several strains of herpes virus and one strain of reovirus have been isolated from biopsy material of lymphoma cases. Intensive work carried out at the movable steel tower in the Zika forest has yielded twenty-three strains of viruses. This tower was acquired with assistance from WHO and enables insects flying at different heights to be caught.

The regional reference centre for Australasia at Canberra has continued epidemiological and serological investigations in the Maprik area of the Territory of New Guinea, and has arranged, in co-operation with other Australian laboratories, studies on the movements of Murray Valley encephalitis in either epidemic or inter-epidemic years.

The regional reference centre for the Americas at Atlanta has been active in the investigation of the epidemic of dengue which took place in the Caribbean area.

Haemorrhagic fevers, already a considerable public health problem in some urban areas of countries

in the Western Pacific, have recently been spreading to new areas. In 1963 epidemics or outbreaks occurred in Saigon (and other parts of the Republic of Vietnam), Singapore, Bangkok and Calcutta. A study by WHO of the epidemiological trend of haemorrhagic fever in the Western Pacific and South-East Asia Regions suggests that under modern conditions of transport, and in areas of unrestricted *Aedes aegypti* breeding, viruses of the dengue type had become endemic in a rapidly growing pattern now extending through major ports from Manila to Calcutta.

Because of the resurgence of haemorrhagic fevers in some countries and their potential threat to others an inter-regional seminar on mosquito-borne haemorrhagic fevers in the South-East Asia and Western Pacific Regions was held in Bangkok from 19 to 26 October 1964. Twenty-three participants from fourteen countries and many observers attended the meeting. They reviewed data on the extension and importance of these diseases and discussed the epidemiology and clinical manifestations, their pathology and pathogenesis, methods for etiological diagnosis and control measures. The seminar proposed a definition and nomenclature for diseases suspected to be of dengue or chikungunya etiology, and the organization of serological surveys in different areas of the two regions.

**Parasitic Diseases**

More effective control of parasitic diseases requires further study of the ecology and habits of vectors and the physiology of parasites, improvements in pesticides and methods of applying them, more reliable diagnosis, better and safer medication and a fuller epidemiological picture of the diseases concerned. Because of the complexity of the problems involved and the restricted resources available, WHO's activity has been mainly concentrated on supporting laboratory and field research in connexion with the most widespread parasitic diseases.

The WHO Expert Committee on Immunology of Parasitic Diseases that met in Ibadan, Nigeria, in December 1964, reviewed the whole field of immunology applied to parasitic diseases in the light of progress achieved and the new information accumulated during the last few years and gave guidance on the Organization's future technical policy in this regard.

**Bilharziasis**

In order to assemble fuller data on the snails that are the intermediate hosts of bilharziasis, WHO continued to stimulate and co-ordinate studies in various parts of the world on species determination, the establishment of snail colonies for bionomic and genetic studies and for basic research of snail variations, and related work. A noteworthy development in 1964 was the establishment in Copenhagen of the Danish Bilharziasis Laboratory, with facilities for expanding the work undertaken in this field for many years by the Danmarks Akvarium. The laboratory, which receives support from WHO, also serves as a WHO snail identification centre, and supplies other research workers with reference strains of snails.

Intensive work by laboratories and institutions in different parts of the world has provided much knowledge of the value of molluscicides in bilharziasis control. As part of the WHO-assisted molluscicide screening and evaluation programme, several effective molluscicides have been given field tests in different areas under varying conditions. The search continues, however, for an improved and highly selective preparation. WHO issues a series of information circulars to facilitate contact among research workers and provide them with up-to-date information on the various aspects of the programme.

In November 1964 an informal meeting of investigators reviewed the aims and priorities in the molluscicide screening and evaluation programme. It gave particular attention to ways of accelerating the field testing of promising new molluscicides and to the methodology for their field evaluation.

A monograph describing methods for the control of bilharziasis by snail destruction and reviewing the data and experience acquired in research work to date was in press at the end of the year. Intended primarily for those inaugurating bilharziasis control, it gives general guidance on the organization of control programmes and detailed information on the most effective procedures in current use for the control of snail habitats and for the chemical control of snails.

Sero-immunological methods applied to bilharziasis are still in the qualitative phase, and their specificity depends largely upon the nature of the antigens used. During the past few years a reference skin test antigen has been developed and has been tried in hyperendemic areas in many parts of the world. Results have shown that the skin tests with this reference antigen might be a useful tool for epidemiological surveys, although the variable reactions observed in many areas among different age groups require further study. Evaluation of the reference antigen is being continued, with a view to
obtaining quantitative data in terms of dose response, and eventually to achieving its standardization.

Two other diagnostic tests, the complement fixation test and the fluorescent antibody test, have been applied with good results in different areas. The former was recommended by the scientific groups on research in bilharziasis in 1961 and 1962 because of its good sensitivity and the consistent results obtained. The development of a method for finger blood collection on filter paper makes the fluorescent antibody test a very convenient method under field survey conditions, and though still experimental it is being applied to an increasing extent.

The schistosome plasma card test is still being evaluated in the field with kits supplied by the Organization.

Although progress has been significant in all these directions, the mechanisms governing the immune response and its development during the infection are still unknown and are being investigated in programmes assisted by WHO. The cercariae, eggs and adults of _Schistosoma mansoni_ required by laboratories collaborating in the WHO research programme are collected, prepared and supplied by the WHO centre in Puerto Rico. The Department of Parasitology at Lille University (France) is making a comparative study of antigenic fractions of schistosomes and other trematodes in order to evaluate their antigenic relationship by immuno-electrophoretic techniques. WHO has also supported studies of the efficacy of a new method, developed at the East African Institute for Medical Research in Mwanza (Tanganyika), for making _Schistosoma_ egg counts in faecal samples.

Antimonials are the most effective drugs known for the treatment of bilharziasis. Although they have been used extensively a better understanding of their efficacy and action is required. WHO is therefore supporting studies of the mode of action of antimonials on schistosomes, the mechanisms of toxic actions and the distribution of antimonials in the host and parasite and is providing facilities for drug screening and testing. The Bilharziasis Chemotherapy Centre, established at Tanga (in Tanganyika), in co-operation with the British Research Council and WHO, is collaborating in this research.

A standard protocol for the testing of anti-schistosomal drugs has been prepared and was reviewed by a scientific group on chemotherapy in bilharziasis which met in Geneva from 14 to 18 September. The group recommended that further studies be undertaken on sensitivity of infection to chemotherapy and on the mode of action and toxicity of antimonials. It also recommended that WHO stimulate further search for new schistosomicidal compounds.

WHO continued to support studies of the public health importance of bilharziasis. A study made by the Bilharzia Research Unit of the Ross Institute, London, among the primary schoolchildren of one area in the United Republic of Tanzania where the incidence of infection with _S. haematobium_ is very high revealed significant irreversible damage to the urinary tract in a number of cases, and showed a definite relationship between infection and rate of growth. These findings are confirmed by similar work undertaken by collaborating laboratories in Ghana, Nigeria and Senegal.

The inter-regional bilharziasis advisory team visited a number of countries in the African and the Eastern Mediterranean Regions, to assess the extent of the disease and to advise on its control. In Mauritania, for example, which the team visited for the first time in October 1963, it demonstrated control methods—including snail control—in a typical village where bilharziasis is endemic.

The team also paid a follow-up visit to Southern Rhodesia to assess the results of the control programme in progress there, and to advise on the extension of snail control to the irrigation schemes in the Lowveld. On visiting the new Khashm el Girba irrigation scheme in Sudan the team found that adequate plans were being implemented for the control of bilharziasis and other diseases and for the provision of public health services.

The important recent developments in bilharziasis control were reviewed by the expert committee which met in Geneva in September 1964 and which provided guidance for future work.

_Trypanosomiasis_

African health and veterinary authorities and international agencies assisting with economic development programmes in Africa fear a recrudescence of African trypanosomiasis in epidemic form, since land and water development programmes sometimes may lead to an extension of the tsetse-fly belt in some areas unless new measures are taken to prevent transmission.

The United Nations Advisory Committee on the Application of Science and Technology to Development recommended that tsetse-fly control should be one of the programmes singled out for special attention in international assistance. FAO and WHO are jointly carrying out a survey of human and animal trypanosomiasis in an endemic area in East Africa to assess the current situation and determine priorities for a programme of control, in which the United Nations Special Fund and the Economic Commission for Africa have expressed interest. Arrangements are being made, also in collaboration with
FAO, for an African trypanosomiasis information service to provide those concerned with information on all aspects of human and animal trypanosomiasis. WHO has provided support to institutions in Africa for research on the ecology, biology and physiology of Glossina, on storage of strains of trypanosomes freshly isolated from vertebrates, and on immunochemistry and drug trials.

Recent investigations on the biochemical changes occurring during infection have shown that in human trypanosomiasis in Africa serum $\beta$-macroglobulin levels increase considerably. New immunodiffusion methods of detecting these biochemical changes now being tested by collaborating laboratories may prove valuable for diagnosis and for assessing control measures and chemotherapy.

The most serious obstacle to progress in the control of African trypanosomiasis is lack of personnel at all levels. Particularly serious are the gaps in the sleeping-sickness control services caused by the repatriation of former field officers. As a first step towards remedying this situation, a training course in French was held in Bobo-Dioulasso (Upper Volta) in November 1964; plans were made for a similar course in English to take place in Nigeria in 1965.

Filarial Infections

Onchocerciasis, too, threatens to become more widespread as a result of irrigation and hydroelectric developments. Interruption of transmission is still most effectively achieved by direct attack against the larvae of the vector in the rivers and streams where they breed. Though successful control, using DDT as a larvicide, has been reported from many areas, fully reliable chemical control requires more intimate knowledge of the habits and distribution of the vectors. A first meeting of advisers was held in Geneva in July 1964 to discuss entomological aspects in onchocerciasis control and advise on priorities for research. Although African vectors were the subject of most immediate concern, many of the recommendations of the group apply equally to the Central American vectors of onchocerciasis. Plans are being made for studies on the lines suggested by the group. WHO is also supporting and co-ordinating work in different countries on the laboratory culture of Simulium.

Plans have been made for large-scale pilot projects for assessing methods of Simulium control and their effect on the incidence of onchocerciasis in West Africa.

Surveys on the onchocercal etiology of eye lesions have been conducted by WHO in Central America and West Africa, but further studies are needed to elucidate the pathogenicity of onchocercal lesions on the ocular fundus, and of other pathological manifestations of the infection in man. A follow-up epidemiological survey on the ophthalmological aspects of onchocerciasis was carried out in Kenya in four formerly endemic areas where transmission of the infection has been interrupted for a number of years; data were obtained on the development of ophthalmic lesions in onchocerciasis cases in the absence of re-infection.

In filarial infections serological tests have been used for diagnostic purposes. However, cross reactions occur between all six species infecting man. Filariae also share common antigens with many nematodes, particularly with hookworms and ascaris; so that individuals infected by other species may show positive reactions in immunodiagnostic tests for filariasis and onchocerciasis. It is nevertheless possible by means of the skin test to identify filariasis infection if antigenic preparations obtained from heterogeneous species (such as Dirofilaria immitis) are used. The reliability of diagnostic methods, and especially serological methods, depends upon the specificity of the antigen. Therefore, WHO-supported research for the fractionation, isolation and identification of antigens by modern biochemical techniques has been intensified. Preliminary results are promising and field trials are being planned.

A pilot project for filariasis control in Western Samoa has been planned, using mass drug administration as the chief method of control, and vector control measures in one area for comparative purposes. Another control project is being planned in Ceylon to test new methods of control. In Rangoon, the WHO filariasis research unit has undertaken epidemiological studies in order to assess the influence of entomological, environmental and ethnological factors on the incidence of filariasis (see also page 33).

Other Helminthic Infections

Research has been stimulated on immunology and chemotherapy for the control of such diseases as ascariasis, ancylostomiasis, dracointiasis and paramoniasis. Though much research in recent years has been devoted to immunodiagnosis, knowledge of the mechanism of immune response is still limited.

The effectiveness of mass drug administration with piperazine salt for the control of ascariasis is being investigated in China (Taiwan), with special consideration being given to the nutritional aspect. Another pilot
project is being planned in Ceylon. WHO is in contact with scientific institutions concerned with the development and testing of new anthelminthic drugs and is assisting in the clinical testing of promising compounds.

**Leishmaniasis**

WHO continued to support the comparative studies of *Leishmania* strains that are being co-ordinated by the Department of Parasitology of the Hadassah Medical School of the Hebrew University in Jerusalem. Arrangements have been made with the Government of Israel and the Hebrew University for the Department to become a recognized WHO reference centre so that the considerable information it has acquired can be made available to workers in other countries.

Support is also being given to an institution in Brazil for sero-immunological studies on leishmaniasis, and to another in France for epidemiological studies of visceral and cutaneous leishmaniasis in the south of France.

**Mycoses**

Inter-laboratory studies are being supported by WHO to assess the susceptibility of dermatophytes to griseofulvin and to develop standard techniques for this purpose. The programme assisted by UNICEF for mass control of *Tinea capitis* in Yugoslavia has now reached a stage where final eradication seems possible.

A study of the public health importance of mycotic infections was undertaken as a preliminary to the development of control programmes. Data on deep mycoses were collected during visits to a number of institutions in Africa in October and November 1964.

**Bacterial Diseases**

**Cholera**

Cholera remained endemic in 1964 in parts of South-East Asia, and cholera El Tor, after appearing in new areas in the Western Pacific Region, spread to East Pakistan and India (see also page 26).

A WHO inter-regional team, set up to study and advise on cholera control, started work in the Philippines.

The WHO cholera research programme was further developed. The first strictly controlled large-scale field trial on 51,000 people with four different cholera vaccines prepared from *Vibrio cholerae* took place in 1964 in Calcutta. A similar trial on 584,000 people with three different vaccines prepared from *V. cholerae* and *V. El Tor* was organized in the Philippines.

The joint project, in which laboratories in Japan and the Philippines co-operated, included a study of the viability of *V. El Tor* in contaminated food and water. WHO has also supported carrier studies in Hong Kong, Japan and the Philippines.

Co-operative laboratory studies of cholera vaccines are being carried out in several countries with the assistance of the International Laboratory for Biological Standards in Copenhagen.

WHO provided support for experimental studies on animals, for research on vibrio genetics, and the phage-typing of vibrios carried out in India; to this end an international reference centre for vibrio phage-typing was established at the Indian Institute for Biochemistry and Experimental Medicine in Calcutta. Phage-typing has been found to allow differentiation of *V. cholerae* and *V. El Tor* strains in a manner which was not possible by other known techniques.

The results of these investigations were reviewed by the Scientific Group on Cholera Research at its second meeting in November 1964, in Manila. The group also made recommendations on future research activities. This meeting was followed by an inter-regional seminar on cholera control, also held in Manila, to acquaint health service officials responsible for cholera control programmes with the newest methods of diagnosis, prophylaxis and treatment.

To facilitate rapid contact and the exchange of information among research and public health workers, a service of mimeographed information circulars on cholera has been started.

**Enteric Infections**

The primary importance of environmental controls in combating enteric infections was reiterated by the Expert Committee on Enteric Infections which met in Geneva in November 1963. It also stressed that these infections persisted in some areas because of failure, through ignorance or lack of initiative, to make proper use of existing facilities. It drew up a three-stage programme of control measures for areas of high endemicity, areas where initial steps have been accomplished and areas where control is well advanced. The Committee also listed fields in which further research is needed.

Three inter-regional courses designed to give advanced training on the control and study of enteric infections were organized—two in English, in Teheran

---

1 For work on leprosy and tuberculosis, see pages 24 and 6.

and Alexandria, and one in French, in Bucharest. The aim was to acquaint epidemiologists and bacteriologists engaged in communicable disease control in the developing countries with the latest developments in virology, bacteriology, parasitology and epidemiology of enteric infections, and with modern control methods.

The WHO diarrhoeal diseases advisory team completed a survey of diarrhoeal diseases in Iran (in a rural area near Teheran) and East Pakistan (in Dacca). In September it started similar work in Venezuela. The primary purpose of the surveys is to establish the local predominance of the different causes of diarrhoeal diseases and, by training counterpart personnel and demonstrating new control methods, to help local health services to deal more effectively with the problem in their areas. In certain areas, the team has helped to elucidate a failure of environmental control measures to bring about the expected reduction in the diseases.

Results have been published in the Bulletin of the long-term controlled field trials, in British Guiana and Yugoslavia, of typhoid vaccine prepared by different methods. Over a million people were covered in these and similar trials in Poland. The trials have demonstrated the superior effectiveness of acetone-inactivated over heat-phenol inactivated vaccine in reducing typhoid morbidity. International reference preparations of these two vaccines have been established.

A number of laboratories are collaborating in research with a view to elaborating a satisfactory laboratory test for evaluating the potency of typhoid vaccine.

Cerebrospinal Meningitis

Cerebrospinal meningitis is endemic in a number of countries in West Africa where seasonal epidemics occur, affecting mainly children and adolescents. To help combat these, two depots of sulfonamides provided by UNICEF have been set up at Niamey and at Brazzaville, from which countries can obtain emergency supplies at short notice.

Surveys carried out by WHO in Niger, Nigeria and Upper Volta have produced information on cerebrospinal meningitis that was discussed in October 1964 by a group of research workers meeting in Geneva. The purpose of the meeting was to review the present position and make recommendations for future research, which would include epidemiological, biochemical and immunological studies with a view to improving existing control methods and developing new ones. WHO has supported studies being carried out in a few collaborating laboratories on new vaccines and on sulfonamides used in the prevention and cure of cerebrospinal meningitis. The safety of one of the new vaccines has already been demonstrated; it is at present being considered for field tests for efficacy.

Diphtheria, Pertussis and Tetanus

Attempts to survey the distribution of tetanus are considerably hampered by the fact that in many countries there is still no compulsory registration and figures are incomplete. However, a review of available data for the period 1950-1960, carried out by WHO, suggests that mortality from tetanus has been increasing in most of the developing areas and has decreased substantially in Europe, Israel, Japan and China (Taiwan). Case-fatality remains high.

The co-operative pilot studies of the effectiveness of tetanus vaccine in Colombia, Nigeria and the Territory of Papua and New Guinea conducted in the field and assisted by laboratories in the United States of America and the United Kingdom of Great Britain and Northern Ireland, with support from WHO, have been completed, and the results published in the Bulletin.

WHO provided expert advice and supplies to Burma, India, Indonesia and the Republic of Vietnam to help those countries to produce diphtheria-tetanus-pertussis vaccines for nation-wide immunization campaigns.

Plague

Outbreaks of human plague continue to occur in a number of countries, and in some the number of cases reported has increased (see page 26). In India, one of the countries most affected, WHO representatives attended the first national co-ordination meeting on plague, held in Delhi in October 1963, and in 1964 WHO provided assistance for an investigation of the reasons for the persistence of foci of plague in South India. In Venezuela assistance was continued with a survey to determine the extent and nature of the plague foci.

Leprosy

WHO continued to provide technical advice and guidance to twenty-one countries in Africa, seven in Asia, six in the Americas and one in Europe in the planning and carrying out of their leprosy control programmes.

---

At the end of 1963, in the projects assisted by UNICEF and WHO, a total of 2,854,197 cases were registered, and of these 1,826,688 attended for treatment, although not all of them regularly. One of the difficulties in these programmes is to ensure that identified cases attend regularly for treatment over the prolonged period—sometimes lasting six years—that is often necessary. WHO is continuing therefore to stress the need for constant supervision and follow-up.

The WHO leprosy advisory team has again carried out prevalence surveys in a number of countries in which UNICEF/WHO-assisted programmes are in operation, as a basis for an assessment of the programmes. The team visited Burma, where it noted that considerable progress had been made in the leprosy control programme. The number of cases receiving treatment increased from 46,000 in 1958 to 117,000 in 1964, and the programme is being extended to new areas. In November 1963 the team completed its survey in the Philippines. In April 1964 it moved to Argentina to carry out similar surveys in two northern provinces.

In April 1964 a WHO leprosy/BCG trial team started a long-term study in Burma to ascertain the value of BCG vaccination as a preventive of leprosy in child populations.

In several countries in Africa leprosy case-finding has been combined with campaigns against other communicable diseases, especially yaws.

WHO has continued to provide assistance for research on various aspects of leprosy. Collaborating laboratories in Japan and the United States of America are attempting to isolate the chemical fraction responsible for the lepromin reaction, in order to make possible an antigen standardized by weight of the chemical fraction. A method for counting bacilli has been developed which may also be used for assessing results in experiments of transmission to animals and cultivation of *Mycobacterium leprae*. In Japan efforts to transmit *Mycobacterium leprae* to laboratory animals (mice, rats, hamsters, domestic fowl, goldfish and tropical fish) were unsuccessful.

In research on the cultivation of *Mycobacterium leprae* in cultures of kidney cells, fairly numerous bacilli were found in the tissue cells successively transplanted to the further three generations, but they showed a gradual degeneration and decrease in number with successive transplantations. Attempts are being made in Spain to cultivate *Mycobacterium leprae* in the chorioallantoic membranes of chick embryos.

WHO continues to support clinical trials of anti-leprosy drugs at research units in Brazil, Eastern Nigeria, India, Mali and Venezuela. The therapeutic effects of long-acting sulfonamides and a combination of drugs are being studied; no conclusive results have so far been reported.

### International Quarantine

Recommendations of the Expert Committee on Malaria with regard to preventing the reintroduction of malaria into areas from which it has been eradicated were considered by the Committee on International Quarantine, in February 1964. It concluded that there was no need at present to amend the International Sanitary Regulations in respect of malaria, but that special attention should be given to migrants, seasonal workers, and persons taking part in periodic mass congregations (Mecca pilgrims); where appropriate, other international travellers should receive information by means of a warning card on arrival.

The Committee on International Quarantine also discussed the smallpox provisions of the International Sanitary Regulations and, on the basis of the recommendations made by the Expert Committee on Smallpox in its first report, proposed to the Health Assembly amendments to the revaccination portion of the International Certificate of Vaccination or Revaccination against Smallpox. However, the Seventeenth World Health Assembly, while adopting the remainder of the twelfth report of the Committee on International Quarantine, decided (in resolution WHA17.42) to defer consideration of these amendments until the next Assembly in order to allow time for the observations of Member States to be obtained.

During the first six months of 1964, fifty-eight international travellers having diplomatic status arrived at a Mediterranean airport without the required smallpox vaccination certificate. A note was published in the *Weekly Epidemiological Record* pointing out that there are no articles in the International Sanitary Regulations stating or implying that any particular categories of international travellers—for example, those with diplomatic or special passports—are exempt from the provisions of the Regulations.

Revised editions of three booklets were issued dealing with particular aspects of the Regulations: *Vaccination Certificate Requirements for International Travel, Ports designated in Application of the International Sanitary Regulations*, and a similar booklet regarding airports. These and other separate booklets are kept up to date by amendments published in the *Weekly Epidemiological Record*. Information on the status of malaria eradication in 1963 and on *Aedes* aegypti have not yet been published.

---

aegypti at airports was also published in the *Weekly Epidemiological Record*.

Plague was reported in the United Republic of Tanzania after an absence of four years, and was also present in ports in the Republic of Viet-Nam; a plague-infected rat was found in California, United States of America.

A non-imported case of cholera El Tor was found in late August in the city of Narashino, Japan (the last non-imported case of cholera in Japan had been reported in 1946). A small outbreak of cholera El Tor was reported in the Republic of Korea in October 1964. Burma, Cambodia, Hong Kong, Macao, Malaysia and Thailand again experienced outbreaks of cholera El Tor, and the disease continued to be present in Indonesia and the Philippines. There was a widespread epidemic of cholera in the Republic of Viet-Nam, where no cholera cases had been reported since 1953, and cholera continued in East Pakistan and India. Evidence is still to be obtained on the role, if any, of carriers in the international spread of this disease.

One case of jungle yellow fever occurred in Uganda in October 1964—the first time in more than ten years that a case was reported in any of the following East African countries: Kenya, Malawi, Somalia, Southern Rhodesia, Uganda, United Republic of Tanzania, and Zambia.

The Mecca Pilgrimage in 1964 (year 1383 of the Hegira) was again free from quarantinable diseases.

WHO continued to co-operate with ICAO and the International Air Transport Association on matters of common interest concerning the application of the International Sanitary Regulations, and gave advice to the Inter-Governmental Maritime Consultative Organization with regard to the revision of the International Code of Signals and the Convention on Facilitation of Maritime Traffic.
RESEARCH ON TRACHOMA

The virological research laboratory established with WHO assistance at the Institute of Ophthalmology in Tunis is conducting an important programme of studies on trachoma. Work during 1964 included an investigation among 2000 schoolchildren on the island of Djerba to determine the degree of correlation between clinical and laboratory findings and to test the sensitivity of local strains of virus to different antibiotics. Blood samples were also taken from each child for use in immunological studies which it is hoped may eventually make it possible to produce an effective antitrachoma vaccine.
PRODUCTION OF FREEZE-DRIED SMALLPOX VACCINE

In the drive to eliminate smallpox from the remaining endemic reservoirs, WHO is concentrating on helping the countries concerned to develop the production of freeze-dried vaccine, which retains its potency in hot climates. These photographs were taken at the King Institute of Preventive Medicine, Madras, one of four production centres in India which, with equipment provided by UNICEF and advisory assistance from the Organization, have greatly stepped up their output in the past year.

(1) After examination and selection, calves are carefully washed by veterinary staff.
(2) The abdominal area of each animal is shaved before it is inoculated with the cowpox virus.
(3) The inoculated calves are isolated in special stalls while the vesicles develop.
(4) "Harvesting" the vaccine pulp from the vesicles.
(5) The ground and homogenized pulp is tested for bacteriological purity.
(6) Vaccine is tested for potency by inoculation into eggs.
(7) Laboratory staff read the results of the potency test by "pock counting".
(8) Ampoules are filled with vaccine, then examined for leaks.
(9) Racks loaded with ampoules ready for freeze-drying.
(10) The finished product.
Though rainfall is abundant in the Tonga islands there are no springs, streams or lakes. Water was traditionally stored in clay-lined pits, later replaced by concrete cisterns, but supplies were never adequate and the incidence of waterborne diseases was high. In 1958 the Government asked UNICEF and WHO to help in a comprehensive environmental health programme, and by April 1964, when this photograph was taken, seventeen communities had been provided with piped water-supply systems designed by a WHO sanitary engineer following socio-anthropological studies by another WHO expert.

Since 1956 the Government of Sierra Leone, assisted by UNICEF and WHO, has been conducting a yaws control programme which, now that the extent of the problem has been greatly reduced, is being combined with measures against other communicable diseases such as leprosy and smallpox, with a view to the eventual establishment of a comprehensive rural health service.

(1) Village children greet the arrival of a team of trainee medical auxiliaries headed by the WHO medical officer.

(2) The WHO medical officer examines children while trainees prepare syringes for penicillin injections.
CHAPTER 3

ENVIRONMENTAL HEALTH

The Expert Committee on Environmental Change and Resulting Impacts on Health, which met in Geneva in August, reviewed the most significant changes that have taken place in the fields of air pollution, water and waste water, food hygiene, environmental health aspects of radiation, and disposal of solid wastes.¹

The Committee recognized that the provision of safe drinking-water continues to have high priority in relation both to morbidity and mortality. The adequate collection and disposal of wastes is also important for reasons of health and should follow on as soon as financial resources in each country permit. With increasing population and food production, food hygiene will continue to represent an important branch of public health in all countries and therefore deserves high priority in public health programmes. The Committee emphasized that the effects on health of environmental changes could be assessed only by epidemiological studies based on reliable medical statistics. Such studies, coupled with an assessment of the proportion of the population at risk, would make it possible to establish priorities and thus avoid unbalanced expenditure on combating environmental health hazards.

Community Water Supply

The serious repercussions on health of inadequate community water supplies and WHO’s proposed programme of assistance in this matter were outlined by the Director-General in his report to the Seventeenth World Health Assembly on the community water supply programme.² Earlier, a study entitled Urban Water Supply Conditions and Needs in Seventy-five Developing Countries³ had brought out the enormous backlog of unsatisfied needs for water supplies in developing countries—a situation aggravated by expanding populations and urbanization—and the problems developing countries are facing in meeting these needs.

The technical discussions at the Seventeenth World Health Assembly—on the influence of community water supply programmes on health and social progress—again focused attention on the importance of safe and ample water supplies and the need to give more support to water supply programmes in developing countries. The 170 participants in the discussions included members of delegations of eighty-seven countries and representatives of twelve non-governmental organizations. Their report⁴ points out that the gap between the need for water, and its supply, is rapidly widening and can only be closed by immediate and sustained action by governments; that water supplies are not only essential to the well-being of a community but a decisive element in economic growth; that the major factors—water resources, technology, finance, personnel—necessary to bring piped water to large populations in developing countries are already present in those countries in varying degrees, and that WHO, under its community water supply programme, can help to supplement those factors where they are lacking. The report also recommends that WHO should serve as the world focus for the water supply programme.

In 1964, seventy-one countries received help from WHO in 114 projects in which the improvement of community water supplies was the main or one of the main objectives. The Organization helped countries to develop national and local water supply administrations, to carry out preliminary engineering and feasibility studies in order to attract the necessary investment capital, and to train, both locally and abroad, a cadre of all categories of the specialized personnel needed. In the case of the United Nations Special Fund project for providing water supply and sewerage for the Accra/Tema metropolitan area in Ghana, for which WHO is the executing agency, substantial financing for the first stage of water supply was obtained from a bilateral source shortly after the initiation of the project (see page 83). WHO’s assistance to the Government of Liberia in planning the water supply of Monrovia was followed by preliminary approval of financing from another bilateral agency. An interesting development was the decision of the World Food Programme to provide basic foodstuffs to the workers on a PAHO-assisted project

⁴ See WHO Chronicle, 1964, 18, 180.
to supply piped water to 50,000 people in rural communities in Costa Rica.

The WHO community water supply programme has been co-ordinated with the work of other United Nations organizations concerned with water resources development through participation in the inter-agency meetings on water resources development, and by direct consultations with other organizations on programmes of common interest. The United Nations Water Resources Development Centre has been reorganized to facilitate co-operation between the United Nations agencies (see also page 71).

A WHO monograph published in 1964 to meet the practical needs of water supply organization in developing countries gives detailed instructions on the operation of water treatment processes, and advice on the keeping of records, the use of personnel, the operation of water distribution systems and laboratory procedures for water analysis.¹

The second, revised, edition of the International Standards for Drinking-Water² was published in December 1963, bringing up to date the contents of the first edition, published in 1958, and including a new section on the standards of quality for water sources used for water supplies. These standards are not static and must be continuously brought into line with new developments and techniques for measuring physical, chemical and bacteriological qualities, particularly in connexion with the expanding use of new chemical compounds. The latest edition is the outcome of the recommendations of the WHO Expert Committee on International Standards for Drinking-Water which met in 1962. Standards as suggested in this and the previous edition of 1958 have been adopted by a number of Member countries, and in many others they have been used as a basis for establishing national drinking-water standards.

Wastes Disposal

Throughout the world the provision of sewerage and waste disposal facilities has lagged behind the provision of water supplies. This situation unquestionably leads to serious health hazards; WHO assistance for national water supply programmes, therefore, often includes assistance in the planning, financing and administration of sewerage and waste disposal. Examples of this combined form of assistance are the two projects, assisted by the United Nations Special Fund with WHO as executing agency, for the provision of water supplies for Accra (see also page 83) and Calcutta. For both of these projects, the engineering and feasibility reports include sewerage and sewage disposal facilities.

WHO has provided specialized advice on waste disposal to a number of countries: to Malta, for the preparation of a feasibility report on the utilization of waste water for irrigation and on the composting of refuse; to Ethiopia, for a study of the sewerage, sewage disposal and surface draining requirements of Addis Ababa; to the United Arab Republic, on sewerage and sewage pumping installations in several cities; to Mauritius, for a study of the possibility of extending the sewerage system of Port Louis, of using effluents to irrigate sugar-cane plantations and of installing waste stabilization ponds; and to Uganda, as part of the United Nations urban planning team for sewerage and sewage disposal in Greater Kampala.

WHO continued to support research at the Centre for Sanitary Engineering Research at the University of Alexandria, and provided advice on the further development of research into various aspects of waste treatment and disposal.

Information was collected on methods of construction and operation of waste stabilization ponds, an effective and low-cost method for the treatment of both domestic and industrial wastes, with a view to the preparation of a guide, particularly for the benefit of developing countries.

With increasing urban and industrial growth the adequate collection and disposal of solid wastes in cities is also becoming a very complex problem, and requests for assistance from WHO in this field are increasing. WHO has provided advice to Jordan and Venezuela on the refuse collection and disposal facilities for the cities of Jerusalem and Caracas.

Environmental Pollution

Two scientific groups on environmental pollution were convened in 1964. The first, which met in July, reviewed the extent of existing knowledge of physical, chemical and biological pollution of the environment and identified areas where new knowledge was desirable to improve control measures and preventive practices, and indicated needs and priorities. In the study of these questions, methodology was considered of special importance. As extremely small amounts of these pollutants may affect health, new lines of investigation are required. The second scientific group, which was convened in November, considered

the long-term effects on health of new pollutants; it indicated various substances—metals, metalloids, and synthetic organic compounds—which can reach man through air, water, and food, and recommended the use of epidemiological, physiological, biochemical, and morphological methods in future research.

WHO's collaboration with IAEA has included joint work on studies of radioactive waste disposal into the ground, air pollution from radioactivity, environmental monitoring in emergency situations, and mineral reactions in the treatment of radioactive wastes. Information has been collected on the problems of radioactive pollution of the environment.

**Air Pollution**

Since the Expert Committee on Environmental Sanitation discussed air pollution at its meeting in 1957, much technical research has been directed towards the development and improvement of separators, electrostatic precipitators, scrubbers and other devices to prevent air pollution. At the same time research has been conducted with a view to better understanding of the effect of certain pollutants on human health.

A review by WHO of studies in European countries on the effects of air pollution on health was completed at the end of 1963. It confirms that the statistical and epidemiological techniques employed in such studies are inadequate to secure reliable and conclusive results, and that there are great variations in the parameters used for assessing levels of pollution, in the methods and analytical procedures followed, and in the expression and interpretation of data collected. New pilot epidemiological studies have been planned, to be carried out by selected governments and institutions in collaboration with WHO.

An Expert Committee on Atmospheric Pollutants, convened in October 1963, reviewed recent progress in research on air pollution and on air pollution control. It recognized that major handicaps were the lack of internationally accepted nomenclature, units and methods of measuring pollutants, and the absence of accepted guides for air quality that could be used as a basis for national or local standards. It made specific recommendations for surveys to be carried out in a number of countries on the evaluation of air pollution potential and severity. It pointed out the need for tests for determining the nature and magnitude of the effects of air pollutants on man and on animals, vegetation and other environmental features and for research to determine the concentrations and exposure times associated with certain specific effects. The Committee also recommended that the results of studies and investigations be widely disseminated and that facilities be provided for the exchange of information, rare chemicals and measuring equipment for purposes of comparison. Steps have been taken to implement several of the recommendations.

A comprehensive review of sampling and analytical techniques for atmospheric pollutants has been made in preparation for a scientific group on the identification and measurement of air pollutants that is to meet in 1965. Studies, undertaken in collaboration with the Governments of the Federal Republic of Germany and of Italy, on new methods of detecting and estimating pollutants resulting from the photochemical reaction of hydrocarbons and oxides of nitrogen, and of comparing levels of other pollutants, showed positive results. But further investigations will be required to assess the effects of these pollutants on the environment and on health.

**Water Pollution**

WHO has collected data on the extent and degree of water pollution in different parts of the world. The information obtained shows a general increase in the pollution of surface and ground water caused by the discharge into streams and lakes of a greater variety of domestic and industrial waste products in increasing quantity, and indicates the need for new methods of removing economically certain types of persistent wastes and dissolved substances. Research is needed to improve the efficiency of sewage and industrial waste disposal processes and to develop new processes for removing chemicals and nutrient salts, such as phosphates and nitrates, from domestic sewage. Research in progress on the behaviour of polluted river water is as yet hardly on a scale to yield the information that will make it possible to control water quality with maximum economy and efficiency.

**Sanitation Services and Housing**

**Sanitation Services**

Practically all the WHO-assisted projects that were in operation in 1963 in the field of sanitation were continued in 1964. In addition, several new projects were started for strengthening sanitation services in Afghanistan, Cambodia, the Central African Republic and Chad, and for training sanitary engineers and

---

sanitarians in Iran. UNICEF continued to provide rural sanitation equipment and supplies for demonstration projects in all six regions.

A survey has been started of the potentialities for sanitary engineering training in Kenya and Madagascar. This will complete the survey made during the past two years in the African Region with a view to establishing sanitary engineering courses at either post-graduate or undergraduate level. Information has been collected on the scope and level of teaching in civil engineering institutions and on actual and potential resources in teaching personnel, equipment and facilities.

The draft of a guide to hygiene and sanitation on ships has been completed, with the collaboration of a number of international agencies and experts. The guide deals with the sanitation aspects of the inspection and certification of vessels in service, and makes recommendations regarding the sanitary facilities to be incorporated in the design of vessels and those to be provided for the crews of vessels in harbour. The draft is to be reviewed by the Committee on International Quarantine.

An inter-regional travelling seminar on the control of environmental sanitation visited the Soviet Union in September 1964. A group of nineteen public health and sanitation officials from as many countries studied the organization and operation of environmental sanitation services in the USSR. It also studied the research being carried out by several scientific institutes with a view to establishing or improving sanitation standards that would be applicable throughout the Soviet Union.

Housing and Urbanization

An expert committee was convened in Geneva in June to discuss the environmental health aspects of metropolitan planning and development. It reviewed the public administration problems, research needs, and those aspects of the training of sanitary engineers and city planners bearing on the subject under discussion, and stressed the close relationships that should exist between experts concerned with environmental health and experts on city planning. It also pointed out that developing countries need more assistance from WHO in the sanitation and public health aspects of metropolitan planning and development. It noted that WHO's assistance in environmental control fitted well into the programmes of concerted action of the United Nations and specialized agencies in housing, building and planning, and it indicated a number of major subjects on which WHO might provide further assistance within the framework of those programmes.

WHO participated in the United Nations symposium on the planning and development of new towns, which was planned to take place after the meeting of the expert committee mentioned above, and was held in Moscow from 24 August to 6 September 1964.

WHO contributed information on its activities in the fields of housing and urbanization for incorporation in a report presented by the United Nations to the Committee on Housing, Building and Planning of the Economic and Social Council, and took part in the second meeting of that committee, held in New York in January 1964. WHO also took part in a joint meeting of the two inter-agency working groups — on housing, building and planning, and on urbanization — held immediately after the meeting of the Committee, to examine its report.

A WHO sanitary engineer was attached to the Housing, Building and Planning Section of the Economic Commission for Africa, in Addis Ababa, to advise ECA on the environmental health aspects of its housing and physical planning schemes. He took part in the Workshop on Physical Planning and Urbanization Policies in Development convened by ECA in Accra in September 1964. He also initiated studies of the costs of basic sanitation facilities related to housing in African countries.

Housing Programmes: The Role of Public Health Agencies, published during the year, urges the closest collaboration between public health and housing officials. It discusses the participation of health agencies in the planning and implementation of housing programmes, and in the establishment and application of housing standards.

In October 1963 a WHO inter-regional travelling seminar on the public health aspects of housing visited the Soviet Union to study the public health and sanitation aspects of housing, including scientific research being carried out on hygienic housing and the various methods of planning, construction, and public health control of buildings.

In collaboration with the United Nations and its regional economic commissions, a study is being undertaken to develop guiding principles for appraising the hygienic quality of housing and the residential environment under different geographical, climatic and social and economic conditions.

Environmental Biology

Two scientific groups on biological aspects of environmental pollution were convened in Geneva in June. The Scientific Group on the Biological Estimation of Water Pollution Levels considered the poten-
tialities of various biological procedures for monitoring putrescible organic substances, discussed their role in relation to sanitary engineering practice and requirements, and made recommendations on the research necessary to refine and standardize such procedures. The Scientific Group on Biological Aspects of Microchemical Pollution of Water Systems discussed the behaviour and ecological effects of microchemical contaminants (especially synthetic organic compounds, many of which are characterized by a high degree of persistence) in the natural waters receiving them. It paid special attention to the consequences for human health of the contamination by these compounds of fish, fish-eating birds and other sources of food, and to the detection and quantification of microchemical contaminants by test organisms.

To provide a sound ecological basis for the development of effective biotic procedures for the control of disease vectors, various biological control activities are being undertaken in a number of countries. Studies conducted during the year have added to knowledge of mosquito pathogens, particularly Coelomomyces fungi. Basic research on the latter being undertaken at the University of Bristol, England, with WHO assistance, has resulted in the first large-scale infections being achieved under laboratory conditions. New locality records for Coelomomyces, including the first ones from Japan and Guatemala, have been reported to WHO. A search by a New Zealand expedition to the Tokelau Islands revealed the presence of Coelomomyces-infected larvae in approximately 40 per cent. of the Aedes polynesiensis larval habitats sampled at Nukunono atoll. The parasites introduced from Singapore in 1958 for the biological control of this filariasis vector are thus well established, their incidence being considerably higher than that recorded during the previous assessment survey in 1960. For the benefit of research workers in this field, WHO issues a series of mimeographed information circulars giving the findings in current research.

An annotated list and bibliography of pathogens, parasites and predators of medically important arthropods was published as an aid to research in this field. A pocket-sized collecting kit has been designed for manufacture and for distribution to scientists and institutions participating in a widespread survey to find organisms of potential value in the biological control of vectors. To accelerate identification and assessment of the material collected, a WHO international reference centre was designated at the Ohio State University, United States of America, to make preliminary diagnoses and to distribute specimens to other collaborating laboratories for screening and for further study prior to field trials.

WHO has supported a number of biological control activities. Laboratory and field studies of larvivorous South American "annual fish" (cyprinodonts which have dessication-resistant eggs, and are particularly well adapted to life in temporary pools) have been carried out in Bulgaria and the British Solomon Islands Protectorate, and in Brazil a search has been made for larval predators suitable for use against Aedes polynesiensis in the South Pacific. Studies of the larval ecology of Culex pipiens fatigans were carried out in Rangoon (see also page 33), and of chironomid midges in Nicaragua, special attention being paid to natural population-limiting factors affecting these insects.

Vector Control and Insecticide Resistance

The collaborative research programme on vector control and insecticide resistance was reviewed in June by a scientific group, which noted that under the programme almost every major activity proposed by expert committees and scientific groups had been successfully accomplished. The group considered that the progress made during the past decade, while not opening the way to the adoption of a single simple solution to the insecticide resistance problem, did suggest that programmes for the control of vectorborne diseases could be effective in spite of the resistance phenomenon. With regard to the future programme, it pointed out that advances on many fronts, involving the combination of a number of disciplines, would be required during the next ten years. In the development of new insecticides special attention should be paid to methods of formulation and application, to toxicological research on hazards to human health, and to ecological research on possible side-effects on the environment.

The group pointed out that the development of entirely new control methods for insect vectors, such as the release of artificially sterilized or incompatible males, would involve the disciplines of both genetics and physiology, and also research into the ecology and behaviour of the vectors. The group also noted that operations would be necessary against a wide variety of insects, such as the vectors of filariasis and of arthropod-borne viruses; that the increasing volume and speed of international traffic necessitated greater precautions to prevent the accidental transportation of dangerous insects from one part of the world to another; and that continuing and large-scale vector control measures would be required as a result of the increasing urbanization of developing countries.

\[1\] Jenkins, D.W., (1964) Pathogens, parasites and predators of medically important arthropods, Geneva (Bull. Wld Hlth Org., 30, Suppl.)
The Organization has given support to twenty-two laboratories for investigations into the genetics, physiology and biochemistry of resistance to insecticides. It has also provided standard materials, test kits and strains of insects. The distribution of the standard strain of housefly (SRS/Musca domestica/1) has continued, and the first batches of the standard strain of Culex pipiens fatigans and three marker strains associated with it were dispatched to laboratories.

Work on the induction of resistance to new organophosphorus and carbamate insecticides was started in two laboratories, special attention being given to anopheline and culicine mosquitos; the results of these studies will affect considerably the practical application of these compounds.

The routine distribution of test kits for determining levels of resistance to tssete flies, fleas and bedbugs was begun; development studies of similar kits for tests of houseflies, blackflies, ticks and cockroaches are at an advanced stage. Improved procedures for impregnating papers with organophosphorus and carbamate insecticides are expected to extend their storage life.

Over 300 test kits of different types, including those for testing resistance to persistent fumigants, were distributed, and surveys of resistance are being performed on an increasing scale. The results of the surveys made over the past five years have been analysed for issue in the mimeographed series of information circulars on vector control. This series, first issued at the end of 1963, has already a wide circulation among interested workers.

The Organization has maintained a small stock of isotopically labelled compounds which are supplied to research laboratories for investigations on the mechanism of resistance development, biochemistry of resistance, biochemistry of toxicology, etc. At present, four insecticides labelled with carbon-14 are available (DDT, dieldrin, malathion and a new carbamate). In addition, isotopically labelled acetylcholine has been supplied to laboratories in the Netherlands, Nigeria, the United Kingdom of Great Britain and Northern Ireland, the United States of America, and Yugoslavia to aid in the investigation of the new radiometric method for measuring blood cholinesterase enzyme activity. A paper describing this method was published in the WHO Bulletin.\(^1\) Supplies of chemicals such as p,p'-DDT, dieldrin (HEOD), and carbaryl (Sevin) have been maintained and supplied to laboratories for use as standards for analytical evaluations.

The WHO collaborative scheme for the evaluation of new insecticides has now been in operation for five years. During that time the seven collaborating laboratories have tested, in one or more of the stages of screening, a total of 1000 insecticides, obtained from thirty-four companies and four university laboratories. Testing is carried out in five stages: I initial evaluation; II preliminary laboratory evaluation (including studies of cross-tolerances, toxicity and effectiveness on different surfaces); III advanced laboratory and preliminary field evaluation (including formulation properties, protective measures and small-scale trials); IV advanced field evaluation (including field trials and storage stability tests); and V final field evaluation.

Under this collaborative scheme more compounds and new chemical classes are being submitted for testing, and an increasing proportion show properties suitable to the scheme. Of the fifty-eight compounds tested in stages II and III in 1963, slightly more than half were recommended for further testing; seven compounds were tested in stage IV, using experimental huts, on naturally entering mosquitos; and three were tested in the field in Nigeria by the WHO insecticide testing unit, stationed at Lagos (see below).

Several compounds evaluated and recommended under the scheme have been sent to laboratories and test stations in Denmark, Italy, El Salvador, and Nigeria to be tested on mosquitos and houseflies under the different conditions prevailing in those countries.

Forty-two candidate chemosterilants have been tested under the scheme. Though the application of these materials is limited by their toxic properties, a few have been recommended for further tests; the most promising compound is under test for long-term toxicity.

The insecticide testing unit carried out village-scale trials on three compounds—two organophosphorus compounds (OMS-658 and OMS-43), and one carbamate (OMS-33)—for possible use as residual insecticides against adult anopheline mosquitos. Special attention was paid to their effects on the contact of mosquitos and human beings, with examination of mosquitos’ biting rates and house enterings, and of the repellency of the compound. Extensive toxicological examinations were carried out on both the spraymen and the inhabitants of the treated huts to test the safety of these new compounds, and different methods for determining blood cholinesterase levels were compared in order to determine their relative reliability and suitability for field use.

Arrangements are being made for the activities of the insecticides testing unit to be expanded to include field trials of new mosquito larvicides emanating from the collaborative scheme, and trial procedures have been elaborated.

WHO has helped the Government of Iran in large-scale field trials with one organophosphorus (OMS-2) and one carbamate (OMS-33) residual insecticide in the problem area of Kazerun, in southern Iran, where insecticide resistance has prevented the interruption of malaria transmission. WHO provided the insecticides and two experts to evaluate the toxicological aspects of the trials.

Dichlorvos-impregnated resin strands were tested in rural areas of Denmark and Italy for their effectiveness against adult houseflies. An analysis of the results, which appear to be very promising, has been issued in the mimeographed series of information circulars on vector control.

At the request of UNRWA, a vector control specialist visited refugee camps in the Eastern Mediterranean Region to advise on the efficacy of the techniques used and to examine the possibilities of carrying out field trials with newer insecticides against houseflies. Advice was also given to the Government of Syria on the organization of a vector control service.

Arrangements have been made with the Government of Israel and with a research institute in India to carry out field and laboratory trials on the effects on various species of rats and related genera of a new rodenticide which appears to be highly specific for the genus Rattus but to have little or no toxicity for other mammals.

An automatic dichlorvos dispensing system for disinsecting aircraft while in flight is being tested. The trials are being evaluated by inspection of aircraft for surviving insects, under arrangements made with collaborating governments, and by bio-assays on caged mosquitoes. An article on the studies on the "blocks away" method of aircraft disinsection (i.e. between passenger embarkation and take-off) in tropical areas was published in the WHO Bulletin.

A specialist provided by WHO visited ports, airports and quarantine stations in West and East Africa and in the Eastern Mediterranean Region, reviewed quarantine vector control procedures, and, where necessary, recommended improvements to the governments concerned.

The WHO filariasis research unit, located in Rangoon, has carried out extensive fundamental research on Culex pipiens fatigans, the urban vector of filariasis in that area. It is studying the fundamental ecology and behaviour of the adult mosquito with a view to establishing more effective methods for its control. Surveys have been completed of various types of larval habitat in which breeding occurs at different seasons. Both larvae and adults of this species have been tested for susceptibility to chlorinated hydrocarbon and organophosphorus insecticides, and arrangements are being made for the laboratory testing of new compounds emanating from the collaborative scheme, to be followed by assessment in the field, especially of larvicides.

Other methods of control are being studied at collaborating laboratories. Genetic investigations on Rangoon strains are under way in the hope that incompatible or lethal strains of the species might be used as a means of genetic control. Surveys have been conducted of natural mosquito pathogens and predators in Rangoon, and the possibilities of using fish, fungi or other biological agents as an adjunct to insecticidal control are being examined. Epidemiological evaluations have been made, and data on the human population accumulated in government and other surveys have helped to complete the parasitological picture of filariasis in the city.

The work of the research unit was analysed at an inter-regional seminar on the ecology, biology and control of the Culex pipiens complex, which was held in Geneva in September 1964 and attended by thirty-five participants from twenty-two countries. Valuable suggestions were made regarding future research. Participants agreed that the filariasis situation was deteriorating and becoming more difficult to deal with, and expressed concern that some of the available means of attacking the vector were not being applied. The seminar concluded that the remarkable adaptability of the vector made it necessary to intensify integrated research in all the relevant disciplines.

Other research on vectors of filariasis and onchocerciasis—concerning in particular the laboratory culture of Simulium and measures for its control—has been carried out in Ceylon, the United States of America, Western Samoa and West Africa in connexion with WHO's programme on parasitic diseases (see page 22).

On the basis of the fourteenth report of the Expert Committee on Insecticides, which met in November 1963, it was decided to publish specifications for all the commonly used apparatus for the application and

---

dispersal of pesticides. This publication, a companion volume to Specifications for Pesticides, is designed to provide health workers in the developing countries with information on the use and maintenance of new equipment.

Work on the toxicity of pesticides to man has expanded rapidly during the past fifteen months. As already mentioned (see page 32), toxicity tests formed part of the village trials of three compounds, carried out by the insecticides testing unit in Nigeria. In connexion with the large-scale field trial in Northern Nigeria with organophosphorus compound OMS-43, extensive studies were made regarding protective measures against the depression of cholinesterase of spraymen and other persons coming into contact with this insecticide. Investigations into the mode of action of carbamate insecticides have been increased, and the information obtained will help to determine the best method for their large-scale use in the field. A series of field studies was carried out to compare the effectiveness and convenience of six different methods of determining blood cholinesterase levels. It is hoped that this work may shortly make it possible to devise simple procedures that may be used by non-toxicologists. A laboratory in Dakar, Senegal, has begun toxicological investigations on organophosphorus insecticides with support from WHO. This is the only laboratory at present working on this subject in West Africa.

Special attention has also been given to the possible use in all water containers, including drinking-water containers, of larvicides with low mammalian toxicity for the control of Aedes aegypti and similar species of mosquito. Preliminary results indicate that it may be possible to implement this method of vector control.

The twenty-four papers presented at the seminar on vector control held in Geneva in November 1962 have been published in a supplement to the WHO Bulletin.2

---

CHAPTER 4

PUBLIC HEALTH SERVICES

Public Health Administration

The integration into general health services of mass campaigns against specific diseases was discussed by a study group which met in Geneva in April and May 1964.1 The subject was considered under three main headings: the role of mass campaigns in the development of health services, the relationship between mass campaigns and general health services at different stages of development, and the training of personnel to meet changing health needs.

The group stressed the fact that mass campaigns were indispensable to break the vicious circle of excessive sickness, low productivity and poverty, and that it was therefore sometimes necessary to launch them in the absence of general health services. Such an approach, however, was a temporary expedient and the ultimate goal must be the establishment of a permanent scheme of general health services extended to rural and remote areas. Mass campaigns could be used for that purpose in two ways: first, in the "sequential campaign" the early stage of a mass campaign against a given disease was followed by activities against other diseases, so that the single-purpose interest of the campaign staff at the outset was gradually broadened and the staff converted into multipurpose health workers; secondly, the "pre-eradication programme" was designed to create simultaneously a national service against the specific disease (in practice, generally malaria) and develop basic health services capable of undertaking definite responsibilities during the later stage of the eradication programme.

Both the World Health Assembly and the Executive Board, in their resolutions concerning the building up of health infrastructures in connexion with malaria pre-eradication programmes, have drawn attention to the importance of the problem and to the need for an early solution. During the period under review WHO has provided fourteen posts for public health advisers in twelve countries to advise on the building up of health infrastructures in connexion with malaria pre-eradication programmes. At meetings held in Lomé, Togo and Niamey, Niger, public health planners, advisers and malaria specialists discussed the measures that could be taken under the prevailing conditions with the available staff and financial resources, to develop basic health services in countries where the need is particularly urgent.

Significant progress has been made in a number of countries in integrating specialized programmes against specific diseases into the general health services. This was brought out in a study made during the year of three types of activity: the work carried out in the experimental areas in Turkey for integration of malaria personnel into public health administration services, the integration of leprosy control and bilharziasis control projects into the general health services in the Philippines and the integration of the tuberculosis control project into the general health services in China (Taiwan). The study shows that in all three cases the process of integration has reached an advanced stage.

In a number of countries the health authorities are giving sustained attention to the co-ordination of assistance received from different sources for individual health programmes. While in some countries this co-ordination is done only in an ad hoc fashion, in others it is carried out by committees. The results reported are encouraging and these co-ordinating committees facilitate programme development and serve to bring health ministries more closely into contact with other government authorities, such as those dealing with education, agriculture, social welfare and public works.

WHO continued to work closely with the United Nations, FAO, ILO and UNESCO in connexion with the concerted action programmes in rural and community development. In keeping with the present trend of securing the active support of the population for health programmes, the community development approach is being used increasingly, especially in rural health programmes. Particularly successful results have been achieved in rural health activities in Afghanistan, India, Sudan, Ethiopia, Nigeria and the Philippines. Preparations were made at the end of the year for a study of the progress of pilot rural health development programmes in Afghanistan, Nigeria and the United Arab Republic.

Further progress has been made in applied research, sponsored by WHO, on various aspects of the admin-

istration and organization of medical care. In this connexion, a field study has been launched by the Ministry of Health and Local Government of Northern Ireland with a view to developing a methodology for studying the nature of community health; the various social, economic and cultural factors affecting it, and the existing health provisions; the extent to which health services are utilized by the population and the degree to which they satisfy the health needs of the community. In the light of the results of this study, similar studies will be carried out in other countries. These investigations are linked with the studies on organizational patterns for providing health care mentioned on page 37.

A start has been made on a study of medical screening procedures for the early identification of disease and presymptomatic metabolic and other disorders. From the initial study of literature and existing practices, it is already clear that the broader implications of developments in this field are likely to be far-reaching.

The supplement to the Second Report on the World Health Situation was completed and submitted to the Seventeenth World Health Assembly in March. It relates to the years 1961 and 1962, and contains, in addition to the statements on individual countries, a review on a special topic: “Education and training of health service personnel” (see also page 53). A final version of the supplement, incorporating amendments from governments, was issued in mimeographed form later in the year.

National Health Planning

Since it was decided that WHO should help countries with comprehensive national health planning, attention has been concentrated on assistance to countries in Africa. Health planning projects have been assisted by WHO in Gabon, Liberia, Mali, Niger and Sierra Leone (see page 79). Assistance given by PAHO and WHO with national health planning in the Region of the Americas is mentioned in Chapter 15. With a view to arousing interest in national health planning in the Western Pacific Region a seminar on that subject was held in Manila in June 1964. The seminar, which was attended by participants from fifteen countries and territories of the Western Pacific Region, considered national health planning as an essential component of social and economic planning; reviewed current practices and experiences in national health planning in countries of the Region; formulated guidelines for national health planning, taking into account recent scientific progress and methodological improvements; and assessed resources and the means to be utilized by countries in implementing their national health plans.

“Health planning” is the subject selected by the Executive Board for the technical discussions at the Eighteenth World Health Assembly. In preparation for the discussions, a suggested outline for use by countries in discussing health planning has been drawn up and sent to Member States and Associate Members.

The Organization continued to co-operate with the Latin American Institute for Economic and Social Planning, in Santiago, Chile, with the Asian Institute for Economic Development and Planning, in Bangkok, and the African Institute for Economic Development and Planning, in Dakar.

Organization of Medical Care

The interest of Member States in the organization of medical care is attested by the increased number of requests for assistance in training hospital administrators, planning medical care, improving hospital legislation, administration and records, and building health institutions.

Assistance has been given to a number of developing and newly independent countries in reorganizing and modernizing their hospital services. A plan of operations for creating a modern system of hospital organization has been proposed to the Government of the Republic of Viet-Nam, where the Cho Ray Hospital in Saigon has been selected as a pilot institution in which new management methods are to be tried out. The Government has been advised on the creation of a hospitals department within the Ministry of Health and new hospital legislation is in preparation.

WHO has provided assistance to Malaysia for training in hospital administration and for the improvement of hospital records; to Saudi Arabia for the organization of hospital services throughout the country; and to Somalia for the reorganization of the Hargeisa Group Hospital. In Ceylon a three-month course was organized in hospital administration.

Hospital building costs, and the need to design new hospitals with an eye to future needs, are matters on which further study is urgently required. A survey of hospital requirements was made in Tonga as a basis for the preparation of plans, specifications and cost estimates for the construction of three hospitals and standard designs for rural dispensaries and health centres. Advice on standardized components and lay-outs for hospital buildings was also given in response to requests from Cyprus, Ethiopia, Saudi Arabia and Yugoslavia, and a request for assistance has been received from Sudan.
Analysis of the data furnished by some thirty countries in connexion with the study on hospital utilization is nearly complete. The study is being supplemented by a "depth study" concerning selected areas. Its purpose is to define and account for the peculiarities of local hospital utilization rates in so far as they differ from the national rate, and to develop a methodology for use by national health administrators in planning the geographical distribution and bed capacity of hospital facilities. The study will cover health centres, out-patient departments and other provision for ambulatory care. It is planned to link up this study with that on different organizational patterns for providing personal health care, the ultimate objective being to provide a methodology for planning the distribution of overall medical care facilities.

Preliminary analysis of the results of the study of the cost and sources of finance of health services has revealed a striking increase in total health expenditure, which in certain countries is at an annual rate of almost ten per cent., and a corresponding increase in per capita expenditure. Among the reasons for this increase are rising expectations and living standards, leading to improvement, extension and greater utilization of health services; advances in medical sciences which mean more effective—but also more expensive—methods of diagnosis and treatment; the changing age structure of national populations—with a higher proportion in the under-ten and over-sixty groups; and the increasing pressure to provide health services regardless of economic considerations, which results in a relative rise in the price of medical services.

Basic principles to govern the localization of health establishments in modern cities were outlined by the Expert Committee on Environmental Health Aspects of Metropolitan Planning and Development, which met in Geneva in June 1964 (see page 30), but further studies are needed.

Health Laboratory Services

As in the past, WHO's assistance to governments on health laboratory services was mainly concerned with the technical and operational integration of all health laboratory activities into the national health services, and the training of laboratory personnel. Advice has also been given on the standardization of methods and equipment for diagnostic purposes. In addition, the national and international reference activities necessary for research on geographical pathology have been continued and extended.

In the Region of the Americas, a survey was made of the existing health laboratory services, in order to define the needs and establish priorities for the development of such services in the Region as a whole and in individual countries. Similar work has been done by regional laboratory advisers in the Eastern Mediterranean and South-East Asia Regions. In the latter region, special assistance has been given with the production of freeze-dried smallpox vaccine (see page 100).

Technical assistance was given to thirty-four countries in the planning, organization and expansion of laboratory services and in the training of laboratory personnel. In Saudi Arabia, for example, WHO provided technical assistance in the establishment of the general services at the central public health laboratory in Riyadh. In Beirut, the second regional training course for laboratory technician tutors in the Eastern Mediterranean Region was started in October 1964. In Copenhagen an inter-regional training course was organized, from April to June, for clinical pathologists and biochemists on the subject of chromatography and electrophoresis in medicine; it also dealt with the organization of hospital laboratory work.

With a view to achieving uniformity in methods of training and in the standard and recognition of diplomas, syllabus and equipment lists have been prepared and will be submitted with the necessary background explanation to the governments in the African Region. Such uniformity will facilitate the development of inter-country training programmes.

Following the completion in Europe of the network of national blood group reference laboratories working in close collaboration with the WHO International Blood Group Reference Laboratory in London, the extension of this system to other regions has been started.

Contact has been established with the Standardizing Committee of the European Society of Haematology with regard to the studies being made in Europe on the standardization of methods for the determination of haemoglobin.

Collaboration with the International Committee on Laboratory Animals has been strengthened, and the Committee is to provide, at the request of WHO, technical assistance in national programmes for the production of laboratory animals, and for the training of personnel in this field.

In February 1964 the first information bulletin of the WHO-supported International Information Centre on Antibiotics, in Liège, was issued, describing the purpose for which it was established, and its activities. In research on antibiotics, WHO has sponsored an international collaborative study by sixteen laboratories on the disc method of testing bacterial sensitivity to antibiotics. The results, which have now been statistically analysed, were discussed in November
1964 at a meeting of advisers, held in Stockholm. They also drew up the plans for the next stage of this collaborative study.

Nursing

In many countries the standard of programmes of basic nursing is improving steadily. This is a result of an increase in the general educational requirements for admission to training, better prepared teaching staff, and improvements in the clinical services where students learn to nurse. In some countries basic nursing education programmes are being established in universities. WHO assistance to two such university schools terminated during the year. The Higher Institute of Nursing, University of Alexandria, established in 1955, was the first school of this nature to serve the Arabic-speaking countries. Nearly all the nurse graduates are in key positions in their countries. Many have studied abroad for a Master's degree and some are studying for a doctorate—an essential qualification for faculty posts at the University of Alexandria. At the school of nursing in China (Taiwan) the fifth class graduated in 1964, bringing to 107 the number of graduates who have received the degree of Bachelor of Science in nursing from this institution. Several of them joined the faculty of the school after a period of further study abroad (see also page 121).

Also completed in 1964 was the WHO-assisted project in nursing education in Guatemala which has been in operation for ten years. This project (described on page 96) has been concerned with the preparation of instructors and supervisors of nursing services, basic nursing education, and training of nursing auxiliaries. These programmes are now under the direction of national nurses who have been prepared for the work.

Teaching in public health is being introduced into the training of midwives at all levels: professional nurse-midwives with training in public health are being used increasingly in administrative and teaching posts; and the broad public health aspects of maternal and child care are being included in the training programmes for midwives and in the refresher courses of auxiliary personnel—including traditional birth attendants. An example of this trend is the midwifery education programme in Singapore for which WHO is providing assistance.

In a number of countries in Africa, WHO nursing advisers are assisting in planning the national nursing services, as well as helping to develop nursing units at national level.

Post-basic nursing education programmes are developing rapidly and include intensive courses to supplement basic education and give preparation for additional responsibilities, and regular academic programmes at a university or an institution of equivalent level.

WHO has helped to establish two advanced schools of nursing in Europe, one at the University of Edinburgh and one at Lyons, France. The first group of students have started their course at Edinburgh; at Lyons training is to start in 1965. In Ghana a two-year programme has been established, in association with the University of Ghana at Accra, to prepare tutors in basic nursing, public health nursing and in midwifery. The first group will receive their certificates in 1965. In Nigeria, qualified nurses have been accepted at the University of Ibadan for a three-year course leading to a university degree and giving preparation in teaching, administration, or in a clinical speciality.

A scientific group on nursing was convened in November 1963 to identify subjects in nursing of international significance requiring research. In accordance with one of the recommendations of the scientific group a start was made in the preparation of a methodology for the study of current nursing practice and basic nursing education.

As part of WHO's assistance for the general improvement of nursing services and of a long-term programme designed to stimulate research in nursing practice, a five-week conference was organized in Delhi in November and December 1964 for senior nurses from public and hospital services in India. The purpose was to discuss and provide guidance on the application of the methods of study described in *The Staffing of Public Health and Outpatient Nursing Services* 1 so that the nurses taking part could apply them more easily in their own studies of staffing.

A number of courses and seminars have been held on different aspects of nursing. For example, a six-week course on the administration of nursing services was organized in Copenhagen by WHO in association with the Danish National Health Service. The purpose of the course was to improve the care of patients in hospitals by more efficient ward administration. Two seminars on the training of nursing auxiliaries in Latin America have been held: the first in Mexico in December 1963 and the second in Colombia in December 1964. At the second seminar the discussion centred on curricula and the preparation of self-instruction materials in Spanish for use throughout Latin America in the training of auxiliaries.

The role of midwives in general health programmes and the education required for participation in such

---

programmes were discussed at a conference held in Moscow in November 1964. The thirty-nine participants included midwives, nurse-midwives, educators, obstetricians and social paediatricians. Observers attended from the International Federation of Gynaecology and Obstetrics and the International Confederation of Midwives.

A useful outcome of regional and inter-regional seminars and conferences is the organization of national meetings for nurses and workers in allied disciplines, which are contributing to the improvement of nursing services and education. Examples are the conference of directors of post-basic schools of nursing, organized by the German Nurses' Association, and a conference organized by the New South Wales College of Nursing in Australia. WHO provided assistance with both these conferences.

Under the title The Nurse in Mental Health Practice 1 WHO published the conclusions and working papers of a technical conference held in November 1961. The main subjects treated are social and cultural attitudes affecting the role of nurses in mental health practice, modern psychiatric practices affecting the role of nurses, and training for psychiatric nursing. A detailed analysis is given of the information obtained from twenty-one governments and seventeen hospitals in Europe.

Health Education

The number of requests to WHO for assistance in health education again increased in 1964. Specialists were sent to Algeria, India, the Republic of Korea, and Togo, to advise on the planning and development of national provincial health education programmes and on health education as a component of public health services. The authorities in Japan, the Republic of Korea and China (Taiwan) are considering the establishment, with advice from WHO, of health education units at national or provincial level; a national director of health education has been appointed in Malaysia to head a health education department; and in the Philippines a formal agreement on a co-operative and co-ordinated school health programme, including health education, was signed by the Departments of Health and Education. WHO health educators are working with the public health administration projects in Algeria and Turkey. National personnel from seventeen countries received WHO fellowships for training in public health, with specialization in health education.

A working group on the training of doctors in health education was held in Copenhagen in December 1963 under WHO's sponsorship. It advocated special courses in health education for doctors in key positions, short orientation meetings on health education for other members of the medical profession and the inclusion of health education in the undergraduate medical curriculum.

Health education components are included in a wide variety of public health projects, both regional and national, throughout the world. WHO has participated, for example, in planning the health education aspects of the inter-country water supply programme being developed in Latin America and has helped to elaborate the health education component of maternal and child health, dental health and nutrition programmes, and also in the prevention and control of trachoma, cancer, cardiovascular and enteric diseases. A number of background papers on these subjects have been prepared and some have been published in professional journals. A guide is in preparation on the role of health education in malaria eradication and pre-eradication programmes. Health education has been included in the curriculum of the two WHO malaria eradication centres at Lagos, Nigeria and Lomé, Togo.

The evaluation of applied nutrition programmes, being prepared in co-operation with FAO (see page 47) will include also the health education aspects of these programmes. A paper on the evaluation of the health education components of these programmes has been prepared for discussion at a joint technical meeting with FAO to be held in January 1965.

The joint meeting with FAO and UNESCO on the teacher's role in nutrition education is mentioned on page 47.

Over seventy countries have now supplied suggestions and materials for the "Source Book for Health Education in Schools", being compiled jointly by UNESCO and WHO. A specialist in health education has been seconded to UNESCO to prepare the text for this book. Requests have already been received for its translation into some of the non-official languages.

In Afghanistan the health educator provided by WHO has advised on the health education component in the curricula of teacher-training projects, in addition to assisting the development of health education in the general health services. A WHO health educator was assigned to the Government of India to assist in developing a plan for including health education in the basic training courses of primary and secondary school teachers. A WHO school health adviser has been sent to the Philippines and courses on health education for teachers have been organized. An adviser on health education was provided to the Arab States Training Centre for Education for Com-

---

WHO has made a preliminary study of the preparation of teachers for health education in the United States of America and Canada, and similar studies are being planned in several other countries.

The report of the PAHO/WHO Inter-regional Conference on the Postgraduate Preparation of Health Workers for Health Education, dealing with the professional preparation of health education specialists and of various groups of public health workers, was published in the Technical Report Series.¹

Seven volumes of the proceedings of the International Conference on Health and Health Education jointly sponsored by WHO and the International Union for Health Education have been published. WHO has continued to co-operate with the International Union for Health Education, particularly in the preparation of its world conference on "The health of the community and the dynamics of development", to be held in Madrid in July 1965.

The Organization has held discussions with the United Nations Research Institute for Social Development, established in Geneva in July 1964, concerning the need for research into behavioural change in the health field. It is also collaborating with professional groups in reviewing and collating recent research on beliefs, attitudes and practices affecting health and on health education methods and their evaluation.

Maternal and Child Health

The Advisory Committee on Medical Research approved the convening of a series of scientific groups to discuss research accomplishments relating to human reproduction and to recommend subjects requiring further research.

The Scientific Group on the Physiology of Lactation, which met in December 1963, recommended *inter alia* that WHO should support and encourage studies on human lactation in relation to nutrition, particularly in developing countries, including studies of breastfeeding patterns, and metabolic and endocrinological studies of nursing mothers and of their nutritional requirements.

The Scientific Group on the Effects of Labour on the Human Foetus and the New-born, which met in May 1964, stressed the necessity for mothers and infants to be cared for by qualified personnel, adequately trained and equipped to detect and deal with any abnormal condition. It suggested a number of areas for research and made a number of practical recommendations concerning the treatment of pregnant women and newborn infants.

Other groups were convened in September and December to review present knowledge and advise on research relating to neuro-endocrinology and reproduction in the human being and to the mechanism of action of sex hormones and analogous substances, especially the orally active progestogens.

A meeting of seven advisers was held in London in August 1964 to discuss the value, for the purposes of research in human reproduction, of establishing collections of human pituitary glands, and methods of making such collections, and of distributing the hormones prepared.

The health problems of adolescence were discussed by an expert committee which met in Geneva in November 1964. The Committee was chiefly concerned with the physical and mental growth and development of normal adolescents, their needs and problems and the health services that should be available to them; but it also considered the adolescents' relationship to their families and society, and the health problems of working adolescents. It recommended further research on the health problems of adolescents.

WHO prepared a report on health services for children in Asia, for discussion by the UNICEF Executive Board at its meeting in Bangkok in January 1964. The report outlined the health and social needs of children, described existing children's health services in Asia and the work of UNICEF and WHO in promoting them, and suggested lines of development for future programmes.

Direct assistance to governments in developing health services for mothers and children was again an important part of WHO's work. At the end of 1964 about forty doctors and nurses provided by WHO were working in maternal and child health projects in various countries.

A number of leading gynaecologists and obstetricians responsible for teaching, research and maternal and child health services in sixteen countries participated in a travelling seminar in the Soviet Union in July 1964. They visited relevant institutions and health services in Moscow, Leningrad and Tashkent.

WHO has sponsored various activities in order to give effect to resolution EB28.R14, in which the Executive Board drew "special attention to the concept that obstetrics and midwifery are an integral part of comprehensive maternal and child health services." The Organization collaborated with the

International Confederation of Midwives and the International Federation of Gynecology and Obstetrics in preparing and analysing the replies to a questionnaire on midwifery training and practice in all countries of the world. It also collaborated with the International Federation of Gynecology and Obstetrics in a symposium held in Buenos Aires in September 1964 to discuss the social aspects of the teaching and practice of obstetrics and gynaecology. The role of obstetricians in maternal and child health programmes was the subject of a European regional symposium organized by WHO in Copenhagen in October 1964. For the conference, in Moscow, on midwifery services, see page 38 and 39.
CHAPTER 5

HEALTH PROTECTION AND PROMOTION

Under the general heading of health protection and promotion is reported the work done in cancer, cardiovascular diseases, dental health, human genetics, mental health, nutrition, radiation and isotopes, and social and occupational health.

Cancer

In 1964 WHO continued to give particular attention to promoting epidemiological and pathological studies, developing programmes in cancer control and cancer prevention, assistance to research, and training.

The WHO-assisted study which was started in 1959 to investigate why lung cancer is much more frequent in Finland than in Norway has reached its final stage. Various possible factors—air pollution, heating systems, sauna baths, occupations—were considered, but a preliminary survey suggested that the difference is largely associated with different smoking habits in the two countries, the consumption of cigarettes having been for many years much higher in Finland than in Norway. The results of the study were analysed during the year and will be made available after a final meeting of the workers concerned early in 1965.

Work continued on the study on the comparative incidence of types of cancer in several ethnic groups in Israel. A first report had indicated that cancer of most sites is more frequent among immigrants from western countries, whereas cancer of the larynx is more frequent among immigrants from the east. A further detailed analysis of the data has been made according to country of origin.

The pathology and epidemiology of oropharyngeal tumours—a major cancer problem in India and other countries of South-East Asia—were discussed at a meeting of investigators in New Delhi in October 1963. The group suggested a tentative anatomical classification and co-ordinated studies designed to elucidate the possible association between these tumours and smoking and chewing habits, which vary considerably from one area to another. An epidemiological study has been started in both northern and southern India and its extension to Ceylon has been planned. A similar study has been undertaken in the Central Asian Republics of the USSR.

Work has been started on a type of malignant lymphoma of the jaw observed in children in tropical Africa. Preliminary study indicates the need for further clarification and standardization in the clinical and histological definition of this tumour. Other studies on this condition and its reported transmission to African green monkeys are mentioned in Chapter 2 in the sections on Viruses and Cancer (page 17) and Comparative Oncology (page 13).

A long-term investigation has been initiated into the reasons for the considerable variations in the frequency of cancer of the breast in different parts of the world. The possible association between variation in rates of breast cancers and differences in the duration and frequency of breast feeding needs further investigation. A planning meeting was held and arrangements made for the study to go forward in about ten cities in different parts of the world.

A methodology for cancer epidemiology in developing and more advanced areas has been prepared and will be discussed at a meeting of research workers early in 1965.

Agreement has been reached on the histological classification of lung tumours drawn up by the International Reference Centre for the Histopathology of Lung Tumours, in Oslo, following consultations with a large group of pathologists. The International Reference Centre for the Histopathology of Mammary Tumours, in London, prepared a set of slides for circulation to collaborating pathologists in order that a final classification may be reached in 1965. The International Reference Centre for the Histopathology of Soft Tissue Tumours, in Washington, D.C., is in the final stage of the classification revision of fibrous, adipose and muscle tumours. Work on diagnosis and the exchange of material and of clinical information continued at the international reference centres for the histopathology of leukaemias, in Paris, and oropharyngeal tumours, in Agra, India.

Two new WHO international reference centres were established in December 1963, one in Leningrad for ovarian tumours, and the other in Buenos Aires, for bone tumours.

Three co-operating centres were established in 1964 in Santiago, Tokyo and Bombay and have begun exchanging material with the International Reference
RESEARCH ON CARDIOVASCULAR DISEASES

A large-scale study to investigate the possible bearing of environmental factors on atherosclerosis is being conducted under WHO auspices. Autopsy specimens from different geographical areas are forwarded to a central laboratory in Sweden for preparation, and meetings are held periodically to grade them and detect any significant differences within and among communities. One of these "grading sessions" was held in July 1964 at WHO headquarters in Geneva.

INSECTICIDE TESTING

Since 1960 the WHO insecticide testing unit at Lagos, Nigeria, has been engaged in a continuous search, among the many new insecticides that become available, for safe, non-toxic compounds to replace those to which certain malaria vectors have become resistant.
With the assistance of UNICEF and WHO, the Government of Mexico is conducting a nation-wide BCG vaccination programme and, in the State of Queretaro, a pilot tuberculosis case-finding and treatment project using simple, cheap control measures adapted to local conditions.

The staff of a mobile tuberculosis unit prepare their equipment for the day's work.

Villagers queue for X-ray examination.

The pilot project in Nigeria is typical of many in Africa. Following an epidemiological survey conducted in 1963, a pilot area has been established in Ibadan and an adjacent rural community for BCG vaccination, training of personnel, and testing of the local applicability of control measures.

BCG vaccination in a school in Ibadan.

A WHO X-ray technician examines X-ray films at the project headquarters.

In the UNICEF/WHO-assisted programme in the Republic of Korea, emphasis is placed on the training of staff for domiciliary treatment of patients and follow-up of their contacts, many of whom are found to be infected.

A patient with advanced tuberculosis, unable to swallow tablets, is given medicine in powder form.

A follow-up worker interviews the family of a patient who has been under treatment for some months.

The control team at work in a village of Cebu.

A villager found to be infected is supplied with drugs.
REHABILITATION
OF THE
HANDICAPPED IN ALGERIA

A new programme launched by the Government of Algeria with WHO assistance late in 1963 aims at developing rehabilitation services for limb-injury cases and organizing facilities for training national personnel.

(1) A WHO expert takes a class in physical therapy at the Douera Hospital, near Algiers.

(2) Preparing a crippled victim of poliomyelitis for special leg exercises.

AWARDS AT THE SEVENTEENTH WORLD HEALTH ASSEMBLY

(1) During the Seventeenth World Health Assembly, held in Geneva in March 1964, the President, Dr Monawar Khan Afridi of Pakistan, presents to Professor Robert Debré, of France, the Léon Bernard Foundation medal and prize for outstanding work in social medicine.

(2) Dr Afridi addresses the Assembly after himself receiving the Darling Foundation medal and prize for outstanding work on malaria. In the Chair is Dr Hurustiati Subandrio, of Indonesia, Vice-President, who made the presentation.
The examination of autopsy material has continued in the WHO co-ordinated demographic studies of atherosclerosis in Malmö, Prague and selected areas of the Union of Soviet Socialist Republics. Measurements have been made of the total amount of atherosclerosis, fatty streak, fibrous plaque, complicated and calcified lesions, and of stenosis of the coronary arteries (defined as narrowing of the lumen by more than half). The consistency of the measurements has continued to improve. Methods for assessing ventricular hypertrophy, myocardial damage and intramuscular coronary circulation have been proposed and are to be tested. The possibility of further studies in the living in the same areas as the autopsy studies is being investigated. The immediate objective would be to improve diagnosis in the living by assessing the significance of signs and symptoms.

Widely used techniques in the epidemiology of cardiovascular disease have been evaluated. Many laboratories have participated in studies designed to measure validity and repeatability of measurements of blood pressure, electrocardiogram analysis, hypertensive signs in the ocular fundi, cardiac pain and serum cholesterol levels. Results of these studies have been analysed and will be issued by WHO in mimeographed form.

At an informal meeting of advisers in Geneva in December 1963 present knowledge of arterial thrombosis and thrombo-embolic diseases was reviewed and a list of proposed research methods and fields of study, including group studies, was drawn up. It was suggested that priority might be given to studies of fibrinogen levels, fibrinolytic activity, platelet function, tests of coagulation and studies of vessel wall and thrombi. A review of research needs in thrombosis was subsequently published in the Bulletin.4

A parallel review made with regard to venous diseases contains a review of data on morbidity, work-loss and mortality, and an outline of some urgently needed studies in venous pathology.

Studies have been initiated on the etiology and pathogenesis of cerebrovascular diseases. Preserved specimens illustrating various pathological conditions of the vascular system have been prepared and have been examined by pathologists participating in the WHO demographic studies of atherosclerosis. Differences of opinion on pathology were considerable and further tests on fresh material are therefore planned. It is hoped that it will be possible to compare autopsy material with diagnostic findings in the living, and

---

techniques evolving from these studies will be used in studies on ischaemic heart disease and cerebrovascular disease in populations differing in the frequency of these conditions.

The WHO-supported study of the pathology of endomyocardial fibrosis at Mulago Hospital, Kampala, Uganda, was continued and a related study undertaken of the frequency and etiopathogenesis of obscure heart diseases. A pathologist from Kampala visited ten medical schools and hospitals in the African Region as WHO adviser and compared the autopsy findings in many parts of Africa with those at Kampala. His findings showed that endomyocardial fibrosis studied in Kampala could be distinguished morphologically and clinically from obscure heart diseases found in South Africa; it could also be distinguished morphologically and microscopically, but not clinically, from other cardiomyopathies—such as Becker’s disease, nutritional heart disease, mucinous endocarditis and heart muscle disease—which it is not at this stage possible to separate on morphological grounds. Late in 1964 a pathologist visited Latin America to assess the frequency of myocardial involvement in Chagas’ disease. At an informal meeting of advisers held in Geneva in October 1964, it was agreed that the Departments of Pathology in Kampala, Ibadan, and Ribeirão Preto, Brazil, would co-operate in developing similar methods of examining autopsy material, and would also exchange material. The principles of the method of examination of the heart were outlined. It was further decided that a pilot study should be carried out during 1965.

Comparative studies on cardiovascular diseases in animals are mentioned in Chapter 2, page 12.

In addition to the work mentioned above, WHO supported the following research programmes on cardiovascular diseases in 1964: research on the assessment of right ventricular hypertrophy (in Brussels); the epidemiology of chronic cor pulmonale and its antecedent conditions (in Prague); the epidemiology of cardiovascular disease among Polynesians in New Zealand and among rural populations in Uganda, Jamaica and Norway; experimental dietary studies of atherosclerosis in Japan.

Collaboration with the International Society of Cardiology and affiliated regional national societies was intensified.

**Dental Health**

The activities of WHO in the field of dental health were particularly directed towards education and training, the organization of dental health services and research into the epidemiology of dental diseases.

An expert committee met in Geneva in October 1964 to deal with the organization of dental public health services. It emphasized that the organization of an effective national dental health programme required the full-time services of a dentist with advanced training in public health administration to be responsible for the dental health component in the overall national health plan. It recommended that preventive service be given a high priority in dental public health programmes and that the application of proven methods of prevention—such as the use of fluorides against dental caries and oral prophylaxis against periodontal disease—be encouraged; that all public health agencies give primary attention to increasing the number of dentists, and that more opportunities for public health training be provided for dentists; finally, that WHO establish regional centres for the development of research activities and implement a systematic programme for the world-wide collection of data on the prevalence of oral diseases. The Committee outlined some practical measures for overcoming the special problems confronting the newly independent countries in the development of dental public health services.

A series of country studies has been initiated in the Democratic Republic of the Congo, Ghana, Madagascar, Nigeria, Senegal and Uganda. The aim is to estimate the extent of existing needs and to examine the possibilities of an integrated scheme of professional and auxiliary training based on pilot dental schools serving a group of countries and responsible for assisting other pilot schools for dental auxiliaries to be established in the same or in neighbouring countries.

The shortage of dentists in Africa is so severe, that the only hope of improving the situation in the foreseeable future lies in the extensive use of auxiliary personnel. In Somalia WHO is helping to set up a school for dental assistants similar to that established under a recently completed project in Sudan. A more unified approach to the problem of the shortage of dentists in Africa should follow the surveys mentioned above. Similar studies have been undertaken in Iraq, Jordan and Pakistan.

Epidemiological studies in French Polynesia and Sudan have been completed and results will be available early in 1965. The aim of the study in French Polynesia was to ascertain the causes of the high prevalence of dental caries in the archipelago, as a basis for a dental health programme. The Sudan study was the fourth in a series of country studies on periodontal diseases, aiming to clarify their etiology.

WHO is giving attention to the development of dental epidemiology on a comparable basis in all countries. The first of two training courses on survey
techniques was held in Singapore from February to May and was attended by dentists from six countries in the Western Pacific Region. The second course is planned to take place in Suva, Fiji, in 1965, for participants from the territories of the South Pacific. These courses provide training in internationally comparable methods and criteria for measuring the prevalence of dental and oral diseases.

A proposal was prepared for the revision of the section of the International Classification of Diseases on diseases of the buccal cavity (see page 57). WHO has continued to collaborate closely with the International Dental Federation, which was represented at the meeting of the Expert Committee on Organization of Dental Public Health Services.

Human Genetics

The Expert Committee on Human Genetics met in Geneva in December 1963 to consider the rapid developments taking place in genetics and to discuss their present and future significance to public health. The Committee pointed out that genetic considerations added a new dimension to public health work, and that attention should be given to the control of mutagenic agents, whether physical, such as X-rays and other ionizing radiations, or chemical. Adequate scientific study of the mutagenicity and genetic significance of the vast array of new chemical substances being brought into use as drugs, food additives, pesticides or cosmetic preparations was an urgent necessity. Genetic counselling services should be extended and improved. For some hereditary diseases effective methods of prevention and cure existed and their application should be extended.

To remedy the shortage of trained geneticists, WHO has sponsored a number of training courses, both for teachers in medical schools and for research workers. A four-week training course was held in Bombay in 1963 which made available to medical and scientific workers from Asia recent advances in simple laboratory and field techniques in human population genetics.

The Government of Cameroon received WHO assistance in investigating the problem of fatal hereditary anaemia in infancy. Limited survey work had shown the problem to be of some magnitude, and this was confirmed by the survey initiated by WHO and continued by local personnel. WHO also gave advice on the development of diagnostic and counseling services for these haemoglobinopathies.

Analysis began during 1964 of the returns from the thirty hospitals in five continents participating in the WHO-sponsored study, which began in 1961, of the frequency of congenital malformations in different parts of the world.

Mental Health

In 1964 the field of mental health was included in the WHO programme of medical research, and a scientific group on mental health research was accordingly convened in April to advise on subjects that would be suitable for action by WHO and to recommend priorities. The group stressed that the firm scientific foundations for practical programmes of prevention and therapy were still lacking and that there was a very wide range of topics on which research was urgently required. It recommended that first priority should be given to epidemiological research on the distribution of mental disorders, including psychosomatic symptoms, and the effectiveness of different preventive and curative methods. It pointed out that before epidemiological surveys could be internationally comparable, advances would have to be made in developing an internationally acceptable classification of mental disorders and standardized procedures for case-finding and assessing the severity of the illness. The group also recommended that WHO should assist with research on social psychiatry and with biological research into the causes and treatment of mental disorders.

Work was started on the preparation of an international guide to the collection of psychiatric statistics. At a meeting held in December 1964, a detailed methodology was drawn up for a series of studies of variations in diagnosis made by psychiatrists from different countries when presented with similar clinical materials.

In its thirteenth report, the Expert Committee on Mental Health which met in October 1963 to clarify the concept of "psychosomatic disorders" and to evaluate present knowledge on etiology, treatment and prevention urged that early attention be paid to epidemiological studies of psychosomatic patterns and the establishment of criteria for their identification, as well as to studies of different forms of treatment and the application of psychopharmacological agents. As many disorders are of multiple etiology and there are innumerable gradations in their degree of psychogenicity, no hard-and-fast line can be drawn between those that may be called "psychosomatic" and those that cannot. The Committee emphasized the importance of developing the psychosomatic approach in the teaching of medicine and recommended that schools of medicine, public health and nursing re-examine their curricula with this in mind.

As part of the psychiatric epidemiology programme, WHO has co-operated in preparations for a census of psychiatric patients in Israel. The plan of operations, the definitions and measurement techniques used were designed with a view to their being applicable on an international scale. In Iran, WHO co-operated in several projects for community surveys of psychiatric epidemiology, intelligence testing and psychological tests on a nomadic tribe.

Help and advice were given to a number of countries in building up mental health services and improving training facilities. The WHO-assisted programme in China (Taiwan), for example, is designed to integrate mental health work into the regular public health services. In the Philippines, where WHO is helping to develop a mental health programme covering the whole country, a new department of psychiatry has been set up at the Philippine General Hospital and travelling mental hygiene clinics have been organized. Advice was given to the Government of Gambia on the organization of mental health services and training.

A team visited several Latin American countries to survey the psychiatric situation, discuss long-term plans for mental health programmes and consider possibilities for research projects, especially in connexion with psychiatric epidemiology. Similar advice has been provided in Thailand.

At the Baroda Medical College, India, a WHO adviser has worked with the visiting professor of psychiatry from Edinburgh University (see page 98) to design research that would produce useful data and contribute to the teaching programme. A second course of training for psychiatric nurses from several countries in the Eastern Mediterranean Region was given in Lebanon. WHO has continued to advise on the development of training facilities in child psychology in Israel. WHO was represented at the Specialist Meeting on Teaching and Research in Psychiatry in African Medical Schools, held at Leopoldville under the auspices of the Conseil scientifique pour l'Afrique in March 1964.

Public health practice and the prevention of mental illness was the subject of a WHO seminar held in London in July 1964. Psychiatrists, general practitioners, public health administrators and nurses from nearly thirty European countries discussed the role of the various mental health services for specific groups of the population (for schools, mothers, old people, etc.) in combating mental disorders. They paid particular attention to the problems of schizophrenia, depression and mental retardation, and to mental health education in industrialized societies.

Work on a number of subjects closely related to mental health has been carried out in co-operation with other organizations. With regard to juvenile delinquency, for example, WHO took part in the Third ad hoc Inter-Agency Meeting on Juvenile Delinquency, its Prevention and Related Youth Policy, held in Geneva in February 1964: the help of WHO was requested in studying the medical and, particularly, mental health aspects of problems of behaviour disorders and juvenile delinquency. Papers on mental health aspects of the prevention of crime and on juvenile delinquency in developing countries, particularly in Africa, have been prepared for the Third United Nations Congress on the Prevention of Crime and the Treatment of Offenders, to be held in Stockholm in August 1965.

### Nutrition

Protein malnutrition continues to be the major public health problem in developing countries. One of the measures to combat the problem is the development and use of cheap protein-rich foods in the feeding of infants and young children. The FAO/UNICEF/WHO Protein Advisory Group met in July to review the procedures currently in use for testing protein concentrates and protein-rich food mixtures; in connexion with the use of low-fat peanut flour in protein-rich food programmes it also made recommendations on methods of preventing fungal infection.

The Joint FAO/WHO Expert Group on Protein Requirements, which met in October 1963, reviewed information that had accumulated since the publication of the FAO report on protein requirements in 1957. It substituted a single level of physiological requirement for the protection and promotion of health for the traditional dichotomy of minimum and optimum protein requirements. The revised recommendations on human protein requirements for all ages and both sexes are considered safe, simple and comparatively easy to apply in practical nutrition.

Collaborative studies on nutritional anaemias have continued. Two reference centres have been established, one in London and one in Johannesburg, to assist and co-ordinate these studies and to promote the development of uniform haematological and other assay procedures so as to ensure the comparability of the results obtained in laboratories in different parts of the world. It has been established that, in comparison with iron from other sources, food iron from wheat is poorly absorbed in normal as well as in iron deficiency states. This finding is of considerable importance for populations the major component of whose daily diet is a cereal.

The WHO-assisted epidemiological studies in Jordan on xerophthalmia and keratomalacia, which are manifestations of vitamin A deficiency, have almost
been completed, and the data collected are being analysed. It can be concluded that in general most of the children examined below six years of age are in a chronic state of vitamin A subnutrition and that, in some, accompanying protein malnutrition assisted by gastro-intestinal or respiratory infections precipitates the acute ocular manifestations which may lead to partial or total blindness. It is proposed to follow up these studies with trials of preventive measures.

In October 1964 an expert committee was convened on nutrition in pregnancy and lactation. It drew attention to the lack of information and advised on subjects requiring further research.

Methods of evaluating applied nutrition programmes were studied at a FAO/WHO inter-agency meeting held in Rome in November 1963. These programmes, which are being carried out experimentally with joint assistance from FAO, UNICEF and WHO in more than fifty developing countries, are intended to demonstrate how nutritional standards, particularly in rural areas, can be raised through co-ordinated action of the authorities for education, agriculture and health. During 1964, WHO investigated the progress achieved by the programmes so far in countries in Africa and Latin America, South-East Asia and the Western Pacific, and a report was prepared for consideration at the meeting of a FAO/WHO expert group to be held in Rome in January 1965.

WHO participated with FAO and UNESCO in a meeting, held in Paris in September, on the teacher's role in nutrition education. The participants advocated, as part of health education, the inclusion in the school curriculum of a practical course on the basic principles of nutrition, the production, selection and preparation of food and the introduction of good food habits. They also suggested that the facilities of school gardens and school canteens should be used to give the courses a practical start.

An inter-regional seminar on the treatment and prevention of protein-calorie malnutrition in infants and young children was held in September 1964 at Kampala, Uganda, to discuss with medical and public health personnel in Africa the most recent knowledge on the subject. Special emphasis was laid on the utilization of local food resources.

An inter-regional training course on applied nutrition was held under joint FAO/WHO auspices in Bangkok at the end of 1964 for countries in the South-East Asia and Western Pacific Regions.

WHO also participated with FAO and UNICEF in the organization of a permanent training centre in nutrition, under the auspices of the Governments of France and Senegal, with theoretical courses in Paris and practical training in Dakar. The first twelve-month course started in November 1964, the participants being mainly from French-speaking African countries. A similar system for English-speaking Africans arranged by the Governments of Nigeria and the United Kingdom of Great Britain and Northern Ireland has been in operation since October 1962. It consists of theoretical courses at the London School of Hygiene and Tropical Medicine, and practical work in Ibadan.

A review of the Organization's programme in nutrition since 1948 was prepared at the end of the year for submission to the Executive Board at its thirty-fifth session, in January 1965.

Food Additives

A comprehensive programme of research on food additives and pesticides was prepared, based on the recommendations made at several meetings of joint FAO/WHO expert committees on food additives. One important feature of this research will be studies aiming to improve the extrapolation of results of animal tests to man.

A group of consultants on the toxicity of intentional and unintentional food additives, which met in Geneva in December 1963, recommended that FAO and WHO should draw the attention of all those engaged in the manufacture and development of pesticides to the importance of obtaining information on the chemical nature of break-down products of pesticides left on crops. The group drew attention to the possible carcinogenicity of certain organic chlorine compounds and to studies demonstrating the tendency of a number of dithiocarbamate fungicides to produce goitre, anaemia and neurological changes.

At its meeting in Rome in April, the Joint FAO/IAEA/WHO Expert Committee on the Technical Basis for Legislation on Irradiated Foods discussed the available evidence concerning the effect on food of treatment with ionizing radiation and made recommendations on general principles to govern the production of irradiated foods and procedures for evaluating the wholesomeness of food treated in that way.

Toxicological data on colours used in or recommended for use in food were critically evaluated at a meeting in December 1964 of the Joint FAO/WHO Expert Committee on Food Additives, and specifications for identity and purity were drawn up for those colours found to be acceptable for use in food.

The joint FAO/WHO Codex Alimentarius Commission held its second session in Geneva in September and October 1964. The Commission reviewed reports of the various international bodies and Codex Alimentarius committees on the drafting of standards.
None of the draft standards was found to be yet ready for submission to governments for final approval and acceptance. The Commission confirmed with some changes and additions the previous allocation of work; it also requested that arrangements be made to establish joint ECE/Codex Alimentarius groups of experts to work on standards for frozen foods and edible fungi.

Work on the hygiene of food products of animal origin is mentioned on page 13.

Radiation and Isotopes

Several conclusions which can be drawn from the United Nations Third International Conference on the Peaceful Uses of Atomic Energy, held in Geneva in August 1964, are pertinent to the orientation of WHO's programme in the field of radiation. It was clear from this meeting that the application of nuclear energy was emerging from the primary developmental stage, in which the main responsibility lay with governmental bodies, into one of economic competition on an industrial basis. It follows from this trend that, with rapidly growing numbers of power reactors, and a drive for economy in the cost of power production, regulatory activities to safeguard the health of the public will become increasingly important. The WHO programme has been directed, with this development in mind, towards strengthening competence in radiation protection matters within public health services.

Another conclusion to be drawn from the Conference is that recent advances in the availability of radioisotopes and improvements in equipment have brought about further increases in the scope and intensity of medical work with radioisotopes. This was brought out clearly in a paper presented jointly to the Conference by IAEA and WHO, in which it was pointed out that between 80 and 90 per cent. of all isotopes that are produced for use in the world today are for medical work.

The protection of the public in the event of radiation accidents was the subject of a seminar held in Geneva in November 1963 and jointly sponsored by FAO, IAEA und WHO. Advisory and administrative officers in public health, food, agricultural, veterinary and fisheries services and in the field of atomic energy discussed the scientific basis for assessing the risks involved in exposure to radiation and the specific protective measures to be taken in the event of a radiation accident. An earlier seminar convened by the same three organizations in 1961 had dealt with such questions as the mechanisms of transfer of radionuclides to man and with monitoring programmes.

Radiochemical analysis is increasingly used in evaluating radioactive environmental contamination and internal contamination in man. Its methods are essential for public health work in this field and of importance to agriculture and fisheries with regard to the possible contamination of food and feedstuffs. For these reasons FAO, IAEA and WHO jointly convened in Geneva in September 1964 a scientific meeting on methods of radiochemical analysis. It revised and added to the material published in the compendium of methods prepared in 1958 by the Joint FAO/WHO Expert Committee on Methods of Radiochemical Analysis, and focused principally upon radionuclides and types of sample of interest to health. Special consideration was given to rapid methods for use in emergencies.

Direct methods, such as in vivo counting, and indirect methods, such as excretion analysis, of assessing radioactive body burdens in man were considered in May at a symposium in Heidelberg jointly sponsored by IAEA, ILO and WHO. Emphasis was given to the interpretation of monitoring data, in particular those obtained through indirect methods, since in most cases of internal contamination errors inherent in physical measurements are smaller than errors arising from their interpretation.

Despite recent developments in the field of nuclear energy, medical diagnostic radiology still constitutes the major source of radiation exposure of the population, apart from natural radiation. Moreover, the use of X-rays and other ionizing radiations is growing, not only because their applications are becoming increasingly varied, but also because of the expansion of medical services, particularly in the developing countries.

The Expert Committee on Radiation which met in Geneva in December 1964 discussed public health and the medical use of ionizing radiation. It paid particular attention to diagnostic uses of X-rays; it compared the hazards and benefits of procedures involving irradiation, and emphasized the importance of considering alternative non-radiological methods; and it recommended means of reducing unnecessary exposure to radiation by improving radiological techniques and facilities.

For a number of years, WHO has been stimulating manufacturers to develop improved X-ray apparatus combining high standards of both radiation protection and technical performance. Beginning with mobile mass chest X-ray units for use in projects assisted

by UNICEF and WHO, this work has been extended to include general purpose units for use in hospitals. Four different models, designed especially to meet requirements for use in developing countries, have been approved, and will soon be undergoing six-month field tests.

An inter-regional seminar on medical radiation was held in Athens in October 1963 to consider the role that public health and hospital laboratories could play in radiation protection. The participants were directors of public health laboratories and members of public health services from eleven countries in Europe, the Eastern Mediterranean and South-East Asia. Lectures and practical demonstrations were given on the principles of radiation protection and the role of public health authorities and laboratories, on methods and equipment for radiation protection in X-ray diagnostics and therapy and for radioisotope uses in hospitals, on the planning and surveillance of radioisotope laboratories, the control of contamination and waste disposal from hospitals and health laboratories, and on the basic requirements of public health protection services.

Simple and effective means of reducing the radiation dose received by patients and medical personnel, and of improving the quality and effectiveness of radiological procedures, were presented in a WHO multiple seminar on radiological health held in Madras, Colombo, Singapore, Bangkok and Rangoon: a radiologist and a radiation physicist provided by WHO gave lectures and practical demonstrations and visited local radiological installations.

A study group jointly convened by IAEA and WHO met in December 1964 in Geneva to consider the planning of radiotherapy facilities, with special emphasis on the needs of developing countries.

WHO has supported studies in fundamental radiobiology and investigations on the action of radiation on genetic material and cellular mechanisms. The international collaborative investigation supported by WHO on the incidence of leukaemia in patients treated with radiation for cancer of the cervix uteri was continued.

WHO has continued its support to the International Commission on Radiological Protection, for the collection of data on radiation exposure as a basis for recommendations on maximum permissible exposure levels and other protective measures, and to the International Commission on Radiological Units and Measurements, for the development of standards and units in medical radiology.

---

Social and Occupational Health

The health problems inseparable from unplanned and uncontrolled growth of industry and its associated urbanization were discussed at an inter-regional seminar on the health aspects of industrialization, held in Dacca in November 1963. Participants from twenty-two countries discussed hazards to the health of workers engaged directly in the process of industrialization and the repercussions of industrialization on community health as a whole.

WHO participated in the United Nations inter-regional seminar on the social aspects of industrialization, held in Minsk in August 1964. Participants—planners and social workers from nineteen developing countries—examined social policy in relation to industrialization, and considered that it should be designed to ease the transition from non-industrial to industrial modes of life and avoid some of the undesirable features that have been associated with industrialization in the past.

In collaboration with the Andrija Štampar School of Public Health, WHO organized the first inter-regional training course for industrial hygienists in Zagreb, Yugoslavia. This was an eight-month course on the principles and practice of industrial hygiene especially designed to meet the needs of the developing countries.

A European symposium on occupational hazards in agriculture was organized by WHO in Milan in December 1964.

In accordance with the recommendations of the Joint ILO/WHO Committee on the Health of Seafarers regarding the preparation by ILO, IMCO and WHO of an international scheme for medical assistance to ships at sea, an international ship's medical guide has been prepared, including a list of the contents of the medicine chest required to provide the treatments recommended in the guide, and the medical section of the International Code of Signals has been revised. The final draft of the scheme will be submitted to the Joint ILO/WHO Committee on the Health of Seafarers for final review and adoption at its forthcoming session in 1965.

WHO has provided assistance to a number of governments on specific problems related to occupational health. For example, experts have visited India and Iran to review the problems of industrial and occupational health hazards and to advise on the organization of industrial health services and on measures for developing training facilities and promoting research programmes. In India WHO also gave advice on the prevention of manganese poisoning.

---

Medical Rehabilitation

WHO has assisted seventeen countries by providing experts to advise on rehabilitative medicine and surgery, physical therapy, occupational therapy and prosthetics, or by advising governments on the setting-up of occupational therapy services and on training facilities. It has also provided fellowships and some supplies and equipment. WHO participated in an ad hoc inter-agency meeting on rehabilitation of the disabled in which the problem of rehabilitation in the African countries was discussed.

Training courses on rehabilitation of the physically handicapped have been organized, primarily for the benefit of the developing countries, where shortage of specialized personnel is hindering the setting-up of rehabilitation services. Thus, a year's course for teachers of physical therapy has been organized jointly by WHO and the World Confederation for Physical Therapy. Students from Israel, Pakistan, Thailand, India, Ceylon, the Philippines and Malaysia are attending the course, which is being held in the United Kingdom and started in July 1964.

An inter-regional course for physicians on the medical rehabilitation of the physically handicapped was held in Denmark with the cooperation of the Danish National Health Service and the University of Copenhagen from September 1963 to June 1964. Twenty-two fellows from sixteen countries took part in the training course, which included theoretical and practical instruction in medical rehabilitation in general and in specific medical fields, such as orthopaedics, rheumatology, and geriatrics. The United Nations and ILO collaborated with WHO by providing lecturers to deal with the social and vocational aspects of rehabilitation.

Diabetes Mellitus

An Expert Committee on Diabetes Mellitus met in Geneva in November 1964 with the participation of ILO and the International Diabetes Federation. The Committee found indications of increasing prevalence, which is apparently in accord with the clinical association between diabetes mellitus and increased food consumption, reduced physical exertion and obesity. It defined the terms potential, latent, asymptomatic and clinical diabetics, and criteria for the diagnosis of diabetes mellitus by means of the glucose tolerance test. The prevention of diabetes mellitus was discussed from the genetic, congenital and nutritional points of view. The Committee agreed that diabetics should be advised not to marry another diabetic, or if they do, not to have children. From the public health point of view it would be unwise to assume that diabetes was always due to a single recessive gene; there was a strong body of alternative opinion that a polygenic inheritance or that multifactorial causes might be involved. Even with modern therapy a severely diabetic mother might have a stillborn, oversize and overweight baby; maternal hyperglycaemia might lead to foetal congenital malformations. Early detection and control of gestational diabetes was strongly recommended to prevent foetal losses. Strong evidence was presented to show that obesity led to diabetes in the adult, and it was recommended that health education programmes directed primarily at reducing obesity should be organized by health and other agencies. For public health control of diabetes mellitus, services should be organized for early case detection, follow-up, health education of the public and of patients, and education of the medical and allied professions. Screening methods and procedures for case-finding were also recommended.

The Committee deplored the current unjustified restrictions on the employment of juvenile and adult diabetics, as being founded on prejudice, and strongly recommended a more liberal attitude since, with very few exceptions, diabetics were able to perform the same work as non-diabetics.

Research projects recommended included population studies in communities of different culture and diet; follow-up studies of potential and latent diabetics; and comparative studies in various countries of the complications of asymptomatic and clinical diabetes.
CHAPTER 6

EDUCATION AND TRAINING

WHO has continued to give particular attention, often in co-operation with other agencies, to educational programmes for the developing countries. To make possible a clearer assessment of the needs of those countries in education and a better co-ordination of the various types of assistance, WHO convened in September an inter-regional conference on basic principles of medical education in developing countries. Medical education specialists from twenty-one countries—both those providing and those receiving assistance—took part, as well as representatives of several intergovernmental and non-governmental organizations concerned with assistance in education. The discussions of the experience acquired and the problems encountered, from the point of view of the assisting and the assisted countries, led to a better understanding of the work of each, and should result in a more effective and co-ordinated approach.

WHO is providing assistance with the preparations for the Third World Conference on Medical Education, to be convened in 1966 by the World Medical Association. The theme of the Conference will be “Medical education—a factor in socio-economic development”, and special attention will be given to the problems of developing countries. WHO is helping with the planning of the Conference and the collection of technical data, and at the invitation of the Association a WHO staff member has been designated to the Executive Committee of the Conference.

Apart from its regular co-operation on education with the United Nations (through the Sub-Committee on Education and Training of the Administrative Committee on Co-ordination) and UNESCO, WHO took part in several conferences organized by UNESCO on education in Africa. They included the Conference of Ministers of Education of African Countries participating in the Implementation of the Addis Ababa Plan, which reviewed progress made in national education schemes in Africa and the general plans for the development of higher education—a subject relevant to the training of health personnel. UNESCO also contributed to the study on the development of pre-medical education and teaching methods which was made by WHO in preparation for the meeting of the Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel (see page 52).

Much attention has been given to assistance in the establishment of new medical schools in developing countries and the recruitment of teaching staff for many existing schools. At the request of the Governments of Kenya and Syria, WHO arranged for groups of consultants on medical education to study the need for and possibility of establishing new medical schools in Nairobi and Aleppo. An analysis of the situation, taking into account existing schools in the same or neighbouring countries, has been submitted to the governments concerned, together with recommendations. Following advice from similar groups of consultants, the Government of Tunisia has established a medical faculty at Tunis University, and the Government of Cameroon has set up a local long-term preparatory committee in connexion with the plans to establish a school of medicine at Yaoundé to serve Cameroon and the neighbouring countries.

WHO has again helped with the development of national programmes by providing teaching staff and educational advisers. The following table shows the number of professors, lecturers and other teaching staff provided by WHO for medical, public health, nursing and other training institutions, during the period 1 October 1963 to 31 December 1964, and the countries to which they were assigned:

For training professional personnel * (by subject)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical sciences</td>
<td>16</td>
</tr>
<tr>
<td>Public health and preventive medicine</td>
<td>27</td>
</tr>
<tr>
<td>Paediatrics, maternal and child health</td>
<td>18</td>
</tr>
<tr>
<td>Other clinical subjects</td>
<td>8</td>
</tr>
<tr>
<td>Radiography, laboratory techniques</td>
<td>7</td>
</tr>
<tr>
<td>Physical therapy</td>
<td>5</td>
</tr>
<tr>
<td>Environmental health</td>
<td>16</td>
</tr>
<tr>
<td>Nursing</td>
<td>98</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

For training auxiliary personnel

<table>
<thead>
<tr>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
</tr>
</tbody>
</table>

Total number of months assigned: 2610

* Some instructors were engaged in the training of both professional and auxiliary personnel.
Countries to which assigned

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>11</td>
</tr>
<tr>
<td>Algeria</td>
<td>3</td>
</tr>
<tr>
<td>British Solomon Islands</td>
<td>1</td>
</tr>
<tr>
<td>Burma</td>
<td>4</td>
</tr>
<tr>
<td>Burundi</td>
<td>3</td>
</tr>
<tr>
<td>Cambodia</td>
<td>9</td>
</tr>
<tr>
<td>Central African Republic</td>
<td>1</td>
</tr>
<tr>
<td>Ceylon</td>
<td>7</td>
</tr>
<tr>
<td>Chad</td>
<td>2</td>
</tr>
<tr>
<td>China (Taiwan)</td>
<td>3</td>
</tr>
<tr>
<td>Colombia</td>
<td>1</td>
</tr>
<tr>
<td>Cyprus</td>
<td>1</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>5</td>
</tr>
<tr>
<td>Gabon</td>
<td>4</td>
</tr>
<tr>
<td>Gambia</td>
<td>1</td>
</tr>
<tr>
<td>Ghana</td>
<td>7</td>
</tr>
<tr>
<td>Guinea</td>
<td>2</td>
</tr>
<tr>
<td>Indonesia</td>
<td>35</td>
</tr>
<tr>
<td>India</td>
<td>3</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2</td>
</tr>
<tr>
<td>Iran</td>
<td>4</td>
</tr>
<tr>
<td>Iraq</td>
<td>6</td>
</tr>
<tr>
<td>Israel</td>
<td>2</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>2</td>
</tr>
<tr>
<td>Japan</td>
<td>1</td>
</tr>
<tr>
<td>Jordan</td>
<td>1</td>
</tr>
<tr>
<td>Kenya</td>
<td>4</td>
</tr>
<tr>
<td>Korea, Republic of</td>
<td>1</td>
</tr>
<tr>
<td>Laos</td>
<td>10</td>
</tr>
<tr>
<td>Lebanon</td>
<td>2</td>
</tr>
<tr>
<td>Liberia</td>
<td>2</td>
</tr>
<tr>
<td>Libya</td>
<td>6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>14</td>
</tr>
<tr>
<td>Mauritania</td>
<td>2</td>
</tr>
<tr>
<td>Morocco</td>
<td>6</td>
</tr>
<tr>
<td>Nepal</td>
<td>4</td>
</tr>
<tr>
<td>Nigeria</td>
<td>8</td>
</tr>
<tr>
<td>Pakistan</td>
<td>4</td>
</tr>
<tr>
<td>Philippines</td>
<td>3</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1</td>
</tr>
<tr>
<td>Senegal</td>
<td>4</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>3</td>
</tr>
<tr>
<td>Somalia</td>
<td>6</td>
</tr>
<tr>
<td>Spain</td>
<td>1</td>
</tr>
<tr>
<td>Sudan</td>
<td>3</td>
</tr>
<tr>
<td>Syria</td>
<td>3</td>
</tr>
<tr>
<td>Thailand</td>
<td>6</td>
</tr>
<tr>
<td>Togo</td>
<td>2</td>
</tr>
<tr>
<td>Tunisia</td>
<td>2</td>
</tr>
<tr>
<td>Turkey</td>
<td>3</td>
</tr>
<tr>
<td>Uganda</td>
<td>3</td>
</tr>
<tr>
<td>United Arab Republic</td>
<td>9</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1</td>
</tr>
<tr>
<td>Viet-Nam, Republic of</td>
<td>6</td>
</tr>
<tr>
<td>Yemen</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>245</strong></td>
</tr>
</tbody>
</table>

Assistance in the training of medical staff for the Democratic Republic of the Congo was continued: WHO again provided six professors for the medical faculty of Lovanium University in Leopoldville. A second group of fifty former assistants médicaux from the Congo graduated as doctors in 1964 on completion of their three years' complementary training in France. With the group that graduated in 1963, they brought to more than one hundred the number of Congolese physicians who have now obtained full medical qualifications (doctorate in medicine) through this programme and are working in their own country. Two further groups of some twenty students each are due to complete their studies in 1965 and in 1966.

An expert committee that met during November 1964 was concerned primarily with the teaching of the natural sciences in pre-medical courses and with the standard of knowledge that students should reach before starting their medical studies.

An inter-regional travelling seminar on the scientific work of medical students was organized in the Soviet Union. Medical educators from nineteen countries were able to study the system followed in the USSR for introducing medical students to research work, which they carry out under the supervision of their teachers.

With regard to regional activities, a European symposium on post-graduate medical education was held in Prague in October 1963 to consider the links between undergraduate and post-graduate medical education, and the planning, organization and staffing of various types of post-graduate institutions (see page 103). In the Eastern Mediterranean Region, a special group on medical education met in Alexandria in December 1963 (see page 115) to review developments since the regional conference in Teheran in 1962. It considered the most important difficulties encountered in medical education programmes, and suggested measures to meet them.

Medical education in the Western Pacific Region was the subject of a conference of deans of medical schools held in Manila in November 1963 and attended also by observers from organizations assisting medical education in that area. The conference considered the basic needs for medical personnel in the Region, noting the uneven distribution of doctors, and reviewed the state of medical education and the problems hampering its development, including the difficulty of recruiting faculty staff and the lack of post-graduate training facilities. It agreed on the need to formulate and maintain standards for medical education, and discussed how WHO's programme of assistance could best meet local needs (see also page 123).

The third edition of the World Directory of Medical Schools was published, and a World Directory of Post-basic and Post-graduate Schools of Nursing was in preparation at the end of 1964. Material has been prepared for a world directory of schools of pharmacy.

**Training in Preventive Medicine and Public Health**

Much attention has again been given to the inclusion of preventive medicine in the training of medical students. Under WHO auspices, a group of professors of social and preventive medicine prepared a report on the types of clinical experience, outside hospital wards, that would better prepare students for comprehensive medical practice. Another study made during the year deals with the inclusion of the preventive aspects of medicine in text-books of general medicine for undergraduate students.

The teaching of preventive medicine was the subject of a number of group activities. An inter-regional travelling seminar on the public health component in the training of medical personnel in the Soviet Union was held in October 1964. It enabled senior members of medical faculties from countries in the six WHO regions to study the system of teaching preventive medicine in that country. At the regional level, a symposium was held in Nancy, France, during July, to assess the progress made in the teaching of the preventive aspects of medicine in European medical schools, and to suggest further improvements.
In December 1964 a study group of health administrators and heads of schools of public health was convened to consider the need to provide senior staff of national health administrations with an opportunity of advanced training in particular subjects, other than that leading to a specific qualification in public health. It made recommendations on special courses and training programmes, both for those already holding a public health qualification and for those who had been appointed to senior positions in health administrations without previous training in a school of public health.

A study was made of the potential advantages and disadvantages of a system for the international recognition of public health schools and of diplomas and degrees in public health, as well as of the factors involved in introducing and maintaining such a system. The study takes into account the experience of countries with arrangements for the accreditation of schools of public health.

Regional meetings on public health training included the third conference of deans of schools of public health in Latin America, held in São Paulo, Brazil, and a symposium on schools of public health in Europe, held in Rennes, France. The symposium participants discussed the contribution that European schools of public health could make to the training of health personnel from developing countries.

WHO has again provided direct assistance to individual schools of public health. A WHO staff member spent two months as a consultant at the Harvard School of Public Health, participating in a study of the curriculum with particular reference to the appropriateness of the courses for students who will later work in countries other than the United States of America. WHO staff lectured at the School of Public Health in Rennes, France, as part of the Organization’s help to the school, which also included fellowships for the teaching staff.

Travel Abroad for Study and Scientific Exchanges

The fellowships programme continues to enable health personnel to acquire abroad essential knowledge and experience that are not available in their own countries but are needed for their national health services and training institutions. From 1 October 1963 to 30 November 1964, WHO provided assistance to enable 3090 individuals to go abroad for educational purposes. There were 2407 fellowships for study (as compared with 1925 for the previous fourteen months’ period ending 30 November 1963), and 683 for participation in meetings organized by WHO.

The fellowship recipients, a fifth of whom were women, came from 153 countries, and studied in 90 other countries.

Further information on fellowships awarded in relation to particular countries and projects may be found in Part III, and Annex 12 shows the number of fellowships awarded by subject of study and by region. Some other aspects are analysed below:

### Occupation of fellows

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>412</td>
<td>17%</td>
</tr>
<tr>
<td>Research</td>
<td>57</td>
<td>3%</td>
</tr>
<tr>
<td>Medical and health services</td>
<td>1567</td>
<td>65%</td>
</tr>
<tr>
<td>Undergraduates</td>
<td>371</td>
<td>15%</td>
</tr>
</tbody>
</table>

### Profession of fellows

<table>
<thead>
<tr>
<th>Profession</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>1358</td>
<td>57%</td>
</tr>
<tr>
<td>Nurses</td>
<td>317</td>
<td>13%</td>
</tr>
<tr>
<td>Sanitarians</td>
<td>104</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>628</td>
<td>26%</td>
</tr>
</tbody>
</table>
Since the beginning of the WHO fellowships programme, almost 20,000 fellowships have been granted. A survey by interviews of former fellows, their supervisors, and employing authorities has been undertaken in several countries and the information obtained should lead to further improvements in the programme.

<table>
<thead>
<tr>
<th>Type of studies arranged</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO-sponsored courses</td>
<td>915</td>
<td>(38%)</td>
</tr>
<tr>
<td>Other courses</td>
<td>810</td>
<td>(34%)</td>
</tr>
<tr>
<td>Individual studies</td>
<td>682</td>
<td>(28%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place of study</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the fellow's region</td>
<td>1353</td>
<td>(56%)</td>
</tr>
<tr>
<td>In another region</td>
<td>1054</td>
<td>(44%)</td>
</tr>
</tbody>
</table>
CHAPTER 7

MEDICAL RESEARCH

The Organization's programme of medical research was developed and extended. Since the end of September 1963 nearly two hundred new collaborative research projects have been initiated in a variety of subjects, including malaria and other communicable diseases, cancer, cardiovascular diseases, nutrition, immunology, and environmental health. The subjects of these projects, and the regions in which they are being carried out, are given in Annex 13.

Twenty new reference centres were established for vibrio-phage typing, immunoglobulins, autoimmune disorders, the histopathology of bone and ovarian tumours, anaemias, arthropod-borne viruses and enteroviruses, tuberculosis diagnosis, human rickettsiosis, brucellosis, leptospirosis, trachoma, leishmaniasis, diagnosis of diseases of vectors, histopathology of salivary gland tumours and thyroid tumours, and malaria. The reference centres supported by WHO at 31 December 1964 are listed in Annex 15.

During the same period, a total of forty-six scientific groups and other research groups were convened to review the present state of knowledge in various biomedical fields, indicate gaps in research and advise on subjects most suitable for WHO collaborative investigation. These meetings are referred to in the relevant sections of this report. The reports of such meetings are for the information and guidance of the Director-General, and therefore of restricted distribution. However, in view of their general interest and importance, those dealing with measles vaccines, genetics of vectors and insecticide resistance, population genetics of primitive groups, biology of human reproduction, immunology, the evaluation of dependence-producing drugs, and viruses and cancer have been published in the Technical Report Series.

The Organization continued to promote communication between scientists by arranging for research workers to visit each other and work together. The usefulness of this programme for the exchange of scientific workers is becoming more widely appreciated, and the number of applications received is rapidly increasing: fifty-nine grants for such exchanges were awarded during the period under review.

The subjects for which research training grants and grants for the exchange of research workers were awarded during the period covered by this report are summarized in Annex 14.

A pilot project for a mechanized WHO Biomedical Research Information Service has been established for the collection and dissemination of information on research organizations and institutions, scientists and projects. Information on cancer research is being collected throughout the world. An attempt is also being made to collect information covering the whole field of biomedical research on a country basis, and ten countries have been selected for the initial stages of this study.

The Advisory Committee on Medical Research held its sixth session in Geneva in June 1964, when the Committee reviewed the WHO cancer research programme, discussed the role the Organization might play in mental health research, and considered the reports of scientific groups on the following subjects: rickettsial diseases in man, measles vaccines, genetics of vectors and insecticide resistance, yellow fever in East Africa, immunology, the physiology of lactation, and nutritional anaemias. The Committee also considered the future development of the WHO research programme, including the proposal for the establishment of a World Health Research Centre.

The report of the Director-General on the medical research programme for the period 1958-1963 was published, after having been submitted to the thirty-third session of the Executive Board and transmitted to the Seventeenth World Health Assembly.

The National Institutes of Health of the United States Public Health Service continued to support medical research.
five research projects. The Swedish National Association against Heart and Chest Diseases awarded three
and the Government of Israel five research scholarships
as contributions to the Special Account for Medical
Research. Other contributions offered to the Special
Account were: US $500,000 by the United States of
America, for research on human reproduction; and
US $250 by Cambodia, and US $2,000 by the Ivory
Coast for unspecified research.
Preparations were continued for the Eighth Revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death, to take place in 1965 at the International Revision Conference.

At its second meeting, at the end of October 1963, the Sub-Committee on Classification of Diseases (of the Expert Committee on Health Statistics) reviewed the results of various preparatory national and international studies that had been carried out and drafted recommendations concerning the general structure of the Revision. The Sub-Committee’s report, containing also proposals relating to the individual sections of the Classification, was subsequently circulated to countries for comments and suggestions.

The preparations have entailed much work on the part of countries in putting forward suggestions and in trying out proposals made. In the Americas, a number of countries have participated in an active regional revision programme in co-operation with the Latin American Centre for Classification of Diseases and PAHO. The regional advisory committee on health statistics held its third meeting in June and reviewed the revision proposals for the sections of the Classification dealing with infective and parasitic diseases, and nutritional deficiency diseases and anaemias. Similarly extensive work has been carried out by the WHO Centre for Classification of Diseases, in London, in testing and evaluating revision proposals. The two centres have co-operated in reconciling the different suggestions put forward by countries for certain sections of the Classification, and in formulating generally acceptable proposals.

A meeting of specialists in dentistry and stomatology was held in September 1964 to recommend a classification of diseases of the buccal cavity, the existing classification having been criticized on the grounds that many distinct conditions important in dental practice are not properly identified.

The Expert Committee on Health Statistics met in October 1964 and discussed the Sub-Committee’s report, together with comments from national health administrations and other sources. On the basis of this material the Committee prepared final recommendations for submission to countries for further study and for consideration at the International Revision Conference, to be held in July 1965 in Geneva. The text adopted by the Conference will be submitted to the Health Assembly for approval.

Each monthly issue of the *Epidemiological and Vital Statistics Report* has contained a section dealing with a subject of particular interest, including typhoid and paratyphoid fever, acute poliomyelitis, and leading causes of death (such as cardiovascular diseases, malignant neoplasms and diabetes mellitus) in certain countries. Each of these sections has included statistical data and explanatory analytical notes pointing out the important variations from one country to another and from period to period, and indicating fields requiring further investigation.

*Annual Epidemiological and Vital Statistics, 1961* was published during the year. It contains, in addition to vital statistics and statistics of infectious diseases and causes of death, data on health personnel and hospital establishments in various countries.

A number of statistical studies have been undertaken or continued. Information has been collected on morbidity statistics in various countries, on the types of statistics, sources and methods of collection, and the periods covered. The collection of such information is intended as a first step towards drawing up guidelines to help countries in developing this aspect of statistical services.

Statistical work continued with regard to the study on hospital utilization (see page 37); the aim is to develop an acceptable methodology to be used by countries for the collection of comparable data.

In Gabon, Liberia, Mali, Niger and Sierra Leone investigations were made of the availability of statistics and the possibilities of collecting statistical data to assist in national health planning.

Regular contact was maintained with national committees on vital and health statistics, and countries without national committees were encouraged to establish them. Seven new committees were formed during the period under review, and others are being planned.

Some WHO-assisted projects for developing national vital and health statistical services were completed (for example, those in Turkey and in the Republic of Viet-Nam), and the results achieved and method-
ology used were evaluated; some new projects were started, as in the Ivory Coast, and others were extended, as in Morocco (see page 106) and in the South-East Asia Region, where the hospital statistics project started in Thailand was expanded and converted into an inter-country project (see page 101).

A seminar on vital and health statistics was held in the Eastern Mediterranean Region in October 1963 (see page 110); and in the Western Pacific Region the use of statistics in public health administration was the subject of the technical discussions at the fifteenth session of the Regional Committee in September 1964.

Training of health workers in statistical procedures has again been provided in most regions—either in courses relating specifically to statistics, or as part of courses dealing primarily with other subjects. Thus, instruction in biostatistics was included in the WHO-sponsored international training course on the epidemiology and control of tuberculosis, in Prague, and lectures on statistical methodology were given in several other training courses on malaria, diarrhoeal diseases and tuberculosis, organized or assisted by WHO. In the Region of the Americas an extensive programme of training in vital and health statistics was continued at the Latin American Centre for Classification of Diseases, as well as in the schools of public health in various countries (see page 89). In the European Region, the international training courses on the application of statistical methods to medicine and public health were also continued.

WHO has co-operated with the United Nations with regard to the appointment of teaching staff to give courses on health statistics at the training centres of the United Nations regional economic commissions. The courses are intended for statisticians in the developing countries where statistical services need to be started or greatly expanded.

An important aspect of WHO’s statistical work is its contribution to the planning, operation and evaluation of medical research and other field and laboratory studies. Examples are the controlled field trials of vaccines against cholera, leprosy and measles that are being undertaken in different parts of the world, treponematoses surveys, filariasis research in Rangoon (see also page 33), and bilharziasis research in East Africa.

Studies were made on the methodology for the assessment and control of observer variations in medical and biological measurements—for example, in blood pressure readings, in observations on ocular fundi, and in the grading of atherosclerosis in the aorta and coronary arteries. New techniques are being developed to analyse electrocardiographic records by means of an electronic computer. Statistical analyses have been made of data collected in international collaborative biological assays of anti-measles sera, dihydrostreptomycin, and novobiocin, and of information assembled by the WHO advisory teams on diarrhoeal diseases, treponematoses and leprosy. Statistical techniques are also used extensively in WHO’s work on dental health, tuberculosis, maternal and child health, and cancer. Statistical field work has formed part of the Organization’s epidemiological studies on xerophthalmia and keratomalacia in Jordan.

Much of the statistical data collected in WHO’s work is processed with the help of machinery, and increased use is being made of an electronic computer. The application of automatic data processing systems in public health administration was discussed in November 1964 at a conference sponsored by the Organization in the European Region (see also page 104).

WHO collaborated in the work of a United Nations ad hoc committee of experts in the formulation of a long-range programme of work with regard to population. It also took part in an inter-agency meeting for the co-ordination of statistical activities. It has participated in the preparations for the United Nations Second World Population Conference, to be held in 1965, and has undertaken to organize the discussions on mortality, morbidity and causes of death.

In accordance with resolution 1838 (XVII) of the United Nations General Assembly, WHO is co-operating in studies on the effects of population growth, with particular reference to the needs of the developing countries for investment in health services.
Pharmacology and Toxicology

The Organization’s activities on pharmacology and toxicology have two main aspects: the development of a programme relating to the safety of drugs in general and work in the field of drug abuse including certain functions under the international conventions for the control of narcotic drugs.

In November 1963 the Expert Committee on Addiction-Producing Drugs formulated decisions on the appropriate status of narcotics control in respect of five substances, and the Secretary-General of the United Nations was notified accordingly. On the basis of advice from the Expert Committee, WHO also recommended a number of amendments to the schedules annexed to the Single Convention on Narcotic Drugs, which became operative on 13 December 1964. The Committee expressed concern at the upward trend in the abuse of cocaine and stressed the desirability of a further reduction in the legal manufacture of cocaine, in view of the development of synthetic local anaesthetics that can replace it for most therapeutic purposes. It emphasized the need for research on the sociological aspects of drug abuse and examined the abuse of certain types of drugs such as sedative and hallucinogenic substances, and the consequences of habitual chewing of khat leaves (catha edulis). As a result of recent scientific developments and changes in the patterns of drug abuse, the Committee recommended the replacement of the terms “drug addiction” and “drug habituation” by “drug dependence”, amplified by the specifications of the type of drug concerned.

During December 1963 a scientific group on the evaluation of dependence-producing drugs was convened to survey the methods available for determining the degree of dependence on individual drugs.

A special study on the medical aspects of the habitual chewing of khat leaves, undertaken at the invitation of the Economic and Social Council, was completed, and the report was transmitted to the Secretary-General of the United Nations. The report is based on observations in the areas of production and consumption, and gives the results of WHO-sponsored chemical and pharmacological studies, which have led to the discovery in fresh khat leaves of a new active substance with amphetamine-like effects.

As in the past, close working relations were maintained with the United Nations, particularly with regard to the provision of advice on all medical aspects of drug abuse and control and, more specifically, in the preparations for the United Nations Consultative Group on Narcotics Problems in Asia and the Far East, in which the Organization participated. WHO also continued to provide advice in this field to national authorities.

In compliance with resolutions adopted by the World Health Assembly, a programme for the promotion of the safety of drugs in general is being developed under the guidance of the Advisory Committee on Medical Research, and in collaboration with the Section on Pharmacology of the International Union of Physiological Sciences. A communication service has been arranged by which the Organization disseminates decisions taken by Member States to limit the availability of therapeutic substances on account of adverse reactions observed during clinical use.

The programme being undertaken, in accordance with resolution WHA17.39, on the clinical and pharmacological evaluation of drugs has two main aspects. One is the development of suitable methods for monitoring adverse drug reactions and the coordination of national activities in this field in order to ensure that the information obtained is sufficiently homogeneous to be centrally evaluated, and to facilitate rapid dissemination of results. Another part of the programme is to formulate, with a view to international acceptance, principles on which requirements can be based for the evaluation of the safety and efficacy of drugs. In connexion with the monitoring of adverse drug reactions, a scientific group was convened in November 1964. The group, which was composed of clinicians, statisticians, and key personnel in governmental drug control services, discussed the principles involved, outlined the essentials.
of the methodology required, and recommended certain uniform practical approaches.

At the regional level, a European symposium on the toxicology of drugs was held in Moscow during February. Participants from nine countries discussed the scientific principles for the evaluation of the safety and efficacy of drugs, legislative and public health measures, and the organization of a national and international information system on adverse reactions to drugs (see also page 106).

**Biological Standardization**

At its meeting in September 1964 the Expert Committee on Biological Standardization\(^1\) established a number of international standards and reference preparations including, amongst the antibiotics, an international standard for Oleandomycin, and a second international standard for Bacitracin, and international reference preparations of Ristocetin B and Kanamycin B. Other antibiotics under investigation in the collaborating laboratories include gramicidin, viomycin, paromomycin, rolitetracycline, colistin, hygromycin B and tylosin. In view of the fact that stocks of the international reference preparation of Procaine Benzylpenicillin in Oil with Aluminium Monostearate would soon be exhausted, the Committee requested a collaborative study of material suitable for its replacement.

The Committee considered the work done with regard to a number of hormones. It established a first international standard for Streptokinase-Streptodornase and a second international standard for Chorionic Gonadotrophin, and a second international reference preparation of Human Menopausal Gonadotrophins. Other materials considered for reference preparations included human pituitary gonadotrophins, human growth hormone, erythropoietin, human insulin, and some fibrinolytic enzymes.

The Committee also considered the progress made in studies on a number of immunological substances, including BCG vaccine, rabies vaccine, tetanus toxoid (adsorbed), *Clostridium oedematiens* (alpha) toxoid, and typhoid and cholera vaccines; studies on material to serve as an international reference preparation of influenza virus vaccine for use in laboratory tests; and studies on the replacement of the international standard for Old Tuberculin. An international reference preparation of Anti-Measles Serum was established and an international unit for Anti-Measles Serum defined, and the Committee noted the progress made in the preliminary studies on samples of anti-echinococcus and anti-toxoplasma sera, which could possibly serve as international reference preparations. An international standard for *Naja* Antivenin was established; considerable progress was noted in the standardization of snake antivenins in general, and recommendations were made for future work in this field. Certain immunological aspects of rheumatoid infection were studied in conjunction with the need for an international reference preparation of rheumatoid arthritis serum. There were offers of material to serve as international standards for anti-canine-distemper serum and anti-canine-hepatitis serum.

The Committee also noted reports on the preparation of material with a view to establishing an international standard for anti-Rh\(_a\) (anti-D) blood typing serum, and on the collection of other blood typing sera.

With regard to the extension of biological standards and reference preparations to include materials used for diagnosis and identification, the Committee decided that substances used for these purposes should in future be designated “International Biological Reference Reagents”. Various specific antiviral sera were considered under this category, including anti-tick-borne encephalitis sera, and a number of enterovirus antisera.

In addition to the establishment of international standards, reference preparations and reference reagents, the Committee considered requirements for biological substances. International recommendations on requirements are intended to facilitate the exchange of biological substances between different countries and to provide guidance for the production of those substances.

The Committee adopted requirements for diphtheria and tetanus toxoids, formulated on the basis of expert advice from a number of countries, and stressed the need for the formulation of requirements for human immune globulin. It noted the work being done with a view to the formulation of other sets of requirements.

The recently designated third International Laboratory for Biological Standards, at the Central Veterinary Laboratory, Weybridge, England, has developed its work considerably and now makes a significant contribution to the work of international biological standardization for veterinary products.

**Immunology**

In the past decade immunological research, previously mainly concerned with immunity to infectious diseases, has been extended to include new immunological mechanisms, such as reactivity to tissue antigens, immune tolerance, and cell-mediated hyper-

---

sensitivity. Research on important questions of immunity, particularly with regard to the parasitic diseases, has been intensified, and there is also a striking increase in research on the harmful consequences of immunological responses (immunopathology, allergy and tissue transplantation), and on cancer immunology. Useful progress has been made with regard to the co-ordination of and services to research, the unification of nomenclature, and research and training of immunologists in developing countries.

A nomenclature for human immunoglobulins, as suggested at a meeting convened by WHO in Prague during May, has been widely accepted, and plans are being made for another nomenclature meeting, on the increasingly important problem of genetic variants of immunoglobulins. A WHO reference laboratory for the serology of autoimmune disorders has been established at the Courtauld Institute of Biochemistry at the Middlesex Hospital, in London, to provide reference sera and standardized methods for the increasing number of serological tests associated with diagnosis and research in the auto-allergic diseases, and a WHO reference centre for immunoglobulins has been established at the Institute of Biochemistry of the University of Lausanne, Switzerland, for testing immunoglobulins and for providing other services necessary for research on fundamental questions of the relation of antibody structure to function.

WHO has supported research programmes on immunoprophylaxis and therapy, immunopathology, tissue antigens, transplantation, cancer immunology and immunochemistry in Australia, Czechoslovakia, France, Italy, Nigeria, Senegal, Switzerland, and the United Kingdom.

At the Pasteur Institute in Dakar a simplified gel immunodiffusion has been developed to measure the increase in serum macroglobulin, and its value as a diagnostic test for human trypanosomiasis is being assessed. It provides an interesting example of how basic research projects can be applied to public health programmes.

A scientific group on the research programme in immunology met in Geneva in November 1963 to review the progress in research in several important areas of immunology since the meetings of the scientific groups in 1962 and to provide guidance on WHO's future programme. The group also recommended that WHO should provide assistance for immunological training and research, giving high priority to the establishment of immunology research and training centres in developing countries.

The first WHO immunology research and training centre was established in Ibadan, Nigeria, at the end of 1964: research work was started in November; training courses are to begin in 1965. Such a centre serves not only to provide high quality instruction and experience for local trainee scientists, but also to promote work on problems relevant to the health needs of the developing countries. In accordance with a recommendation made by the scientific group, the meeting of the Expert Committee on Immunology of Parasitic Diseases in December 1964 also took place in Ibadan (see also page 20).

Pharmaceuticals

The control of the quality of pharmaceutical preparations is causing difficulties in many countries, because of the increasing numbers of new products and the fact that drugs may be imported in bulk, or as semi-finished or finished preparations, or as pharmaceutical specialities. These problems were discussed by the Seventeenth World Health Assembly, which stressed (in resolution WHA17.41) the need for adequate control of all drugs, whether produced within a country for home consumption or export, or imported, and urged Member States to consider the feasibility of ensuring that drugs exported from a country “comply with the same drug control requirements as apply to drugs for its domestic use”; it also invited “Member States which export drugs to consider whether testing facilities could be made available by arrangement with an importing country which has no such facilities”.

The quality of a pharmaceutical preparation—whether imported or produced in a country either for internal use or for export—can be ascertained by the following measures, which complement each other: regular inspection for quality control, performed in the manufacturing plants on the raw materials and at all stages of manufacture, and on all the batches of the finished product; examination for quality (purity, potency, sterility, etc.) of representative samples of the pharmaceutical preparations, conducted in a national laboratory for pharmaceutical quality control or a private laboratory licensed by the national authorities; and the obtaiment from the exporter or the exporting country of certificates of quality provided such certificates are valid and acceptable in the importing country. The Organization continued to assist countries by providing advice on programmes for controlling the quality of pharmaceutical preparations and on the training of laboratory staff and the equipment of laboratories.

One of the main services rendered by the Organization continued to be the establishment of proposed specifications for the control of the quality of the more
important pharmaceutical substances at present used for therapy in different countries. A provisional text has been prepared for the second edition of the International Pharmacopoeia: it comprises specifications for 526 monographs and 72 appendices, prepared with the collaboration of a large number of specialists from various countries, including the members of the WHO Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations. The specifications have been tested in the laboratories of national pharmacopoeia commissions, in national laboratories for pharmaceutical quality control, in the laboratories of a number of manufacturing firms, and in pharmaceutical and other institutes. Specifications for 129 pharmaceutical preparations not included in the first edition are being introduced in the second, while 109 monographs have been omitted. New analytical methods used in pharmaceutical quality control, such as the determination of infra-red absorption spectra, polarography, chromatography, non-aqueous titration, are described in the appendices. Revised tables of posology for adults and for children, as well as indications concerning the action and use of the different preparations, are included.

In accordance with the intent of resolution WHA3.10 of the Third World Health Assembly, and as in the case of the first edition, the proposed specifications are intended to serve as recommendations for use by national authorities in establishing specifications; they will not have legal effect in any country unless adopted by a competent authority for that purpose.

The provisional text has been sent to members of the expert advisory panel and other experts for comments. It has also been sent to all Member States, and the comments received from governments will be considered for possible inclusion in the text, or examined in relation to the preparation of corrigenda, addenda or future editions.

The introduction of new analytical procedures in the second edition calls for the use of a number of chemical reference substances; these are being prepared by the WHO International Reference Centre for Chemical Reference Substances in Stockholm, in close collaboration with specialists and national authorities dealing with reference standards programmes in different countries.

Studies and collaborative assays are being initiated on the stability of pharmaceutical preparations, since chemical changes may take place—particularly if packing and storage conditions are inadequate—and result in the formation of disintegration products that may affect the toxicity of the preparations and their therapeutic efficiency.

On the basis of recommendations made by the Subcommittee on Non-Proprietary Names of the Expert Committee on Specifications for Pharmaceutical Preparations at its meeting in November 1963, a fourteenth list of 178 proposed international non-proprietary names for pharmaceutical substances was sent to Member States for examination; this list, together with the "General Principles for Guidance in Devising International Non-Proprietary Names for Pharmaceutical Preparations" as revised by the Subcommittee, was published in the November 1964 issue of the WHO Chronicle.
CHAPTER 10

PUBLICATIONS AND REFERENCE SERVICES

At its thirty-third session, the Executive Board considered a report by the Director-General on a communication from the Minister of Health of the USSR proposing that a translation of the Bulletin should be included among the WHO publications issued in Russian in accordance with a decision of the Thirteenth World Health Assembly. The Board noted that the Director-General had agreed to this proposal, on the understanding that it would imply no increase in the total budgetary provision for issuing WHO publications in Russian.

It was decided that the special report made by the Director-General at the thirty-fourth session of the Board on international work in endemic treponematoses and venereal infections during the period 1948-1963 would be published in instalments in the WHO Chronicle, and subsequently issued as an offprint.

Special numbers of the Bulletin were published on malaria and insecticides (Vol. 30, No. 1), communicable diseases (Vol. 30, Nos. 2 and 5), tuberculosis (Vol. 29, No. 5), tuberculosis epidemiology (Vol. 30, No. 4), and measles and cholera (Vol. 30, No. 6). Supplements to the Bulletin were published on vector control and on pathogens, parasites and predators of medically important arthropods. Arrangements were made to supply the International Union against Tuberculosis with 2600 copies of the special number on tuberculosis and 3000 copies of the number on tuberculosis epidemiology at cost price for redistribution to its members. The Union also purchases at cost price 3000 copies of all Bulletin articles and numbers of the Technical Report Series relating to tuberculosis.

The number of subscribers to the Bulletin increased from 1700 to 1800. This figure, added to the number of copies distributed officially (1560) and in exchange for other periodicals (300), gives a total regular distribution of 3660. In addition, 130 copies are sent to sales agents on a standing-order basis. A scheme was put into effect for the distribution of reprints of selected articles from the Bulletin to project staff members.

As from the beginning of the 1964 volume, each number of the International Digest of Health Legislation contained an introduction drawing attention to the principal changes reported in legislation. Comparative surveys of legislation on the control of tuberculosis and on protection against ionizing radiations were published and subsequently issued as offprints. The survey of tuberculosis legislation extends and brings up to date one originally published in 1952. The survey on radiation protection is the most comprehensive survey hitherto published, and occupies 170 printed pages.

Twenty-seven numbers of the Technical Report Series were published in English. These included twenty-one expert committee reports and five reports of scientific groups.

In the Public Health Papers series, the following titles were issued in English: The Nurse in Mental Health Practice (No. 22), Urban Water Supply Conditions and Needs in Seventy-five Developing Countries (No. 23), Care of Children in Day Centres (No. 24), Housing Programmes: The Role of Public Health Agencies (No. 25). In the Monograph series appeared Operation and Control of Water Treatment Processes (No. 49). The preliminary text of this monograph was prepared in 1961 and was amended and amplified as a result of comments received from thirty-six experts in different parts of the world.

To the four published WHO bibliographies referred to in the last Annual Report were added the Bibliography on Yaws (in a bilingual edition in English and French) and Publications of the World Health Organization, 1958-1962: A Bibliography. The second of these constitutes the first quinquennial supplement to the Bibliography of WHO Publications. It covers all the literature published by WHO from 1958 until the end of 1962 and consists of 1361 references to technical books, articles and individual chapters arranged alphabetically by subject, and 81 references to administrative and general books and articles similarly arranged. The work is completed by an index of authors, an index of countries and a list of publications by series.

In addition, the third edition of the World Directory of Medical Schools and the second edition of Interna-

---


tional Standards for Drinking-Water were published in English. Special publications were *The Medical Research Programme of the World Health Organization, 1958-1963*, and *Equipment for Vector Control*.

The Organization participated in a UNESCO working party on scientific translation and terminology in Rome, and in three other working parties held respectively in Moscow, Paris and Washington on other aspects of scientific documentation. After the Rome meeting, the opportunity was taken to discuss with the FAO publishing service a number of outstanding problems in relation to the publication of joint FAO/WHO reports. Information was provided to the publishing service of ILO on the arrangements for the production of Russian editions of WHO publications.

The fourth triennial poll of recipients of free copies of WHO publications was made by the dispatch of reply cards.

A scheme for subscriptions to WHO publications at reduced rates, and payable in local currencies, similar to that operated by the Regional Office for South-East Asia, was initiated by the Regional Office for the Western Pacific.

Total revenue from sales for the financial year 1964 amounted to $152,393.

The collection of medical and scientific literature available in the WHO library and its use by WHO staff both at headquarters and in the regions and by other medical libraries continued to grow during the period. On 30 September 1964, 2,503 medical and scientific periodicals were being regularly received, of which 687 were acquired by purchase, 1,211 in exchange for WHO publications, and 605 by gift. Other serial publications received by the library included 1,600 annual reports from governments, medical and health institutions, etc., and the calendars and prospectuses of some 600 medical schools and faculties.

The first WHO training course in medical librarianship was held at the American University of Beirut from 1 July to 11 September 1964, and was attended by nine librarians of medical schools and ministries of health from five countries of the Eastern Mediterranean Region. They first attended the regular summer course in library science of the American University of Beirut, held from 1 July to 14 August; during these six weeks the lectures and instruction covered all aspects of general librarianship. Special instruction in medical librarianship was given in the second part of the course by WHO lecturers. The course included lectures on the history of medicine, medical periodicals, WHO publications and documents, medical bibliography, etc.
Articles based on information about WHO activities that appeared in the world’s press during the period under review were concerned with a wide range of subjects. Among the most prominent were those relating to the prevention of cancer, the role of the general practitioner, health problems in rapidly growing cities, nursing, the world’s need for water, and health problems in Africa.

During the Seventeenth World Health Assembly an effort was again made to provide information both on matters of general world interest and on achievements and problems in particular countries. This policy was reflected in the press releases issued during the Assembly and in the 120 recordings in fifteen languages dispatched at the request of national broadcasting services. Copies of the recordings were provided for the use of United Nations Radio, New York, and the shortwave overseas services of a number of countries. Photographic coverage of the Health Assembly was given world-wide distribution. An exhibition of photographs, maps and texts on needs and activities in international medical research was held in Geneva during the World Health Assembly and was later transferred to the main lobby of the United Nations building in New York.

“No Truce for Tuberculosis” was the theme for World Health Day 1964. Articles and photographs appearing in the special issue of World Health published for the occasion were widely reproduced. In response to direct requests, some 6000 photographic prints on the subject were distributed from headquarters alone. Two special thirty-minute radio programmes were produced (one in English and one in French) and were requested by fifty-seven national broadcasting stations. The Director-General’s World Health Day message was recorded in English, French and Portuguese, and was broadcast on many networks. The co-operation of the International Union against Tuberculosis greatly contributed to the success of the event.

The theme selected for World Health Day in 1965 is “Smallpox, Constant Alert.”

Under the title of “The Monster and You” an eleven-minute animated cartoon film on tuberculosis was produced in Czechoslovakia for WHO in English, French and Spanish and in an international version that can be overprinted in other languages. The film has so far been shown on several television networks and at international film festivals in Cork, Edinburgh and Bologna.

In accordance with the policy of producing films and television programmes in partnership with other organizations, WHO and UNESCO co-operated with a commercial firm of documentary film producers in the Federal Republic of Germany in making a thirty-minute film on medical education and training entitled “Addis Doktor”. The German version was completed in March 1964. The film deals with the training of public health personnel in Gondar, Ethiopia, and of the medical students from the Democratic Republic of the Congo who are studying at Nantes University in France. This film was also issued in English under the title “Doctors in the Making”, and was shown at the 13th International Film Festival in Mannheim. Arrangements were made for a film on leprosy to be shot in India. It is sponsored financially by the Danish Save the Children Fund, and Indian and Danish film makers are co-operating with WHO in producing it. During the latter part of 1964 preliminary discussions were held with a commercial firm of film makers regarding the co-production of a ten-minute colour cartoon on the history of smallpox eradication.

Thirteen issues of the WHO magazine World Health were published during the period under review in English, French, Portuguese, Russian and Spanish editions. The overall average number of copies per issue was approximately 120,000. The April 1964 issue contained an article on the work of the High Commissioner for Refugees, and over 6000 offprints were produced for the High Commissioner’s office. The September issue of the magazine was entirely devoted to cancer, an additional 10,000 copies being printed for distribution by the International Union against Cancer, at the Union’s request. Other subjects treated in special issues have included nursing throughout the world, leading medical figures in contemporary France, the need for adequate water supplies, and life and health in Romania.

A special feature article on the Voluntary Fund for Health Promotion was printed in the October 1963 issue of World Health, and an eight-page brochure on the Fund was distributed with the July-August 1964 issue.
as well as separately in an edition of 35,000 copies. These are part of the increased publicity given to the Voluntary Fund for Health Promotion, following the resolution adopted by the Executive Board in January to the effect that every opportunity should be taken to make the existence, needs and objectives of the Voluntary Fund better known. Various gifts to the Fund have been publicized through press releases.

Many magazines in various parts of the world published pictures illustrating WHO activities, and photographs from the articles in *World Health* dealing with nursing, tuberculosis, and Palestine refugees were used in the press in a number of countries. Some thirty-five photo-stories appeared in leading magazines in Czechoslovakia, Hungary, Poland and the Soviet Union. A magazine published in Hong Kong brought out a two-page photo feature on WHO in a special issue devoted to economic development in Asia. One series of WHO photographs "The Mask of Meningitis", concerning the WHO-assisted project in cerebrospinal meningitis control in Niger, was published by a dozen magazines. United Press International continued to put out single WHO pictures in their EUROPICX service to Austria, Belgium, France, Federal Republic of Germany, Hungary, Italy, Netherlands, Peru, Scandinavia, Spain, Turkey, United Arab Republic and United States of America. In all, some 40,000 prints were distributed from WHO headquarters during the period under review.

More book publishers called on WHO's photographic facilities for illustrations. For example, the American Medical Association used a number of WHO photographs in its annual report and a London publisher was provided with WHO photographs for a book entitled *Health and Wealth*. WHO photographs were also in demand for exhibitions, notably for a number of American universities, including California, Cleveland, and Western Reserve. The Oxford Committee for Famine Relief (OXFAM) also made use of WHO photographs in its exhibition "Partners in Progress", shown in England in July.

Apart from those made during the World Health Assembly, nearly 200 recordings for radio purposes were made in the period under review. They include round-table discussions, interviews with leading scientists attending meetings in Geneva, and special feature programmes. To mark Human Rights Day, the British Broadcasting Corporation, working with the Radio Unit of WHO, produced a thirty-minute programme entitled "The Right to Health", which was distributed by the BBC to forty-two English-speaking radio stations throughout the world. Further copies of the six programmes in French on the "Pioneers of Public Health" produced in co-operation with the Swiss Broadcasting Society (Radiodiffusion suisse romande), and mentioned in the Annual Report for 1963, have now been supplied to national broadcasting networks outside Europe. A thirty-minute programme for schools on the work of WHO, produced by the Swiss Broadcasting Society from material provided by WHO, was broadcast in Europe and distributed to twenty-four other national networks, mostly in Africa and Asia. A feature programme on the work of nurses in WHO has been provided to radio stations in a number of countries. Special attention has been given to providing broadcasting material for radio stations in areas where press and television are in their early stages and where illiteracy is still widespread.

Some eighty press releases and special features were issued during the period under review. Some 17,000 copies of a fifty-page illustrated booklet on the work of WHO, its relations with other members of the United Nations family, its structure, financing and methods of work, have been distributed to senior administrators and experts whose work may bring them into touch with the Organization. An abbreviated version of the booklet was issued with the October 1964 number of *World Health*. Articles on WHO and its activities have again been provided for a number of yearbooks and reference works.

WHO was represented at the Editors' Roundtable, organized by the United Nations and held in Mexico City in February. The meeting proved a useful opportunity for making contact with leading figures in the press and other mass media of Latin America. WHO was unable to participate in the 1964 meeting of the United Nations Consultative Committee on Public Information as it was held at the same time as the Seventeenth World Health Assembly.
CHAPTER 12

CONSTITUTIONAL, FINANCIAL AND ADMINISTRATIVE DEVELOPMENTS

Constitutional and Legal

Following their admission to membership in the United Nations, Kenya and Zanzibar became Members of the World Health Organization in 1964 by depositing with the Secretary-General of the United Nations a formal instrument of acceptance of the Constitution. On 26 April 1964 Tanganyika and Zanzibar were united to form the United Republic of Tanganyika and Zanzibar, the name of this State being changed in October 1964 to the United Republic of Tanzania. On 5 March 1964 the Seventeenth World Health Assembly admitted Malta, Northern Rhodesia, Nyasaland and Qatar to associate membership; it also took note of the revival of the associate membership of Southern Rhodesia. Three of these Associate Members became independent during the year: Malawi (formerly Nyasaland) on 6 July, Malta on 21 September, and Zambia (formerly Northern Rhodesia) on 24 October 1964. At the end of the year WHO had 118 full Members and three Associate Members. In addition, Malawi, Malta and Zambia continued to enjoy the privileges of associate membership in the Organization. A list of Members and Associate Members as at 31 December 1964 is given in Annex 1.

The Financial Position

Budget for 1964

By resolution WHA16.13, the Sixteenth World Health Assembly established an effective working budget of $34 065 100 for 1964—an increase of $3 671 000 over the corresponding total of $30 394 100 for 1963. On the recommendation of the Executive Board, the Seventeenth World Health Assembly, in resolution WHA17.9, approved supplementary budget estimates for 1964 amounting to $477 650, which increased the effective working budget to $34 542 750.

The supplementary budget estimates were to meet:

<table>
<thead>
<tr>
<th>Description</th>
<th>US $</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Additional costs arising from the increase in the number of Members and Associate Members</td>
<td>13 100</td>
</tr>
<tr>
<td>(2) Increased wage rates for temporary staff, and increased printing costs</td>
<td>34 050</td>
</tr>
<tr>
<td>(3) The cost of land proposed to be purchased for the African Regional Office</td>
<td>23 000</td>
</tr>
<tr>
<td>(4) The cost of land and of the erection of additional housing accommodation for the staff of the African Regional Office</td>
<td>274 000</td>
</tr>
<tr>
<td>(5) The continuing costs of advisory assistance to the Democratic Republic of the Congo, hitherto provided by WHO subject to reimbursement by the United Nations</td>
<td>133 500</td>
</tr>
<tr>
<td></td>
<td>477 650</td>
</tr>
</tbody>
</table>

1 Article 7 reads as follows: “If a Member fails to meet its financial obligations to the Organization or in other exceptional circumstances, the Health Assembly may, on such conditions as it thinks proper, suspend the voting privileges and services to which a Member is entitled. The Health Assembly shall have the authority to restore such voting privileges and services.”
Taking into account these supplementary estimates, the total amount of the approved budget for 1964 was $36,765,880. The difference of $2,223,130 between this amount and the effective working budget of $34,542,750 was appropriated by resolution WHA16.28 as an Undistributed Reserve equalling the assessments on China and on the inactive Members (the Byelorussian SSR, and the Ukrainian SSR). The distribution of the approved budget among the appropriation sections is shown in Annex 7, which also shows the transfers between appropriation sections, made with the concurrence of the Executive Board, and the amounts of the approved supplementary estimates.

Expanded Programme of Technical Assistance

Under the Expanded Programme of Technical Assistance the amount earmarked for WHO for 1964 — the second year of the 1963-1964 biennium — was $8,101,996, or 17.48 per cent. of the total funds available for the programme. This sum included $756,990 for administrative and operational services costs. Contingency allocations in 1964 for WHO projects amounted to $612,768. The total allocated to WHO in 1964 under the programme thus amounted to $8,714,764, as compared with $8,522,276 made available to the Organization in 1963.

Financing of the Malaria Eradication Programme

In accordance with the decision of the Fourteenth World Health Assembly (resolution WHA14.15) that the cost of the malaria eradication field programme should be incorporated in the regular budget by stages over a three-year period starting in 1962, the full costs of that programme, totalling $5,363,000, were provided for in the programme and budget estimates for 1964 by transfer to the Malaria Eradication Special Account under section 11 of the Appropriation Resolution for 1964 (resolution WHA16.28).

In resolutions WHA16.17 and WHA17.24 the Health Assembly again appealed to Members to make voluntary contributions to the Malaria Eradication Special Account to enable the Organization to carry out “accelerated” eradication programmes for which plans have already been approved. Voluntary contributions received in 1964 for the Malaria Eradication Special Account amounted to $163,300, bringing the total contributions received from the inception of the programme to $207,083.40. The net income derived from the malaria eradication postage stamp campaign launched by the Organization in 1962, and credited to the Malaria Eradication Special Account, amounted to $244,807. The sale of the postage stamps and other philatelic material donated to the Organization was closed on 31 December 1963; 114 postal administrations had taken part in the project.

Voluntary Fund for Health Promotion

By resolutions EB33.R5 and EB33.R54, the Executive Board established, as two new sub-accounts in the Voluntary Fund for Health Promotion, a Special Account for the Leprosy Programme, and a Special Account for the Yaws Programme; the Seventeenth World Health Assembly, by resolution WHA17.25, decided to place the Malaria Eradication Special Account in the Voluntary Fund for Health Promotion as a sub-account of that fund.

Contributions received in 1964 for the Voluntary Fund for Health Promotion, excluding the Malaria Eradication Special Account, amounted to $1,465,551, bringing the total value of contributions credited to the Fund to $5,182,734. These contributions related to the following sub-accounts:

<table>
<thead>
<tr>
<th>Sub-account</th>
<th>As at 31.12.1964 (US $)</th>
<th>Total from inception (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Account for Undesignated Contributions</td>
<td>1,501</td>
<td>19,952</td>
</tr>
<tr>
<td>Special Account for Smallpox Eradication</td>
<td>316,994</td>
<td>834,660</td>
</tr>
<tr>
<td>Special Account for Medical Research</td>
<td>962,998</td>
<td>4,475,968</td>
</tr>
<tr>
<td>Special Account for Community Water Supply</td>
<td>1,786</td>
<td>905,821</td>
</tr>
<tr>
<td>Special Account for Assistance to the Democratic Republic of the Congo</td>
<td>173,600</td>
<td>240,975</td>
</tr>
<tr>
<td>Special Account for Accelerated Assistance to Newly Independent and Emerging States</td>
<td>1,560</td>
<td>29,947</td>
</tr>
<tr>
<td>Special Account for the Leprosy Programme</td>
<td>1,382</td>
<td>1,382</td>
</tr>
<tr>
<td>Special Account for the Yaws Programme</td>
<td>6,030</td>
<td>6,030</td>
</tr>
<tr>
<td>Special Account for Miscellaneous Designated Contributions</td>
<td>—</td>
<td>3,538</td>
</tr>
</tbody>
</table>

Contributions and the Working Capital Fund

The obligations incurred in 1964 and the status of collection of contributions and of advances to the Working Capital Fund at the end of 1964 will be shown in the Financial Report (published as a supplement to the Annual Report of the Director-General), which will be submitted with the Report of the External Auditor to the Eighteenth World Health Assembly.

1 Formerly “Special Account for Assistance to the Congo (Leopoldville)”.
Administration

Structure and Staff

Several organizational changes took place. The Office of Programme Evaluation assumed additional responsibilities relating to programme formulation, and became the Office of Programme Formulation and Evaluation. The Radiation and Isotopes unit was divided into two—Radiation and Isotopes, and Human Genetics. Addiction-Producing Drugs, in the Division of Biology and Pharmacology, was renamed Pharmacology and Toxicology, in conformity with the increased scope of its functions. Other changes affecting only unit titles were made in the Division of Environmental Health.

The total number of staff \(^1\) has increased by approximately 5.3 per cent., from 2692 staff members on 30 November 1963 to 2835 on 30 November 1964 (including WHO agents on duty in the Democratic Republic of the Congo). The details of the composition of the staff at 30 November 1964 are given in Annexes 9 and 10.

The improvements in the recruitment procedures initiated in 1963 have started to prove effective, and delays in recruitment, particularly of technical staff, have been noticeably shortened. A special effort has been made to ensure that priority is given to candidates from those countries of which no, or few, nationals are employed in the Secretariat.

A fourth training course for WHO representatives was organized in Geneva in April and May 1964. In all, fifty-two senior staff members have now participated in this type of training, a form of refresher course in WHO policy and programmes. The aim is to bring senior field medical officers up to date with new advances in the technological fields with which WHO is concerned, with emphasis on the interrelationship of public health work and social and economic development. Study of the development of national health programmes formed an important part of this training. A fifth training course was held in October 1964, also in Geneva, for ten senior regional medical staff.

Two short courses were organized in 1964 for senior headquarters staff, in order to stimulate interest in and study possible applications of electronic data processing in the various fields of WHO technical programmes.

As in previous years, individual study leave was granted to a limited number of medical and other technical staff, both at headquarters and in the regions, in order that they might acquire further academic qualifications or refresh their knowledge of their own specialities.

The use of more advanced methods for the mechanical processing of data has been further extended. As in the previous year, certain aspects of budgetary preparation have been processed on punched cards, and a new development has been the transfer of pay-roll operations likewise to punched card machines. A pilot project for a mechanized Biomedical Research Information Service has been established (see also page 55).

The New Headquarters Building

The structure of the building was completed on 15 July 1964, and good progress has been made with the next phase of the work. Contracts were let for the underground garage, which was authorized by the Sixteenth World Health Assembly and will accommodate some 390 vehicles.

The report \(^2\) of the ninth session of the Standing Committee on Headquarters Accommodation, set up under resolution EB26.R13, was considered by the Executive Board during its thirty-third session, in January 1964.

Also in January, WHO took over part of a temporary office building put up for ILO by the Canton of Geneva near the Palais des Nations, and in consequence the offices that had been rented on the opposite side of Geneva were released.

Supply Services to Member States

During the period 1 October 1963 to 30 September 1964, supplies and equipment purchased by WHO amounted to 21 500 line items, with a total value of $2 400 000.

At its thirty-third session, the Executive Board authorized the Director-General to accept in payment for reimbursable purchases such currencies as he might decide: this increased flexibility in the acceptance of currencies has already been of assistance to some health administrations.

The total value of medical supplies purchased as indicated above includes $400 000 for reimbursable purchases made on behalf of Member States, mainly hospital equipment and supplies for Lebanon. Funds have been received from Pakistan for the purchase

---

\(^1\) Excluding staff of the Pan American Health Organization.

of laboratory equipment and supplies for the public health laboratory being established in Islamabad; the purchases will be made when detailed specifications are received.

Emergency Assistance to Member States

Vaccines and other supplies were provided by WHO to the Congo (Brazzaville), Cuba, Senegal and Yemen to help meet emergency situations arising from epidemics, hurricane disaster, or the influx of refugees.

From time to time WHO has been asked by Members to assist them to combat epidemics by providing vaccines free of charge. On such occasions, WHO has co-operated with other sources of relief assistance, such as the Red Cross and bilateral aid, but the Organization's resources have permitted only limited direct assistance. In order to extend the scope of WHO's help in such circumstances, a reserve pool of vaccine is being established: arrangements are being made for the acquisition, if and when required, of up to 200,000 doses annually of dried yellow fever vaccine at nominal cost; one government has donated 500,000 doses of cholera vaccine available at short notice out of current production or reserve stocks. From private sources there have been two contributions of poliovirus vaccine: 500,000 doses of trivalent poliovirus vaccine; and a donation of 500,000 doses of each of types I and II live poliovirus vaccine. The limited quantities of dried smallpox vaccine requested to meet emergency situations have been allocated from the vaccine in the pool for the smallpox eradication programme. Efforts are being made to obtain further donations of cholera and smallpox vaccines to enable the Organization to increase its direct assistance in future emergencies.

Organizational Study of the Executive Board on Methods of Planning and Execution of Projects

A progress report on the organizational study on methods of planning and execution of projects, undertaken in accordance with the decision of the Fifteenth World Health Assembly, was considered by the Executive Board at its thirty-third session. The detailed information collected on the group of eighty-six projects that were to be studied was analysed and the report compiled. A complete draft of the study was sent in November to members of the Executive Board in preparation for its consideration at the thirty-fifth session in January 1965.

The Seventeenth World Health Assembly and Thirty-fourth Session of the Executive Board

In accordance with resolution EB33.R37 adopted by the Executive Board at its meeting in January 1964, the Seventeenth World Health Assembly was convened in the Palais des Nations, Geneva, on 3 March, instead of during May, as had previously been decided by the Board at its thirty-second session. This was due to the holding of the United Nations Conference on Trade and Development in the Palais des Nations from the end of March until June.

The thirty-fourth session of the Executive Board was held at the usual time, in May.
CHAPTER 13

CO-OPERATION WITH OTHER ORGANIZATIONS

The extent and nature of WHO’s co-operative effort with other organizations is indicated by the examples given in the various chapters and in the Project List forming Part III of this report. The present chapter supplements that information, summarizing the work carried out under the various inter-agency programmes and in co-operation with individual organizations of the United Nations system, with regional and other intergovernmental organizations, and with non-governmental organizations.

United Nations Development Decade and Other Co-operative Action

Since the United Nations Conference on the Application of Science and Technology for the Benefit of the Less Developed Areas, held in 1963, this subject has remained an important area for co-operation among international organizations with specific responsibilities for research and its application. The Administrative Committee on Co-ordination (ACC) has set up a sub-committee on science and technology, of which WHO is a member. The sub-committee takes an active part in the work of the Advisory Committee on the Application of Science and Technology to Development, established in 1963 by the Economic and Social Council.

Co-operation in studies on the conversion to peaceful uses of resources released by disarmament was considered by ACC, since the directing organs of several specialized agencies as well as the United Nations General Assembly and the Economic and Social Council have called for such studies. Pending a decision by the Executive Board, the Director-General arranged for WHO to take part in the work of the inter-agency committee on the conversion to peaceful uses of the resources released by disarmament, which held its organizing meeting in October 1964.

The three United Nations regional development institutes envisaged by the United Nations General Assembly in 1962 have been established with assistance from the Special Fund. WHO appointed a public health administrator to the staff of the Asian Institute for Economic Development and Planning, and arranged lectures on health at the African Institute for Economic Development and Planning, pending the appointment of a regular WHO staff member at the Institute. The courses organized jointly by the Latin American Institute for Economic and Social Planning and WHO were continued for the third year, and collaboration with the Institute was extended to certain missions to countries. In these activities, WHO co-operated with the regional economic commissions for Africa, Asia and Latin America, which work closely with the regional institutes.

For the Third International Conference on the Peaceful Uses of Atomic Energy, IAEA and WHO submitted a joint working paper (see page 48). As a member of ACC, WHO took part in inter-agency consultations on co-ordination in the field of peaceful uses of atomic energy.

Early in 1963, WHO assigned a staff member to the United Nations Water Resources Development Centre, which was designed to function as an inter-agency unit responsible, under ACC, for co-ordinating the concerted action programme. The functioning of the Centre was reviewed in 1964 by ACC and the Economic and Social Council, and the Council endorsed the proposal to entrust the co-ordination of the inter-agency water resources programme to ACC. WHO is a member of the sub-committee established by ACC for this purpose, and continues to co-operate with the Centre, which co-ordinates the United Nations’ own activities. In collaboration with the other organizations concerned, WHO is preparing a report to the Economic and Social Council on research into environmental pollution and its control.

WHO is responsible for the health component in the inter-agency programme of housing, building and planning, which was approved by the Economic and Social Council in 1964. In addition to the provision of community water supplies, which is important in this programme, the health component includes work relating to housing standards and the health problems arising from urbanization. WHO has taken part in housing surveys, pilot projects in low-cost housing, and technical meetings, and co-operated with the Economic Commission for Africa (ECA) in this field (see page 30). The United Nations was represented...
at the meeting in June of the WHO Expert Committee on Environmental Health Aspects of Metropolitan Planning and Development (see page 30).

In the inter-agency programme of rural and community development, WHO continued to assist countries in health projects of a community development nature and to take part, with other organizations, in regional projects. These included United Nations seminars; the UNESCO-sponsored regional training centres for the Arab States and for Latin America; regional development projects assisted by ILO (for example, the Andean region development programme, and projects in some countries of Africa—Rwanda, Burundi and the Democratic Republic of the Congo, Kivu Province); ILO missions for the sedentarization of nomads in several countries of the Eastern Mediterranean Region.

WHO prepared a working paper for a United Nations seminar on the social aspects of industrialization, held in Minsk (see page 49), and preparations were made to co-operate in the symposia on industrial development planned by the United Nations regional economic commissions. The United Nations took part in the WHO inter-regional seminar on the health aspects of industrialization, held in Dacca in November 1963 (see also page 49).

The United Nations and WHO are co-operating in training courses for health administrators in Latin America, and in studies and meetings on problems of public health administration in African countries.

WHO has continued to assist in the health aspects of the United Nations/FAO World Food Programme, and has given technical advice on an increasing number of projects. The Programme has now been in operation for two years of its experimental three-year period, and WHO is participating in the evaluation of its activities to date. The possibilities of World Food Programme aid in health-promoting activities were studied; as such projects would be essentially long-term activities, WHO undertook to compile a list of possible health-promoting projects which could, in part, be helped by food aid within and beyond the World Food Programme's present experimental period.

The United Nations Research Institute for Social Development commenced work in Geneva during the year; WHO took part in the second session of the Board, and is collaborating in certain aspects of the Institute's research programme. Further consultations were held between the United Nations and the specialized agencies regarding the United Nations Training and Research Institute, which is expected to be in operation before the end of 1965.

The Economic and Social Council had called on ACC for a functional classification of the activities comprised in the United Nations Development Decade programme and a report on methods of evaluating the overall impact of international assistance on the development of countries. WHO took part in the preparation of these reports, and will be associated with the pilot evaluation projects that were approved by the Economic and Social Council on the recommendation of ACC.

To establish a closer partnership between the governmental and inter-secretariat bodies responsible for co-ordination—that is, the Economic and Social Council and ACC—an informal meeting of the members of ACC with officers of the Council was held in Geneva in July 1964.

**United Nations Special Fund and the Expanded Programme of Technical Assistance for Economic Development**

WHO has continued to act as the executing agency for four projects receiving Special Fund assistance: in Ghana, the Accra/Tema water supply and sewerage scheme (see page 83); in India, the Central Public Health Engineering Research Institute at Nagpur, and the survey of water supply resources of Greater Calcutta; and in Chile, the Institute of Occupational Health and Air Pollution Research, at Santiago.

The Organization has also been designated executing agency for the projects for the training of sanitary engineers in Venezuela (starting at the end of 1964), and in Brazil (at the Institute of Sanitary Engineering, Guanabara), where a consultant provided by WHO carried out a preliminary survey. WHO is co-operating with FAO in the surveys of the Antalya region of Turkey and has assigned a public health administrator and a sanitary engineer to the project; this is the first time WHO has acted as sub-contractor to the executing agency of a Special Fund project.

Finally, WHO has continued to advise the Special Fund on the health aspects of requests from governments, stressing any hazards which might be avoided by timely and co-ordinated action: for example, the Organization provided advice with particular reference to parasitic diseases in development programmes for river basins in Ethiopia, Upper Volta, and Zambia. Consultations were held concerning ways in which pre-investment assistance in the health field may be substantially increased in the future.

In the Expanded Programme of Technical Assistance, the two-year project programming was continued during the 1963-1964 biennium, in accordance with the proposal made by the Technical Assistance Committee in 1962 and subsequently endorsed by the Economic and Social Council. The working capital and reserve fund was increased to the level of US $12.5 million and the contingency allocation for urgent requests
was authorized at 10 per cent. of the estimated resources for the 1963-1964 biennium.

Projects financed under the Expanded Programme are shown in the list in Part III of the Report.

Co-operation with Individual Organizations

In addition to participating in inter-agency programmes, WHO has continued to work with individual organizations of the United Nations system on matters of common interest.


With regard to statistics, WHO continued to collaborate with the United Nations regional training centres and to provide advice to governments. WHO prepared technical studies for the United Nations Second World Population Conference, and continued its joint study with the United Nations on the implications of population trends for investment needs in health services in developing countries.

Besides providing advice to the United Nations Commission on Narcotic Drugs, WHO took part in a United Nations mission to explore problems of opium-producing regions in Burma, and completed a study requested by the Economic and Social Council on the medical aspects of the habitual chewing of khat (see also page 59).

As in previous years, the Organization provided reports and observations on health conditions for the Trusteeship Council.

The Organization prepared working papers for several technical meetings of the United Nations regarding the planning of social services, and continued to co-operate in the work of the United Nations relating to juvenile delinquency, rehabilitation of the physically handicapped, human rights, and the status of women.

The appointment of WHO liaison officers to the Economic Commission for Africa (ECA) and the Economic Commission for Asia and the Far East (ECAFE) has led to numerous consultations on the health aspects of work undertaken by these bodies, and to increased participation by WHO in certain regional and country projects. The Organization's co-operation with the regional economic commissions in connexion with the regional development institutes has been mentioned (see page 71). In addition WHO co-operated with ECA in work on general social development, rural and community development, housing, urbanization and water resources development, and designated a sanitary engineer to work with ECA. With ECAFE, it collaborated in community development and other social development projects, and in the health aspects of the water resources development projects in the Lower Mekong Basin. As in the past, close liaison was maintained with the Economic Commission for Latin America (ECLA); the principal areas of collaboration were the health aspects of national planning and public administration and, within the framework of the inter-agency water resources and housing programmes, the provision of community water supplies. Co-operation with the Economic Commission for Europe was continued on statistics; water pollution, in which FAO and IAEA are concerned; air pollution, which interests also the Organization for Economic Co-operation and Development; the rational development of water resources, and housing.

WHO continued to provide a public health administrator, a medical officer and a public health nurse to assist the work of the United Nations Relief and Works Agency for Palestine Refugees in the Near East, and to give technical supervision for the health programmes administered by that agency (see also page 33).

United Nations Children's Fund. By June 1964, UNICEF was providing aid for a total of 553 long-range projects in 122 countries, including 165 projects in basic health services (mainly maternal and child health), 148 in disease control, and 123 in nutrition.

At the January 1964 meeting of the UNICEF Executive Board, in Bangkok, WHO presented papers on malaria eradication and on the needs of children in Asia. The decisions adopted by the Board included a more flexible policy in regard to maternal and child health activities. Of the total UNICEF allocations at this session, about 60 per cent. was for health projects, including disease control (US $11 600 000 covering previous commitments, and US $12 382 000 being new allocations), and approximately 20 per cent. for nutrition projects (a slight increase over allocations in previous years).

At the June session of the Executive Board, held in New York, the greater part of UNICEF allocations was again devoted to health activities, with increased emphasis on maternal and child health and basic health services, as well as on training. In addition to approving continued assistance to 157 projects, the Board approved allocations totalling US $27 337 787 for fifty-one new projects, on the following subjects:
health services and disease control, fourteen; nutrition, seventeen; welfare services, five; education, fourteen; and vocational training, one.

The Project List, in Part III, indicates the variety of subjects for which UNICEF and WHO are jointly providing assistance. Recent developments in WHO's collaboration with FAO and UNICEF on nutrition programmes are mentioned in Chapter 5 (see page 46).

ILO. Under the standing arrangements with ILO, consultations continued in the fields of occupational health, the health of seafarers, working conditions of women and children, and the integration of indigenous populations (the Andean region development programme). ILO took part in the work of the Expert Committee on the Health Problems of Adolescence (see page 40). A joint meeting was held to prepare a guide for medical advice by radio to ships at sea; and WHO contributed to the Fifteenth General Assembly of the International Social Security Association, which is associated with ILO.

Co-operation with ILO in assistance to governments was somewhat expanded during the year through WHO's participation in the inter-agency programme of rural and community development mentioned above (page 72).

FAO. As in previous years, FAO and WHO worked together on projects concerning nutrition, food hygiene and veterinary public health, including the standardization of therapeutic substances for veterinary use. UNICEF was associated with many of the nutrition projects. Joint assistance was continued to a number of regional technical institutions, including the Institute of Nutrition of Central America and Panama (INCAP) and the FAO/Special Fund project, in Turkey, mentioned above (see page 72). Joint technical meetings included a meeting of the FAO/UNICEF/WHO Protein Advisory Group, a FAO/WHO inter-regional training course on nutrition, and a FAO/WHO training course on food hygiene and veterinary public health in the Eastern Mediterranean Region. Joint FAO/WHO expert meetings were held on brucellosis, food additives, and legislation regarding irradiated foods.

The two organizations continued their joint programme on food standards, and the second session of the Codex Alimentarius Commission was held in September 1964 (see also page 47).

UNESCO. WHO continued its association with the health education aspects of UNESCO's programme of school and university education, as well as collaboration with UNESCO's regional training centres, as mentioned above. The two organizations continued to work together in various fundamental education projects. They also co-operated in health education programmes for teachers (especially in the South-East Asia and Western Pacific Regions) and for the general public. Plans have been made for WHO to contribute to UNESCO pilot projects for adult literacy.

UNESCO and WHO continued the arrangements for consultation on inter-disciplinary brain research and research on cell biology, the supply of laboratory animals, and other UNESCO research activities having medical implications. WHO kept in touch with UNESCO's work on problems of arid zones and humid tropical zones.

IAEA. Consultations continued between the Directors-General of IAEA and WHO for the purpose of improving co-ordination on health programmes, and as a result of these discussions it was decided that the two organizations should exchange liaison officers. The two officers took up their assignments during the year. Work with IAEA is mentioned on pages 47 to 49.

WMO. The World Meteorological Organization is co-operating in the WHO study of environmental pollution, and the two organizations maintained contact on various aspects of the water resources programme, including groundwater surveys.

ICAO. As in previous years, ICAO took part in the work of the WHO Committee on International Quarantine, and the two organizations maintained close contact regarding airport sanitation, aircraft disinsection, and other matters concerning the International Sanitary Regulations.

IMCO. WHO continued to collaborate with the Inter-Governmental Maritime Consultative Organization in preparing an international facilitation convention for shipping, and in establishing code formulae for medical and quarantine messages for the international code of signals; it also kept in touch with work relating to the pollution of the sea by oil and by radioactive substances.

Regional Intergovernmental Organizations

Co-operation with regional intergovernmental organizations has continued along the lines reported in previous years. A number of projects assisted by WHO in the South-East Asia and Western Pacific Regions have also received assistance through the Colombo Plan. The WHO liaison officer with ECA also maintains liaison with the Organization of African Unity. WHO assisted CCTA in connexion with seminars on mental health and occupational
health and collaborated with the South Pacific Commission in the organization of a seminar on nursing education, and a refresher course on tuberculosis. In Europe, it collaborated with the Organization for Economic Co-operation and Development in work on water and air pollution, and with the Council of Europe on environmental pollution and demographic questions.

Non-governmental Organizations

In January 1964, at its thirty-third session, the Executive Board admitted the following four non-governmental organizations into official relations with WHO: the International Council on Jewish Social and Welfare Services; the International Astronautical Federation; the International Federation for Medical Electronics and Biological Engineering; and the International Council of Scientific Unions.

A list of the sixty-five non-governmental organizations now in official relations with WHO is given in Annex 6.

The close relationship established between WHO and the League of Red Cross Societies was taken into account by ACC and by the Economic and Social Council (at its thirty-seventh session) in their conclusions on the co-ordination of assistance in natural disasters. Liaison continued with the International Committee of the Red Cross, and there has been joint action with the League of Red Cross Societies in assisting Yemen, and in helping Cuba and Haiti to cope with the aftermath of the hurricane Flora.

WHO has maintained technical co-operation with numerous other non-governmental organizations, including the International Organization for Standardization. Co-operation has not only increased in range, but has become more active in a number of fields where it was already well under way. A greater number of non-governmental organizations than previously have been invited to be represented at meetings of WHO expert committees and scientific groups and at technical meetings held in the regions, and many of their officers and members are members of WHO expert advisory panels. Exchange of publications has continued, and informal consultation and collaboration on programme matters—particularly with regard to technical policies—have been extended.

As in previous years, most of the non-governmental organizations in official relations with WHO were represented at the World Health Assembly; many of them also sent representatives to sessions of the Executive Board and the regional committees. Conversely, WHO has taken part in a large number of technical congresses and other meetings convened by non-governmental organizations.

Specific examples of co-operation are given in the various chapters of this report. Three may be cited here to indicate their scope and variety. The International Union against Tuberculosis assisted in preparing and distributing the material for World Health Day, the theme of which was “No Truce for Tuberculosis.” Co-operation with the International Air Transport Association in matters of international quarantine was extended to include experimental work on the disinsection of aircraft. The International Union for Child Welfare participated in assistance to the Democratic Republic of the Congo by making available a paediatrician and three nurses to work at the N'Djili public health centre for a period of two years.
PART II

THE REGIONS
MAP 1. WHO REGIONAL OFFICES AND THE AREAS THEY SERVE

AREA SERVED, AS AT 31 DECEMBER 1964, BY:

- Regional Office for Africa
- Regional Office for the Americas/PASB
- Regional Office for South-East Asia
- Regional Office for Europe
- Regional Office for the Eastern Mediterranean
- Regional Office for the Western Pacific

MAP LEGEND:
- ○ Regional Office

CITY LOCATIONS:
- BRAZZAVILLE
- WASHINGTON
- ALEXANDRIA
- NEW DELHI
- MANILA
CHAPTER 14

AFRICAN REGION

The membership of the Organization in the African Region was increased by the admission as Associate Members, at the Seventeenth World Health Assembly in March 1964, of Northern Rhodesia and Nyasaland, which later became independent as Zambia and Malawi.

During the year the governments of the Region continued their efforts to improve the state of health of their peoples, but national administrations were still hampered not only by limited financial resources but also by the very serious dearth of qualified professional personnel.

An increasing number of governments are planning their health services within overall plans for economic and social development. WHO has concentrated on programmes of this type: during the year it provided direct assistance for national health planning programmes in Gabon, Liberia, Mali, Niger and Sierra Leone by helping both in the drawing up of the plans and in the establishment of permanent planning organizations within the ministries of health to work in co-ordination with the national bodies responsible for overall development plans. The Organization has also provided public health advisers to work with the ministries of health of Burundi, Guinea, Niger, Nigeria, Rwanda and Togo on the strengthening of health services at all levels and their extension to cover all communities, especially in the rural areas.

Communicable Disease Control

Expanded community health services are needed not only to meet the growing demand for such services, but also to provide the basis for sustained action with regard to communicable diseases such as malaria, smallpox, tuberculosis, leprosy, which affect large populations in Africa. To assist malaria pre-eradication programmes, WHO has provided, in Cameroon, Ghana and Togo, for example, public health advisers who are responsible for guiding the properly integrated development of community health services.

The largest share of WHO assistance in the field of communicable diseases in Africa was again allocated for malaria eradication and pre-eradication programmes. Pre-eradication programmes are in operation in Cameroon, Dahomey, Ghana, Liberia, Mauritania, Mozambique, Nigeria, Sierra Leone, Southern Rhodesia, Togo and Uganda, and continued assistance has been given to eradication programmes in the islands of Mauritius and Zanzibar. Professional and auxiliary personnel for the programmes are being trained at two WHO centres: one at Lagos, in Nigeria, for English-speaking students and one, opened in 1964, at Lomé, in Togo, for French-speaking trainees (see also page 83).

Extensive tuberculosis control projects of various types have been conducted in the Region; these include projects aimed at strengthening individual aspects of national tuberculosis control services, such as laboratory services; projects primarily aimed at BCG vaccination and at training the necessary personnel, but so planned that they could later be extended to other control activities; and projects under which a WHO team operates a full-scale tuberculosis control programme, including curative services mainly on a domiciliary basis. Projects of this kind are at first confined to pilot areas, but one of their functions is to train the national personnel required to extend operations to wider areas; another is the search for a simple, standardized and effective methodology of tuberculosis control on the community scale which would at the same time be acceptable to local populations.

The Tuberculosis Epidemiological Centre at Nairobi, which has specialists in epidemiology and in applied statistics, and modern statistical machinery, has continued to analyse, evaluate and report on the data collected in the course of these projects.

Leprosy control programmes, with material assistance from UNICEF and guidance from WHO, were in operation in Cameroon, the Central African Republic, Chad, Congo (Brazzaville), Dahomey, Gabon, Gambia, Ghana, Guinea, Ivory Coast, Madagascar, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo, Uganda and Upper Volta.

Smallpox is endemic throughout the greater part of the Region and epidemics flare up periodically. A number of countries are undertaking measures to control and if possible eradicate it. In Liberia WHO has assisted a smallpox eradication project by providing a WHO medical officer as technical adviser.
WHO has assisted in providing vaccine for Liberia (see also page 84), Mali, Sierra Leone, Togo and Upper Volta and is helping to increase the production of freeze-dried smallpox vaccine within the Region.

In a number of countries in the Region yaws control projects have been in operation for many years. In most of them the prevalence of the disease has been drastically reduced after initial mass treatment campaigns, but in a few areas initial treatment surveys are still in progress. With the reduction of yaws incidence to low levels, the search for residual cases is already being combined in some projects with smallpox vaccination and leprosy case-finding and treatment, as a first step towards integrating the work into existing rural public health or communicable disease control services.

Onchocerciasis, trypanosomiasis and bilharziasis are likely for a number of years to remain serious health and economic problems in Africa, claiming high priority for international assistance.

An epidemiologist visited Zambia to study the potential danger of the spread of these and other endemic diseases as a result of the proposed irrigation and hydro-electric development scheme in the Kafue River basin. A similar survey has been made in connexion with the Sourou valley development scheme in Upper Volta.

Discussions were held with the Governments of Ghana, Togo and Upper Volta with regard to a proposed inter-country project for the control of onchocerciasis in the Volta basin. Experts on epidemiology and entomology visited Uganda to advise on onchocerciasis control, and the prospects for control in the Corubal River basin in Portuguese Guinea and the Republic of Guinea are being studied; an epidemiologist visited both countries towards the end of 1964.

A course on trypanosomiasis was given at Bobo-Dioulasso, Upper Volta, and preparations were made for a similar course to be held at Kaduna, Nigeria. A study of the problem of human and animal trypanosomiasis in Kenya and Uganda was undertaken jointly with FAO. Experts visited Bechuanaland and Mali and advised the Governments on the control of the disease.

Advisory assistance on bilharziasis was given during the year to Cameroon, the Central African Republic, Ghana, Mauritania, Southern Rhodesia and Upper Volta. A control programme has been developed in Southern Rhodesia, and in Ghana preparations for a pilot project are at an advanced stage.

Environmental Health

During the year, WHO provided assistance for twenty-one environmental health projects in the Region: of these, two were concerned almost exclusively with the training of sanitation staff; nine, though primarily concerned with training, also included demonstration work in pilot areas; five were directed at developing safe water supplies; and five formed part of general health programmes and included the objective of creating an environmental health unit within the health ministry as the basis for a nation-wide sanitation programme.

The Organization assisted in preliminary studies for major community water supply projects for Accra, Cotonou, Monrovia and a number of towns in Madagascar. The United Nations Special Fund has been supporting the preparation of an engineering and feasibility report for water supply and sewerage schemes for the metropolitan area of Accra/Tema (see page 83).

An engineer was sent to Mali to make a preliminary survey of the possibilities of extending the water supply and sewerage system of Bamako and installing piped water in a number of other towns. Other governments in the Region—for example, in Kenya and Nigeria—have continued to receive assistance from WHO advisory staff on operational environmental health projects primarily concerned with water supplies for rural areas.

Maternal and Child Health

For many years the WHO-assisted maternal and child health programmes have provided impetus for the development of community health services. During the period under review, the number of WHO-assisted maternal and child health projects increased to eleven with the assignment of WHO advisers to projects in Burundi, Gabon, Ivory Coast, Madagascar, Rwanda and Uganda (see page 84). UNICEF has provided the material aid necessary for the operation of all these projects.

In Burundi a demonstration zone has been established in which the district hospital has expanded its paediatric services, improved its provision for the care of children suffering from kwashiorkor and co-ordinated its work with that of three model health centres; mobile health units have been organized to serve remoter rural areas, and an immunization programme has been started. Local community leaders and health personnel have taken part in regular meetings arranged by health committees to stimulate community interest and participation in health activities. One of the main objectives of the project is the training of local personnel.

In a WHO-assisted project for the promotion of family health and child care services in Kenya, nearly seventy health workers employed by rural
health centres received training during the year at the National Reference Health Centre, Karuri. The maternal and child health project in Ghana has included the setting-up of a school health service for seventeen primary schools in Tema.


**Nutrition**

Nutritional diseases resulting from dietary deficiencies or as sequelae of infectious and parasitic diseases are still widespread in Africa, particularly affecting children and pregnant women.

WHO assisted in basic surveys on nutritional problems in eight countries and the provision of training facilities for nutrition personnel in five countries (in two of these the training was at university level). Visits were made to thirteen countries to study the integration of nutrition activities into overall plans for developing health services. Liaison was maintained with FAO in many of these activities, and five countries were visited jointly by WHO and FAO experts.

With FAO and the Commission for Technical Co-operation in Africa, WHO is participating in the work of the joint food and nutrition commission for Africa. This commission, consisting of representatives of governments, will meet every two years to study problems, establish priorities and advise international organizations on the orientation of future programmes. The secretariat, at Accra, consists of two secretaries, one provided by FAO and one—who took up his duties in March 1964—by WHO. The Commission is responsible for the periodical dissemination of information in the form of bulletins, the first of which was issued towards the end of the year.

**Health Education**

An increasing number of requests were received from governments for assistance in health education. The Organization helped in the selection of suitable candidates of university level for specialist training abroad and provided expert advice on health education services and their integration into general health services, particularly in connexion with the national health planning teams working in a number of countries.

In Nigeria, a plan was prepared for a health education unit within the Ministry of Health. In-service training in health education was given to health inspectors, vaccinators and social welfare officers, and the WHO health education adviser continued to teach in the nursing training courses. In Togo, a WHO health education adviser helped in the development of health education activities in connexion with WHO-assisted programmes.

Health education has been included in the curricula of the two WHO malaria eradication training centres in Lagos and Lomé.

**Education and Training**

Progress in the development of health services depends on the availability of fully qualified national staff. Although for some time peripheral health services may be provided by more simply trained auxiliary staff, this makes it even more important for professionally trained personnel to be available for direction and supervision, and many countries in the Region are severely handicapped in this respect.

In practice, all WHO-assisted projects have a sizable training component, but in addition the Organization has given assistance to medical and nursing training schools in Africa and, through its fellowships programme, has provided facilities for basic and post-graduate professional studies. However, the lack of secondary education in many African countries has led to a serious shortage of suitable candidates for professional training.

In 1964, a WHO team of advisers visited Kenya, Uganda and the United Republic of Tanzania for further consultations with the authorities concerning the plan to set up a medical school in Nairobi, Kenya.

Preparations continued for the establishment of a medical school and teaching hospital at Yaoundé, Cameroon. The consultant group on medical education that visited Cameroon in 1963 has produced a report dealing with the administrative problems, financial implications, location, architecture and staffing of the proposed institution and outlining a timetable for the implementation of the project.

Continued assistance has been given to the departments of paediatrics at the University of Ibadan (Nigeria) and Makerere College (Uganda), University of East Africa.

At the University of Ghana, the first group of twenty students finished the first year of the course in post-basic nursing. The courses, for which WHO has provided three nurse educators and a lecturer on public health nutrition, lead to a nursing tutor's diploma in public health nursing, medical-surgical nursing, mental health nursing or midwifery; they are in addition designed to broaden the students' understanding of Ghana's health problems and to enable them to see the place of nursing in the health services as a whole. In 1965, the courses will include students from Gambia.
Under an agreement between the Federal Government of Nigeria, the University of Ibadan and WHO, a team of WHO nurse educators has arrived at Ibadan to prepare a training programme at Bachelor of Science level for general, public health, midwifery, psychiatric and paediatric nurse educators, nurse supervisors and administrators. These courses—the first university degree courses in nursing in Africa—will be for students from English-speaking countries in Africa. A senior nurse educator and a medical-surgical nurse have been sent to the University of Dakar to help prepare similar courses for students from French-speaking countries.

During the year WHO provided assistance to basic nursing education in ten countries, including Chad, where the first group of students took their final examinations at the new school opened there. Direct assistance was also provided for the training of auxiliary (community) nurses and midwives.

**Assistance to the Democratic Republic of the Congo**

WHO continued to provide the Democratic Republic of the Congo—formerly known as Congo (Leopoldville)—with advisory and teaching staff, operational staff, and a liaison unit for administrative purposes. With the gradual emergence of national medical personnel, it became possible in 1964 to commence a planned reduction in the number of operational staff which will be continued over a period of years. Owing to perturbed conditions in certain parts of the country, operational activities suffered occasional interruptions in the areas affected.

Assistance with the training of medical staff was also continued, and six professors were again provided for the medical faculty at Lovanium University. A second group of fifty former assistants médicaux graduated in 1964 on completion of their three years’ complementary training in France. Two further groups of some twenty students each are due to complete their studies in 1965 and in 1966.

**Collaboration with other Organizations**

WHO continued to collaborate with the United Nations Technical Assistance representatives; and its fruitful co-operation with UNICEF was maintained on a large number of jointly assisted programmes. Liaison in the Region was maintained and strengthened with FAO, ILO and UNESCO.

There was a notable increase in co-operation with the Economic Commission for Africa. A sanitary engineer was appointed by WHO to work at ECA headquarters in Addis Ababa; a post has been created for a WHO public health adviser to work with the ECA-sponsored African Institute for Economic Development and Planning in Dakar; and WHO provided a lecturer and fellowships for the ECA training course in vital and health statistics at Yaoundé, Cameroon. The Organization also continued its collaboration with the Commission for Technical Co-operation in Africa, which it assisted in the organization of a seminar on mental health and a symposium on occupational health.

**The Regional Committee**

The fourteenth session of the Regional Committee for Africa was held from 14 to 21 September 1964 at the Palais des Nations, Geneva. It was attended by representatives of twenty-nine Member States and three Associate Members, and of the United Nations Technical Assistance Board, UNICEF and ILO. Observers for one intergovernmental and eight non-governmental organizations were present. The Director-General attended the session.

The Committee examined the report on WHO activities during the period from 1 July 1963 to 30 June 1964. It stressed the need to integrate communicable disease programmes with the general health services, the importance of health planning and of co-ordination, and the priority to be given to programmes of education and training. In discussing malaria, it emphasized the importance of research on specific problems raised by that disease in Africa, and of co-ordinating eradication and pre-eradication programmes in neighbouring countries; in tuberculosis, it stressed the value of BCG vaccination as being one of the main elements of any control programme in the Region; and with regard to smallpox, it called for increased production of freeze-dried vaccine in Africa. It endorsed the proposed intensification of leprosy activities and recommended high priority for programmes for the control of trypanosomiasis and onchocerciasis.

The proposed programme and budget estimates for 1966 were examined and endorsed for transmission to the Director-General.

The theme of the technical discussions was “Health education in Africa: the selection of appropriate techniques”. The subject chosen for discussion in 1965 was “Auxiliary health personnel and their training in the development of health services in Africa”.

The Committee nominated Dr Alfred Quenum, of Dahomey, for consideration by the Executive Board for the post of Regional Director for Africa.
At the invitation of the Government of Zambia, the Committee decided to hold its fifteenth session at Lusaka in September 1965; it also decided that its sixteenth session in 1966 should take place at the Regional Office in Brazzaville.

Administrative Developments in the Regional Office

The basic structure of the Regional Office remained unchanged. However, recruitment remains a serious problem in the Region, both for posts in the field and supporting staff in the Regional Office.

With the retirement of the Regional Director on 31 January 1964, and as no nomination for the post had been put forward, the Executive Board authorized the Director-General to appoint a personal representative to ensure the continued technical and administrative direction of the Office; the Personal Representative of the Director-General took up his duties on 1 February 1964.

Plans for the extension of the Regional Office building were finally approved. At the end of the year contributions totalling US $328,996 had been received from or pledged by Member governments towards the cost of enlarging the premises. Construction work was expected to begin early in 1965 and to take approximately two years.

To alleviate the staff housing problem in Brazzaville the construction of four housing units, providing a total of thirty-six single and family apartments, had been planned. By the end of 1964, two of these blocks, containing twenty-four apartments, had been completed and fully occupied. The remainder are expected to be completed by mid-1965.

Some Aspects of Work in the Region

A list of projects current during the period under review will be found in Part III. The following have been selected for fuller description.

Malaria Eradication Training Centres

With the assistance of the Federal Government of Nigeria, a malaria eradication training centre for English-speaking health personnel was established in Lagos in 1962; similarly, in co-operation with the Togolese Government, a centre for French-speaking personnel was established in Lomé in 1964. These centres are designed to cope with demands not only from the African but from other regions for the training of national personnel for malaria pre-eradication programmes and, at a later stage, for eradication programmes.

The extramural and internationally-recruited staff assigned to the centres from government institutions in the area and by WHO give teaching on the general principles of administration, statistics, health education and public health, and in the specific field of malaria epidemiology and techniques, such as geographical reconnaissance, use of insecticides, chemotherapy, etc. The three- to four-month courses given at the centres are supplemented by short visits to health programmes and government establishments, and students receive a final three weeks' field training in the operational area of a WHO-assisted pre-eradication programme.

From the beginning of its activities in October 1962 up to the end of 1964, the Lagos centre had held eight courses (three junior courses, three senior courses and two special courses), which were attended by a total of eighty-five national students of various levels (professional and non-professional, including laboratory technicians) and by sixteen WHO staff members. At the Lomé centre, three courses have been held, one junior and two senior, with thirty-nine students.

Although the demand for the training of auxiliary and paramedical personnel is expected to continue, and even to increase, there has been a shortage of national doctors for training in this specialized field. This lack of candidates is common to both English-speaking and French-speaking countries and may be considered as one aspect of the general lack of professional manpower in the African Region.

Master Plan for Water Supply and Sewerage for the Metropolitan Area of Accra/Tema, Ghana

This project, which started in November 1963, is concerned primarily with the preparation of a master plan for water supply and sewerage for the metropolitan area of Accra, including preliminary engineering studies and a feasibility report. The Government of Ghana also requested WHO's assistance in setting up the Ghana water supply and sewerage corporation to deal with the execution, management and financing of the plan.

The United Nations Special Fund allocated US $865,300 for the implementation of the project. WHO selected a consulting engineering firm to provide alternative proposals for the long-range development of water supply and sewerage, select and justify the most feasible alternative, carry out preliminary engineering and feasibility studies for the first stage, and assist in drafting a loan application.
The Organization also appointed an expert panel of three to review the work of the consulting engineering firm and to study certain special technical problems connected particularly with marine outfall.

Three months after the beginning of the project, the consulting firm presented its first progress report, on the basis of which the Government signed a contract with an executing firm for the construction of a new aqueduct to provide the forty million gallons a day required to cover the needs of the first phase of the water supply scheme for the city of Accra. In two further progress reports, additional information was given about the marine outfall investigation and drawings for a sewerage scheme for Accra/Tema were presented. Studies regarding the exact location of the sewage outfalls are in progress.

The recommendations of another firm contracted by WHO to assist the Government in establishing, operating and managing the proposed water supply and sewerage corporation were also reviewed by the expert panel. The Ghanaian Government has requested additional assistance from the Special Fund for an extension of the programme of work.

Smallpox Control, Liberia

Since 1962 WHO has been helping the Government of Liberia with a nation-wide vaccination programme aimed at the eradication of endemic foci of smallpox.

The national public health service carried out an intensive vaccination campaign in 1961 and part of 1962, with an estimated coverage of 80 per cent. of the population. WHO provided a medical officer from August 1962 until July 1964, and has also supplied the vaccine for the project.

To ensure the development of the project on a sound technical basis, the medical officer made an assessment of the campaign and the status of immunity, in a survey starting in Monrovia and extending later to rural areas. Twenty field personnel provided by the Government were trained and organized into teams for the purpose of this survey, which took place from December 1962 to July 1963. Immediately after the survey a new vaccination campaign was started in Monrovia.

As a means of expediting the smallpox project, the integration of yaws and smallpox control programmes in the country is being considered. A WHO smallpox adviser will shortly be posted to Monrovia to help a number of countries in West Africa, including Liberia, with the planning, implementation and coordination of their smallpox control projects. In the meantime the medical officer provided by WHO for the WHO-assisted yaws control project has taken over responsibility for smallpox operations also.

Development of Maternal and Child Health Services and Promotion of Training, Uganda

In Uganda local and international agencies are co-operating in promoting the development of comprehensive health services for mothers and children. Since 1955 UNICEF has been providing supplies and equipment, and WHO technical advice, in order to help with the training of local personnel for the maternal and child health services and with the development of health education facilities.

In 1959 it was decided to extend the scope of the project to the development of comprehensive health services in the country. The plan includes a number of specific aims relating to maternal and child health, such as the expansion of health services in rural areas by upgrading existing dispensaries (in order to give them the functions and status of health centres), the expansion of training facilities to provide enough trained staff for the health centres, and the promotion of health education in schools, health centres and community development activities. The plan also provides for administrative machinery to ensure technical co-ordination of maternal and child health services and training facilities, and the co-ordination of all maternal and child health activities with those of other programmes—especially the training programmes in paediatrics, social medicine, nursing and midwifery of Makerere College, University of East Africa, and programmes in nutrition and environmental sanitation.

In July and August 1960 a consultant visited Uganda to advise on the work of the maternity and paediatric wards at the new Mulago hospital, particularly in relation to the training of medical students.

In 1961, on the recommendation of the advisory committee on maternal and child health set up by the Minister of Health, an extensive survey was made, with WHO assistance, of the adequacy of the maternal and child health workers.

In January 1964 WHO provided a medical officer, supplies and fellowships. A national counterpart was appointed.

By 1964 twenty major rural health centres had been established, providing general curative services, antenatal, post-natal, infant and pre-school clinics and health education and carrying out immunization programmes. They also provide home-visiting and domiciliary midwifery services.

Training of all categories of local personnel is being carried out at government and mission training centres, and field training is given to medical students of the
Medical School of Makerere College, University of East Africa. The WHO medical officer has taken part in the teaching of medical assistants and sanitary assistants at the School of Hygiene in M'Bala, of health visitors, and of community development workers. FAO and WHO have co-operated in organizing the courses for medical and agricultural students at Kasangati Health Centre. The Rockefeller Foundation is also giving assistance with activities at Kasangati.

A plan has been prepared for an immunization campaign, including BCG vaccination and vaccination against smallpox, diphtheria, pertussis and tetanus. The campaign is to be executed in three phases, beginning at the end of 1964.
CHAPTER 15

THE AMERICAS

This chapter describes the work done in the Region of the Americas, where the Pan American Sanitary Bureau has a dual capacity as secretariat of the Pan American Health Organization and Regional Office of the World Health Organization.

National Health Planning

PAHO and WHO continued to promote national health planning, the inclusion of basic health programmes in national development plans, the development of health planning methodology to meet the needs of national health administrations and the analysis and reorganization of health services.

At the end of 1964, seventeen countries of the Region had made considerable progress in the planning phase of their health programmes or had already begun to put their plans into operation. In El Salvador, PAHO/WHO and national personnel analysed and evaluated the first six months' operation of health services based on a national plan established in 1963. As a result of this analysis, a number of technical, organizational and administrative changes were recommended.

Emphasis was laid on assisting governments in training national personnel in health planning methods. The Latin American Institute for Economic and Social Planning in Santiago, Chile, held its third international course on health planning (in Spanish); and the second (English-language) course on the same subject was held at the Johns Hopkins University, Baltimore, United States of America. In each case, the Organization supplied lecturers and granted fellowships to students participating. The courses were attended by officials from most countries in the Region and by a number of PAHO/WHO staff. In addition to these international training courses, a number of national and local courses for health planners were given in various countries.

The Organization co-operated with international, bilateral and multilateral finance organizations in a review of the national investment programmes organized by the Inter-American Committee of the Alliance for Progress. The review showed an increase in the health investments in some countries, resulting in particular from the rapid progress of water supply programmes in both urban and rural areas. The Organization took an active part in the second annual meeting of the Inter-American Economic and Social Council.

Strengthening of National Health Services

The Organization continued to implement its programme for the strengthening of general health services. Under this programme, it assisted with twenty-seven projects in twenty-one countries and eight territories, by providing twenty-two medical officers, seventeen sanitary engineers, fourteen public health nurses, three sanitary inspectors, two statisticians, a health educator, a specialist in administrative methods, a veterinarian and a hospital administrator. These advisers helped the health authorities of the various countries in preparing or implementing national health plans; in baseline studies of health needs and resources; in reorganizing and modernizing health services, including, in certain areas, ministries and departments; in extending or revising health legislation; in preparing programme budgets; and in training a wide variety of health personnel.

Advice was given to the Government of El Salvador on improving co-ordination between the Ministry of Health and the National Social Security Institute; and to the Ministry of Labour and Social Welfare of Ecuador on the creation of a separate Ministry of Health.

In view of the increasing interest in the subject of medical care, an adviser was appointed at the end of 1963 to Zone IV, and in 1964 a consultant was sent to Uruguay. Advice was given to the Government of Jamaica on the organization of the Montego Bay Hospital and its integration into the general health services; to Barbados, on the construction of a new teaching hospital for the West Indies University; to Venezuela, on the organization and expansion of the Vargas Hospital as a teaching hospital integrated into the health services; to Brazil, on the improvement of three hospitals in the north-east of the country; to Argentina, on hospital administration and medical care in the provinces where the Organization is collaborating with the Government.

1 The countries in Zone IV are Bolivia, Colombia, Ecuador and Peru.
PAHO participated in the VII Inter-American Conference on Social Security, held at the beginning of July 1964 at Asunción, Paraguay, and WHO was represented at the Fifteenth General Assembly of the International Social Security Association held in September in Washington.

In the field of maternal and child health, two courses in social paediatrics for paediatricians and teachers of paediatrics from Latin American countries were organized jointly, one with the International Children's Centre, Paris, the other with the Inter-American Children's Institute. A survey was begun of existing obstetrics personnel and of their utilization and training, and teaching material adapted to local needs is being prepared for nurses and auxiliary nurses. In the Region's economically underdeveloped areas, where malnutrition is one of the main health problems among children, an effort was made to stimulate nutrition programmes through infant clinics and nurseries providing medical care.

The Organization's work in nutrition takes four main forms: investigation of the Region's nutritional problems, technical advisory services, training of professional and auxiliary staff, and collaboration in joint FAO/UNICEF/WHO nutrition programmes. The integration of these programmes into general health programmes continues to be a major objective.

At the nutrition training centre set up at the University of Puerto Rico with help from PAHO and WHO, the first three-month course was held. It was attended by twenty nominees from the public health, agricultural and education services of five countries.

At the Institute of Nutrition of Central America and Panama (INCAP), research continued on factors affecting the production and availability of necessary foods; the cultural factors responsible for food habits (as a basis for nutrition education programmes); the factors affecting the utilization of the foods ingested, such as the biological value of proteins and the effect of infections on nitrogen retention; on protein-calorie malnutrition and its effects on the physical and mental development of children, and the working efficiency of adults; and the possible relationship between diarrhoeal diseases and malnutrition. In Bogotá, Colombia, a meeting was held of research workers investigating protein-calorie malnutrition in the Americas to determine the present state of the investigations, to standardize methods and plan future co-ordinated activities. In Venezuela, a group of research workers from eight countries advised on co-ordinated research on endemic goitre; another scientific group discussed research needs relating to nutritional anaemia. As a source of protein, Incaparina has been accepted by Guatemala and Colombia, and its production and distribution have increased in five other Latin American countries.

Preparations have been made for an evaluation of the public health aspects of the eighteen applied nutrition programmes which are being implemented in the Region, under the auspices of various organizations (see also pages 47 and 95).

A consultant, appointed jointly by FAO and PAHO/WHO, visited the Caribbean region to advise the health authorities on nutrition problems and on the establishment of a nutrition institute to train personnel and to investigate the nutritional status of the people.

One of the aims of the PAHO/WHO mental health programme is to change the traditional attitude to mental disorders which still persists in some countries of the Region and which is reflected in their public health programmes. Assistance has been provided in the planning of a psychiatric hospital in Guatemala; in a review of the problem of mental disorders and of the existing mental health programme in Venezuela; and in the preparation of a mental health programme in the public health services in Jamaica.

The Latin American Mental Health Information Centre, set up by PAHO in 1963 with funds from the United States National Institutes of Health, helped to establish closer liaison between Latin American psychiatrists and distributed documentation to medical libraries, governmental bodies and professional workers concerned with mental health.

The Foundations' Fund for Research in Psychiatry, Connecticut, is collaborating with PAHO/WHO in its evaluation study of the psychiatric care programme in Mendoza Province, Argentina, as a basis for preparing a broad mental health plan, including both prevention and therapy, suitable for Latin American countries.

The Second Latin American Seminar on the Teaching of Dentistry was organized in Mexico in October 1964 in collaboration with the Latin American Association of Dental Schools and the W. K. Kellogg Foundation. It was preceded by a survey of the twenty-one schools of dentistry in the countries of Central America. The seminar was attended by thirty-eight participants and seventy-five observers. The subjects dealt with included education prior to specialization in dentistry; teaching of basic and clinical sciences, and of preventive and social dentistry; equipment of dental schools. The seminar was followed by an extensive course on the teaching of dentistry organized jointly by the Latin American Association of Dental Schools, the W. K. Kellogg Foundation and PAHO/WHO.

In Colombia advice was given in connexion with a survey of dental problems and personnel; with the expansion of the pilot department of preventive and
social dentistry at the University of Antioquia; with
the salt fluoridation programme started at that
university with help from the United States National
Institutes of Health; and with a training programme
for auxiliary dental health workers.

Advice was given to the Dominican Republic,
El Salvador, Mexico, Nicaragua, Panama and Vene-
zuela on the organization and curricula of departments
of preventive and social dentistry in their respective
universities, and to the Nicaraguan Ministry of
Health on the work of its recently created Division
of Dentistry.

Twelve countries in the Region were provided with
advisory services connected with various aspects of
nursing education, both basic and advanced, and the
study of existing nursing needs and resources. In
addition, nineteen nurses appointed by PAHO/WHO
and assigned to sixteen countries continued to co-
operate with the national health authorities in the
planning, administration and evaluation of nursing
services, both preventive and curative.

Much of the work in nursing has been concerned
with various aspects of nursing education and is
described later in this chapter (see pages 90 and 96).

Environmental Health

Particular attention was paid to community water
supply programmes in Latin America. Many countries
are now implementing water supply programmes in
both urban and rural areas. It is estimated that in
the period 1960-1964, sums totalling US $500 000 000
have been allocated to such projects. About half of
this total has been provided by the international
finance organizations, in particular the Inter-American
Development Bank, the rest from national and local
contributions.

Loans were approved for the construction of rural
water supply systems in Chile, Peru (see also page 94)
and Venezuela. With advice from PAHO, Argentina
and Brazil are preparing national plans for rural
water supplies. The plans, which provide for revolving
funds and community participation, cover a popula-
tion of 2 000 000 in Argentina, and 2 500 000 in
Brazil. Advice was given on problems of water
contamination in the cities of Buenos Aires, Sao Paulo,
and Montevideo.

In February 1964, two advisory committees met in
Washington, one to study technical problems and the
other to consider the question of the participation of
communities in rural water supply programmes.
In June 1964 a regional conference was held in
Bogotá, Colombia, to consider national programmes
for rural water supplies; fifty engineers from twenty-
five countries and territories participated, together with
officials of the Inter-American Development Bank,
the United States Agency for International Develop-
ment and PAHO/WHO.

To provide the engineers and auxiliary staff necessary
for the water supply, drainage and other environmental
health programmes, the Organization has continued
to promote and support training programmes of
all types, and in particular to assist in the establishment
of research and training centres in various areas.

The United Nations Special Fund has agreed to
finance two projects for which the Organization is
acting as executing agency: one—already being
implemented—to strengthen the sanitary engineering
departments at four universities in Venezuela; and
the other for the creation of a research and training
institute in sanitary engineering in Rio de Janeiro.

With the support of PAHO/WHO, the Government
of Costa Rica has submitted a request to the United
Nations Special Fund for the creation of an institute
of water resources and sanitary engineering in the
country’s national university. The Government of
El Salvador also presented a request to enable it to
investigate ground waters with a view to finding new
sources of water supply for the metropolitan area of
San Salvador.

The Organization gave assistance in organizing
ten short courses on special subjects relating to
water supplies which were held at the national
universities of Colombia, Costa Rica, Venezuela (two
courses), Panama, Peru, Mexico, Trinidad and Sao
Paulo, Brazil. These courses were for engineers and
were intended to be a first step in a long-range pro-
gramme of training in this field. At San José, Costa
Rica, a course for water supply administrators was
held, with twenty participants, and in Kingston,
Jamaica, another was given for thirty public health
inspectors from the West Indies.

With assistance from the Organization, a Sanitary
Engineering Research Centre has been set up in the
Engineering Faculty of the University of Buenos Aires,
Argentina; it is to include a laboratory for research,
education and training, and it will in the first place
give special attention to problems of air pollution.

Technical advice was given to the authorities of the
cities of Caracas, Santo Domingo and Buenos Aires on
problems relating to the collection and disposal of
solid waste-matter. A seminar on this subject, for
officials, was held in the School of Sanitary Engineering
of Buenos Aires University. On the frontier
between Mexico and the United States of America,
a survey was carried out covering thirteen localities
in each country to determine the situation with
regard to refuse collection and disposal and to study
certain of the organizational aspects.
In July 1964, the Organization participated in the IX Inter-American Congress on Sanitary Engineering in Bogotá, in which 600 engineers from all countries and territories in the Region participated, and in the IV Central American Seminar on Sanitary Engineering, held in Panama, which was attended by more than a hundred sanitary engineers from countries in the area.

**Occupational Health**

In the field of occupational health, WHO is helping to establish the Institute of Occupational Health and Air Pollution in Santiago, Chile—a research and training centre for Chile and other countries; it is being financed by the United Nations Special Fund.

The first Latin American symposium on industrial hygiene was held in March 1964 in São Paulo, Brazil to stimulate the development of occupational health programmes, especially in countries in the process of industrialization. There were nineteen participants from a number of countries in the Region.

**Radiation Protection**

Work on radiation protection included a meeting, in November 1964, of a group of research workers from Peru and the United States, and representatives of the United States Atomic Energy Commission and PAHO, to discuss a joint project to investigate the effects of radiation on large animals at high altitudes. PAHO is co-ordinating a programme of physical and biological surveys in areas of Brazil where the radiation level is high, which is being carried out by the Institute of Biophysics of the University of Brazil, in collaboration with the United States Atomic Energy Commission.

Two courses were held in Chile: one, for health administrators, on protection against radiation, was intended to arouse interest in the establishment of radiation protection programmes in every country in the continent; the other, on the use of radioisotopes in diagnosis and therapy, was for medical specialists in radiation.

**Health Statistics**

Work on health statistics consisted of the collection and publication of data, the extension of advisory services to governments, training and research. The volume relating to 1962 in the series of *Registered Cases of Notifiable Diseases in the Americas* appeared in Spanish and English. Two handbooks were published, one giving instructions on the use of the International Classification of Diseases; the other on the preparation of health statistics reports, containing revised questionnaires on notifiable diseases, deaths by age and cause, hospitals, health personnel and vaccinations. A Portuguese edition of the 1955 revision of the International Classification of Diseases was prepared with the assistance of the Latin American Centre for Classification of Diseases, which also undertook the translation and adaptation of teaching material for use in hospitals.

At its third meeting, held in Washington in June 1964, the Regional Advisory Committee on Health Statistics discussed hospital statistics and the indices used for assessing progress in the field of health, and reviewed revision proposals for various sections of the International Statistical Classification of Diseases, Injuries and Causes of Death (see also page 57).

In collaboration with PAHO/WHO, the Schools of Public Health of Argentina, Chile, Colombia and Peru gave intermediate courses on vital and health statistics, including the keeping of medical records and hospital statistics, which were attended by 115 students from thirteen countries. Four courses provided by the Latin American Centre for Classification of Diseases at Buenos Aires, São Paulo, Medellín and Santiago were attended by 154 students from twelve countries. In addition, twelve short courses, attended by 127 auxiliaries, were given in Buenos Aires on hospital statistics, medical terminology and the classification of diseases.

For the first time, the services of consultants in health statistics were used in the six zones in an effort to improve statistical work in the Region as a whole. In Antioquia, Colombia, a demonstration area was established for the purpose of improving local procedures with respect to vital and health statistics and of providing data for use in programme planning.

Further progress was made in the Inter-American Investigation of Mortality. This epidemiological study is being carried out in eleven cities in the Americas and one in the United Kingdom, and is being financed by a grant from the United States National Institutes of Health. By the end of 1964 data relating to more than 40,000 deaths had been compiled and analysed. These show marked local differences in cancer mortality and in the figures for cardiovascular diseases, which call for more thorough investigation.

**Education and Training of Professional and Technical Personnel**

A large proportion of the Organization's resources was again devoted to the education and training of health personnel. In 1964 a total of 639 fellowships were awarded by the Organization in the Region of the Americas.

WHO organized four courses on teaching methods in medical schools, and carried out a study of relations between professors and students in medical schools. During a third travelling seminar, a group of thirteen
deans of Latin American schools of medicine visited three schools of medicine in Brazil and Costa Rica to study their organization and administration.

In collaboration with the Government of Colombia, the Colombia Association of Medical Schools and the Milbank Memorial Fund, a study of human resources for health services was started, with a view to developing a national health plan and reviewing the medical education system.

For the Institute of Preventive Medicine at the University of Ceará, Brazil, the Organization provided fellowships for prospective teachers of preventive and social medicine, consultants and a public health nurse.

For training in social pediatrics, the Organization co-operated with the School of Medicine of the University of Chile, in arranging courses which were attended by paediatricians from those and other countries.

All schools of public health in the hemisphere have continued to receive assistance. Visits were made to Central American countries with regard to the possible creation of a school of public health for that group of countries and advice was given to the schools of public health in Argentina, Brazil, Colombia and Venezuela on the medical care and hospital administration programmes.

Comparability of studies, degrees and diplomas and possible administrative changes were discussed by a study group with participants from nine schools of public health in Argentina, Brazil, Chile, Colombia, Mexico, Peru, Puerto Rico and Venezuela which met in Buenos Aires in November.

Another study group, composed of professors of preventive medicine and of public health in schools of medicine and veterinary medicine in Argentina, Brazil, Mexico and Peru, met at Chapel Hill, North Carolina, to plan the evaluation of the teaching of the health sciences in schools of veterinary medicine in the Americas. The group prepared a document which will serve as a guide for the Organization's future activities in this field.

Nursing Training

With a single exception, all Latin American countries have at least one school of nursing organized according to modern criteria and requiring at least nine years of previous education. The Directory of Schools of Nursing in Latin America was revised and brought up to date.

A survey on all schools of nursing in the English-speaking countries and territories of the West Indies was planned and carried out. In all, twenty-three schools of nursing were visited. The reports on these schools were examined by a special group composed of nurses from Antigua, the Bahamas, Barbados, British Honduras, Grenada, British Guiana, Jamaica, St Kitts, and Trinidad and Tobago. A seminar to be held shortly will evaluate the work done in each of the schools and formulate recommendations for future changes.

A second course on nursing was held in Barbados. It was given in English and dealt principally with the problems of nutrition and health education. UNICEF provided fellowships for thirty participants from eight islands in the Caribbean area. The third of a series of seminars on nursing services was held at Crown Point, Tobago, and was attended by forty-seven nurses from twenty English-speaking areas.

The main emphasis in connexion with nursing education is now moving towards the training of competent teaching staff and administrators for the nursing services in each country. To this end advanced courses in nursing were organized in 1964 in Brazil, Ecuador, Peru and Venezuela, and were attended by about 100 nurses in the four countries.

Direct advisory services to the national schools of nursing in Bolivia and Guatemala were terminated since it was considered that these countries now possess a sufficient number of graduate nurses to enable them to undertake responsibility for nursing education. The Guatemala project (described on page 96) had continued for ten years and had brought about a substantial increase in the number of trained personnel in the country. The results obtained in Bolivia are not as striking from the numerical point of view but there has been a marked increase in interest in nursing studies and the prestige of the profession has risen considerably. When the project ended, it was planned to incorporate the national school of nursing into the university so as to give the school greater stability.

A handbook for the training of nursing auxiliaries in Latin America was published in May 1964 in Spanish and English. At a seminar which took place in December 1964 in Colombia the possibility of using “programmed instruction” (a new technique for the rapid in-service training of auxiliaries) for training such personnel was studied.

Publications

In addition to the regular series of publications, a number of reports were issued relating to seminars and scientific meetings held under the Organization’s auspices. They included reports on the design of water supply systems; the teaching of preventive medicine and public health in schools of veterinary medicine; the organization and administration of schools of public health; mental health; the training
In Ghana, UNICEF and WHO are helping with the training of "community health nurses" to provide domiciliary services for the rural areas, and with the malaria pre-eradication programme.

(1) During Ghana's National Health Week community health nurses use dolls to demonstrate the rudiments of hygiene to village women.

(2) Community health nurses demonstrate the principles of nutrition, including preservation of food, during National Health Week.

(3) The course of training for community health nurses includes instruction in basic chemistry.

(4) Villagers watching an educational film on the importance of destroying malaria-carrying mosquitos.

(5) Spraying a hut with a knock-down insecticide to assess the density of malaria-carrying mosquitos. The entrance is sprayed first to prevent the mosquitos leaving the hut.
DEVELOPMENT OF HEALTH SERVICES IN THE CONGO

Assistance to the Democratic Republic of the Congo in rebuilding its disrupted health services is continuing. The photographs were taken at the N'Djili Health Centre, opened in 1963 and being run with assistance from WHO and the International Union for Child Welfare.

(1) A medical clerk registers newcomers to the centre.

(2) A member of the health team takes a blood sample from a baby suspected of being anaemic.

(3) A young mother helps an assistant médical to weigh her baby.

(4) Sanitary inspection of smoked fish in N'Djili market by a WHO expert.

Meanwhile Congolese assistants médicaux, under a WHO-sponsored scheme, supplement their training and become fully qualified doctors at French universities before returning to join their country's small but growing medical force.

(5) A Congolese student on his ward rounds in the gastro-intestinal department of a hospital, Lyons.

(6) Professor and students discuss a case.

(7) Examining a tissue section in the endocrinology laboratory of the Edouard Herriot Hospital, Lyons.

(8) Learning the use of an automatic timing device for staining microscopic slides.
A second-year student learns how to change bandages.

Distribution of medicaments in the out-patient department of the dispensary.

TRAINING OF HEALTH AUXILIARIES IN MOROCCO

The Government of Morocco is establishing a country-wide network of rural health centres staffed, under medical supervision, mainly by "health auxiliaries" (aides sanitaires). In 1964 more than a thousand men and women completed the two-year course of training for this work, bringing to over 4300 the number trained since 1957, when UNICEF and WHO assistance to the programme began.

Home-visiting in a village near Rabat.

A young mother suffering from tuberculosis is urged to attend the health centre.
of nursing auxiliaries; the control of gastro-intestinal diseases; and malaria diagnosis.

*Health Conditions in the Americas, 1961-1962*, prepared for the XV Meeting of the PAHO Directing Council, the sixteenth session of the WHO Regional Committee, was published. It deals particularly with indices for the evaluation of health conditions, and of progress made; it includes indices based on population structure, on vital statistics and on hospital and personnel resources.

**Eradication or Control of Communicable Diseases**

The total area from which malaria has been eradicated had been increased by the end of 1964 through the addition of new zones in Venezuela, the remaining part of the original malarious zone in Guadeloupe, and the first areas to reach the maintenance phase in Peru. About 700,000 square kilometres of territory that was originally malarious, with 8,000,000 inhabitants, passed from the attack to the consolidation phase (see also page 93).

Governments have continued to give special attention to administrative problems. In some countries, for example the Dominican Republic, administrative reorganization has been necessary; in others, changes have had to be made in the direction of the campaign, as in Colombia, or the whole method employed has had to be modified, as in Brazil. Complementary eradication measures were taken in problem areas; mass chemotherapy was used with encouraging results in El Salvador, Honduras and Nicaragua. In certain countries, however, lack of funds is still the basic difficulty and in some cases this has led to interruption of the operations—which necessarily favours recrudescence of the disease.

Seventy-three participants and fourteen observers, including directors-general of health and directors of malaria eradication services from all the countries of South America, attended a seminar at Poços de Caldas, Minas Gerais, Brazil, on the role of general health services in malaria eradication, and issued a report outlining the forms which that participation should take. Steps have been taken to ensure that the recommendations of the report are applied in all countries.

The campaign for the eradication of *Aedes aegypti* continued to make progress in 1964. *A. aegypti* has been eradicated from Mexico, the countries of Central America and most of South America, so that the problem is limited to Venezuela, the Guianas, the United States of America and the West Indies. With regard to the United States, a programme was launched in 1964 for the eradication of *A. aegypti* from various southern states; the programme also covers Puerto Rico and the Virgin Islands. The campaign was continued in Cuba according to plan; and also in Venezuela, and in a number of Caribbean territories, where, however, it was hindered by administrative and technical difficulties including the development of resistance to chlorinated insecticides. New insecticides and eradication techniques are being studied at the laboratory set up in Jamaica at the end of 1962.

At the present time, a leprosy control programme is being implemented in every country of the Americas in which the disease is endemic. In all these programmes emphasis is laid on the training of personnel at various levels, the creation and improvement of systems of registration, and improved planning and organization.

A new leprosy registration system described in a manual prepared by PAHO/WHO in 1963 is being tried out, with the collaboration of the Government of Argentina, in a leprosy control programme in the Provinces of Entre Ríos and Misiones. Trials will be held in other countries until the system has been perfected.

Measures being taken to improve systems of notification and of diagnosis of smallpox are helping to clarify the situation with regard to numbers and types of cases.

Good progress was made in the smallpox vaccination programmes in the countries of Central America, and in the Caribbean, where the rate of smallpox vaccination is low. In Bolivia, where systematic vaccination of the population was recommenced in August 1963, the Organization has provided assistance with the training of personnel and the organization of field work. In Brazil, the laboratories at Recife and Porto Alegre and the Oswaldo Cruz Institute in Rio de Janeiro, which all receive equipment from the Organization for the production of freeze-dried vaccine, produce good quality vaccine in quantities exceeding the country's requirements. In the first half of 1964 the smallpox vaccination programme in Ecuador was completed. More than 80 per cent. of the country's population have been vaccinated.

The laboratories that prepare freeze-dried vaccine in the Americas are able to meet the internal needs of the countries in which they are situated and to supply vaccine to those which do not produce it, such as the countries of Central America, Haiti and the Dominican Republic.

Tuberculosis control activities have recently been intensified; new programmes have been started, and existing programmes are being re-oriented to obtain a better use of resources and a wider population coverage with regard to examination, BCG vaccination
and ambulatory chemotherapy. Special attention has also been paid to the dissemination of information.

In an effort to establish a uniform policy with regard to tuberculosis, a new model tripartite plan of operations (between the government, UNICEF and WHO) has been drawn up providing specifically for the various stages in the programme, from the establishment of a demonstration area to the incorporation of tuberculosis control activities into the general health services. New plans of operations have been signed and programmes started, or extended to new areas, in Bolivia, Chile, Costa Rica, Dominican Republic, El Salvador, Honduras, Mexico, Nicaragua and Peru.

The general policy with regard to tuberculosis control was discussed at the first meeting of the tuberculosis consultants of the Region, which was held in Mexico City in April 1964, and in which statisticians, epidemiologists and public health administrators also took part.

A regional seminar on tuberculosis was held in November and December 1964 in Maracay and Caracas, Venezuela; sixty specialists in tuberculosis and public health from all parts of the Region discussed the basic data for assessing the tuberculosis situation in a community, and work programmes for tuberculosis control at the local and national level within the health services.

Inter-country training activities included courses at the National Tuberculosis Control Centre in Argentina, where a short course was attended by twelve doctors from Argentina and Paraguay, and a number of courses for nurses and auxiliary nurses have been held.

The campaign for the control of yaws continued, and in 1964 effort was concentrated mainly on the following countries and territories in the Caribbean: Jamaica, where a survey was carried out in 1963 to determine the extent and nature of the disease in that country; Antigua and Montserrat, where the disease is under control (seven and two cases registered in each of the two islands respectively in 1963); St Vincent and St Lucia, where activities for the control of the disease are proceeding; Haiti, which is in the surveillance phase, and the Dominican Republic.

**Research**

At the third meeting of the PAHO Advisory Committee on Medical Research, held in 1964, the progress made in forty-five active research projects was reviewed, and recommendations were made for their future development. These include studies on nutrition by INCAP, on foot-and-mouth disease by the Pan American Foot-and-Mouth Disease Centre and on other zoonoses by the Pan American Zoonoses Centre. The Directing Council of PAHO approved an expanded programme of research in these centres.

In view of the close relationship between health and economic and social development, the Advisory Committee recommended intensified studies of medical demography, epidemiology and human reproduction in relation to economic and social development.

Special research conferences were organized on the chemotherapy of Chagas' disease, on arthropod-borne diseases, on leprosy and on protein-calorie malnutrition. The recommendations made at conferences held in 1963 on tuberculosis, cancer, and congenital malformations, and the difficulties that had been encountered in applying those recommendations, were examined.

A special meeting of the PAHO Advisory Committee on Medical Research was devoted to the study of environmental factors in community well-being. Particular attention was paid to the inhabitants of shanty towns and other types of "emergency populations", and to the need for further studies of the sanitary and sociological situation, and of the reasons for migration from rural to urban areas.

**The Regional Committee**

The XV Meeting of the Directing Council of the Pan American Health Organization, which was also the sixteenth session of the WHO Regional Committee for the Americas, was held from 31 August to 11 September 1964 in Mexico City.

This session was attended by representatives of all Member States in the Region, except Haiti, and by representatives of France, the Netherlands and the United Kingdom of Great Britain and Northern Ireland.

Representatives of UNICEF, the United Nations Technical Assistance Board, ILO, the Organization of American States, the Inter-American Development Bank, and of seven non-governmental organizations also took part. The Director-General attended the session.

The Committee reviewed the annual report for 1963 of the Director of the Pan American Sanitary Bureau/WHO Regional Director, and approved the PAHO regular budget for 1965 and a draft WHO programme and budget for the Region of the Americas for 1966 for transmission to the Director-General for consideration in his preparation of the programme and budget estimates for WHO for that year. The provisional draft of the proposed PAHO programme and budget for 1966 was noted, and the Director was authorized to include in it the sum of $200,000 for INCAP. The Director's financial report for PAHO for 1963 and the corresponding report of the External Auditor were approved.
Article 6 of the Constitution of the Pan American Health Organization was amended, introducing the possibility of suspending the right to vote of Members that were two or more years in arrears with their contributions.

The Committee examined the various programmes being assisted by the Organization. Among its recommendations on the community water supply programme, the Committee urged continued collaboration with the Inter-American Development Bank and other international credit organizations in order to help the countries to obtain financial aid for water supply programmes. If the health objectives of the Charter of Punta del Este—the continent-wide programme of economic and social development—were to be achieved, more funds would be needed for constructing water systems in rural areas; to that end national revolving funds should be created and external financial assistance should be obtained. Welcoming the progress made on malaria eradication, it expressed anxiety concerning the lack of economic resources to intensify the campaign in areas where transmission still persists and recommended that governments study the possibility of obtaining financial help from public and private sources, and that research into less expensive methods of eradication in problem areas be intensified. It recommended intensification of studies of vector resistance to insecticides.

The Committee called for studies of: venereal disease in the countries of the Region as the basis for a continent-wide control programme; the incidence and distribution of epilepsy in the Americas and the legal discriminations to which sufferers from epilepsy are subject; and the training of auxiliary personnel as a preliminary to the adoption of a co-ordinated policy on the subject. It urged governments of countries where smallpox persists to accelerate eradication campaigns, and others to maintain a high level of immunity; requested the convening of a study group on ways of promoting co-ordination between public health services and social security and other health organizations.

The Committee examined and endorsed the recommendations made by the PAHO Advisory Committee on Medical Research, and recommended governments to study the possibility of establishing a permanent national fund, administratively and technically autonomous, for the investigation of public health problems.

The technical discussions for the session were on “Tuberculosis eradication: a task for present planning and future action”. At the 1965 session, the subject will be “Methods of improving vital and health statistics”.

Organization and Administration of the Regional Office

The administrative reorganization made considerable progress during 1964 in the simplification and modernization of administrative practices, principally by means of the introduction of electronic computation techniques in the administrative services.

Some Aspects of Work in the Region

A list of projects current during the period under review will be found in Part III. The following have been selected for fuller description:

Malaria Eradication, Jamaica

After many years of partial control programmes, Jamaica adopted the policy of eradication of malaria and began the preparatory phase in 1957. By January 1958, the attack phase was started with an annual cycle of house-spraying with dieldrin. In December 1958 it was discovered that the vector, Anopheles albimanus, was resistant to dieldrin in some parts of the island and a change was made, as rapidly as possible, to DDT. With DDT it was necessary to spray the entire malarious area (87 per cent. of the island) twice a year instead of only once with dieldrin. By October 1959 the change-over had been completed.

The attack phase, employing the standard basic technique of house spraying, continued throughout June 1960, while at the same time epidemiological evaluation by collection and examination of blood slides and by entomological investigation was perfected. On the basis of this evaluation five parishes (with a third of the population of the originally malarious areas) were placed in the consolidation phase in June 1960, and spraying was discontinued in them.

The consolidation area was extended at the end of 1960 and by January 1962 the entire island was in the consolidation phase, and routine spraying way completely stopped. The record of houses sprayed throughout the attack phase is shown in Table 1, by spraying cycle.
TABLE 1. SPRAYING OPERATIONS IN JAMAICA, 1958-1961

<table>
<thead>
<tr>
<th>Spraying Cycle</th>
<th>Period</th>
<th>Houses sprayed</th>
<th>Insecticide</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>January-December 1958</td>
<td>271,514</td>
<td>97.3</td>
</tr>
<tr>
<td>2nd</td>
<td>January-September 1959</td>
<td>270,181</td>
<td>97.4</td>
</tr>
<tr>
<td>3rd</td>
<td>October 1959-March 1960</td>
<td>269,225</td>
<td>96.6</td>
</tr>
<tr>
<td>4th</td>
<td>April-September 1960</td>
<td>241,046</td>
<td>95.1</td>
</tr>
<tr>
<td>5th</td>
<td>October 1960-March 1961</td>
<td>144,428</td>
<td>95.9</td>
</tr>
<tr>
<td>6th</td>
<td>March-October 1961</td>
<td>89,080</td>
<td>95.4</td>
</tr>
</tbody>
</table>

Surveillance continued, using widespread collection of blood slides from persons with fever or a history of recent fever, epidemiological investigation of cases found, and emergency spraying and/or chemotherapy to clear foci of infection discovered. In a total estimated population of 1,685,000 (at the middle of 1963), blood slides examined and cases found were as shown in Table 2.

TABLE 2. BLOOD SLIDES EXAMINED AND POSITIVES FOUND IN JAMAICA, 1958-1964

<table>
<thead>
<tr>
<th>Year</th>
<th>Blood slides examined</th>
<th>Positives</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Totals</td>
<td>Percentage</td>
<td></td>
</tr>
<tr>
<td>1958</td>
<td>56,266</td>
<td>205</td>
<td>0.36</td>
</tr>
<tr>
<td>1959</td>
<td>39,276</td>
<td>371</td>
<td>0.94</td>
</tr>
<tr>
<td>1960</td>
<td>184,534</td>
<td>135</td>
<td>0.07</td>
</tr>
<tr>
<td>1961</td>
<td>292,901</td>
<td>31</td>
<td>0.01</td>
</tr>
<tr>
<td>1962</td>
<td>246,592</td>
<td>2</td>
<td>0.0</td>
</tr>
<tr>
<td>1963</td>
<td>185,459</td>
<td>3</td>
<td>0.0</td>
</tr>
<tr>
<td>1964*</td>
<td>117,084</td>
<td>1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

* January - November.

The Department of Junín is situated in the centre of Peru and about 70 per cent. of its territory is mountainous. According to the 1961 census, there were 506,000 inhabitants, of whom 242,000 lived in urban and 264,000 in rural areas; 90 per cent. of the inhabitants are of indigenous origin. Agriculture is the main activity.

The health services in the Department include three health centres: one in the capital, Huancayo, and the other two in Tarma and Jauja. Each centre is staffed by a physician, a sanitary engineer, nurses and sanitary inspectors, apart from the personnel of the hospital attached to the centres.

When the project started, the Ministry of Public Health and Social Welfare was preparing a national plan for the supply of water to rural communities. The country had had very little experience of the financing and administration of rural water-supply systems. It was agreed that the work in Junín would provide the basic data, information and experience for the establishment of the national programme to cover the rest of the country, and it was decided to obtain maximum co-operation from the communities in the construction and administration of the installations. To this end, a propaganda campaign was launched by sanitary inspectors who had been trained in Junín during the first stage of the project. The communities were asked, as their contribution, to provide 30-50 per cent. of the initial cost, including labour and available local material and a cash payment, and to pay a monthly tariff to cover the costs of running and maintaining the plant and amortizing the debt.

Local committees were formed and the Government signed agreements with each of the communities covered by the project.

Most of the water supplies installed are in the form of a protected water source, a main conduit taking the water by gravity to a cemented reservoir, and a system of distribution by means of public taps of sufficient capacity to permit house connexions. In order to reduce costs, the topographical work is being done by the sanitary inspectors under the supervision of the health centre engineer. The plan

Rural Water Supplies, Peru

The agreement concerning this project, which is part of a project for integrated public health services in the Department of Junín, was signed in 1961, but the installation of rural water supplies did not start till May 1962.
and design are based on a daily consumption per head of 100 litres. Most of the conduits used are made of plastic. Each public tap serves an average of eighty persons.

The cost per inhabitant is about $8, which corresponds approximately to eleven days’ wages in the area.

The administration and maintenance of these services are in the hands of administrative committees organized in each community. Each committee consists of three members: the local mayor, the chairman of the municipal council and a third person designated by the community. The committee appoints a water-supply administrator and works according to regulations previously approved by the inhabitants.

The committee also fixes the charges for the water, which in Junín range from $0.10 to $0.20 per family and per month for the use of a public tap, and from $0.30 to $0.40 per month where there is a house connexion.

Up to the time of reporting, water-supply systems had been installed in nine communities with a total population of 8013. Work on installations for six other communities with 5794 inhabitants is proceeding, and plans are ready for the commencement of work in eight further communities. In nearly every case, the financial obligations are being met within the established time-limits and a favourable economic balance is being maintained.

The programme is being implemented jointly by the Peruvian Ministry of Public Health and Social Welfare, the Economic Development Fund of Peru, PAHO/WHO and UNICEF. It is considered to have attained its objective, which was to design and construct simple, cheap and efficient water-supply systems for rural communities, making the greatest possible use of local labour and other resources.

This experiment has been extremely useful in the preparation of the national programme for the supply of water to rural areas which is being undertaken by the Ministry and for which the Inter-American Development Bank has granted a loan of $1 700 000. The programme has also shown that it is possible to obtain adequate co-operation and contributions from the rural communities and that they can take responsibility for the administration and maintenance of the systems installed. Finally, Junín continues to serve as a training centre for the Ministry of Health’s environmental sanitation personnel.

Co-ordinated Applied Nutrition Programme, Panama

A co-ordinated programme of applied nutrition has been functioning in the Republic of Panama since April 1963. The basic plan was prepared jointly by the Ministries of Public Health, Education, and Agriculture with assistance from FAO, UNICEF, and WHO operating through INCAP. The Panamanian Government supplies the personnel and other facilities needed to carry out the programme, UNICEF provides the stipends for the training of this personnel as well as equipment and materials, while INCAP and FAO provide technical advisory services and participate in the training of local personnel.

In 1962 a nutrition survey was carried out in ninety-six communities of the four central provinces to establish a baseline for future evaluation of the effects of this programme, and for a better orientation of the activities.

Before the programme started a three-week training course for teachers was organized in basic nutrition, nutrition education in the school and horticulture.

This co-ordinated programme consists of nutrition activities in rural areas through a combined effort of health centres, the agricultural extension agencies and schools. In the health centres, the mothers who attend the various services receive nutrition education from nutritionists, nurses and auxiliary nurses. Dietary supplements are provided to those in need of them.

In the schools nutrition education is based on school vegetable gardens, the produce from which is used for the school lunches and also as teaching aids in classroom instruction. Children from the third to the sixth grades work in the school vegetable gardens with the help and guidance of the agricultural extension agent, and, in some of the communities, of the parents. In some communities, too, the children’s mothers help in preparing the school lunches under the supervision of the teachers.

The present pilot programme has been established in the four central provinces with the participation of forty-one elementary schools, with 472 teachers and 11 184 pupils, twelve health centres and eight agricultural extension agencies.

The overall co-ordination of the programme is carried out by an inter-ministerial committee consisting of four members of the Ministry of Agriculture, eight from the Ministry of Education and four from the Ministry of Public Health. Local committees consist of the director of the health centre, the agricultural extension agent, and the education supervisor.

During June and July 1964, an attempt was made to evaluate the results of the first year of this programme. This was the first evaluation of its kind, and only takes into account material gains, notably the production from the school vegetable gardens, which exceeded expectations. The example of the school gardens has stimulated the establishment of many home vegetable gardens, most of the produce from which is used in the home, though a fraction is sold.
In the health centres the programme has not functioned as well as expected, mainly because the personnel was already overburdened with other health work and could not devote the necessary time to nutrition education.

Nursing Education, Guatemala

Over a period of ten years the Organization has been helping the Government of Guatemala in programmes to improve nursing education and nursing services. Initially the main purpose was to train auxiliaries, a preliminary survey made in 1954 having shown that there were in all 1050 nursing auxiliaries in the country, all untrained. Since 1961, when the scope of the project was extended, the programme has included programmes of nursing education at three levels: the advanced training of instructors and supervisors of nursing services; basic nursing education; and the training of nursing auxiliaries.

In 1964 the Organization’s assistance was terminated because by that time the programmes of nursing education were operating under the direction of the national nurses who had completed their advanced training as instructors and administrators.

From the quantitative point of view the results of the project were as summarized in the following table, which shows the increase in the numbers of nurses trained at the three different levels of nursing during the ten years of the project.

<table>
<thead>
<tr>
<th>Year</th>
<th>Qualified nurses</th>
<th>Nursing auxiliaries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With basic training</td>
<td>With advanced training</td>
</tr>
<tr>
<td>1954</td>
<td>277</td>
<td>10</td>
</tr>
<tr>
<td>1964</td>
<td>730</td>
<td>70</td>
</tr>
</tbody>
</table>

During the period of its assistance, the Organization granted twenty-seven long- and short-term fellowships, and provided the services of two nurse educators and two short-term consultants and approximately $20 000 in supplies and equipment. In all, the Organization invested more than $190 000 in this project, and the Government of Guatemala spent approximately $1 000 000 in installing and operating the three training programmes.

Students from other Latin American countries also attended the basic nursing education courses and the post-basic courses in supervision and administration. The nursing auxiliaries received their training at national hospitals in various Departments in Guatemala, as well as at the National School of Nursing. Specialized courses were given, including training in psychiatric nursing.
CHAPTER 16

SOUTH-EAST ASIA REGION

While efforts to strengthen basic health services have continued, much of the health planning in South-East Asia is still dominated by the problem of communicable diseases. The magnitude of this problem was reflected in the WHO pattern of assistance, in which nearly half the budget was concentrated on projects designed to eradicate or control some of the major communicable diseases. Over the years considerable progress has been achieved in the attack on malaria and yaws, but as regards other communicable diseases much still remains to be done. In spite of successful projects in some countries, it is estimated that most leprosy sufferers remain unregistered and untreated.

Tuberculosis is now the greatest single public health problem in the Region. A noteworthy feature of the work at the Tuberculosis Chemotherapy Centre, Madras, was the introduction of an intermittent regimen involving the weekly or twice-weekly administration of streptomycin and isoniazid in a single combined dose, which facilitates the important supervision of drug administration.

Progress in the control of filariasis and venereal diseases continues to be disappointing, while little impression has been made on the very high morbidity and mortality rates that are due to lack of proper water supplies and defective sanitation.

The incidence of smallpox during the year was relatively high, with epidemics in several countries. The concept of smallpox eradication has been accepted by all governments, and programmes of varying scope have been launched, but they face formidable difficulties of administration, logistics and public acceptance. The main technical requirement for a successful eradication programme is an adequate supply of a potent, thermostable vaccine. WHO has made available limited supplies of freeze-dried vaccine. The assistance provided by UNICEF and WHO to countries in the Region for the local production of freeze-dried vaccine is described later in this chapter (see page 100).

Several reappraisals of activities and resources were made during the year with the aim of consolidating long-term plans for campaigns to eradicate malaria, smallpox and yaws. Control measures against leprosy, tuberculosis and trachoma were concentrated on selected areas of highest prevalence. There was general acceptance of the necessity for periodic and current assessment of control and eradication programmes, and independent appraisals at different stages of campaigns were assisted by WHO.

Increased efforts were made to obtain more reliable epidemiological data on morbidity and mortality from the enteric group of diseases, diphtheria, pertussis and tetanus. WHO assisted the production of pertussis vaccine and of purified absorbed diphtheria and tetanus toxoids. Help was also given in the production of oral poliomyelitis vaccine.

The prevalence trends of haemorrhagic fever of the dengue group complex and of cholera El Tor have given cause for anxiety. Both conditions have occurred in epidemic proportions and are tending to spread rapidly in the South-East Asia and Western Pacific Regions. A WHO seminar on haemorrhagic fevers was held in Bangkok in October 1964 for participants from both regions; epidemiological, clinical and control aspects of the condition were reviewed (see page 20). WHO also assisted in a controlled field trial of classical cholera vaccines, covering a population of 100,000 in Calcutta. A decision on the extension of the trial is to be taken in the light of results at the end of the year.

WHO helped in an appraisal of some infectious-disease hospitals in India with particular reference to their effectiveness in dealing with communicable diseases and to their potential value as teaching centres.

Health laboratory services are still far from having attained acceptable standards. WHO has assigned staff to assist in the development of these services in most countries of the Region, but progress is very slow.

Some headway has been made in the field of health statistics: national committees on vital and health statistics have been formed in two countries, and medical records departments have been planned, established or consolidated in most of the countries of the Region. WHO sponsored a regional training course for hospital records officers in Bangkok (see also page 101). In anticipation of a rapid expansion of the general health services and the integration into them of spe-
cialized programmes, governments have continued to promote the training of auxiliary health workers. However, the successful use of health auxiliaries is dependent upon the due strengthening of the supervisory organization; assistance toward achieving this was given in Burma, India and Thailand. The absorption into the general health services of malaria personnel in India and of yaws and leprosy staff in Thailand was actively promoted.

Progress in the development of community water supply programmes has been slow, but some momentum was gathered during the past year. However, the great majority of the population of the Region still lack accessible safe water, and even fewer are served by proper drainage systems. The problems of scarcity of trained staff, high costs and lack of equipment are very serious. The current national water supply programmes are insufficient to meet the enormous backlog of present needs, let alone keep pace with the expected rate of population growth. WHO's activities in sanitation have been intensified and expert assistance has been given to most of the countries of the Region; in particular, sanitary engineers and other advisers have been sent to Afghanistan, Ceylon, India and Nepal. Rural water supply programmes assisted by UNICEF and WHO have resulted in the working-out of a number of typical schemes readily reproducible in rural areas. A broad research programme has been started at the Central Public Health Engineering Research Institute, Nagpur, to which WHO has provided advisory services (see also page 99).

Assistance to medical education continued to be a major component of the WHO programme. The Regional Committee in 1963 emphasized the need for increased assistance to post-graduate medical education in order to train teachers and specialists. The shortage of teachers is acute; the risk of grave deterioration in the standards of undergraduate medical education is real, and the delay in adopting modern teaching methods serious. The Baroda experiment being made in co-operation with the University of Edinburgh, whereby visiting professors from its medical school are assigned to some six departments of Baroda Medical College, which is receiving simultaneous support in the form of fellowships and visits by advisers, completed its first year of operation. Numerous difficulties, due largely to lack of local resources, have been encountered. While much improvement in teaching has been achieved in individual departments, the continued lack of resources may jeopardize the success of the project in realizing its aim of creating a first-rate teaching institution.

WHO has continued to provide visiting professors and advisers for twelve other medical faculties in the Region, but the number of foreign teachers available is much too small for the needs. Assistance was given to Indian medical educators in reviewing the problem of post-graduate education and shortage of teachers. WHO also helped to review the work of a post-graduate medical institute in India.

During a WHO-sponsored study tour on medical education, deans of medical colleges from four countries visited eleven medical colleges and public health institutes in India and Thailand.

Collaboration with the United Nations agencies and with intergovernmental, non-governmental and other bodies working in the field of health was maintained through inter-agency meetings and informal contacts. WHO representatives have continued to work in close association with Technical Assistance Board and UNICEF offices. The Organization collaborated with FAO in nutrition projects, with UNESCO in the introduction of health education into schools and teacher training programmes, and with the United Nations Department of Economic and Social Affairs in assistance to medical rehabilitation. Co-operation with ECAFE was close, WHO participating in a number of meetings and providing a public health administrator to the Asian Institute for Economic Development and Planning, Bangkok.

The Regional Committee

The seventeenth session of the Regional Committee, held from 22 to 28 September 1964, in the Regional Office, New Delhi, was attended by representatives of eight Member States. The Director-General was present. Dr Zakir Husain, Vice-President of India, inaugurated the session, and at the opening meeting an address was also given by Dr Sushila Nayar, India's Minister of Health.

The Committee approved for transmission to the Director-General the proposed programme and budget estimates for the Region for 1966. It carried out a detailed study of the Regional Director's annual report and expressed its satisfaction with the work of WHO during the year under review.

The Committee noted the many difficulties retarding the progress of health programmes in the Region and agreed that this situation was likely to last for some years. It welcomed the assistance of WHO in solving some of the problems. Much interest was shown in the pilot projects for promotion of rural water supplies. The Committee again stressed the need for rapid development of basic health services. Noting the high prevalence of enteric diseases, especially in children, it recommended typhoid immunization programmes in schools. It also stressed the urgent need for improvement of infectious-disease hospitals by proper staffing and equipment and close links with teaching hospitals.
The Committee was concerned about the spread of dengue-type haemorrhagic fever and recommended that increased reporting of epidemiological information on this group of diseases be arranged by governments.

The value of the assistance provided by the Organization in making independent assessments of malaria eradication programmes was recognized and the necessity for evaluation of all disease control programmes, including the health education aspects, was stressed. Emphasis was also placed on the need for operational evaluation of applied nutrition programmes.

The technical discussions, on the subject of smallpox eradication, were centred on the planning, organization and execution of the national eradication programmes.

"Integration of Malaria Eradication into the General Health Services" was selected as the subject of the technical discussions to be held at the next session of the Regional Committee.

The Committee confirmed its acceptance of the invitation by the Government of Afghanistan to hold its 1965 session in Kabul. It decided to hold the 1966 session at the Regional Office in New Delhi, and was informed by the delegate of Mongolia that a formal invitation would be received from his Government to hold the 1967 session in Ulan Bator.

Administrative and Organizational Developments in the Regional Office

In the new Regional Office building, the artist appointed by the Government of India completed a large mural, depicting the history of medicine, on both sides of the Conference Hall. Contributions to the decoration of the building were received during the year from France and Afghanistan. The Mongolian contribution and some more furniture from Ceylon are expected shortly; this will complete the contributions from all countries in the Region.

No major organizational changes took place in the structure of the Regional Office. Some recruitment difficulties were experienced and a number of posts remained unfilled at the end of the year.

Some Aspects of Work in the Region

A list of projects current during the year will be found in Part III. The following have been selected for fuller description.

Central Public Health Engineering Research Institute, Nagpur, India

In 1959 the Government of India undertook to develop the Central Public Health Engineering Research Institute in Nagpur as a national centre for research in the field of environmental health. The United Nations Special Fund agreed to assist by providing equipment and materials worth US $525,000, and WHO, as executing agency, to advise in the selection of equipment to be purchased for the project. An expert was assigned for six weeks in 1961 to advise on equipment lists and the phasing of deliveries.

The laboratories of the Institute began operating in April 1959 in temporary quarters. In October 1963 the construction of laboratories and staff quarters on a large plot of land covering 44 hectares was completed, and the buildings were occupied. The new building of the Institute is a three-storey structure covering a total area of about 4500 square metres and housing the Sections of Engineering, Chemistry, Botany, Zoology, Bacteriology, Air Pollution, Industrial Hygiene and Rural Sanitation, in addition to administrative offices. An adjacent but separate building provides cafeteria and workshop facilities.

Field laboratories have been established in twelve cities in India. At the end of 1964 the total strength of the staff was 355 (68 scientists, 163 technical personnel and 124 non-technical personnel).

In 1963 and 1964 WHO provided advisory assistance on instrumentation, on training in public health engineering, on water pollution control and sewage treatment, and on long-term applied research programmes in sanitary engineering.

During its initial stage of operation, the Institute faced the difficult problem of recruiting enough specialized personnel. It made every effort to train its own personnel by using as teachers those members of its staff who possessed the necessary qualifications. The Director and the senior Assistant Director of the Institute were granted WHO fellowships for observation of public health engineering research laboratories abroad.

As part of its initial programme, the Institute has undertaken a number of studies. These have included stream surveys, industrial waste surveys, studies on the composition and characteristics of municipal wastes, and an inventory of sewage farming practice in India.

At present, research is being done in the following fields: methods of operation to improve the output of existing water treatment plants and modified designs to achieve increased efficiency in new plants; development of an effective means of disinfecting water from open wells; development, under varying climatic conditions, of design criteria for sewage treatment by oxidation ponds and re-use of the effluent for irri-
gation, fish culture and general purposes; and, lastly, evaluation of the economic importance to the nation as a whole of stream pollution by sewage and industrial wastes, characterization of wastes of major importance, and the development of economically feasible methods of water purification.

By issuing quarterly publications and holding symposia and conferences, the Institute maintains contact with the public health engineers of the various states of India and others in the field.

With the new permanent central laboratory at Nagpur and twelve established field laboratories, the Institute is staffed with well-qualified and experienced senior staff and properly trained junior staff, and has a comprehensive programme of research in progress.

Departments of Paediatrics, Bangkok, Thailand

The aim of this project was to bring the maternal and child health services in Bangkok up to a satisfactory standard for teaching purposes and adjust the undergraduate training in paediatrics in the two medical schools (Chulalongkorn and Siriraj) to include promotional and preventive aspects of child care. WHO provided a social paediatrician (a professor of paediatrics) from May 1962 to July 1964.

When assistance to the project began, a programme for the development of maternal and child health services within the framework of the general municipal health services in Bangkok and Dhonburi was in operation. In support of this project, WHO provided technical guidance and UNICEF gave material assistance.

At the Siriraj and Chulalongkorn medical faculties, independent chairs of paediatrics had been in existence since 1945 and 1947 respectively. The main emphasis in the courses was on clinical paediatrics; teaching in social paediatrics lagged behind.

During the project period, the municipal maternal and child health services were strengthened by the establishment of a nursing unit in the Public Health Division of the municipality. Additional posts for medical officers and nurses were created, priority being given to candidates with post-graduate experience in paediatrics, obstetrics and public health. Sanitary inspectors and social workers were posted to the health centres. Particular attention was paid to the improvement and consolidation of existing maternal and child health services before creating satellite sub-centres or expanding to new areas.

The WHO paediatrician demonstrated consultation techniques in the health clinics and helped organize in-service refresher training courses in paediatrics for the staff. The recording system was reorganized, individual health-counselling was introduced and the area of responsibility of each health centre defined. A referral system to the paediatric and obstetric departments of the four main hospitals in Bangkok was developed, and attention was given to the method of registration of child deaths. To improve communicable-disease control, an intensive diphtheria immunization programme was launched, tuberculin testing and BCG vaccination were introduced in the health centres, and new procedures were established for the reporting of cases of tetanus neonatorum occurring in hospitals.

A manual to be used in well-baby clinics was produced, and a small paediatrics library was established for the use of the maternal and child health staff.

The Ding Daeng health centre in Bangkok was developed into a practice area for the paediatric departments of the two medical faculties and for student social workers in Thammasart University. Special records and guidelines for practical work in the field were prepared.

In the paediatric departments, physical facilities were further expanded and medical and nursing procedures improved. An initial series of lecture and discussion sessions helped to focus the attention of the teachers of paediatrics on social paediatric aspects of undergraduate training.

The teaching of paediatrics was co-ordinated with that of other departments, preclinical and clinical. A comprehensive and detailed curriculum of paediatric studies was proposed. The introduction of block-system teaching in all clinical departments in the fourth year of medical studies gave impetus to the development of a six-week, full-time, comprehensive paediatric programme, with practical training and "clerkship" in all branches of clinical and social paediatrics, for each student. Encouragement and guidance were given to the development of research in social paediatrics at both undergraduate and postgraduate levels.

A firm basis now exists for the further development of comprehensive maternal and child health activities based on health-centre practice. The teaching of clinical and preventive paediatrics, with liberal opportunities for field training, has been introduced and is well established. A detailed curriculum for the undergraduate paediatric course of studies based on modern teaching principles has been devised, and steps have been taken towards its implementation.

Production of Freeze-dried Smallpox Vaccine in South-East Asia

One of the important factors responsible for past failures of vaccination programmes and the continued endemicity of smallpox in South-East Asia has been
the poor keeping qualities of glycerinated lymph (wet vaccine), which rapidly loses its potency when exposed to the temperatures prevailing in tropical countries. The difficulty is increased by poor transport conditions and lack of refrigeration facilities. In contrast, freeze-dried smallpox vaccine has been shown to retain satisfactory potency after exposure to temperatures of 37° to 45° C for several weeks or even months.

It is therefore important for countries of the Region embarking on smallpox control or eradication programmes to utilize freeze-dried smallpox vaccine wherever possible. This inter-country project, started in 1958, was aimed at promoting the production of a thermostable freeze-dried vaccine according to the method recommended by the Study Group on Requirements for Smallpox Vaccine. It is closely related with another project (SEARO 30), in which the countries of the Region are being assisted in achieving the control, and ultimately the eradication, of smallpox, in pursuance of the resolution adopted by the World Health Assembly in 1958 on a global smallpox eradication programme (WHA11.54).

In 1958, two WHO experts visited India, Indonesia and Thailand to advise on appropriate laboratories that could conveniently change over from the production of glycerinated lymph to that of freeze-dried smallpox vaccine. The following Institutes were selected as suitable for this work: the King Institute of Preventive Medicine, Guindy, and the State Vaccine Institute, Patwadangar, both in India; the Laboratory of the Division of Medical Research, Department of Medical Sciences, Bangkok, in Thailand; and the Bio Farma Institute, Bandung, in Indonesia.

WHO Fellowships were awarded to five bacteriologists and three maintenance engineer/mechanics from the three countries to enable them to become acquainted with the techniques of freeze-dried vaccine production and with the installation, care and maintenance of the equipment involved. UNICEF provided equipment and supplies, to enable each institute, after a period of running-in, to achieve an annual output of between 3 and 10 million doses of vaccine. After this equipment had been received and installed, follow-up visits by WHO experts were arranged in 1960 and 1961.

By the end of 1963, the national smallpox eradication programme in India had steadily expanded; the Government of Burma had decided to embark upon a nationwide vaccination programme, and the Government of Indonesia was intensifying its vaccination activities. A WHO expert visited these three countries early in 1964 and recommended that two further laboratories in India (the Vaccine Institute, Belgaum, and the Institute of Preventive Medicine, Hyderabad) and one in Burma (the Laboratory of the Burma Pharmaceutical Institute, Rangoon) be adapted to undertake freeze-dried vaccine production. He also recommended additional equipment to raise the output of the Bio Farma Institute in Indonesia, and the adoption of recently-developed production techniques involving shelf-drying and the use of automatic ampoule-filling and sealing machines.

In 1964, six further WHO Fellowships were awarded to three bacteriologists and three maintenance engineers. The additional equipment required is to be supplied by UNICEF.

WHO also assisted all the above-mentioned production institutes in having the first batches of their vaccine tested independently, in WHO reference laboratories, for potency and freedom from extraneous organisms, in order to confirm that it came up to internationally acceptable standards.

The project is continuing, and further follow-up visits by experts for advice and guidance on the spot and to ensure maintenance of standards are being planned up to the end of 1966.

**Hospital Statistics**

There is a need to improve the maintenance of clinical and administrative hospital records in order to ensure appropriate medical care and obtain adequate information to guide the economic management of hospitals. Where accurate information on morbidity and mortality in hospitals, along with relevant data on hospital facilities, can be properly collected, processed and published, there is a sound foundation for the administration and planning of medical and health services.

In 1959, WHO started a programme of assistance to the Government of Thailand in developing an organization for maintenance of hospital records and for processing and analysing the data obtained. By the end of 1962 a type of medical records department suitable for major hospitals had been developed, medical record forms designed, senior and junior staff for operating medical records units trained, and a pattern for annual reports from major hospitals evolved. A procedure was also developed for the collection of morbidity statistics from smaller hospitals.

By the end of 1962 the project had covered twenty-one hospitals, with an aggregate authorized bed complement of 2124 and estimated yearly in-patient discharges numbering 48,000. Procedures had been reasonably well established, and the hospital statistics organization developed was thought to provide a suitable model for other countries in the Region. In 1963, the project was expanded in Thailand and converted into an inter-country programme aiming

---

at the gradual introduction of similar hospital statistics procedures in other countries.

In January 1964 the scope of the work was broadened to cover all general hospitals of the Department of Medical Services of Thailand (eighty-eight, with a total of approximately 11 400 beds). The coverage by then was thirty-two hospitals with 4139 beds (148 000 discharges yearly). In addition, four hospitals (with 2040 beds) outside the Department of Medical Services participated in the scheme.

As for the project's extension to other countries in South-East Asia, this aspect has been facilitated by two associated programmes: the regional seminar on hospital statistics held in Bangkok in 1962 and the hospital records training course that was started in Bangkok in June 1964, with ten participants from five countries of the Region.

Close co-ordination is being maintained with the vital and health statistics project in Burma and the work of the Statistics Section of the Institute of Public Health, Kabul, both of which are primarily concerned with hospital statistics. An even closer co-operation is envisaged in the near future with the health statistics project in Ceylon.

Membership in the European Region was increased during the year by the admission of Malta as an Associate Member by the Seventeenth World Health Assembly.

WHO's direct assistance to the developing countries in the Region is being increasingly directed towards public health planning and the implementation of public health services, different projects on specific subjects being closely co-ordinated, in order to form part of the planned development of the health service in the country concerned. Thus in Algeria a public health advisory team consisting of a public health administrator, a nutritionist, an engineer, a sanitarian, a health educator, a nurse and a statistician-epidemiologist is helping to plan the country's public health system and establish training facilities. A public health plan is being drafted in collaboration with the Health Department of the Ministry of Social Affairs. A key element in the plan is the establishment of the Institute of Public Health as the body responsible for the technical control of all health services. Twelve WHO-assisted projects are proceeding in Algeria under the overall co-ordination of the WHO representative.

The same method of operation obtains in Morocco, and in Turkey, where the Government has begun implementing the National Health Service Act in one province and a training area has been set up under the School of Public Health. Three WHO-assisted projects have been regrouped under a single health services development project, with which three other projects have been brought into close collaboration. At the time of reporting a total of ten projects, co-ordinated by the WHO representative, were in operation in Turkey.

Greater attention is being given to planning in relation to medical manpower. WHO has helped a number of developing countries in the Region in studies of the nature and extent of the various public health and medical care services required and in assessing their need for manpower and training facilities. In the highly industrialized countries the problem is rather to assess the need for specialists and to provide for their training.

This was one of the questions discussed at a symposium on post-graduate medical education in Europe, convened in Prague in October 1963. The participants—specialists in various aspects of medical education from over twenty countries—considered the application of the principle that medicine is a life-long study. The report of the symposium recommends, *inter alia*, that medical students should be required, on graduation, to spend a further period of about two years in obtaining, under supervision, additional knowledge and experience in a hospital, and in some "front-line" medical activity, such as family practice or community medical work. Specialized training, which should not begin until this two-year period has been completed, should cover clinical knowledge in the specialty, the basic medical sciences that are of special importance to it, and laboratory medicine, which forms a link between the two. The report advocates that doctors should study throughout their professional career, attending refresher courses at intervals of not more than five years. It is pointed out that in some countries there is a legal obligation on doctors to have postgraduate training, and in a few there is already provision for continuous post-graduate training. Other subjects discussed included the special problems of overseas post-graduate students—a subject particularly relevant in a region where medical schools provide training for students from all over the world.

The award of fellowships has again been an important contribution to the post-graduate training of health personnel for all countries in Europe. In the period under review the Regional Office for Europe made arrangements for the placing in Europe of over a thousand WHO fellows, about half of them fellows from other regions.

One of the tasks in Europe is to strike a balance between activities designed to assist the highly industrialized countries of the Region, and those for countries at other stages of development. Of benefit to all are the international conferences and seminars convened by the Organization. The results of the meetings held during the period under review show that in the field of public health the factors differentiating the countries of Europe are less important than the similarities. The subjects selected for these meetings reflect the chief problems faced today by health administrations in Europe. They included toxicology of drugs (see page 106), automatic data pro-
cessing systems, the role of obstetricians in maternal and child health programmes, viral hepatitis, prevention of mental illness, in-patient psychiatric treatment of children, chronic nephritis, chronic rheumatoid arthritis, and sanitary inspection services.

The conference on the application of automatic data processing systems in health administration organized by WHO in Copenhagen in November 1964 was attended by senior public health administrators from eighteen countries and aroused particular interest. Automatic data processing systems are being used already with great advantage in surveys, in statistics, in medical records, and in the analysis of the toxicology of drugs, and could be valuable in other fields of public health also. The conference reviewed the various types of computer and data processing systems and discussed their use in health administration. Demonstrations were given on computers installed in Copenhagen.

The many regional training courses sponsored by WHO in Europe in collaboration with a number of governments and universities are considered as a further contribution to the post-graduate training of health personnel of all countries of the Region, whatever their stage of development. Such courses have been organized in epidemiology, hospital and medical administration, rural public health, veterinary public health, sanitary engineering, application of statistical methods to medicine and public health, and geriatrics. With a view to helping as many countries as possible, some of the courses are given in more than one language—for example, courses on the application of statistical methods to medicine and public health have been given in English and French, and a similar course in Russian is being organized. In addition, a number of inter-regional courses, including those on anaesthesiology, clinical chemistry, human genetics, nursing services administration, and the application of basic medical sciences to surgery, were given in Copenhagen, under the Danish contribution to the Expanded Programme of Technical Assistance.

An assessment has been made of the extent of communicable disease problems in the European Region, particularly the problems of virus diseases. There is growing laboratory evidence of the important role played by viruses in respiratory illnesses, and epidemiological studies are to be initiated with WHO assistance in Spain and Yugoslavia. Discussions at the European symposium on viral hepatitis, held in Prague in October 1964, suggested that similar studies were needed on viral hepatitis, the incidence of which, although low and apparently declining in a number of western European countries, is rather high in central and eastern Europe.

Poliomyelitis, so long a cause of anxiety in the Region, appears to have been brought under control in the majority of countries, and large-scale vaccination programmes are planned in some countries where morbidity is still high.

The Organization is supporting projects against communicable eye diseases in four countries of the Region. In Morocco follow-up studies indicate that better results have been obtained by the routine treatment of first- and second-year children in all primary schools than by mass treatment applied at village gatherings during one season followed by self-treatment with antibiotic ointment. By the time children reach the third year, the proportion still having active trachoma has fallen to 10 per cent. or below, and this percentage continues to decline in the higher forms.

Finally, the malaria eradication programme in Europe maintains its gains, though the importation of malaria cases remains a risk. Certification of malaria eradication was made in Hungary and Spain, and preparatory work for certification has been carried out in several other countries. The eradication campaign in Turkey is continuing to progress (see page 105). Efforts are being made to strengthen the rural health structure with a view to eventual eradication of malaria in Algeria and Morocco.

For the first time, WHO is collaborating in a Special Fund project in Europe: in the Antalya region of Turkey (including the Provinces of Antalya, Burdur and Isparta) a broad programme of social and economic development is in progress, with FAO as the executing agency. Pre-investment surveys have been initiated; and WHO, which is providing advice on the health aspects, has assigned a public health administrator and a sanitary engineer to the project. Surveys are being made of public health and rural health services and of veterinary services.

There have been constant consultations and close co-operation with UNICEF, particularly with regard to the jointly assisted work in Algeria, Morocco and Turkey.

WHO has been concerned with various activities of the Economic Commission for Europe, especially those dealing with various aspects of statistics, air pollution and water resources. The necessary machinery has been established for ensuring co-ordination with the Economic Commission for Africa (see page 73) with regard to activities concerning Algeria and Morocco.

Finally, WHO continues to maintain contact with the Council of Europe and the Organization for Economic Co-operation and Development on matters of common interest.
Administrative Developments in the Regional Office

A management survey of the organizational functions and structure of the Regional Office, in which the administrative management unit at headquarters is taking part, was started in 1964.

Contrary to expectations, it was not possible to start construction of a new building for the Regional Office, owing to legal difficulties. The increasing shortage of space, which affects the Office as a whole, is particularly felt in the documents reproduction unit, which has been reorganized and re-equipped with modern machinery and additional staff to cope with the increasing volume of work.

The Regional Committee

The fourteenth session of the Regional Committee for Europe, held in Prague from 22 to 26 September 1964, was attended by representatives of thirty countries; Malta, admitted to associate membership by the Seventeenth World Health Assembly, participated for the first time. UNICEF, one inter-governmental organization, and eight non-governmental organizations in official relations with WHO were represented. The Director-General attended one meeting of the session.

The Committee discussed the report of the Regional Director for the period July 1963 to June 1964 and approved the general trends in the work as reported. It discussed in detail the proposed regional programme and budget for 1966 and, with certain amendments, endorsed it for transmission to the Director-General.

A report on the frequency and distribution of morbidity and disablement—part of a series of studies on epidemiological characteristics of the European Region—was discussed by the Committee, which recommended that the Organization continue these studies and submit similar reports at future sessions. The Committee also discussed a report on the epidemiology of home accidents, and requested the Organization to continue this study, arranging limited inter-country comparative surveys in collaboration with the appropriate national authorities.

The topic for the technical discussions was “The pre-symptomatic diagnosis of diseases by organized screening procedures”. The subject aroused keen interest, organized screening procedures being regarded as one of the most important developments in the field of preventive medicine. In addition, as the Committee had agreed at its previous session, there were informal discussions on matters of topical interest. The subjects discussed were the value of revaccination against poliomyelitis by the oral route, and evidence of Salmonella contamination of canned food. The subject selected for the technical discussions in 1966 was “Causes and prevention of perinatal mortality”.

The Committee confirmed that its fifteenth session would be held in Istanbul in September 1965, and accepted the invitation of the Government of Morocco to hold its sixteenth session in that country.

Some Aspects of Work in the Region

A list of projects current during the period under review will be found in Part III. The following have been selected for fuller description.

Malaria Eradication, Turkey

In 1926, the Turkish Government started an anti-malaria campaign and in 1950 residual insecticides were introduced. The campaign was gradually extended to cover all the malarious areas of the country, and in 1957, with the assistance of UNICEF and WHO, it was transformed into an eradication programme covering the whole population (now over 30 million). In 1963, it was possible to stop spraying in areas having a total population of 21 million; in the rest of the country spraying is being continued.

The programme, drawn up by a central office, is carried out in fifty-seven operational zones, roughly corresponding to the administrative divisions of the country. With WHO assistance, the central office regularly reviews the programme, establishes operational priorities and takes such steps as the changing situation may require. The heads of all the zones meet once a year to review the work done and draw up detailed plans for zones where technical or administrative problems have arisen. In addition, representatives of groups of zones meet quarterly.

In 1963, 4363 cases of malaria were recorded, of which 3098 were classified as indigenous. During the first six months of 1964, 444 cases, including 200 indigenous, were recorded, as against 542, including 172 indigenous, during the corresponding period of 1963. The apparently slow rate of progress is due not to technical difficulties, but to shortage of programme personnel; however, measures have been
taken, in co-operation with the Government, in order to improve this situation.

WHO's assistance takes the form of a nine-man team and of short-term consultants. UNICEF provided equipment, insecticides and drugs to a total value of US $600,000 in 1963, and US $326,000 in 1964. The two organizations are also helping the Government in its long-term programme for a national health service, which is planned ultimately to cover the whole country, by providing consultants and financial assistance for training courses and fellowships.

In areas from which malaria has been eradicated, WHO is assisting in the general public health training of the malaria eradication personnel so that they can be integrated into the existing rural health services.

Symposium on the Toxicology of Drugs, Moscow

The increasing volume and variety of drugs entering into international trade and the complexity of their evaluation, and the public feeling aroused by the events connected with thalidomide, have underlined the need for efficient measures for ensuring the safety and efficacy of drugs and the quality control of pharmaceutical preparations. To this end WHO has for some time been working for the establishment of general principles and requirements for drug evaluation, the regular exchange of information on the safety and efficacy of drugs, and the introduction of a system of rapid information on adverse drug effects.

As part of this effort and because of the importance of Europe as a producer of drugs, WHO convened a European symposium on the toxicology of drugs in Moscow in February 1964. This was the medical counterpart of the technical meeting on the quality control of pharmaceutical preparations organized by WHO in Warsaw in 1961, at which the pharmaceutical problems of drug safety and efficacy were studied.

The symposium in Moscow was attended by pharmacologists, toxicologists and public health officials from nine European countries, who exchanged their views on policy and experience in drug control.

The main discussions centred on methods of appraising drug safety, and the application of toxicological knowledge in drawing up laws and regulations for the protection of health. The possibilities and limitations of the experimental evaluation of the therapeutic safety of drugs were discussed. The importance of collecting and appraising information on adverse reactions was stressed, and participants described the procedures for monitoring adverse drug reactions in their countries. Problems of training and research were also discussed.

Epidemiology and Health Statistics, Morocco

Since 1961 WHO has been helping to strengthen national epidemiological and health statistical services in Morocco, by providing a medical statistician. The national counterpart was appointed in 1964, after completion of his training abroad on a WHO fellowship.

The statistician provided by the Organization set out to demonstrate the importance and usefulness of epidemiology and health statistics for planning and evaluation of health services, concentrating on a few selected fields, such as trachoma and venereal diseases. Because Morocco, like other countries at a similar stage of development, still lacks a complete network of peripheral medical services, the usual methods of obtaining information do not always apply. To meet this situation, the statistician introduced a method of obtaining morbidity data through lay interviewers of village populations.

Increased efforts are being made to train sufficient numbers of health statistical clerks to work at regional and local levels. The first training course for such clerks was held towards the end of 1963, and a second course was started late in 1964.

In addition, the statistician has participated in statistical courses for doctors and nurses. In view of the increasing work-load of teaching involved in the project, a second statistician has been recruited by WHO at the request of the Government. However, the project is still hampered by a shortage of trained local staff, who could relieve the statisticians provided by WHO of routine duties, thus enabling them to make more effective use of their time.

Since the start of the project, the Organization has provided the necessary basic equipment and supplies. In 1964, to meet the needs of the expanding activities, including the training courses, additional equipment and supplies were provided.

European Conference on Public Health Administration, Zagreb

A conference on public health administration was convened by WHO in Zagreb in June 1964 and attended by senior public health officials from twenty-seven European countries. Its discussions were based on a review of health services in Europe, prepared by WHO; this gives an account of the general trends in the development and organization of European
health services, followed by a brief description of the systems of public health administration in each of the countries.

The conference concentrated on certain aspects of the review, such as the advantages and disadvantages of the centralization and specialization of health services. It also examined new trends in the organization and administration of public health services, and considered the possible changes in administration to meet the new public health problems and conditions. In this connexion it discussed two subjects in particular: the modern concept of mental health, and the use of epidemiological and statistical data as a basis for the organization and development of health services.

The conference made a comparative study of the main trends in health legislation in Europe, with particular reference to the classification of legal texts and the notification of communicable diseases. It considered that further discussions on particular aspects of health legislation would be valuable.

The conference also discussed the methodology of public health planning and the integration of health plans into general plans for economic and social development. It concluded that public health planning was a necessity, and should be developed in consultation with all the interested parties, particularly the medical profession; it should also be subject to continual revision. So far as possible, public opinion should be taken into consideration in the planning. Finally, the importance of international co-operation was stressed.
Membership in the Eastern Mediterranean Region was increased during the year by the admission of Qatar as an Associate Member by the Seventeenth World Health Assembly.

An important development in many countries of the Eastern Mediterranean Region is the inclusion of long-term national health plans in their general planning for social and economic development. Jordan and Somalia are examples of countries where WHO is assisting by advising national development councils on the establishment of priorities and by providing training in the basic principles of planning. The most important aspects of these long-term national health plans include the development of rural health services, the progressive integration of specific communicable disease control programmes into the public health services, the training of professional and auxiliary personnel, the strengthening of vital and health statistics, and the establishment of urban and rural health demonstration centres.

The improvement of training facilities is of vital importance for the strengthening of health services, since there is still a serious lack of qualified medical and paramedical personnel in the Region.

In Tunisia, following the assistance provided by WHO in previous years during the planning stages, the Faculty of Medicine in Tunis was opened late in 1964. The Organization is providing professors in anatomy, histology and embryology, and physiology.

Assistance is being provided or planned for medical education in Iran and Iraq, and a WHO consultative group visited Syria in April to advise on the establishment of a new medical faculty in Aleppo.

A special group meeting on medical education was convened in Alexandria in December 1963 (see page 114). It considered inter alia the need to revise the medical curriculum in order to prepare the future doctor more adequately for his role in the community.

Assistance to educational institutions included post-graduate public health training. For instance, WHO is assisting in the development of a public health training programme at the Institute of Parasitology, Tropical Medicine and Hygiene, in Teheran, and at the Hadassah Medical School, in Jerusalem, a division of social medicine and public health has been established with help from WHO.

The WHO fellowships programme has continued to play an important role. At a meeting of national fellowships officers in November 1963, representatives from thirteen countries in the Region discussed problems related to the selection, placement and utilization of fellows. With a view to evaluating the fellowships programme, twenty-eight former WHO fellows selected at random in each of two countries of the Region were interviewed in December 1963. In one of the countries, in the great majority of cases the effect of the fellowships and the utilization of the fellows after their return were considered most satisfactory. In the second country, the picture was less encouraging, but it is hoped that the position will improve with a more stringent selection of fellows and advance planning for their utilization on return home.

There has been further emphasis on nursing education. Steps are being taken to establish a post-basic college of nursing in Iran. In Iraq, responsibility for the training of nurses has been transferred from the Ministry of Health to the University of Baghdad, where a faculty of nursing has been established. At the Higher Institute of Nursing of the University of Alexandria, graduates from various countries of the Region have been trained to carry on the undergraduate teaching programme as the WHO staff is withdrawn. However, despite the intensification of the training programme, and the resulting increase in the number of nurses, the rapid development of health services is creating a need for even more nursing personnel, so that the problem of lack of nurses remains unsolved. A description of the school of nursing at the Ahmed Maher Hospital in Cairo is given below (see page 113).

In work carried out in close co-operation with UNICEF and the United States Agency for International Development (AID), satisfactory progress has been made in most of the malaria eradication programmes (see pages 3 and 4), and in the simultaneous development of malaria and rural health services under pre-eradication programmes. The urgent need to develop an adequate health infrastructure into which the national malaria eradication service can be integrated is now fully realized in countries in which malaria eradication programmes are approaching the maintenance phase. As a pre-
liminary step in preparing malaria workers for their future broader activities, the curricula of some of the national malaria eradication training centres have been expanded to include subjects on general health; at the same time, studies on various aspects of malaria are being included in training courses for general health workers. In countries with pre-eradication programmes assistance is also being given for the development of rural health services. A public health adviser has been assigned for this purpose to the malaria advisory team provided by WHO in Ethiopia, and similar assistance is planned for Somalia and Sudan.

The first independent evaluation of a malaria eradication programme in the Region was conducted in Iran during November and December 1963 by a team of WHO and AID experts. The team made recommendations which it is hoped may lead to a solution of the problems confronting the programme in southern Iran. A review of the programme in Israel has been made by a WHO consultant; it shows that most of the country can be considered to be in the maintenance phase (see page 3).

Co-ordination between neighbouring countries has been continued through border meetings and exchange of epidemiological information. Countries that held such border meetings during the year included Iran and Iraq; Lebanon and Syria; Jordan and Syria; Jordan and Saudi Arabia; India and Pakistan; and Syria and Turkey. In addition, Burma, India and Pakistan again held annual border conferences.

A detailed description of the malaria eradication programme in Pakistan appears below (see page 112). With regard to tuberculosis, the new pattern adopted for the development of co-ordinated national programmes, starting with pilot areas, is being applied in almost all the countries in the Region, and in Jordan and Syria such pilot areas started operating during the year. Mass BCG vaccination campaigns, still accepted as the most practical and the safest means of tuberculosis prevention in developing countries, are being conducted simultaneously with case-finding and treatment in various forms. The tuberculosis programme in the Region has reached the stage where emphasis should be placed on the evaluation of the methods used and the results achieved as a step towards applying on a national basis an effective and simple system adapted to local social conditions and economic resources.

As regards smallpox, the eradication campaign in East Pakistan will soon cover the entire population, and a follow-up phase will ensue; an eradication programme is expected to start in West Pakistan in 1965. Intensive routine vaccination has been carried out in Karachi. By the end of February 1964 the campaign in Sudan covered a population of just over seven million, and a consultant provided by WHO evaluated the programme during March and April. In Yemen, by the end of 1963 about 15,000 people had been covered by a mass vaccination campaign in Hodeida, and in Saudi Arabia smallpox vaccination was made compulsory by law. An eradication programme is being organized in Somalia with help from WHO.

In order to define the major problems of food hygiene and zoonoses in the Region, FAO and WHO organized a joint seminar on food hygiene, zoonoses control and veterinary public health practice. It was held in Lahore, Pakistan, at the end of October 1964, and was followed by a five-day field visit to Teheran, Iran.

In the WHO-assisted projects for the control of communicable diseases, training and health education activities have been considerably intensified. Large-scale control activities were continued in Ethiopia, Iraq, Tunisia and the United Arab Republic, and pilot trials have been started in West Pakistan. Good progress has been made in the control projects in Jordan and Sudan, and control activities in schools have been continued on a national basis in Ethiopia and Kuwait, and resumed in Libya.

Good progress has been made in the Organization's epidemiological investigations of cholera in East Pakistan; the information collected, including data on sanitation, research and therapy, serves to promote WHO-assisted cholera programmes in other regions. During a bacteriological survey of cholera cases and their contacts, healthy carriers were found among contacts; this finding, as well as the existence of cholera El Tor in areas previously free, is of great epidemiological importance.

In order to give epidemiologists and bacteriologists advanced training in the control and study of enteric and diarrhoeal diseases, inter-regional training courses on enteric infections were held in Teheran (in October and November 1963), and in Alexandria (in April 1964). The WHO diarrhoeal diseases advisory team, consisting of an epidemiologist, a parasitologist, a bacteriologist, a paediatrician and a sanitary engineer, completed a survey in Iran, and made a similar study in Pakistan on the problems of diarrhoeal diseases as a cause of morbidity and mortality in infants and children.

Agricultural development, land reclamation, new irrigation schemes and the settlement of nomads all tend to increase the danger of bilharziasis in certain countries in the Region, and most of them are paying more attention to this serious problem. In Lebanon, the Organization made a survey of bilharziasis foci and advised on control methods, and in Somalia it
is planned to integrate snail control work into the WHO-assisted rural health project. During the period under review a survey of the distribution of bilharziasis in Iran was undertaken, and the WHO inter-regional bilharziasis advisory team visited Ethiopia, Lebanon, Sudan and the United Arab Republic to carry out surveys and discuss the programme of work and progress made in WHO-assisted bilharziasis control projects.

Public health laboratory services are now recognized by the countries of the Region as an essential part of health services in general. Many countries are adopting a co-ordinated national public health laboratory system, with a central public health laboratory to which are affiliated provincial or regional laboratories, as well as hospital laboratories. Such a system has been established in Iran, Jordan, Pakistan, Saudi Arabia and the United Arab Republic; Lebanon and Syria are reorganizing their laboratory services to fit this pattern; and Ethiopia, Libya and Somalia are planning to do likewise. The Organization has provided advice and supplies and equipment to public health and other laboratories in Cyprus, Ethiopia, Iran, Iraq, Jordan, Lebanon, Syria, Tunisia, and the United Arab Republic. The first regional training course for laboratory technician tutors was completed in Beirut in May 1964, and a second course was started in October.

Health education is being included to an increasing extent as part of community development and other projects—for example, in Ethiopia, Saudi Arabia and Tunisia. Special attention has been given to health education in schools in Aden, Kuwait, Libya, Tunisia, the United Arab Republic and Yemen. The teaching of health education to auxiliary health personnel has been an important aspect of several WHO-assisted projects—for example, at the Arab States Training Centre for Education for Community Development, the Public Health College of Haile Selassie I University, in Ethiopia, the Palasht School for Sanitarians in Iran, and the Health Training School in Somalia.

In co-operation with UNICEF, WHO has assisted ten countries in the Region in the improvement of maternal and child health and school health services and their integration into the public health services through the establishment of health centres and rural health services, and through the training of health personnel. In Cyrenaica, health auxiliaries trained at the Benghazi maternal and child health demonstration project, for obtaining information within the various fields of health education and training, including the training of physicians in record-keeping. Stress was also laid on the need for simple manuals setting out principles for health statistical organization and a methodology for obtaining information within the various fields of health statistics.

In the Region, which has a population of about 220 million, the number of new cancer cases reported each year now reaches nearly half a million, and there is considerable difficulty in organizing diagnosis and treatment on such a large scale. In this connexion, WHO has advised governments on the setting-up of curative services and on their integration into a more comprehensive cancer control programme; it has also assisted in the training of personnel for specialization in cancrology, cancer surgery and radiotherapy, providing fellowships to candidates from Ethiopia, Iran, Jordan and the United Arab Republic. WHO provided advice on the work of the Teheran Cancer Institute and on the organization of cancer control institutes in Iraq and Tunisia.

In the field of radiation health, the Organization has assisted in the training of local personnel and in developing national services for radiation protection. In Ethiopia, it continued to assist the training courses for X-ray technicians, and in Tunisia a section of the central medical technical service for the repair and
maintenance of medical equipment—a WHO-assisted project—is responsible for radiation protection. The Organization has also awarded fellowships for specialization in radiology, radiochemistry and various aspects of radiation protection.

Increased emphasis has been placed on the need for the development and organization of nutrition services. WHO has continued to assist in the development of the nutrition institute in Teheran, and it is planned to include specialized training among the functions of the institute.

In medical rehabilitation, WHO provided advice and fellowships to various countries, among them Iran, Lebanon, Pakistan, Syria and Tunisia.

The problems of environmental health, particularly in rural areas, are still of primary importance. Improvements in environmental health depend upon a good water supply system, and the Organization has continued to help with water supply projects in Jordan, Pakistan and Saudi Arabia. WHO is also assisting several countries in projects for the improvement of sewage and waste disposal systems, as well as in other aspects of environmental health, including housing. An important development in the training of qualified personnel for environmental health work is the commencement of post-graduate courses in sanitary engineering at both the American University of Beirut and the University of Teheran. These courses are in addition to those which have already been available for several years at the Universities of Alexandria and Lahore.

Five countries of the Region were represented at the WHO inter-regional seminar on the health aspects of industrialization, held in Dacca, East Pakistan, in November 1963. Participants discussed the health problems of workers directly exposed to the process of industrialization, and the repercussions of industrialization on the health of the community as a whole.

Much of WHO's work in the Region is carried out in association with other international organizations, particularly with UNICEF. WHO is co-operating with ILO in occupational health projects, with FAO in nutrition programmes, with UNESCO in health education and training in community development, and with the United Nations with regard to the health aspects of community development projects. Close contact has been maintained with the Economic Commission for Africa, and with the Economic Commission for Asia and the Far East.

The Regional Committee

Sub-Committee A of the Regional Committee for the Eastern Mediterranean met in Kuwait from 3 to 7 October 1964, and Sub-Committee B met at the Palais des Nations, Geneva, on 22 and 23 September 1964. Sub-Committee A was attended by representatives of Cyprus, Ethiopia, France, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Pakistan, Qatar, Somalia, Sudan, Syria, Tunisia, the United Arab Republic, the United Kingdom of Great Britain and Northern Ireland, and Yemen. Sub-Committee B was attended by representatives of Ethiopia, France, Iran, Israel, and the United Kingdom of Great Britain and Northern Ireland. The United Nations, the Technical Assistance Board, UNICEF, and the United Nations Relief and Works Agency for Palestine Refugees in the Near East were represented at Sub-Committee A, and representatives from one intergovernmental and four international non-governmental organizations were also present. At Sub-Committee B the United Nations and the Technical Assistance Board were represented, as well as five non-governmental organizations and the International Children’s Centre. The Director-General attended part of the session of Sub-Committee B, and he was represented by Dr P. M. Kaul, Assistant Director-General, at Sub-Committee A.

In pursuance of resolution WHA7.33, Sub-Committee A designated a representative to meet with the Regional Director to harmonize the decisions and prepare the final report on the session, while Sub-Committee B requested the Regional Director to act on its behalf in the same connexion. The resolutions adopted by the sub-committees on subjects common to the two agendas were either identical or the same in substance, with the exception of that dealing with the use of the Arabic language in the Regional Office, Sub-Committee A requesting the Executive Board to reconsider its resolution on this subject.

The following were among points brought out during the discussions on the annual report of the Regional Director: education and training activities should continue to receive priority; the creation of new medical faculties was a great step forward, but the curricula of existing faculties should be periodically reviewed and, if necessary, revised according to the countries' changing needs; it was important that medical educators receive appropriate training. With regard to malaria, inter-country border meetings were very useful for the co-ordination of eradication measures, and should be encouraged; further epidemiological studies were needed to cope with problem areas where the local vector had developed resistance to insecticides. Environmental health and community water supplies played an important role in the health field, and WHO assistance in this respect should continue. Health planning was an essential component of any long-term national plans for social and economic
development, and health ministries should participate fully in the work of National Development Boards. Sound vital and health statistical services were very important, and should be promoted or developed. The control of drugs and pharmaceuticals deserved continued attention; in view of the vast quantities of these products on the market, WHO assistance in the maintenance of adequate standards was most important.

Other technical subjects discussed under separate items on the agenda were the public health aspects of measles in the Eastern Mediterranean Region, the public health laboratory services, various aspects of medical education, and the role of hospital pharmacy and medical stores in a hospital community.

The proposed programme and budget estimates for the Region for 1966 were considered and endorsed with minor amendments for transmission to the Director-General.

The subject of the technical discussions was “Infantile diarrhoea”. “School health” had previously been chosen by both sub-committees as the subject for technical discussions in 1965, and “Health aspects of industrialization in relation to air pollution” was selected by Sub-Committee A as the theme for the discussions in 1966.

Sub-Committee A had in previous sessions accepted invitations for its future sessions as follows: Ethiopia in 1965, and Pakistan in 1966. Sub-Committee B expressed the hope that its meeting in 1965 would be within the Region.

Administrative Developments in the Regional Office

There has been no major change in the organizational structure of the Regional Office. A survey of office space has been made, with the assistance of a management specialist from headquarters. The number of WHO representatives has been increased, and at the end of the year there were eight such posts in the Region.

Some Aspects of Work in the Region

A list of projects current during the year will be found in Part III. The following have been selected for fuller description.

Malaria Eradication Programme, Pakistan

The malaria eradication campaign in Pakistan was launched in 1961 following the signing of an agreement between the Government and WHO. By a previous agreement, signed in November 1960, two malaria eradication training centres, one in each Province of Pakistan, had already been set up.

The total cost of the programme is estimated at approximately US $110 million. The local costs are committed by the Government, while the cost of imported materials—initially borne by the Government and by WHO—has since 1962 been covered by loans from the United States Agency for International Development. Additional assistance in the form of equipment and insecticides has been provided by UNICEF, and the UNICEF Executive Board has sanctioned a substantial grant for 1965.

Malaria control has been in operation since the beginning of the century; with the introduction of DDT during the Second World War, the work was expanded to cover a large part of the country. But while in some areas the control was conducted systematically and achieved considerable success, in others the efficiency of the operations was much below standard, mainly because of administrative difficulties.

At the end of 1959, a nation-wide pre-eradication survey was launched with the assistance of two WHO teams, one in each Province, working under a national co-ordinator. The survey, completed in the last quarter of 1960, led to the preparation of two fourteen-year phased plans of operation which, while identical in basic approach, were adapted to the conditions prevailing in East and West Pakistan.

The Malaria Eradication Ordinance of June 1961 created an autonomous malaria eradication service under the overall direction of a central malaria eradication board and of two provincial malaria eradication boards.

Since its inception, the programme has strictly followed the methods and schedules specified in the plan of operation. As the programme expanded, the proportion of the population protected by attack operations increased regularly, as shown below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total at risk</th>
<th>Protected in East Pakistan</th>
<th>Protected in West Pakistan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>86 200</td>
<td>370</td>
<td>1 100</td>
</tr>
<tr>
<td>1962</td>
<td>88 350</td>
<td>1 780</td>
<td>2 700</td>
</tr>
<tr>
<td>1963</td>
<td>90 650</td>
<td>5 537</td>
<td>7 700</td>
</tr>
<tr>
<td>1964</td>
<td>93 050</td>
<td>10 877</td>
<td>15 149</td>
</tr>
</tbody>
</table>

During July 1964 further areas with a population of eighteen million entered the preparatory phase and will be covered by attack measures in 1965 when areas with a population of approximately three million are expected to be ready to enter the consolidation phase (the attack phase lasting generally three years in East Pakistan and four years in West Pakistan).
The peak of training activities will be reached in 1965, and in 1966 the programme will culminate, with the maximum expansion of the attack operations. The consolidation phase is scheduled to end in West Pakistan in 1973 and in East Pakistan in 1974, by which time the total population of the country may be over 122 million.

Encouraging features of the Pakistan programme are: a strong administrative organization; a thorough system of geographical reconnaissance completed well in advance of the first spraying operations and continuously brought up to date; the early establishment of both active and passive surveillance; emphasis on health education, with qualified health education officers in each zone; separate evaluation sections at all levels, and an independent assessment division at provincial and national levels. These features are made possible by a large permanent staff (only unskilled labour is recruited seasonally) which receives a very thorough training before assignment. Supervision is strict, and efficiently organized at all levels.

The problems encountered include all those to be expected in an undertaking of such magnitude: administrative difficulties during the earlier years, strain on the training centres because of shortage of accommodation and of instructors, delays due to climatic conditions, migration of population, etc. A typical problem is that of the north-western areas of East Pakistan, where the programme is well advanced: the disappearance of malaria encourages new settlers, who reintroduce the disease.

Despite these difficulties, the programme is proceeding satisfactorily, and evaluation data are up to expectations. A comprehensive plan for the development of rural health services has been worked out and practical progress is being made, though at a slower pace than that of malaria eradication. A plan for integrating the malaria eradication programme into the health services during the critical period between the achievement of eradication and the completion of the rural health system is already under study.

Inter-country and inter-regional co-ordination is maintained through regular border meetings: every six months for West Pakistan and India, and every year for Burma, India and Pakistan; meetings with Afghanistan and Iran are planned, probably starting in 1965.

School of Nursing, Ahmed Maher Hospital, Cairo

The aim of the project, which began in 1961, was to improve nursing services in the United Arab Republic by setting general standards of nursing education and practice that would become the established pattern for the country as a whole. To this end, it was proposed to demonstrate nursing education and services in a model hospital and a model school of nursing at the Ahmed Maher Hospital, in Cairo.

The first phase of the project entailed the revision of the curriculum and of certain educational and service policies and the preparation of facilities and personnel for both hospital and school by adapting and expanding the existing facilities and by recruiting additional staff. The Government gave every support to the plan: representatives of the Ministry of Health participated in committees for the revision of curricula and policies, initiated a large building programme, obtained equipment and supplies, employed seven graduates of the Higher Institute of Nursing of the University of Alexandria to work with staff provided by WHO, and made whatever other personnel changes seemed necessary to facilitate progress.

It was planned to start the second phase of the project—the training of nurses from other nursing schools and hospitals—only after the completion of the first. However, interest in the project was so great that courses had to be arranged before the final preparations were completed. Numerous requests for advice were received from medical directors of hospitals and schools of nursing, from university medical faculties, and from Ministry of Health officials.

In 1963 it was decided to extend the project so as to provide "models" not only for general hospitals, but for all spheres in which nurses served. The plan of operation was revised and the Technical Assistance Board increased assistance, providing for three additional nurses under contingency funds in 1964. Provision is now made for the senior adviser and educators in nursing services administration, general nursing education, public health nursing, and mental health and psychiatric nursing. The Government has also made provision for an additional seventeen posts to be filled by graduates of the Higher Institute of Nursing.

Plans for the future include the enrolment each year of twelve graduates of the Higher Institute of Nursing, so that they may gain a year's practical experience in teaching and administration before assuming these responsibilities in a post.

Supervisory Team for Health Centres, Ethiopia

Two major steps in the programme for the development of integrated rural health services in Ethiopia were the establishment of the Public Health College and Training Centre at Gondar in 1954, and the

---

subsequent creation of a network of rural health centres, numbering fifty-eight by the end of 1964. In 1962, the supervisory team for health centres, consisting of a public health adviser, a sanitary engineer and a public health nurse/midwife, was provided by WHO to help the Government in ensuring the proper operation of the health centres, the coordination of local and provincial health services and their integration within overall social and economic plans, and in promoting in-service training.

After three months' orientation at the Gondar Public Health College and Training Centre, the team started its work of visiting health centres, provincial health departments and related health institutions, spending enough time in each area to become acquainted with local health conditions and needs, and paying particular attention to the operation and administration of health centres.

The team works in close cooperation with provincial health departments and with the Ministry of Health in solving administrative, budgetary and financial problems. It is empowered to take decisions on the spot, on behalf of the government authority concerned, regarding such changes of working procedures as appear to be justified in the light of recognized public health principles or experience in the field. Any substantial measures taken or recommended to strengthen local health services and improve procedures in health centres are reported to and discussed with the provincial and central health authorities, and follow-up action is taken.

Emphasis is being laid on establishing uniform procedures at the various health centres. It is planned to develop draft rules for the work of the health centres, to be tried out at one unit for three months before being applied in other centres.

Efforts are being made by the team to promote the gradual integration of specialized health services into the programme of health centres. The resulting increase in the volume and variety of work makes additional training necessary for the staff. Accordingly, every opportunity is taken of supplementing the staff's routine in-service training by arranging visits to other institutions. For example, the health officer and the nursing staff of two health centres near Addis Ababa had a period of special training at the tuberculosis centre in Addis Ababa before starting tuberculin testing and BCG vaccination in their centres. Others have received guidance from the trachoma programme in Addis Ababa before taking up examination of schoolchildren and mass treatment of trachoma in their centres.

The supervision of rural sanitation activities and the provision of technical guidance for the staff are particular problems. In the vicinity of Gondar, sanitation work is continuously supervised by the staff of the College as part of the training of students. Elsewhere, the necessary guidance is provided by the sanitary engineer of the supervisory team. During initial visits, the engineer assesses sanitary conditions and points out problems requiring particular attention. It has not been possible to arrange systematic follow-up visits at intervals of less than one year, so that the possibility of providing supervision and technical guidance is limited; however, the engineer has been able to provide general guidance and encouragement. According to the plan, responsibility for sanitary supervision will in due course be taken over by the provincial and central authorities. Despite inadequate equipment, the local personnel has generally succeeded in bringing about notable improvements in the sanitary conditions in their areas.

During the team's visits to rural health centres, the public health nurse has helped in improving the work and boosting the morale of the young and largely inexperienced nurses in these centres. More frequent visits would seem desirable, and, in this context, a counterpart national team is needed—to accompany, advise and assist the supervisory team, as foreseen in the plan of operation. Such a team would certainly increase the value of the project and the impact on the rural health services of the country.

The team maintains close cooperation with other health projects in Ethiopia assisted by WHO or by other United Nations agencies or bilateral agencies, such as the United States Agency for International Development.

Special Group Meeting on Medical Education, Alexandria

Social and economic progress has had a striking effect on most aspects of public health, but the shortage of trained medical and paramedical personnel continues to present an intractable problem. The problem is not one of numbers only, as the training must be adapted to the new and more realistic goals of a changing society.

In 1940 only eight medical schools existed in the Region. Now there are thirty-six medical schools, in ten countries. This impressive expansion has been confined almost exclusively to countries already possessing medical schools and, largely, to three countries (Iran, Pakistan and the United Arab Republic), where twenty-three of the twenty-eight new schools have been established. In 1959 WHO started work on medical education on a region-wide basis, with a survey of all the medical schools in the Region. This led to a regional conference on medical
education, held in Teheran in October 1962, at which medical educators and public health administrators reviewed the whole problem of medical education. The full proceedings of the conference have now been published, and have aroused interest in other parts of the world.

As a result of the conference, meetings on medical education were arranged by the national authorities in various countries in the Region.

On the suggestion of the conference, a special meeting of ten of the Region’s leading medical educators was convened in Alexandria in December 1963 to discuss informally the existing situation, with particular emphasis on the results of the Teheran conference, and to suggest the general lines of a long-term programme by which WHO could promote medical education in the Region.

The specific suggestions made include the establishment of a regional group to assist in policy-making, the drawing-up of medical curricula, and the promotion of closer contacts not only between the Organization and the medical schools, but also between the medical schools in the various countries; the setting-up of a regional information centre on medical education at the Organization’s Regional Office, and of model medical schools which would also serve as experimental centres for trying out new ideas in the field of medical education. The group also recommended that WHO earmark a certain proportion of budgetary funds specifically for medical education, and emphasized the need to provide assistance for medical school libraries. In this connexion, during 1964 WHO organized, in collaboration with the American University of Beirut, a course for medical librarians (see page 64). With regard to the design and planning of medical school facilities, including teaching hospitals, the group recognized the value of the literature made available by WHO, but stressed the importance of exchange of ideas between the deans and faculty members in the various countries. Finally, with a view to furthering inter-country collaboration, the group proposed that consideration be given to the possibility of establishing a regional medical education association.
In the Western Pacific Region satisfactory progress has again been made in the field of public health administration despite unsettled conditions in a number of areas. However, many problems remain: limitations in budgetary and material resources, shortage of trained personnel, the relative unfamiliarity of national staff with modern planning, inadequate co-ordination by government agencies, and lack of appreciation, on the part of those responsible for economic planning, of the importance of health for economic and social development.

In order to focus attention on the importance of long-term public health programmes within the overall social and economic development plans, a series of regional seminars was arranged on different aspects of public health planning: the first, on health surveys and reporting, was held in October 1963, and dealt with the various methods used in gathering and assessing the basic information needed for planning; the second, in June 1964, dealt with the preparation, contents, implementation and evaluation of health plans (see also page 36); a third seminar, on health planning in urban development, will be held in 1965.

In China (Taiwan) a comprehensive ten-year health plan has been prepared, as an integral part of the national social and economic plan. In the Republic of Viet-Nam, a new office for the general administration of health development has been created to draw up a national health plan geared to the national plan for economic development.

Projects for strengthening local health services are in operation in Cambodia, the Republic of Korea, Laos and Malaysia. In Cambodia, the curative and preventive services at the WHO-assisted rural health training centre at Takhmau have now been fully integrated and the procedure adopted will be progressively extended to other provinces as soon as the necessary personnel are trained. In the public health demonstration area being established with help from WHO in a province in the Republic of Korea, considerable progress has been made: the pilot urban health activities are being expanded and a pilot rural health project has recently been started. In Malaysia, UNICEF and WHO are helping the Government to develop and implement health policies, and train personnel, with a view to strengthening and expanding rural health services. Plans are being developed for the establishment of public health demonstration areas in the Philippines and the Republic of Viet-Nam.

With a view to improving the organization and administration of health services, a number of countries have created new central technical units to plan, direct and co-ordinate specialized health activities. In the Republic of Korea, public health co-ordination and fellowships committees have been set up, and the creation of a provincial health advisory committee has been approved. In the Republic of Viet-Nam, the functions of the newly established office for the general administration of health development include the co-ordination of all foreign and international aid given to the Ministry of Health and of the various health activities of the different ministries. In Malaysia, an office of training programmes and personnel co-ordination has been set up.

Developments in health education include the drawing up in Malaysia of a ten-year programme for setting up central and local health education services (see page 122). In the Republic of Korea the establishment of a national health education service in the Ministry of Health and Social Affairs is under consideration. In China (Taiwan) long-range plans are being made for the work and further development of the health education division in the Taiwan Provincial Health Department. In the Philippines the results of the first three years of the programme for increasing the health education component in teacher training and in school health programmes have been evaluated by members of the project's advisory committee. As a result, new emphasis is being placed on preparing students of health education for work in teacher training institutions and the health education aspects of the curricula of schools are being expanded. In the Republic of Viet-Nam WHO is providing advice on the planning and the organization of a national health education programme and the introduction of health education activities into community health programmes.

WHO has continued its assistance to most countries in the Region in the development of nursing services. In Cambodia the clinical teaching programme for nursing and midwifery students has been improved and nursing posts have been created in the Ministry.
of Health. Assistance to programmes in nursing education, nursing administration, midwifery, public health nursing and clinical specialties has continued in Malaysia, where the rapid expansion of the health services is imposing new demands on the nursing profession, and the shortage of nurses qualified for teaching, supervisory and administrative positions has become more acute. In the Philippines, paediatric nursing services have been upgraded and strengthened, and formal courses for paediatric and public health nurse instructors from government schools of nursing have been introduced. In China (Taiwan) national nurses have assumed responsibility for the School of Nursing and the internationally recruited nursing staff has been withdrawn (see page 121). In the British Solomon Islands Protectorate, the number of nursing students has increased and the standard has improved; new posts have been created for supervisory staff, and a rural health centre, which will be developed as a demonstration and training centre, is nearing completion. A WHO-assisted project in nursing education was started in the Gilbert and Ellice Islands early in 1964.

The first seminar on nursing education for territories in the South Pacific was organized jointly by the South Pacific Commission and WHO in December 1963. It pinpointed the many difficulties of providing health services for widely scattered and sparsely populated areas and of establishing training programmes when in most territories there are no opportunities for general education beyond primary level. Realistic programmes of nursing education and service are needed, based on an objective evaluation of the situation in each country.

Maternal and child health programmes have included surveys, in-service training, training courses for rural midwives and other health workers, the organization of paediatric and obstetric services, the establishment of maternal and child health units at various levels, and the strengthening of the maternal and child health aspects of rural health development programmes. In Laos, new centres and child welfare clinics have been established, and training courses for rural midwives have been set up in four new areas. In Cambodia, a survey of the maternal and child health conditions throughout the country has been completed, and in-service training is in progress. The training course for rural midwives has been extended from six months to one year. In the Republic of Viet-Nam more than twenty schools for rural midwives have been reorganized and national staff are gradually taking over the planning, implementation and supervision of activities. With the assistance of UNICEF and WHO a centre for malnourished children has been established. This operates in close co-operation with the maternal and child health team. In the Philippines, following a study of the hospitals, health centres, maternity homes and other facilities in different provinces, recommendations have been approved for the reorganization of the maternal and child health division of the Department of Health and the appointment of a maternal and child health adviser in each of the eight regional health offices; several pilot projects have been established in selected areas with a view to improving maternal and child health facilities. In China (Taiwan) the maternal and child health programme was assessed by a WHO consultant and found to be progressing satisfactorily.

Following the visit of the WHO advisory team to investigate, in co-operation with the South Pacific Commission, the general health of mothers and children in islands in the South Pacific, a number of governments have asked UNICEF and WHO for assistance in building up their basic health services, with emphasis on maternal and child health activities.

Increased attention has been given to the strengthening of the school health services. UNICEF and WHO are supporting school health projects in China (Taiwan) and the Philippines. In Cambodia, where a school health service already exists, the Ministries of Education and Health have drawn up plans for an expanded programme of activities which will be closely linked with the Takhmou rural health training centre and the maternal and child health project, both of which are receiving assistance from WHO. WHO is helping to plan a similar programme in the Republic of Viet-Nam, where the establishment of a school health service is under consideration.

In the Philippines, a pilot project in applied nutrition, assisted jointly by FAO, UNICEF and WHO, was started during the year to promote the increased production of nutritionally valuable foods, and to introduce nutrition education programmes in schools and communities and provide training. A similar programme has been planned in the Republic of Viet-Nam. A study was made in French Polynesia of the problem of dental caries in relation to malnutrition, and a remedial programme is now being planned.

The first regional seminar on methods of improving nutritional standards in villages was held in Manila in January. It reviewed the main nutrition problems of the Region, and emphasized that nutrition programmes must be integral parts of community development programmes. It also recommended that national health administrations should establish central nutrition sections to assist in formulating national food and nutrition policies.

The information programme launched by WHO in 1963 to stimulate public interest and education in nutrition has been continued. Guides on the content
and methodology of training courses and on various aspects of nutrition have been widely distributed.

In health statistics, WHO has provided direct assistance to three countries—Malaysia, the Philippines and the Republic of Viet-Nam—and fellowships to enable government officials from a number of countries to have advanced training. The WHO-assisted project in Malaysia, originally concerned only with the medical records of government hospitals, has been expanded to include the improvement of hospital records and health statistics generally. In the Philippines, training courses on statistical methodology for senior and junior statistics officers continued; and a new system of hospital statistics is being tried out in three hospitals in the city of Manila and its vicinity. WHO’s assistance with statistics in the Republic of Viet-Nam ended in December 1963. During the three years of the project’s existence the staff of the new bureau of statistics in the Ministry of Health was increased, and central coding and tabulation were introduced (see also page 199).

**Education and Training**

Studies of health manpower requirements and training needs are being made in a number of countries.

WHO-assisted training projects for auxiliary personnel are in operation in four countries: in the British Solomon Islands Protectorate, for auxiliary nursing staff; in Cambodia, for officiers de santé and other auxiliary personnel; in the Republic of Korea, for laboratory aides and sanitary inspectors; and in the Philippines, for sanitary inspectors.

The training of paramedical personnel has again been an important feature of WHO’s programme in the Region. It has included assistance to the Institute for Medical Research in Malaysia for the training of laboratory technicians, to the School of Allied Medical Professions of the College of Medicine, University of the Philippines, for the training of physical therapists and occupational therapists, and to the School of Physical and Occupational Therapy in Japan, where a three-year training course for physical therapists has been started. The School of Radiography in Singapore is now well established and it should be possible to withdraw WHO assistance at the end of 1965.

The present status of undergraduate medical education in the Region was reviewed at the first conference of deans of medical schools, held in Manila in November 1963 (see page 123). Staff are being recruited and trained for the new Faculty of Medicine of the University of Malaya, where WHO assistance is to be directed particularly to the teaching of preventive medicine and public health. Assistance to other medical schools has been continued.

Post-graduate programmes in public health were further developed. In the Philippines, WHO assistance has enabled the Institute of Hygiene to strengthen its faculty, expand its curricula and accept more students, including some from other countries of the Region. In China (Taiwan) WHO has given advice on the establishment of post-graduate courses in public health at the National Taiwan University. In the Republic of Korea the short-term training courses for physicians, nurses, sanitary inspectors and laboratory aides for local health services have been supplemented by a post-graduate course, leading to a degree in public health, at the Seoul National University. This course is designed for senior staff in public health administration.

The fellowships programme plays an important role in the education and training activities in the Region. More governments have established national fellowship selection committees, in which WHO staff take part in an advisory capacity.

**Communicable Disease Control**

In all WHO-assisted malaria programmes progress has been noted, although in some areas intensive efforts have had to be made to maintain the results achieved, and prospects of further advance are jeopardized by unsettled political conditions. Particular attention has been given to strengthening the basic health services, as in China (Taiwan), where facilities and administration at the local level have been much improved, and where at the end of the year an evaluation team was making a final assessment of the programme. In Sabah, with the exception of a small area under consolidation, all the malarious areas, with a population of over 400,000, are in the attack phase. In Sarawak more than 500,000 of the 677,000 people living in the originally malarious areas were in the consolidation phase at the time of reporting, and the remainder were in the attack phase. In the Ryukyu Islands, case-detection has confirmed the absence of malaria, no cases having been reported since April 1961. Machinery for surveillance is effective, and the Government has asked for inspection by a WHO evaluation team early in 1965.

Some of the pre-eradication programmes have experienced setbacks, mainly of an operational and administrative nature. However, epidemiological assessment has been strengthened and the training of staff intensified, and more attention is being given to the supervision and evaluation of activities. In June 1964 the malaria eradication pilot project in Malaya was terminated and a pre-eradication pro-
gramme started. In the malaria eradication pilot project in the British Solomon Islands Protectorate malaria morbidity and mortality have been considerably reduced, and there are indications that transmission has been interrupted in many areas.

Since the malaria eradication training centre in Manila was re-established late in 1963, it has provided a full course for administrative officers, two full courses for sub-professional operational personnel, and several shorter courses for entomologists, malarialogists, parasitologists and sanitary engineers. The centre is sponsored jointly by the Government of the Philippines, the United States Agency for International Development and WHO, and with the closing down of the training centres in Jamaica and Yugoslavia it is likely to be of greater international importance than hitherto for the training of staff for malaria programmes.

Two seminars were organized on the control of communicable diseases of public health importance: the first, in December 1963, on the role of immunization in the control of communicable diseases; the second, at the end of 1964, to review the major communicable disease problems in the Region and exchange information on the preventive and control measures used.

Cholera is still widespread in the countries of this and neighbouring regions, and control measures have not been fully successful in preventing its appearance or reappearance. Present-day treatment, however, has been shown to be capable of keeping the mortality rate very low when patients are treated early. Research on the role of carriers in cholera transmission and field trials of cholera vaccine have been undertaken and the results reviewed by a scientific group (see page 23). In the meantime, immunization programmes are being expanded, health education is being intensified, and more attention paid to community sanitation. An inter-regional seminar was held in Manila (see pages 23 and 207).

Assistance to national tuberculosis control and BCG vaccination programmes continued in China (Taiwan), the Republic of Korea, Malaysia, the Philippines and the Republic of Viet-Nam. All these programmes have made progress, and the public health approach to the tuberculosis programme in the community is now well accepted. The nation-wide programme in the Republic of Korea covers all phases of tuberculosis control (see page 121). The first phase of the tuberculosis control project in Western Samoa was successfully completed at the end of 1963. The method of approach used has provided a pattern of work which it is felt can be applied with equal success in other areas of the South Pacific. A similar project was started in the New Hebrides at the end of June 1964.

The refresher course on tuberculosis for assistant medical officers in the South Pacific, which was organized jointly by the South Pacific Commission and WHO, was the preparatory phase of the co-ordinated tuberculosis programme being planned for this part of the Region. In the Republic of Viet-Nam the tuberculosis control project assisted by UNICEF and WHO has been redefined, a central tuberculosis service has been set up in the Ministry of Health, and rural midwives are being trained for a nation-wide BCG vaccination campaign. The regional tuberculosis advisory team spent most of 1964 in the Philippines, where it helped to establish a national tuberculosis control pilot area project. It also helped in assessing national control programmes or in carrying out tuberculosis control surveys in French Polynesia, Malaysia, the New Hebrides, the Ryukyu Islands and Western Samoa.

Arrangements were completed for the WHO inter-country treponematoses team to return to the South Pacific to assist in the second phase of the project—aiming at full control and, ultimately, the eradication of yaws in areas where the disease was formerly endemic. At the time of reporting the team was working in Western Samoa, where it is also carrying out surveys on venereal, filarial, mycological and helminthic diseases. WHO assistance to the yaws mass treatment and survey campaign in Cambodia was terminated, as there is now a nucleus of trained yaws workers to maintain surveillance and follow-up, and to help in developing rural health services. The inter-regional treponematoses advisory team also worked in the Region in 1964 (see page 9).

For work on arthropod-borne virus diseases in the Region, see pages 19-20.

**Environmental Health**

The cholera outbreaks and the frequency of gastrointestinal, helminthic and other water-borne infections are an indication of the seriousness of environmental health problems in the Region. WHO has provided a considerable amount of assistance to governments on different aspects of these problems. In the Philippines, for example, it has given advice on environmental health at the national level: a division of environmental sanitation has been established in the Department of Health, and WHO-assisted training courses for sanitary inspectors are being held in a number of areas. A food sanitation programme is also being developed to train key personnel of the Department of Health in inspection techniques. In Malaysia, a division of environmental sanitation and communicable disease control has recently been set up within the Department of Health. Environmental sanitation also forms part
of the WHO-assisted projects for the development of rural health services in Cambodia, the Republic of Korea, Laos, and Malaysia.

The need to improve community water supplies and community sanitation remains a major problem in the greater part of the Region, deserving high priority. In six of the less developed countries of the Region, having an aggregate population of about ninety million, not more than 18 per cent., or about sixteen million, of the urban population, have access to safe water supplies, while in most of the South Pacific area the people obtain water from rain-catching tanks. In Tonga, a project assisted jointly by UNICEF and WHO to provide a number of villages with piped water supply has been so successful that other countries in the area have shown interest in similar programmes. In China (Taiwan), the five-year plan for a community water supply to serve an additional population of almost two million has made progress. In the Republic of Korea a consulting engineering firm has reviewed possible schemes of organization, operation and management of an enlarged water system to determine which is the most suitable for the city of Seoul. In Sabah, WHO has given advice on community water treatment problems and the training of waterworks operators.

As in previous years, there has been close cooperation with international and bilateral agencies working in the field of health, particularly with UNICEF, which is providing supplies and equipment to sixty-eight WHO-assisted projects in the Region, in the fields of maternal and child health, nursing, nutrition, rural health, environmental health and communicable diseases. Close working relations have continued with the resident representatives of the Technical Assistance Board. Co-operation with the South Pacific Commission has been strengthened.

The Regional Committee

The fifteenth session of the Regional Committee for the Western Pacific was held in Manila from 17 to 22 September 1964. The meeting was attended by representatives of all Member States in the Region, and by representatives of France, Portugal, the United Kingdom of Great Britain and Northern Ireland, and the United States of America, attending on behalf of certain territories in the Region. Representatives of the United Nations, the Technical Assistance Board, ILO, UNICEF, the International Committee of Military Medicine and Pharmacy, the South Pacific Commission, and of twenty non-governmental organizations in official relations with WHO were also present. The Deputy Director-General attended the session.

The Committee examined in detail the fourteenth annual report of the Regional Director, for the period 1 July 1963 to 30 June 1964. During the discussion two subjects were raised on which specific resolutions were passed: the increasing importance of virus diseases, and in particular the difficulty experienced by some governments in obtaining poliomyelitis vaccine; and the possibility of WHO assistance to governments in their population study programmes.

The programme and budget proposals for the Western Pacific Region in 1966 were discussed and approved for transmission to the Director-General.

The Committee extended by one year the Second General Programme of Work originally planned for the period 1962-1965, and decided that the Third General Programme of Work should relate to the period 1967-1971.

The Committee reviewed the report on the procedure for the nomination of Regional Directors, which the Executive Board had requested the Director-General to prepare, and which it had invited the regional committees to consider. General agreement was reached that the present procedure should be revised, and proposals for new arrangements were approved by the Committee.

The Committee noted with satisfaction the action taken by WHO to implement the recommendations on cholera control adopted by the Committee at its fourteenth session in 1963. It also welcomed the important place accorded in the Organization's programme on human genetics to research on population genetics in primitive groups.

Other items discussed included the need for improved health services for pre-school children and the public health aspects of protection against ionizing radiation. A paper on dental epidemiology and national dental services, presented by the Administration of Papua and New Guinea, drew attention to the many reports of unusual dental conditions, especially in less developed countries. In this connexion, the Committee stressed the need for sound dental epidemiology programmes.

"The use of statistics in public health administration" was the subject of the technical discussions. "The use of health education services in national health programmes" was selected as the topic for the technical discussions in 1965.

The sixteenth session will be held in Seoul (Republic of Korea), and the seventeenth session at the Regional Office. The Committee accepted an invitation from
the Government of Malaysia to hold its eighteenth session in Kuala Lumpur.

Administrative Developments in the Regional Office

There has been no change in the organizational structure of the Regional Office. A number of senior posts were filled. The post of regional adviser in education and training was still vacant at the time of reporting.

Some Aspects of Work in the Region

A list of projects current during the period under review will be found in Part III. The following have been selected for fuller description.

Nursing Education, China (Taiwan)

Since 1952 WHO has been helping to improve the standards of nursing education, and therefore the quality of the nursing services, in China (Taiwan). The purpose of the project was to train graduates for key senior positions in the nursing services and education programmes throughout the country by introducing a professional course combining sound training in nursing with a good general education.

WHO provided twelve fellowships for study abroad and a team of four nurse educators for the first ten years of the project. Since 1962 this team has been reduced gradually, the last nurse educator leaving the project in August 1964. The work of the team was mainly advisory, with occasional classroom teaching and demonstrations.

Assistance was provided to the National Taiwan University Hospital vocational school of nursing until 1956, when a degree course in basic nursing education was established at the University and the vocational school discontinued. The normal degree course for the Bachelor of Science in nursing takes four years, but practising nurses who meet the requirements for university admission can take an abridged two-year course. A satisfactory curriculum has been developed for the degree course, and regular university standards are being applied. A one-year post-basic course for nurses who do not need a degree, or who do not qualify for admission, has been under consideration, but funds from the university budget are not available for this type of student.

Some difficulty has been experienced in finding the necessary teachers. Only four members of the teaching staff have a Master’s degree, and it is regarded as essential to increase the opportunities for further education for members of the nursing faculty, either through fellowships to study abroad or through the establishment of a course for a Master’s degree at the University.

The number of students enrolled has increased steadily and the present number of 154 is practically the maximum capacity of the programme; there are more candidates seeking admission than can be accepted. This situation is likely to grow more acute as the requirements for promotion to administrative and supervisory posts in nursing are upgraded, putting a premium on the sort of qualifications provided by this course. The solution would appear to be the establishment of similar courses at other universities. Former students are now working in positions of responsibility in hospitals and health services or are themselves teaching in schools of nursing.

Tuberculosis Control, Republic of Korea

In a national BCG vaccination campaign in the Republic of Korea over 2.6 million children were vaccinated between 1951 and 1959, an extensive case-finding programme was started in 1955, and in 1957 almost 50,000 patients were receiving domiciliary chemotherapy. The programme was originally supported by bilateral assistance, which was decreased from 1958 onwards and discontinued in March 1961. The Government then requested assistance from WHO, and a revised plan of operations was signed at the beginning of 1962. Since 1963 UNICEF has provided supplies and equipment.

The overall objective of the project is to establish an effective and comprehensive tuberculosis control programme so as to reduce tuberculosis and finally eliminate it as a public health problem. This entails developing central and provincial as well as local tuberculosis control services within the existing health agencies already established at various government levels; training the different categories of personnel required for the programme; and demonstrating effective methods for the public health control of tuberculosis adapted to local conditions.

WHO has provided a medical adviser and a public health nurse since March 1962, as well as advisers on bacteriology, the keeping of records, and vaccine production. The instructions given by the bacteriologist on such matters as sputum collection and the preparation, staining and examination of smears were incorporated in a pamphlet on the diagnosis of
methods recommended by the WHO adviser. WHO started to produce its own BCG vaccine, using the methods recommended by the WHO adviser. WHO also awarded four fellowships for study abroad.

The programme is now being operated by over 350 national workers, in addition to the staff in 189 health centres. At the national level, the work of the tuberculosis control office at the Ministry of Health and Social Affairs is complemented by the BCG vaccine production laboratory of the National Institute of Health, the central tuberculosis laboratory and the national tuberculosis control pilot area projects at Yong Dong Po, Seoul and at Puchon Gun, Kyong-gi-do. In each of the nine provinces and the City of Seoul there is a supervisory medical officer—who works closely with a number of BCG teams—a provincial tuberculosis laboratory and a demonstration health centre, usually in the provincial capital. A lay follow-up worker is assigned to each of the 189 county (or "gun") health centres and is responsible for microscopic examination of sputum and the supervision of domiciliary chemotherapy of patients within the area. A nurse in each health centre has been trained to perform tuberculin testing and BCG vaccination, mainly of pre-school children.

Between November 1962 and July 1964, 1.8 million children were vaccinated with BCG. Twenty-six teams, each of which is composed of two nurses, a clerk and a driver, have been trained and are working in all the provinces. A national BCG assessment team, which will be responsible for quality control, is being organized.

Tuberculosis patients are treated with drugs, mainly on a domiciliary basis. Bacteriologically proven and cavitary cases are provided with two drugs, isoniazid with either streptomycin or PAS, while potential cases are treated with isoniazid alone. The number of patients under treatment rose sharply from 28,732 in July 1962 to a maximum of 123,307 in August 1963, and is now maintained at around 100,000.

The Korean National Tuberculosis Association has been contributing actively to the programme by operating thirteen mobile case-finding teams and the central tuberculosis laboratory, and by paying the salaries of the provincial supervisory medical officers, the follow-up workers and the laboratory technicians in the provincial tuberculosis laboratories. It is also carrying out a health education programme.

This is the largest WHO-assisted tuberculosis control project in the Region. Despite operational problems, such as the occasional shortage of drugs in the field and inadequate supervision, many of its operational methods could serve as a model for projects elsewhere. The project has successfully integrated the specialist services into the general health set-up, with the assistance of the voluntary bodies, and provides effective service for a large proportion of the recognized cases of tuberculosis in the country. The project has also given a new impetus to BCG vaccination, by promoting the coverage of susceptible groups and the assessment of the allergy after vaccination.

A visit of the WHO regional tuberculosis advisory team has been planned for 1965 in order to evaluate activities, to strengthen the pilot area project, and possibly also to assist in the conduct of a national tuberculosis prevalence survey. International assistance to the project is expected to be completed in 1967.

Health Education Advisory Services, Malaysia

A ten-year scheme for developing health education services throughout Malaya has been receiving help from WHO since 1962, when a health education adviser was provided. A health education advisory committee was set up to work with government officials and the WHO adviser. An extensive study was made of needs for health education services and a comprehensive ten-year plan was prepared for the various stages of the programme. Two fellowships were awarded, one to the chief health education officer, and the second to a key worker in school health education. In 1964 a health education division was established in the Ministry of Health under the direction of an assistant director of medical services in charge of health education.

At first, attention was concentrated on developing health education in training programmes for medical doctors, nurses, public health workers, school officials and community leaders. Health education courses have now been included in the training of public health inspectors, public health nurses, public health overseers, midwives, health sisters, dental nurses, hospital nurses, tuberculosis programme personnel, malaria eradication programme workers, teacher trainees in all teacher training colleges, and in adult education programmes such as those of the Rural Industrial Development Administration. Moreover, health education sessions form part of meetings of, for example, medical officers of health, state matrons, headmasters and women's institutes, as well as of the field training of the University of Singapore students working for the Diploma of Public Health.
LEPROSY CONTROL IN EAST PAKISTAN

UNICEF and WHO are assisting the Government of Pakistan in a programme aimed at developing a network of static and mobile leprosy treatment centres, particularly for East Pakistan, where the disease is a serious public health problem.

(1) At the Mitford Hospital, Dacca, the WHO leprosy adviser tests the extent of damage to a patient's motor nerves.

(2) The doctor in charge of the leprosy wing of the Mitford Hospital—a former WHO fellow—fills out a record card for a new patient.

(3) Testing for loss of sensation with cotton wool.

(4) Consultations are held periodically in villages in the Dacca area and medicaments distributed.
NUTRITION WORK IN HAITI

PAHO, which also serves as the WHO Regional Organization for the Americas, is assisting the Government of Haiti in training personnel for nutrition work, establishing a nutrition rehabilitation centre and organizing supplementary feeding programmes.

(1) Every day mothers bring their children to the rural nutrition centre at Bon-Repos...

(2) ... for a supplementary meal of vegetable-protein mixture.

(3) Once a week each child is medically examined and weighed.

(4) The team at work in another rural nutrition centre, at Petite-Place Cazeau.

DENTAL SURVEY IN THE WESTERN PACIFIC

A tour of six villages around Singapore, for the purpose of examining the dental needs of the population, was part of a three-month training course in dental epidemiological techniques held early in 1964 for senior dental officers from various countries in the Western Pacific Region. Surveys are also being carried out in other countries of the Region and the data obtained will be used for recommendations on the establishment and strengthening of dental services.

The pictures on this page show the team, on arrival at a village, registering the population and carrying out examinations.
The organization of epidemiological services and their role in the control of communicable diseases was the subject of a travelling seminar held in Moscow and Baku from 13 October to 2 November 1964. The twenty participants, from nineteen countries, came from all six of the WHO regions.
The Ministries of Health and Education have co-operated in introducing health education into the curricula of primary and secondary schools, teacher training colleges, and the University of Malaya's School of Education.

In a pilot demonstration area near Jitra in Kedah State, a community project has been developed from what was originally an applied nutrition project, local health staff and community leaders having recognized that malnutrition could not be eliminated without tackling the health and agricultural problems that contribute to it. Community surveys were carried out to provide a complete picture of conditions in the communities (kampongs) and to secure baseline data upon which to initiate planning for community action programmes.

At the time of reporting, work had been started to integrate fully health education into all the Ministry of Health programmes. The resources of the National Information Service have been secured and other national and international groups are being interested in supporting the health education of the public; for example, the International Women's Club is working on a community study, and the Associated Country Women of the World organized an international nutrition seminar in Kuching, Sarawak, in 1964.

**First Regional Conference of Deans of Medical Schools, Manila**

In November 1963 WHO sponsored the first conference of deans of medical schools in the Region. This was considered opportune because a number of countries in the Region have recently established, or are planning to establish, medical schools, and because the approach to medical education varies greatly from country to country, according to the different stages of economic, social and political development, the local problems and resources, and the outside influences received.

The Conference, which was held in Manila, had twenty participants from ten countries and territories in the Region, and eight observers from medical associations and other institutions. WHO provided the costs of attendance of the participants, three short-term consultants, and supplies and equipment. The purpose of the Conference was to review the objectives and present status of undergraduate medical education in the Western Pacific Region; to formulate guiding principles for establishing standards of undergraduate medical education; to consider problems and difficulties of maintaining standards, and how these might be solved; and to consider the basic principles and problems of the organization and administration of medical schools.

Among its conclusions, the Conference stressed that assessments of a country's medical manpower requirements had to take account of what the country could afford, the relative priority to be accorded to prevention and treatment, and the kind of service that the people would find acceptable.

The Conference reviewed the various forms of WHO's assistance in medical education, and suggested that WHO, through its publications, should arrange a wider exchange of information about medical education. It also suggested a programme of exchange of faculty members among the various medical schools in the Region.
PART III

PROJECT LIST
PROJECTS IN OPERATION IN 1964

This part of the Report contains a list of the projects—country, inter-country and inter-regional—that were in operation during the whole or part of the period from 1 October 1963 to 30 November 1964. Continuing projects for which the only assistance given during the period was technical advice from headquarters or regional offices are not normally shown.

In country projects, the purpose for which the government or governments undertook the project is stated. Details of the assistance provided by the Organization and of the work done are given for completed projects and refer to the whole period over which the project was assisted by the Organization. Such details are not given for continuing projects.

As in former Annual Reports, an attempt has been made to summarize the immediate results of projects for which the Organization’s assistance terminated in the period under review and, where the nature of the work has permitted, to assess or evaluate how far the project has succeeded in the purposes for which it was undertaken. It has not been possible to do this for all completed projects: there has not been time, for example, to assess those that ended late in the period covered.

The projects are grouped by region in the following order: Africa, the Americas, South-East Asia, Europe, Eastern Mediterranean and Western Pacific. In order to give a balanced account of the health programme in the Americas, the list for that Region includes the projects assisted by PAHO in addition to those assisted by WHO. For each region, projects that concern more than one country appear first, and are lettered AFRO, AMRO, SEARO, EURO, EMRO or WPRO; projects in individual countries follow, in alphabetical order of countries. Inter-regional projects are given at the end of the list.

Under the heading “Fellowships” are shown those fellowships awarded during the period 1 September 1963 to 30 November 1964 that do not form part of assistance to a larger project. A table showing all the fellowships awarded during the same period, by subject of study, is given in Annex 12.

The starting and finishing dates are shown after the project title; the finishing date of uncompleted projects is indicated, where possible, in italics. Names of other co-operating agencies, whether or not they have contributed funds, are given after the source of funds.

The abbreviations used include the following: R—regular budget; MESA—Malaria Eradication Special Account; EPTA—Expanded Programme of Technical Assistance; AID—United States Agency for International Development. Other abbreviations are explained in the list on page ii.
AFRICA

AFRO 53 Regional Tuberculosis Epidemiological Centre, Nairobi (June 1960 - ) R

To assist in the technical planning of tuberculosis projects, in the preparation of technical protocols and in co-ordinating project activities; to evaluate, analyse and report on the epidemiological and statistical information received from tuberculosis projects in the Region; and to assist in planning, co-ordinating and analysing field research work.

✓ AFRO 87 Centre for Post-basic Nursing Education, Ibadan (1962 - 1967) R UNICEF

To establish a department of nursing at the University of Ibadan, Nigeria, offering in the first instance courses in post-basic nursing education, leading to a Bachelor's degree, to prepare general, public health, midwifery, psychiatric and paediatric nurse educators and nurse supervisors or administrators in general and special fields. Places will be made available for students from countries other than Nigeria.

✓ AFRO 88 Centre for Post-basic Nursing Education, Dakar (Aug. 1963 - 1969) R

To assist with the development of programmes of post-basic nursing education for countries in Africa where French is spoken, including the organization of adequate facilities for applied teaching and practice for nurse educators (public health and midwifery) and nurse administrators (hospital and public health services).

AFRO 101 Cerebrospinal Meningitis (1963 - ) R.

To provide assistance during epidemics to countries of the Region where cerebrospinal meningitis is endemic; to gain more knowledge of the nature and epidemiology of the disease; and to devise suitable control measures.

AFRO 105 Malaria Eradication Training Centre (English Language), Lagos (1961 - 1972) MESA

To train national personnel, particularly those from within the Region, in all aspects of malaria eradication techniques. (See page 83.)

AFRO 113 Tuberculosis Advisory Team (English-speaking) (April 1962 - Aug. 1963) EPTA

AFRO 114 Tuberculosis Advisory Team (French-speaking) (July 1962 - Sept. 1964) EPTA

The aim was to provide a basis for recommendations on the planning and development of tuberculosis control work in certain countries of the Region by (a) evaluating the tuberculosis situation by means of limited tuberculin test surveys, study of statistical and epidemiological material, and assessment of tuberculosis institutions and control programmes; and (b) collecting information of a more general nature (availability of personnel and funds, priorities to be accorded to public health problems, etc.).

The English-speaking team, consisting of a medical officer, an epidemiologist and a public health nurse, worked in Eastern and Northern Nigeria; the French-speaking team—a medical officer, a statistician and a public health nurse—visited Senegal, Ivory Coast, Mali, Dahomey, Mauritania and Burundi. In the last three countries, the team's work included trials of direct BCG vaccination. Reports on the teams' work have been sent to the governments concerned.

AFRO 115 Tuberculosis Advisory Team (French-speaking) (1962 - ) EPTA

To provide a basis for recommendations on the planning and development of tuberculosis control work in certain countries of the Region by (a) evaluating the tuberculosis situation by means of limited tuberculin test surveys, study of statistical and epidemiological material, and assessment of tuberculosis institutions and control programmes; and (b) collecting information of a more general nature (availability of personnel and funds, priorities to be accorded to public health problems, etc.).

AFRO 116 Rural Health Seminar, Enugu, Eastern Nigeria (19 - 23 Nov. 1963) R

A seminar to study the problems of co-ordinating the development of the rural health services in the Region with the planning, organization and execution of national health programmes, particularly as regards staffing and the integration of specific disease control programmes into the work of the rural health services. The seminar recommended (i) the improvement of staff training, including the introduction of periodic refresher courses, and an adequate system of supervision to ensure better use of personnel; (ii) the integration of mobile units into the basic rural health service system; and (iii) measures to ensure that all physicians working in African countries have a full understanding of their public health problems.

WHO provided a consultant and the cost of attendance of forty-eight participants from twenty-three countries in the Region. The seminar was also attended by twenty WHO staff members and four observers from FAO, UNICEF, the United States Agency for International Development and the African and Malagasy Organization for Economic Co-operation.

AFRO 128 Malaria Eradication Training Centre (French Language), Lomé (1962 - 1972) MESA

To train national personnel, particularly those from within the Region, in all aspects of malaria eradication techniques.

✓ AFRO 130 Department of Paediatrics, Makerere College, University of East Africa, Kampala (1958 - 1966) R UNICEF

To assist in strengthening facilities for teaching paediatrics at Makerere College, University of East Africa, Kampala.
AFRO 133 Training Course on Trypanosomiasis (in French), Bobo-Dioulasso, Upper Volta (4 Nov. - 12 Dec. 1964) EPTA

A course of lectures, field work and discussions for physicians, veterinarians, agronomists and entomologists working or intending to work on trypanosomiasis control. It was held at the Centre Muraz, Bobo-Dioulasso, and was attended by nine participants from Burundi, Cameroon, Democratic Republic of the Congo, Fernando Po, Guinea, Ivory Coast, Mali, Senegal and Togo.

WHO provided three consultants, temporary advisers and fellowships for the participants.

AFRO 134 Department of Paediatrics, University of Ibadan, Nigeria (1961 - 1966) R UNICEF

To assist in strengthening facilities for paediatric teaching at the University of Ibadan.

AFRO 135 Nutrition Advisory Services (1963 - ) R

To assist the countries of the Region in developing their nutrition programmes.


This commission has been set up with a view to facilitating contacts between the different specialists interested in nutrition problems in Africa. The permanent secretariat of the Commission, which has one FAO and one WHO secretary, is responsible for the preparation and the distribution in two languages of bulletins and news concerning all nutrition work carried on in Africa.

AFRO 159 Advisory Services in Sociology (1963 - ) R

To study social and cultural factors of special importance to health in certain countries of the Region, in order to provide information for planning health programmes adapted to local needs.

AFRO 172 FAO/WHO Study of Trypanosomiasis in Africa (Oct. - Dec. 1964) EPTA (FAO)

A team of two WHO consultants and one FAO consultant made a survey of human and animal trypanosomiasis in Nyanza Province, Kenya, and in lake-side districts of Uganda.

Basutoland 2 Tuberculosis Control (1962 - 1969) EPTA UNICEF

To establish a pilot area for the study of standardized and simplified tuberculosis control measures, with a view to finding efficient and economically feasible methods of combating the disease on a country-wide scale.

Basutoland 12 Leprosy Advisory Services (Nov. - Dec. 1963) EPTA

WHO provided a consultant to assess the extent of the leprosy problem and advise on a control campaign.

Basutoland 200 Fellowships R: Medical radiotherapy (eighteen months).

Bechuanaland 2 Trypanosomiasis Control (1955 - 1966) EPTA

To assess past and present trypanosomiasis survey and control work in Ngamiland and Chobe District; to study the trypanosomiasis problem in all its aspects, and to plan a pilot control project.

Burundi 2 Public Health Administration (June 1962 - 1969) EPTA

To plan and organize a national health service, and to train professional and auxiliary health personnel.


To develop and train staff for the maternal and child health services.

Burundi 5 Environmental Sanitation and Training (Sept. 1963 - 1967) EPTA

To train sanitation personnel and to set up a demonstration area.

Burundi 200 Fellowships R: Undergraduate medical studies (two for twelve months).

Cameroon 2 Malaria Pre-eradication Programme (Dec. 1962 - 1975) MESA EPTA

To develop a basic health service with a network of health posts which should reach the standard required to handle surveillance activities by the end of the second year of the attack phase of the malaria eradication programme; and to develop the national antimalaria service, establishing facilities for training of personnel, for assessment of the malaria situation, for microscopic diagnosis and for the distribution of antimalarial drugs to the population in malarious areas.

From 1958 to 1962 a pilot project and pre-eradication survey were undertaken.

Cameroon 10 Health Services, Federal Republic (Oct. 1961 - Dec. 1964) EPTA

WHO provided seven medical officers for periods ranging from six months to three years to assist the Government in maintaining the health services in Western Cameroon. They worked in hospitals in several towns and in rural health centres, supervised dispensaries and midwifery centres, and gave lectures to student nurses.

Cameroon 16 Nursing (1962 - 1966) EPTA UNICEF

To develop plans for nursing education and administration.

Cameroon 200 Fellowships R: Nursing (twelve months).

Cameroon 201 Fellowships EPTA: Nursing education (two for thirteen months), undergraduate medical studies (seven years).
Central African Republic 7  Environmental Sanitation Services (1964 - 1966) EPTA UNICEF

To set up a sanitation unit in the Ministry of Health; to train sanitation personnel; and to plan and develop a long-term sanitation programme.

Central African Republic 8  Bilharziasis Control

(Jan. - Feb. 1964) R

WHO provided a consultant for six weeks to assess the situation as regards intestinal and urinary bilharziasis and to advise on control measures. His recommendations dealt with measures for controlling the snail intermediate hosts, epidemiological studies, environmental sanitation measures in urban areas, health education, and equipment for diagnostic and autopsy services.

Central African Republic 11  Nutrition Survey

(June - Sept. 1963) EPTA UNICEF (FAO)

WHO provided a consultant for three months to make a study of diseases due to malnutrition and to assist in planning measures to control them. He found that protein malnutrition was not a serious public health problem, although anaemias associated with intestinal and blood parasites were widespread. He submitted recommendations on nutrition work to be carried out through the health services.

Central African Republic 201  Fellowships EPTA: Undergraduate medical studies (two for three and a half years).

Chad 10  Environmental Health (1964 - 1966) EPTA UNICEF

To set up a sanitation unit in the Ministry of Health; to train sanitation personnel; and to carry out a sanitation programme covering the whole country.

Chad 14  Nursing Education (1962 - 1967) R

To set up a central school of nursing.

Congo (Brazzaville) 200  Fellowships R: Leprosy control (two months), nursing and midwifery (four years), undergraduate medical studies (one for three and a half years, one for six years).

Congo (Brazzaville) 201  Fellowships EPTA: Environmental health (two years), hospital administration (twelve months).

Congo (Democratic Republic of) 5  Malaria Advisory Services (1963 - 1967) MESA

To collect information on the epidemiology of malaria as a basis for a future pre-eradication programme.

Dahomey 1  Malaria Pre-eradication Programme

(Dec. 1963 - 1972) MESA

To develop a network of rural health service facilities on which a malaria eradication programme for the whole country can be built; to train personnel to form the nucleus of a national malaria service; to undertake a general survey of malaria epidemiology; and to develop facilities for improving the diagnosis of malaria and increasing the availability of antimalarial drugs.

Dahomey 7  Environmental Sanitation Services (Sept. 1961 - 1966) EPTA UNICEF

To organize sanitation services.

Dahomey 12  Expansion of the Cotonou Water Supply

(March - June 1964) Special Account for Community Water Supply

WHO provided the services of a firm of consulting engineers to make engineering studies for the expansion of the Cotonou water supply and to assist in preparing a report on the feasibility of the project and in preparing a request for a loan to finance it.

WHO also provided a consultant to make a study to determine the capacity of the water-bearing formation surrounding Cotonou. His report has been submitted to the Government.

Dahomey 200  Fellowships R: Environmental health (two years), medical entomology (fourteen months), public health administration (twelve months), tuberculosis radiology (three years).


To develop the maternal and child health services and to train personnel.

Gabon 6  Environmental Health (1963 - 1966) R UNICEF

To set up a sanitation unit in the Ministry of Health; to train sanitation personnel, and to develop a long-term sanitation programme.

Gabon 16  Nursing Education (1962 - 1966) R

To organize basic programmes for the training of professional and auxiliary nurses.

Gabon 18  National Health Planning

(July 1963 - Dec. 1964) R (AID)

The aim was to assist the Government in formulating an overall national health plan. WHO provided a public health adviser and consultants in health statistics, medical care, malaria, tuberculosis, laboratory services, rural health services, and health education. Assistance was also provided by staff attached to environmental sanitation and nursing projects in Gabon.

In December 1963 six national commissions for planning the economic and social development of the country were established, including a health and hygiene commission. Regular meetings were held to co-ordinate the health planning with the general development plans.

The health plan which has been drafted is in four parts: a description of the general characteristics of the country and of economic and social problems; an assessment of the present health situation; a statement of needs and priorities; and the health development plan proper.

Gabon 200  Fellowships R: Maternal and child health (seven weeks), nursing (twelve months).


WHO provided a consultant to advise on the leprosy control programme.
Gambia 3 Nursing Education (1962 - 1967) EPTA UNICEF
To organize programmes for training professional and auxiliary nurses and midwives.

Gambia 11 Mental Health (June - July 1964) EPTA
WHO provided a consultant for six weeks to assess mental health problems in Gambia. His report includes recommendations for the development of psychiatric services by measures to improve existing institutions, the special training of a Gambian physician and of paramedical staff, and the expansion of outpatient services so as to reduce to a minimum the need for institutional care.

Gambia 200 Fellowships R: Nursing administration (four months).

Gambia 201 Fellowships EPTA: Environmental health (four months), nursing education (two for twelve months).

Ghana 1 Malaria Pre-eradication Programme (Jan. 1963 - 1977) MESA EPTA
To carry out surveys of malaria epidemiology; to develop basic health services, with emphasis on building up the technical, administrative and operational facilities required for the launching of a malaria eradication programme; and to train the personnel needed.

This programme superseded the pilot project that was carried out from 1958 to 1962.

To develop the maternal and child health services and to train personnel.

Ghana 5 Bilharziasis Control (1957 - end of 1965) EPTA
To study the snail intermediate hosts of bilharziasis and to set up a pilot control project.

Ghana 11 Tuberculosis Control (1962 - end of 1969) EPTA UNICEF
To organize a pilot area project in order to determine the best procedures, under local conditions, for case-finding, treatment and follow-up of tuberculosis cases and suspected contacts; and to train national personnel.

Ghana 18 Malaria Eradication: Field Research Project (June 1959 - March 1964) MESA
The project was designed to test the feasibility of using medicated salt for the interruption of transmission of malaria in a holoendemic area in Africa.

WHO provided a malariologist from July 1961 to November 1963, a sanitarian from June 1959 to March 1964, a technician from January 1960 to January 1963 and an epidemiologist from August 1963 to January 1964, supplies and equipment and contributions to local costs. Two short-term consultants visited the project in January and February 1960 and in March 1962.

After careful studies had been made of the use of salt, the average amount consumed, and local marketing arrangements, and after base-line data had been compiled on the epidemiology of malaria in the area chosen, which covered 26,000 people in a district in northern Ghana, the initial distribution of salt medicated by the addition of chloroquine and pyrimethamine was started in July 1961. From the end of 1961, chloroquine only was used.

Immediately after the introduction of the medicated salt, parasite rates in all age-groups, which had previously averaged over 70 per cent., fell to 4.2 per cent. and, for most of the rest of the period of the trial, remained below 10 per cent. However, although the malaria incidence was greatly reduced, the goal of interruption of transmission was not attained.

The trial provided valuable information on the use of medicated salt in tropical Africa, on the difficulties which may be encountered in the supply and distribution of such salt, and on the attitude of the population to this form of medication.

Ghana 25 Training of Community Health Nurses (1962 - end of 1964) EPTA
To train community health nurses who will supplement the work of the public health nurses in organizing a domiciliary health service as part of an overall plan for rural health.

Ghana 27 Post-basic Nursing Education (June - Aug. 1962; Sept. 1963 - 1968) R
To set up a school for post-basic nursing education programmes in the University of Ghana.

To prepare master plans for water supply and sewerage for the Accra/Tema metropolitan area and to set up the Ghana Water Supply and Sewerage Corporation. (See page 83.)

The former project Ghana 10—Environmental Sanitation Survey—has been merged with this project.

Ghana 200 Fellowships R: Bilharziasis (seven weeks), nutrition (eight months), public health—DPH course (twelve months), sanitary engineering (two for twelve months), school health (three months).

Guinea 1 Maternal and Child Health Services (1961 - ) EPTA UNICEF
To develop the maternal and child health services and to train personnel.

Guinea 4 Nutrition (June - Aug. 1964) EPTA
WHO provided a consultant to make a limited nutrition survey and a study of endemic goitre and advise on a pilot control programme.

Guinea 8 Environmental Sanitation (Sept. 1960 - end of 1966) EPTA UNICEF
To plan an environmental health unit in the Ministry of Health; to train sanitation personnel; and to develop a sanitation programme for the whole country, starting with a pilot demonstration area and giving special attention to water supply programmes.
Guinea 16  Public Health Services (July 1964 - ) EPTA
To study the cost and efficiency of the health services and to reorganize them to operate as economically as possible.

Guinea 200 Fellowships R: Laboratory techniques (two months), training of auxiliaries (three for twelve months).

Ivory Coast 4  Maternal and Child Health Services
(March 1964 - 1966) R UNICEF
To develop the maternal and child health services and to train personnel.

Ivory Coast 8  Health Statistics (Nov. 1963 - 1966) EPTA
To organize and establish a section of health and vital statistics in the Ministry of Health.

Ivory Coast 12  Environmental Sanitation
(Jan. 1963 - end of 1966) EPTA
To set up a sanitary engineering section in the Ministry of Health; to train sanitation staff; and to develop a long-term sanitation programme.

Ivory Coast 200 Fellowships R: Hospital administration (twelve months), nutrition (two years), undergraduate medical studies (one for three years, one for three and a half years).

Kenya 2  Environmental Sanitation
(Sept. 1960 - end of 1966) R UNICEF
To improve water supplies and excreta disposal systems and to train sanitation personnel.

Kenya 4  Tuberculosis (Chemotherapy and BCG) Centre
(Nov. 1957 - end of 1968) EPTA UNICEF
To continue tuberculosis control work (including case-finding, contact-tracing, domiciliary treatment, chemoprophylaxis and other investigations), and to train medical and auxiliary personnel—particularly the auxiliaries needed for the national BCG campaign.

Kenya 9  Nutrition Survey and Control of Deficiency Diseases
To study the nature, frequency, severity and distribution of deficiency diseases in the provinces; to determine the place of malnutrition in relation to general health and socio-economic conditions and to train personnel for a permanent national nutrition unit.

Kenya 16  Family Health and Child Care Services
To extend family health and child care services and to train personnel.

Kenya 27  Establishment of Medical School, Nairobi
(July - Aug. 1964) R
WHO provided two consultants to advise on the establishment of a new medical school in Nairobi.

Kenya 200 Fellowships R: Environmental sanitation (four months), maternal and child health (six months), port health services (three months), public health services (two months).

Kenya 201 Fellowships EPTA: Child health (twelve months), hospital administration (two for two years), parasitology and entomology (two for ten months), public health—DPH course (five for ten months), undergraduate medical studies (seven years).

Liberia 3  Yaws Control (1953 - ) EPTA UNICEF
To consolidate the yaws control programme, and to establish leprosy control operations as part of the operations of the rural health services.

Liberia 15  Environmental Health Programme
(July 1958 - 1966) R UNICEF
To strengthen the Division of Environmental Health in the National Public Health Service and develop a national sanitation programme; to implement a programme for training sanitation personnel, and to establish a demonstration project for practical training.

Liberia 17  Smallpox Control (1962 - 1967) R
To carry out a smallpox eradication programme. (See page 84.)

Liberia 20  Malaria Pre-eradication Programme
(Dec. 1962 - 1972) MESA
To develop a network of rural health services on which a malaria eradication programme for the whole country can be built; to train personnel to form the nucleus of a national malaria service; to make a general survey of malaria epidemiology, and to develop facilities for improving the diagnosis of malaria and for increasing the availability of antimalarial drugs.

Liberia 25  National Health Planning
(May 1964 - April 1965) Funds-in-trust
To draw up a national health plan.

Liberia 200 Fellowships R: Environmental health (twelve months).

Liberia 201 Fellowships EPTA: Undergraduate medical studies (seven years).

Madagascar 7  Tuberculosis Control
The aim was to investigate the possibility of introducing tuberculosis control measures which would be acceptable to the population, and to train national personnel. WHO provided a consultant from October to December 1960, and another from April to July 1962, a medical officer from May 1962 to April 1963 and from September 1963 to August 1964, and a public health nurse from May 1962 to August 1964. Between May 1962 and May 1964 a WHO-assisted mass BCG vaccination campaign, preceded by tuberculin testing, was carried out by mobile units in rural and urban areas of Tulear, Tananarive and Diego-Suarez provinces. The results of the
vaccination campaign were very satisfactory; more than 100,000 persons were tuberculin-tested and half that number were vaccinated. A campaign of case-finding by X-ray examination, organized by the Government, was undertaken at the same time. The cases found were further examined but many of them could not be traced a short time later and many of those who started treatment did not continue with it.

Madagascar 9 Community Water Supplies (Jan. - Feb. 1964) R

WHO provided a consultant for six weeks to survey the water supply situation in Madagascar, make recommendations on urban water supply programmes and help to prepare a draft request for assistance from the United Nations Special Fund.

Madagascar 18 Rural Health Services (Aug. 1963 - end of 1965) R

To strengthen basic health services within the framework of community development, with emphasis on maternal and child health.

Madagascar 200 Fellowships R: Anaesthesiology (twelve months), cardiology (three years), communicable diseases (three years), dermato-venereology (three years), maternal and child health (two years), microbiology (twelve months), nursing (two for twelve months), obstetrics and gynaecology (three years), paediatrics (three years), surgery (two for three years).

Madagascar 201 Fellowships EPTA: Anaesthesiology and reanimation (seven months), bacteriology and serology (two years), laboratory techniques (twelve months), oto-rhino-laryngology (twelve months).

Malawi 4 Nutrition Programme (March 1964) R UNICEF (FAO)

WHO provided a consultant for a month to make a study of local nutrition conditions and problems in connexion with the preparation of an applied nutrition project to be assisted by FAO and UNICEF.

Malawi 201 Fellowships EPTA: Laboratory techniques (six weeks), undergraduate medical studies (seven years).

Mali 9 Environmental Health (April 1963 - end of 1966) R

To set up an environmental health unit in the Ministry of Health; to plan and develop a national sanitation programme and to train assistant health inspectors.

Mali 13 Public Health Administration (Dec. 1961 - 1968) EPTA

To improve the organization of the national health services.

Mali 16 Trypanosomiasis Control (Jan. - Feb. 1964) R

WHO provided a consultant for six weeks to make a study of the trypanosomiasis problem, which has become more acute owing to the spread of human trypanosomiasis from Bamako to other parts of the country, and to advise on control methods. His report, which has been submitted to the Government, contains recommendations on the establishment of a trypanosomiasis service.

Mali 18 Public Health Laboratory (March - June 1964) R

WHO provided a consultant for three months to advise on the development and extension of laboratory services.


WHO provided a consultant to assist in drawing up a national health plan.

Mali 200 Fellowships R: Maternal and child health (twelve months), ophthalmology (three years), public health nursing (twelve months), undergraduate medical studies (three and a half years).

Mali 201 Fellowships EPTA: Anaesthesiology and reanimation (eighteen months), nursing (fifteen months).

Mauritania 3 Maternal and Child Health Services (Feb. 1963 - 1965) R UNICEF

To organize maternal and child health services and train personnel.

Mauritania 8 Nursing Advisory Services (1963 - end of 1966) R

To organize nursing services and develop nursing education.

Mauritania 9 Malaria Pre-eradication Programme (Oct. 1962 - 1972) MESA

To develop a network of rural health services; to train personnel to form the nucleus of a national malaria service; to undertake a general survey of malaria epidemiology, and to develop facilities for improving the diagnosis of malaria and increasing the availability of antimalarial drugs.

Mauritania 200 Fellowships R: Nursing (fifteen for two years).

Mauritania 201 Fellowships EPTA: Cardiology (three years), laboratory techniques (two for twelve months), nursing (three for twelve months, seventeen for two years), nursing education (twelve months), undergraduate medical studies (three years).

Mauritius 2 Tuberculosis Control (Second phase: March 1961 - Feb. 1964) EPTA

The aim was to build up a comprehensive control service and to train national personnel. WHO provided a medical officer from August 1961 to January 1962 and from November 1963 to February 1964, a public health nurse from August 1961 to January 1964, a statistician from April to December 1962, and a laboratory technician from March to December 1961 and from August to December 1962. The fact that, owing to recruitment difficulties, WHO staff could not be provided for part of the time, delayed the accomplishment of the project aims.

The original intention had been to begin case-finding in Port Louis and to extend it later to the rest of the country. However, it was found necessary to confine the work to the population groups most exposed to tuberculosis. The results, which confirmed those of the preliminary survey, showed that tuberculosis was highly endemic and that the number of cases exceeded the treatment facilities available. For that reason, efforts were concentrated on establishing a home-visiting service. By the time the project ended, the service had covered the whole island and all cases found had been given domiciliary treatment.
The tuberculosis case-recording system was revised and, in
the laboratory set up with WHO assistance in 1957, methods of
culture were improved and tuberculin sensitivity tests were
 carried out. Thirty-one laboratory assistants were trained.

Mauritius 7  Malaria Eradication Programme
(Jan. 1960 - end of 1966) MESA

To eliminate focal transmission of malaria and establish the
consolidation phase of the eradication programme.

Mauritius 12  Environmental Sanitation (Jan.- March 1964) R

WHO provided a consultant to help with a training pro-
gramme of refresher courses for sanitation personnel and to
survey sanitation conditions in Port Louis and in rural areas.
His report, which has been submitted to the Government, con-
tains recommendations on a programme for the extension of
the Port Louis water supply, the construction of new sewers
and the strengthening of the sanitation unit.

Mauritius 200  Fellowships R: Environmental health (two for
four months), nutrition (thirteen months), public health—DPH
course (twelve months).

Mauritius 201  Fellowships EPTA: Undergraduate medical
studies (three for seven years).

Niger 8  Public Health Administration
(Oct. 1962 - end of 1964) EPTA

To organize the national health services.

Niger 11  Nursing Education (Nov. 1963 - end of 1968) R

To develop nursing education programmes.

Niger 17  National Health Planning
(Jan.- Dec. 1964) Funds-in-trust (AID)

WHO provided consultants in various fields, a secreta-
y, equipment and supplies to assist the Government in formulating
a national health plan. Data on health services and facilities
in the country have been collected for use in preparation of
the plan.

Niger 200  Fellowships R: Nursing and paediatrics (two years),
surgery (six months).

Niger 201  Fellowships EPTA: Nursing (four for twenty months,
six for two and a half years), nursing education (two years),
undergraduate medical studies (five years).

Nigeria 1  Yaws Control (July 1954 - ) EPTA UNICEF

To control yaws by mass treatment with long-acting penicillin;
to train personnel; and to establish proper epidemiological
surveillance through rural health services.

Nigeria 10  Rural Health Services, Eastern Nigeria
(Nov. 1957 - 1966) EPTA UNICEF

To improve rural health services in general—particularly
maternal and child health and sanitation services—and to train
paramedical and auxiliary personnel.

Nigeria 14  Tuberculosis Control (Pilot Area Project), Ibadan
(Sept. 1961 - end of 1968) R UNICEF

To establish a pilot tuberculosis control area in the town of
Ibadan, and later in a rural community, for testing tuberculosis
control measures applicable under local conditions and with the
resources available; and to train personnel.

Nigeria 21  Rural Health Services, Western Nigeria
(1961 - 1966) EPTA

To facilitate the integration of public health services by the
progressive development of a network of rural health centres;
to set up a centre for the practical training of sanitation per-
sonnel; and to organize sanitary engineering services in the
Ministry of Health.

Nigeria 23  Environmental Sanitation, Northern Nigeria
(1963 - end of 1966) R UNICEF

To carry out environmental sanitation work, including the
provision of rural public water supplies and the training of
sanitation personnel, in the Igal and Idoma divisions.

Nigeria 24  Health Laboratory Services
(Nov. 1962 - 1966) EPTA

To set up a public health laboratory for the diagnosis of virus
diseases and the production of smallpox and yellow fever
vaccines.

Nigeria 25  Tuberculosis Control (Federal Government)
(1963 - mid-1964) EPTA

The final aim was to train personnel of the government
statistical unit, complete arrears of unprocessed data and
establish a simplified tuberculosis index. WHO provided a
statistician to assist with building up and organizing an up-to-
date system of reporting, recording and statistical evaluation of
epidemiological material in a central tuberculosis index, and a
laboratory technician to establish laboratory services for the
diagnosis of tuberculosis.

Work was carried out on the X-ray registration cards available
for patients examined by the federal tuberculosis service since
1960.

Plans were made for expansion of the laboratory services for
tuberculosis diagnosis to cover the whole country, and a counter-
part technician was trained to operate them.

Nigeria 26  Malaria Pre-eradication Programme, Western

To develop a network of rural health services on which a
future malaria eradication programme for the whole of the
Western Region of Nigeria can be built; to train personnel to
form the nucleus of the malaria service; to make a general
survey of malaria epidemiology; and to develop facilities for
improving the diagnosis of malaria and for increasing the
availability of antimalarial drugs.

Nigeria 28  Health Education (1962 - 1966) EPTA

To extend the use of health education methods in the health
services.
Nigeria 32 Malaria Pre-eradication Programme, Northern Nigeria (Nov. 1962 - end of 1972) MESA

Nigeria 37 Malaria Pre-eradication Programme, Eastern Nigeria (March 1963 - end of 1972) MESA

To develop a network of rural health services on which a future malaria eradication programme for the whole of the Region can be built; to train personnel to form the nucleus of the malaria service; to make a general survey of malaria epidemiology, and to develop facilities for improving the diagnosis of malaria and for increasing the availability of antimalarial drugs.


Following an epidemic outbreak of poliomyelitis, WHO provided a consultant and vaccine for a poliomyelitis vaccination campaign in Ibadan.

Nigeria 200 Fellowships R: Bacteriology (ten months), cardiovascular diseases (twelve months), environmental health (twelve months), leprosy control (two for one and a half months), mental health (five months), nutrition (one for eight months, one for two years), public health—DPH course (two for twelve months), public health nursing education (three years), undergraduate medical studies (twelve months).

Nigeria 201 Fellowships EPTA: Undergraduate medical studies (seven years).

Portugal — Angola 200 Fellowships R: Public health—DPH course (twelve months).

Portugal — Mozambique 1 Malaria Pre-eradication Programme (Nov. 1962 - 1968) MESA

To develop the minimum basic public health infrastructure necessary to support a malaria eradication programme; and to train staff for the national malaria service.

This programme follows a pre-eradication survey carried out from 1960 to 1962.

Portugal — Mozambique 200 Fellowships R: Bacteriology (three months), mycology (twelve months), public health—DPH course (twelve months).

Réunion 7 Malaria Pre-eradication Survey (1964 - 1966) MESA

To assess the prevalence of malaria and to prepare a plan of operation for an eradication programme in the island.

Sierra Leone 1 Yaws Control (Jan. 1956 - ) EPTA UNICEF

To carry out yaws control; to train auxiliary personnel for the project and for centres which will undertake epidemiological surveillance of the disease and provide a comprehensive rural health service; to organize measures of treatment and prevention of other communicable diseases such as leprosy and smallpox.

Sierra Leone 4 Environmental Health in Rural Areas (July 1960 - end of 1966) EPTA UNICEF

To improve environmental sanitation conditions in rural areas; to set up a sanitation unit in the Ministry of Health, and to train sanitation personnel.

Sierra Leone 12 Nursing (May 1964 - end of 1966) R

To develop nursing education programmes.

Sierra Leone 16 Nutrition Training, Faculty of Medicine, Dakar (1964 - ) R

To develop the teaching of nutrition in the Faculty of Medicine of the University of Dakar and in the various institutes attached to it.

Sierra Leone 200 Fellowships R: Nursing (eighteen months), nutrition (ten months).

Sierra Leone 201 Fellowships EPTA: Nursing education (twelve months), public health—DPH course (twelve months).

Sierra Leone 7 Nursing Education (1961 - 1966) R

To set up a comprehensive school of nursing and midwifery which will provide training in public health integrated in the curriculum.

Sierra Leone 11 Health Laboratory Services (April 1961 - end of 1964) R

To organize laboratory services at the national level and a regional laboratory, and to train staff for peripheral laboratories.

Sierra Leone 14 Environmental Sanitation and Training (Nov. 1961 - end of 1966) R UNICEF

To set up a sanitary engineering unit in the Ministry of Health; to plan a sanitation programme for the whole country; and to train health inspectors.

Sierra Leone 19 Malaria Pre-eradication Programme (Nov. 1963 - 1972) MESA

To develop a network of rural health services on which a future malaria eradication programme for the whole country can be built; to train personnel to form the nucleus of a national malaria service; to make a general survey of malaria epidemiology, and to develop facilities for improving the diagnosis of malaria and for increasing the availability of antimalarial drugs.
Sierra Leone 21 Nutrition Programme (1964) R

WHO provided a consultant to make an evaluation of the nutritional state of the population, principally among the vulnerable groups, and to develop nutrition work in the health services. His report, which has been submitted to the Government, contains recommendations regarding the setting-up of a food and nutrition board and a nutrition department, combined with a maternal and child health department, in the Ministry of Health, to collect and analyse data on health and nutrition and to train personnel.

Sierra Leone 22 National Health Planning
(July 1963 - Dec. 1964) Funds-in-trust (AID)

WHO provided a consultant to assist in drawing up a national health plan.

Sierra Leone 200 Fellowships R: Environmental health (fourteen months), nursing administration (four months), port health services (eight months).

South Africa 200 Fellowships R: Classification, registration and safety of drugs (two for five months), epidemiology (four months), forensic medicine (six months), organization and control of therapeutic trials (six months), public health administration (one for three months, one for four months), tuberculosis (one for four months, one for six months).

Southern Rhodesia 5 Malaria Pre-eradication Programme
(Oct. 1964 - 1972) MESA

To develop the organization of a malaria service and to stimulate the development of a network of rural health services facilities.

From 1957 to 1963 a pilot project and a pre-eradication survey were undertaken in the country.

Southern Rhodesia 200 Fellowships R: Hospital administration (ten months), nursing education and administration (six months), nutrition (four months), oto-rhino-laryngology (two months), tuberculosis laboratory work (three months).

Swaziland 2 Tuberculosis Control
(Dec. 1962 - end of 1968) EPTA UNICEF

To set up a pilot area, where tuberculosis control methods will be introduced in order to study their practicability and acceptability under prevailing conditions, with a view to using them on a larger scale in other parts of the country.

Swaziland 7 Nutrition Programme
(May 1964) R UNICEF (FAO)

WHO provided a consultant to advise on the preparation of an applied nutrition project to be assisted by FAO and UNICEF.

Tanganyika — see United Republic of Tanzania.
Uganda 17 Onchocerciasis Control (Oct.-Nov. 1964) EPTA

A WHO consultant made a preliminary assessment of the onchocerciasis problem in Uganda and advised on control methods with a view to establishing priorities for starting control campaigns in the areas where onchocerciasis foci exist.


WHO provided a sanitary engineering consultant for the United Nations advisory team which assisted the Government in planning the development of the Kibuga area, comprising the municipalities of Kampala (48,000 inhabitants) and Mango (60,000 inhabitants). The WHO consultant made recommendations on the preparation of a master plan for extending the water supply and sewerage schemes in the two municipalities and advised on public health and sanitation measures to be taken into account in preparing the development plan for the area. His report will be included in that of the United Nations to the Government.

United Republic of Tanzania — Zanzibar 4 Malaria Eradication Programme (June 1957 - end of 1968) MESA EPTA UNICEF

To eradicate malaria from Zanzibar and Pemba. The programme is an extension of the malaria control operations started in 1957.

United Republic of Tanzania — Zanzibar 200 Fellowships R:
- Environmental health (two for twelve months).

Upper Volta 7 Smallpox Eradication (1961 - end of 1965) R

To carry out a smallpox eradication campaign.

Upper Volta 8 Public Health Administration (Dec. 1961 - end of 1964) EPTA

To plan, organize and develop the national health services.

Upper Volta 11 Nursing Education (March 1962 - 1967) EPTA

To develop nursing and midwifery education.

Upper Volta 200 Fellowships R:
- Nursing (three for two years).

United Republic of Tanzania — Tanganyika 21 Nursing Education (March 1962 - ) EPTA

To develop a comprehensive programme for training nurses.


To make a study of protein-calorie malnutrition throughout the country, but in particular in the Dodoma district, which is to be used as a pilot area and studied more extensively, in order to provide information for the implementation of measures to prevent malnutrition.

United Republic of Tanzania — Tanganyika 200 Fellowships R:
- Entomology (three months), nutrition (eight months), ward sister’s course (twelve months).

United Republic of Tanzania — Tanganyika 201 Fellowships EPTA:
- Post-graduate medical studies (eight months — extension of previous award), undergraduate medical studies (seven years).

Zambia 3 United Nations Special Fund/FAO Project for Development of the Kafue River Basin (Nov. 1963) R

WHO provided a consultant for a month to study the health implications of the Kafue River Basin development scheme, with special reference to bilharziasis. His report has been submitted to the Government.

Zambia 4 Nutrition Programme (April 1964) R UNICEF (FAO)

WHO provided a consultant to make a general study of nutrition problems in connexion with the planning of an applied nutrition project to be assisted by FAO and UNICEF.

Zambia 200 Fellowships R:
- Mental health (two months).

Zanzibar — see United Republic of Tanzania.
THE AMERICAS

**AMRO 1** Sanitary Engineering Training  
(Dec. 1952 - 1960; 1964 - ) PAHO

To assist countries of the Region in expanding their institutions for training sanitary engineers and in revising the curricula.

**AMRO 3** Rehabilitation (1962 - ) PAHO

To advise the countries of the Region on problems of medical rehabilitation.

**AMRO 8** Aedes aegypti Eradication, Caribbean Area  
(1950 - ) EPTA

To advise Jamaica, Trinidad and Tobago, and the British, French, and Netherlands territories in the Caribbean on *Aedes aegypti* eradication.

**AMRO 10** Programme for Biostatistics Education  
(1952 - ) EPTA

To improve vital and health statistics in the countries of the Region by training technical and professional personnel in specialized centres.

**AMRO 16** Schools of Public Health (1953 - ) R

To assist schools of public health in the Region, especially the newer ones, to strengthen and improve their organization, administration and teaching.

**AMRO 17.6** Waterworks Operators’ Courses  
(1960 - 1966) PAHO Community Water Supply Fund

To train water treatment plant operators from countries of the Region.

**AMRO 18** Medical Education (March 1953 - ) R PAHO

To assist countries of the Region to improve medical education, including the teaching of social medicine.

**AMRO 39** Environmental Sanitation (1958 - ) PAHO

To hold annual meetings of the Advisory Committee on Environmental Sanitation, which provides guidance on the environmental sanitation programme of the Organization in the Region.

**AMRO 45** Laboratory Services (Feb. 1955 - ) R

To assist governments of the Region in the improvement and extension of public health laboratory services; in the production and control of biological products; and the setting-up or expansion of animal colonies.

**AMRO 46.9** Seminar on Nursing Education, Cuernavaca, Mexico (1 - 10 Dec. 1963) R PAHO

A seminar on the training of nursing auxiliaries in Latin America, with twenty-eight participants from Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama and United States of America. The Organization provided the cost of their attendance, ten temporary advisers and supplies and equipment.

**AMRO 47** Yaws Eradication and Syphilis Control, Caribbean Area (1954 - ) PAHO UNICEF

To determine the prevalence of yaws in the countries and territories of Zone 1; to assist with the yaws eradication programme and in reducing the prevalence of syphilis and gonorrhoea, in strengthening laboratory services, and in organizing venereal disease control services.

**AMRO 50** Water Fluoridation (1961 - ) PAHO

To advise countries of the Region on methods of water fluoridation for the prevention to dental caries.

**AMRO 54** Institute of Nutrition of Central America and Panama, Guatemala City (1949 - ) PAHO UNICEF (INCAP Member Governments) (United States National Institutes of Health) (Kellogg Foundation) (Nutrition Foundation) (Milbank Memorial Fund) (Massachusetts Institute of Technology) (Association for Aid of Crippled Children).

To co-operate in developing the Institute of Nutrition of Central America and Panama (INCAP), which trains professional and auxiliary personnel from its member countries and other countries in the Americas and carries out nutrition research for solving the urgent problems created by the inadequate nutritional status of a large part of the population of the Americas.

**AMRO 60** Smallpox Eradication (1951 - ) PAHO

To co-operate with governments of the Region in the production of smallpox vaccine and advise them on the organization, conduct, and evaluation of national smallpox eradication programmes.

**AMRO 62** Public Health Aspects of Housing and Urbanization (1962 - ) PAHO

To foster the participation of health authorities in housing and city planning programmes; and to advise countries of the Region on the establishment of health standards for houses and urban areas.

**AMRO 63** Schools of Nursing (Sept. 1958 - ) R

To provide advisory services in specialized areas of nursing education, fellowships for members of nursing faculties, and nursing texts in Spanish to schools of nursing in Latin America.
AMRO 67 Teaching of Public Health in Schools of Veterinary Medicine (1955 - 1966) R

To assist schools of veterinary medicine in the Region to incorporate public health and preventive medicine into their curricula.

AMRO 72 Dental Health (1954 - ) PAHO

To assist countries of the Region in strengthening dental services by providing technical advisory services and fellowships for training in public health dentistry.

AMRO 74 Epidemiological Studies on Plague (1964) PAHO

A consultant was provided to make a study of plague control in Ecuador and Peru, especially in the border area, in order to prepare a control programme.

AMRO 76 Vaccine Production and Testing (July 1954 - ) R

To provide vaccine-testing services to laboratories preparing vaccines in the Americas.

AMRO 77 Pan American Foot-and-Mouth Disease Centre, Rio de Janeiro (1951 - ) PAHO/Organization of American States (AID) (Brazil Ministry of Agriculture)

To provide countries of the Americas with technical advisory services for the control of foot-and-mouth disease, for laboratory diagnosis of the disease, and for the training of professional and auxiliary personnel; and to carry out research on the preparation of modified live-virus vaccine.

AMRO 81 Pan American Zoonoses Centre, Azul, Argentina (1956 - ) EPTA PAHO (Government of Argentina) (United States Public Health Service) (Wellcome Research Laboratories)

To advise countries of the Region on the establishment and improvement of veterinary public health services and control programmes; to carry out research on the most prevalent zoonoses; and to train technical personnel for zoonoses control work.

AMRO 85 Latin American Centre for Classification of Diseases (April 1955 - ) R PAHO

To study problems of medical certification of causes of death; to give training on classification of causes of death in accordance with the International Classification of Diseases; and to assist in revising the Classification.

AMRO 86 Health Statistics, Zone III (Jan. 1955 - ) R

To help the countries of Zone III to improve their vital and health statistics systems; and to advise on the use of statistical data in national health planning and on the statistical aspects of projects.

AMRO 88 Aedes aegypti Eradication (1954 - ) PAHO

To stimulate, co-ordinate, and evaluate Aedes aegypti eradication programmes in the countries and territories of the Region that are still infested with the mosquito.

AMRO 90 Malaria Eradication Advisory Services, Inter-zone (1955 - 1967) MESA PAHO Special Malaria Fund

To provide technical advisory services and local training in certain aspects of country programmes for which long-term consultants are not necessary.

AMRO 94 Diarrhoeal Diseases in Childhood (1956 - ) PAHO

To study the epidemiology of diarrhoeal diseases in childhood and their effect on nutritional status.

AMRO 95 Environmental Sanitation, Caribbean Area (May 1956 - ) EPTA PAHO UNICEF

To investigate and evaluate environmental conditions and provide technical advice during the development of extensive sanitation programmes in the countries and territories of the Caribbean area.

AMRO 100 Tuberculosis Control (Dec. 1957 - ) R PAHO

To stimulate the expansion of tuberculosis control programmes in the Region by assisting governments in their planning and execution and promoting the convening of technical meetings on tuberculosis.


To co-operate in the training of students at the Community Development Training Centre for Latin America.

AMRO 117 Malaria Technical Advisory Services, Zone I (1957 - 1965) PAHO Special Malaria Fund

AMRO 118 Malaria Technical Advisory Services, Zone III (1958 - ) PAHO Special Malaria Fund

AMRO 119 Malaria Technical Advisory Services, Zone IV (1958 - ) PAHO Special Malaria Fund

To provide technical advice to the countries of the zone and to co-ordinate their malaria eradication programmes; and to co-ordinate the research and training activities of these programmes with those of the continent-wide malaria eradication programme.

AMRO 134 Training Centre for Malaria Eradication, Kingston, Jamaica (April 1958 - Dec. 1963) PAHO Special Malaria Fund (AID)

The Centre was established, in co-operation with the Government of Jamaica and the United States Agency for International Development, to train personnel in all aspects of malaria eradication techniques. The Organization provided a director, an administrative officer, three secretaries, a messenger, and a number of temporary advisers as specialist lecturers. Assistance was also given in the form of supplies and equipment and payment for common services.

Since April 1958, twenty-four training courses have been held at the Centre, eighteen for professional staff (senior...
courses) and six for non-professionals (junior courses). A total
of 405 trainees sponsored by the Organization, the United
States Agency for International Development or the Government
of Jamaica, attended these courses. They came from sixty-nine
countries in all six WHO regions.

During the initial years, the Centre was able to use the
facilities of the Jamaica malaria eradication programme but, as
this programme advanced towards its successful conclusion, the
scope for practical demonstration of techniques in Jamaica
diminished, and in addition new training centres were opened
in other parts of the world. Hence, the Centre, having fulfilled
its objective, was closed at the end of 1963.

AMRO 137 Training Centre for Malaria Eradication, São Paulo
(1958 - 1966) PAHO Special Malaria Fund (AID)

To train professional and auxiliary personnel for the malaria
eradication programme of Brazil and other Latin American
countries.

AMRO 142 Health Aspects of Radiation
(Oct. 1958 - ) PAHO (United States Public Health Service)

To stimulate the adoption of international standards and pro-
cedures for radiation protection in connexion with the use of
X-rays and radioisotopes and the development of regulations for
the disposal of radioactive wastes; to promote the teaching of
basic health physics, radiobiology, and radiation protection in
medical, dental, veterinary public health, and other professional
schools; to foster the use of radioisotopes for medical diagnosis,
therapy, and research; and to collaborate with countries of the
Region in establishing sampling stations for determining the
radioactive contamination of air, food, and water.

AMRO 143 Health Statistics, Zone IV (July 1956 - ) R

AMRO 144 Health Statistics, Zone II 1 (Jan. 1958 - ) R

To assist the countries of the zone in improving their vital
and health statistics systems; and to advise them on the use of
statistical data in national health planning and on the statistical
aspects of projects.

AMRO 149 Leprosy Control (1958 - ) PAHO

To determine the prevalence and characteristics of leprosy in
the Americas; and to assist countries in planning and organizing
leprosy control work and in training professional and auxiliary
personnel.

AMRO 150 Food and Drug Services (1959 - ) PAHO

To provide technical advice to the national services responsible
for the health aspects of production and control of foods, drugs
and biologicals, both locally manufactured and imported; and
to assist countries in improving national control services.

AMRO 155 Bilharziasis Control (1960 - ) PAHO

To set up, jointly with the Government of Brazil, an inter-
national centre for snail identification for the western hemi-
sphere; to carry out bilharziasis studies for the development of
practical and effective control methods.

1 Zone II: Cuba, Dominican Republic, Haiti and Mexico.

AMRO 156 Training Programme in Hospital Statistics
(1961 - ) PAHO

To organize training courses in medical records and hospital
statistics, in order to improve the collection of essential data for
planning health and medical services.

AMRO 157 Health Statistics, Zone I (1964 - ) PAHO

AMRO 159 Health Statistics, Zone VI 2 (1959 - ) PAHO

To assist the countries of the zone in improving their vital
and health statistics systems; and to advise them on the use of
statistical data in national health planning and on the statistical
aspects of projects.

AMRO 160 Yaws Eradication and Venereal Disease Control,
Inter-zone (1961 - ) R PAHO

To meet requests from countries for advisory services on
yaws eradication and venereal disease control.

AMRO 163 Epidemiology, Zone VI (1958 - ) PAHO

To stimulate the development and co-ordination of pro-
grames for the eradication or control of communicable diseases
in the countries of Zone VI; to advise the governments on new
control methods and techniques and on problems related to the
application of the International Sanitary Regulations; and to
promote better reporting of notifiable diseases.

AMRO 165 Nutrition Advisory Services (1958 - ) PAHO

To provide advisory services in nutrition to meet specific
needs of governments.

AMRO 183 Midwifery (1962 - 1967) PAHO

To provide countries of the Region with advisory services
for improving their maternity care services and their institutions
for the training of midwives.

AMRO 185 Medical Care Services (1961 - ) PAHO

To assist countries of the Region with studies associated with
aspects of planning, organization, training, and applied research
in medical care services.

AMRO 187 Water Supplies (1959 - ) PAHO Community
Water Supply Fund PAHO Special Fund for Health Pro-
motion

To advise countries of the Region on the planning, financing,
and carrying out of national water supply programmes and on
the organization and administration of central and local water
supply and sewerage authorities.

AMRO 188 Veterinary Public Health, Zone III
(Sept. 1957 - ) R PAHO

To assist the countries of Zone III in developing veterinary
public health services and activities, especially the study and
control of zoonoses and the application of protective measures
in food control; to promote the teaching of veterinary public
health; and to collaborate in the evaluation of veterinary public
health and related programmes.

2 Zone VI: Argentina, Chile, Paraguay and Uruguay.
AMRO 196 Insecticide Testing Teams (1960 - ) MESA PAHO Special Malaria Fund

To test insecticides and larvicides and evaluate the potentialities of larvicides, especially their application by aircraft. The work includes evaluation of various insecticide formulations and application rates on the main types of wall surface found in tropical areas of the Americas.

AMRO 198 Administrative Methods and Practices in Public Health (1959 - ) PAHO

To help countries of the Region to improve the administrative practices of national health services at all levels.

AMRO 202 Leprosy Control, Zone III (1960 - ) PAHO

To assist the countries of Zone III in studying, organizing, carrying out and evaluating leprosy control programmes; in training professional and auxiliary personnel in techniques of leprosy control; and in integrating leprosy control work into the work of the general health services.

AMRO 203 Epidemiology, Zone III (1961 - ) PAHO

To stimulate the development and co-ordination of programmes for the eradication or control of communicable diseases in the countries of Zone III; to advise the governments on new methods and techniques of control and on problems related to the application of the International Sanitary Regulations; and to promote better reporting of notifiable diseases.

AMRO 204 Sanitary Engineering, Zone I (1960 - ) PAHO

AMRO 205 Sanitary Engineering, Zone II (1960 - ) R PAHO

AMRO 206 Sanitary Engineering, Zone III (1960 - ) R PAHO Community Water Supply Fund UNICEF

AMRO 207 Sanitary Engineering, Zone IV (1960 - ) PAHO Community Water Supply Fund

AMRO 209 Sanitary Engineering, Zone VI (1960 - ) PAHO

To assist the governments of countries in the zone in improving the organization of the environmental sanitation services of the Ministry of Health; to advise the agencies responsible for water supply and sewerage services; and to cooperate with universities and other institutions in training professional and auxiliary personnel for sanitation work.

AMRO 210 Medical Education, Zone VI (1964 - ) PAHO

To improve the programmes of the schools of medicine of the countries in Zone VI by providing advice on the planning of teaching and scientific research, and on organization and administration; and to assist in assessing the number of physicians and research workers needed in each country.

AMRO 220 Malaria Eradication Epidemiology Teams (1960 - 1966) MESA PAHO Special Malaria Fund

To determine the causes of the persistence of malaria transmission in areas regularly sprayed with residual insecticides, and to recommend remedial measures.

AMRO 234 Sewage Disposal and Water Pollution Control (1962 - ) PAHO

To advise governments of the Region on the planning of programmes for the construction of sewerage and sewage treatment plants, and on the solution of specific problems of watercourse pollution.

AMRO 236 Waste and Garbage Disposal (Nov. 1961 - ) R

To advise on methods of collection and disposal of refuse and garbage and on the organization and administration of the relevant municipal services.

AMRO 237 Medical Education, Zone III (1960 - ) PAHO

To assist in improving the teaching of medicine in the countries of Zone III.

AMRO 240 Seminar on Nursing Services, Tobago (9 - 17 Nov. 1964) R

A seminar for nurses from English-speaking countries and territories in the Caribbean area, at which the order of priorities in the development of hospital and public health nursing services was analysed. There were forty-seven participants from Antigua, Aruba, Bahamas, Barbados, Bermuda, British Guiana, British Honduras, Cayman Islands, Curacao, Dominica, Grenada, Jamaica, Montserrat, St Kitts, St Lucia, St Vincent, Surinam, Trinidad and Virgin Islands (United Kingdom and United States). The seminar also considered the ways in which hospital and community nursing services could co-operate and made recommendations on continuity of health care, the use of education techniques and the improvement of nursing administration.

The Organization provided four consultants and the cost of attendance of the participants.

AMRO 246 Tuberculosis Control, Zone III (1963 - 1966) PAHO

To assist countries of Zone III in studying, organizing, carrying out, and evaluating tuberculosis control programmes; in training professional and auxiliary personnel in modern techniques of tuberculosis control; and in integrating tuberculosis control work into the work of the general health services.

AMRO 247 Teaching of Statistics in Medical Schools (1961 - ) PAHO

To help to develop medical statistics courses in schools of medicine in the Region.

AMRO 253 Administrative Methods and Practices in Public Health, Zone III (1963 - ) PAHO

To help the countries in Zone III to improve the administrative methods and practices of their health services.

AMRO 256 Industrial Hygiene (1961 - ) PAHO

To help to organize or improve the operation of national industrial hygiene services by providing technical advice and facilities for training of personnel.
AMRO 257 Seminars on the Teaching of Dentistry (1962 - 1966) PAHO (Kellogg Foundation)

To assess the situation as regards the teaching of dentistry in the Region and formulate recommendations for the solution of problems.

AMRO 262 Nutrition Advisory Services, Zone IV (1956 - ) R

To advise the countries of Zone IV on the development of nutrition programmes, especially at the level of the local health services; on applied research related to nutrition programmes; and on the training of personnel.

AMRO 263 Leprosy Control, Zone IV (1960 - ) R

To assist the countries of Zone IV in studying, organizing, carrying out and evaluating leprosy control programmes, in training professional and auxiliary personnel in techniques of leprosy control; and in integrating leprosy control work into the work of the general health services.

AMRO 266 Regional Development of Epidemiological Studies (1961 - ) PAHO

To obtain, by special investigations, accurate and comparable data on causes of death in adults in certain cities of the Americas.

AMRO 268 Paediatric Education Course (1961 - ) R UNICEF (International Children’s Centre)

To assist in organizing annual courses on social paediatrics for physicians engaged in paediatrics or paediatricians in charge of maternal and child health services in Latin America who wish to enlarge their experience.

AMRO 269 Nutrition Advisory Services, Zone I (Aug. 1961 - ) R

To collaborate with the countries and territories of Zone I in the study and evaluation of nutrition problems and needs; in planning, in close co-operation with national and international agencies, nutrition education programmes and programmes to foster the production of protein-rich foods; and in integrating nutrition programmes into health services at all levels.


To organize short courses on problems of specific interest to governments in connexion with water supply programmes.

AMRO 272 Study of Medical School Organization (April 1963 - 1966) PAHO

To provide deans and faculty members having administrative responsibilities in medical schools in the Region with the opportunity of visiting similar institutions to study their teaching, functioning and administrative structure.

AMRO 275 Chagas' Disease (1960 - ) PAHO

To assist countries of the Region in studying the prevalence and epidemiological characteristics of Chagas' disease, and in organizing control measures.


To advise governments of the Region on the planning and design of sanitary installations for schools; and to prepare a manual on the subject.

AMRO 281 National Health Planning (1961 - ) PAHO

To assist governments in formulating national health plans and in training personnel for the purpose.

AMRO 283 Co-ordination of International Research (1962 - ) PAHO PAHO/United States National Institutes of Health

To stimulate the development of biomedical research and training of specialized personnel; and to provide for an annual meeting of the PAHO Advisory Committee on Medical Research to analyse and make recommendations on suggested projects and on those in operation.

AMRO 284 Teaching of Dentistry (1962 - ) R

To co-operate with university authorities of countries of the Region in improving teaching in schools of dentistry.


To evaluate, jointly with FAO and UNICEF, the applied nutrition programmes operating in sixteen countries of the Americas.

AMRO 289 Nursing, Zone I (1959 - ) PAHO

AMRO 290 Nursing, Zone II (1962 - ) PAHO

AMRO 291 Nursing, Zone III (1963 - ) PAHO

AMRO 292 Nursing, Zone IV (1952 - ) PAHO

AMRO 294 Nursing, Zone VI (1963 - ) PAHO

To assist countries of the zone in planning and organizing nursing services and the training of professional and auxiliary nursing and midwifery personnel, and in developing basic research on nursing.

AMRO 302 Information Centre on Mental Health in Latin America (1963 - ) PAHO/United States National Institutes of Health

To establish a centre to collect and distribute information on mental health work in Latin America, to serve as a clearing-house for the exchange of information among professionals working in this field, and to stimulate relevant scientific research.

AMRO 303 Medical Care Services, Zone III (1962 - ) PAHO

AMRO 304 Medical Care Services, Zone IV (1961 - ) PAHO

To assist countries of the zone in integrating medical care services into the general health services and in formulating standards for medical care.
AMRO 305  **Leprosy Control, Zone VI** *(1962 -  )* PAHO

To assist the countries of Zone VI in studying, organizing, carrying out and evaluating leprosy control programmes; in training professional and auxiliary personnel in techniques of leprosy control; and in integrating leprosy control work into the work of the general health services.

AMRO 316  **Tuberculosis Control, Zone IV** *(1962 - 1966)* PAHO

To assist countries of Zone IV in studying, organizing, carrying out and evaluating tuberculosis control programmes; in training professional and auxiliary personnel in modern techniques of tuberculosis control; and in integrating tuberculosis control work into the work of the general health services.

AMRO 317  **Medical Care Services, Zone IV** *(1962 -  )* PAHO

To assist countries of Zone IV in integrating medical care services into the general health services and in formulating standards for medical care.

AMRO 318  **National Health Planning, Zone IV** *(1963 -  )* PAHO

To assist governments of the countries of Zone IV in formulating national health plans and in training personnel for the purpose.

AMRO 319  **Administrative Methods and Practices in Public Health, Zone VI** *(1963 -  )* PAHO

To help the countries in Zone VI to improve the administrative methods and practices of the health services.

AMRO 322  **National Health Planning, Zone VI** *(1963 - 1966)* PAHO

To assist governments of the countries of Zone VI in formulating national health plans and in training personnel for the purpose.

AMRO 323  **Regional Conference on Rural Water Supplies, Bogotá** *(29 June - 4 July 1964)* PAHO

A conference at which specialists in the development of water supply programmes considered how ministries of health might most effectively implement national plans for supplying water to rural populations. There were fifty participants from Argentina, Barbados, Bolivia, Brazil, British Guiana, British Honduras, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, United States of America, Uruguay and Venezuela. In addition there were officers from the United States Agency for International Development, the Inter-American Development Bank, and the University of North Carolina, United States of America, and twenty-seven staff members from WHO and PAHO.

The Organization provided the cost of attendance of forty-one participants.

AMRO 334  **Etiology of Congenital Malformations** *(1963 - 1965)* PAHO / United States National Institutes of Health

To carry out research on the etiology of congenital malformations.

AMRO 338  **Maternal and Child Health Programme Planning and Service Norms** *(1964 - 1966)* PAHO

To prepare guides on the establishment of priorities and standards of service in connexion with the planning of maternal and child health programmes and on the techniques of carrying out surveys and conducting seminars.

AMRO 339  **Symposium on Industrial Hygiene, São Paulo** *(21 - 26 March 1964)* PAHO

A symposium to review the situation in the countries of the Region as regards industrial hygiene and occupational diseases, and to stimulate the development of industrial and occupational health programmes, especially in countries undergoing industrialization. There were nineteen participants from Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. They discussed the problems related to industrial hygiene and occupational diseases, the organization and functions of public and private services and their relationship to social security agencies and the evaluation of programmes.

The Organization provided the cost of attendance of fifteen participants and other expenses of the symposium.

AMRO 340  **Resistance of Malaria Plasmodia to Drugs** *(1963 - 1965)* MESA PAHO / Special Malaria Fund

To study the Plasmodia strains of human malaria that are reported to be resistant to antimalarial drugs.

AMRO 351  **Studies on Promotion of Rural Health and Agriculture** *(1963 - 1964)* PAHO / Inter-American Development Bank

A medical officer and an agronomist provided by the Inter-American Development Bank studied ways of fostering the development of agriculture, livestock breeding and rural welfare in countries of the Region, in furtherance of the policy of incorporating the protection and promotion of health into the overall process of socio-economic development.
AMRO 356 Manganese Poisoning and Metabolic Disorders
(1964 -1966) PAHO/United States National Institutes of Health

To co-ordinate research on the dynamics of the mental syndrome produced by chronic inhalation of dust containing manganese.

AMRO 358 Laboratory Services, Caribbean Area
(1964 -1966) PAHO

To develop, at the University of the West Indies, Kingston, Jamaica, a programme for training laboratory technicians for English-speaking countries and territories in the Caribbean area. Emphasis will be laid on the importance of laboratory practices in the curative and preventive aspects of medicine.

AMRO 359 Caribbean Nutrition Institute
(1963 - 1966) PAHO (FAO)

To co-ordinate nutrition work in the Caribbean area, in order to develop a programme that will include training of personnel and scientific research.

AMRO 365 Health Education, Caribbean Area
(1963 - ) EPTA

To help the countries and territories of Zone I in developing health education work and training of personnel.

AMRO 374 Teaching Methods and Administrative Organization of Medical Schools (1964 - ) R

To help medical schools of the Region that wish to revise their teaching methods and administrative procedures, by organizing group discussions and seminars at which administrative procedures and teaching techniques are analysed.

AMRO 379 Meeting on Research in Protein-calorie Malnutrition, Bogotá (16 - 20 March 1964) PAHO (Williams Waterman Fund)

A meeting of research workers to standardize the methodology of studies on malnutrition caused by inadequate protein and calorie intake. There were twelve participants from Bolivia, Brazil, Chile, Colombia, Jamaica, Mexico, Peru, United States of America, and Venezuela. The meeting was also attended by a member of the FAO/UNICEF/WHO Protein Advisory Group, a representative of the Williams Waterman Fund, three staff members from the Institute of Nutrition of Central America and Panama, one from UNICEF and six from PAHO/WHO. Procedures were established for co-ordinating and analysing the comparability of the results obtained by each investigator.

The Organization provided the cost of attendance of ten participants.

AMRO 381 Working Group on a Latin American Common Market for Biological Products, Washington, D.C.
(3-6 Aug. 1964) PAHO

A working group to study the recommendations of the Task Force on Health at the Ministerial Level (Washington, D.C., April 1963) on the possibility of setting up a Latin American common market for biological products. There were twelve participants from Brazil, Canada, Chile, Colombia, Mexico, Peru, United States of America, and Venezuela and observers from the Inter-American Development Bank, the Organization of American States and the United States Pharmaceutical Manufacturers Association. The group made recommendations on procedures to control the quality and increase the quantity of biological products and on measures to ensure the free interchange of such products among Latin American countries.

The Organization provided the cost of attendance of the participants and secretarial staff for the meeting.

AMRO 393 Mental Health, Zone I
(April - May 1964) PAHO/Foundation for International Medical Services

Three professors and the cost of attendance of ten physicians and ten nurses were provided for the course on mental health, organized by the Caribbean Mental Health Federation and held in Barbados from 26 April to 2 May 1964. The participants came from Anguilla, Antigua, British Guiana, Dominica, Grenada, Nevis, St Kitts, St Lucia, St Thomas, St Vincent and Trinidad and Tobago.

AMRO 0213 Study on Morphological Variations among Mosquitoes
(1964 - ) PAHO Special Malaria Fund (University of Illinois)

To investigate morphological variations among mosquitoes involved in malaria transmission.

AMRO 0507 Course in Rehabilitation and Prevention of Deformities in Leprosy Patients (1964 - 1965) PAHO

A course to train personnel in non-surgical methods for the prevention of deformities in leprosy patients and for their physical rehabilitation.

AMRO 0707 Typhus Zone IV
(1964 - 1965) PAHO (United States National Institutes of Health)

To investigate the possibility of domestic animals being reservoirs of epidemic typhus.

AMRO 2213 Studies on Water Resources
(1964 - 1967) EPTA (ECLA)

To collaborate with the Economic Commission for Latin America (ECLA) in a study of Latin America’s water resources, particularly with a view to the provision of adequate water supplies.

AMRO 4507 Radiation Health Protection (1964 - ) PAHO

To advise governments of the Region on protection against radiation hazards.

Argentina 3 Nursing Education (Jan. 1957 -1966) EPTA

To improve teaching in the schools of nursing of the Universities of Buenos Aires, Córdoba, Litoral (Rosario), and Tucumán.

Argentina 6 Fellowships R.: Health education (one for ten months, one for eleven and a half months), hospital administration (fourteen months), laboratory services—serology (four months), leprosy (twelve months), nursing services (twelve
months), nutrition (eleven months), occupational health (twenty months), public health administration (eleven months), sanitary engineering (eleven months), water supply design (eleven and a half months).

Argentina 7 Health Services, El Chaco
(May 1957 - 1966) EPTA PAHO UNICEF
To plan and carry out an integrated health services programme under the provincial health service; to train professional and auxiliary personnel; and to draft a health code and supporting legislation.

Argentina 8 Malaria Eradication Programme
(1951 - 1970) PAHO Special Malaria Fund UNICEF
To eradicate malaria from the country by a phased programme.

Argentina 13 Fellowships PAHO: Clinical and social pediatrics (two for one month), health planning course (two for three and a half months), medical use of radioisotopes (seven months), public health administration (two for three months), sanitary engineering (two and a half months).

Argentina 17 School of Public Health (1958 - 1967) R PAHO
To strengthen the teaching at the school of public health.

Argentina 18 Medical Education (1958 - ) R
To improve the medical education programme of the country's medical schools.

Argentina 20 Tuberculosis Control
(March 1960 - 1966) R UNICEF
To organize, in a pilot area of the Province of Santa Fe, a national antituberculosis centre for collecting epidemiological information, applying and evaluating methods of tuberculosis control and training personnel from Argentina and other countries.

Argentina 24 Medical Care Services (1958 - ) PAHO
To make studies on medical care problems and resources and on the organization of medical care and health establishments and their integration into the general health services; and to train personnel in hospital organization and administration.

Argentina 25 Training of Nursing Personnel
(1960 - 1965) PAHO UNICEF
To organize training courses for professional and auxiliary nursing personnel.

Argentina 27 Mental Health (1963 - 1966) PAHO
To study the programme of psychiatric care of the Province of Mendoza, in order to prepare a broad mental health plan including prevention and treatment of mental illness.

Argentina 28 Leprosy Control (1960 - 1966) PAHO UNICEF
To organize and carry out a national leprosy control programme and to lay down procedures for its evaluation.

Argentina 29 Water Supplies
(1961 - 1967) PAHO Community Water Supply Fund
To prepare and implement plans for the construction and expansion of water supply and sewerage systems.

Argentina 30 Sanitary Engineering Education
(1961 - 1966) PAHO
To strengthen the teaching at the School of Sanitary Engineering of the University of Buenos Aires.

Argentina 32 Health Statistics (1960 - 1965) PAHO
To carry out an integrated vital and health statistics programme in the Province of Buenos Aires; and to set up a co-ordinated programme of the provincial agencies concerned with statistics, to provide demonstrations and field practice for personnel being trained in statistics.

Argentina 35 Health Services, San Juan and Mendoza
(1961 - 1966) PAHO UNICEF
To carry out an integrated health services programme in San Juan and, later, in Mendoza.

Argentina 51 Aedes aegypti Eradication (1950 - 1964) PAHO
A medical officer and a sanitary inspector, and supplies and equipment, were provided to assist with the Aedes aegypti eradication campaign.

Bolivia 4 Malaria Eradication Programme
(1957 - 1966) PAHO Special Malaria Fund UNICEF (AID)
To eradicate malaria from the country.

Bolivia 5 Nursing Education (1953 - 1964) R
The aim was to strengthen the teaching at the National School of Nursing, La Paz.
WHO provided three nurse educators—from August 1953 to May 1964, from July 1954 to June 1959 and from January 1955 to January 1956, sixteen twelve-month fellowships for advanced nursing studies, and six fellowships (five of three years and one of one year) for basic nursing studies. Supplies and equipment were provided to the School and to the Miraflores Hospital, La Paz, which is used for practical training of nursing students.

During the eleven years of this project, an adequate organizational structure was established for the school, and nurses were prepared for teaching posts by fellowships for advanced studies. The possession of a high-school diploma was made a prerequisite for admission to the School. Training in obstetrical nursing was integrated into the curriculum, the teaching in all subjects was improved, and practical training, both in hospitals and health centres, was broadened.
Half the nurses who received fellowships from the Organization for advanced training are working in the School or in other health services of the country.

**Bolivia 7** Tuberculosis Control (1963 - 1968) EPTA UNICEF

To organize, in the northern part of the Bolivian plateau, a pilot area (consisting of the Provinces of Omasuyos, Manco Kapac, Camacho and part of the Provinces of Ingavi and Los Andes) in order to obtain epidemiological information, apply and evaluate practical tuberculosis control methods, and train medical and auxiliary personnel for the gradual extension of the programme to other areas of the country.

**Bolivia 8** Smallpox Eradication (1962 - 1965) EPTA

To continue the smallpox vaccination campaign, begun in 1957, until 80 per cent. of the population has been protected.

**Bolivia 10** National Health Services
(1955 - 1969) PAHO UNICEF (AID)

To improve the national health services at the ministerial and local levels; and to train professional and auxiliary personnel.

**Bolivia 11** National Plan for Rural Development
(1953 - ) EPTA UNICEF (UN) (FAO) (ILO) (UNESCO)

To promote the economic and social and health development of the rural populations of the Andean Highlands, so as to facilitate their integration into the national community.

**Bolivia 16** Fellowships R: Dental care and hygiene (eleven months), hospital administration (fourteen months), sanitary inspection (five and a half months).

**Bolivia 17** Nutrition (1964 - 1966) PAHO/Williams Waterman Fund PAHO/Foundation for International Child Health UNICEF (FAO)

To carry out an integrated programme of applied nutrition in an area of the country, including training of professional and auxiliary personnel, laboratory studies, and research on the extent of protein-calorie malnutrition in pre-school children.

**Brazil 3** Health Services in Nine North-Eastern States
(1958 - 1968) R PAHO UNICEF (AID)

To promote the development of general health services in certain areas of nine states in the north-eastern part of Brazil.

**Brazil 7** Nutrition (1960 - 1966) R PAHO UNICEF (FAO)

To improve the nutritional status of the population of the north-eastern part of Brazil through the maximum use of locally available foods, nutrition education and the organization of nutrition courses for professional and auxiliary personnel engaged in health, education, and agriculture.

**Brazil 8** National Virus Laboratory Services
(1959 - 1967) EPTA PAHO

To expand laboratory facilities for the diagnosis of virus diseases, and to develop research programmes and the production of vaccine at the Oswaldo Cruz Institute.

**Brazil 24** Malaria Eradication Programme
(1958 - 1971) MESA PAHO Special Malaria Fund (AID)

To eradicate malaria from the country by a phased programme.

**Brazil 25** Sanitary Engineering (1952 - ) PAHO

To improve the organization of the environmental sanitation services of the Ministry of Health, and to train professional and auxiliary engineering personnel.

**Brazil 28** Fellowships PAHO: Clinical and social paediatrics (two for one month), health planning course (three for three and a half months), public health administration (eleven and a half months).

**Brazil 31** Rehabilitation

To reorganize the Department of Occupational Therapy of the Institute of Rehabilitation, University of São Paulo; and to organize training courses and rehabilitation centres throughout the country.

**Brazil 35** School of Hygiene and Public Health, São Paulo
(1958 - 1966) R

To strengthen the School of Hygiene and Public Health of the University of São Paulo, particularly to enable it to be used also as an international training centre.

**Brazil 36** Health Statistics (1963 - 1966) R PAHO

To improve the vital and health statistics services, especially those related to the notification of communicable diseases; and to train personnel in vital and health statistics and in medical records and hospital statistics.

**Brazil 38** Smallpox Eradication (1956 - 1967) PAHO (AID)

To set up laboratories to produce enough freeze-dried vaccine to meet the needs of the national smallpox eradication campaign.

**Brazil 39** Health Services, Mato Grosso
(1959 - 1969) PAHO UNICEF

To improve the public health services of Mato Grosso by strengthening the central organization, regionalizing health services, providing adequate technical supervision, and training personnel.

**Brazil 41** Malaria Eradication Programme, São Paulo
(1958 - 1967) PAHO Special Malaria Fund (AID)

To eradicate malaria from São Paulo state.

**Brazil 42** Rabies Control (1959 - 1966) R

To develop the national and state health services needed for producing vaccine and carrying out rabies control programmes.
Brazil 43  Teaching of Preventive Dentistry (1963 - 1966) PAHO
To develop the training programmes in preventive and social dentistry at the country's dental schools.

Brazil 44  Teaching of Public Health in Schools of Veterinary Medicine (1960 - 1966) PAHO
To improve the teaching of public health and related subjects in the schools of veterinary medicine.

Brazil 49  Water Supplies (1962 - 1966) PAHO Community Water Supply Fund
To draw up plans for water supply systems.

Brazil 51  Yellow Fever Laboratory (1950 - 1967) PAHO
To support the continent-wide campaign against yellow fever by providing laboratory diagnostic services and supplying yellow fever vaccine.

Brazil 59  Teaching of Preventive Medicine, University of Ceará (July 1963 - 1966) PAHO
To improve the teaching at the Institute of Preventive Medicine of the Medical School, University of Ceará, revising the curriculum as necessary.

Brazil 60  Nursing Education, Recife (1963 - 1966) R PAHO
To set up in the school of nursing of the University of Recife a centre for post-graduate nursing education to serve the northern and north-eastern parts of Brazil.

Brazil 61  Nutrition Courses (1963 - 1966) PAHO
To establish courses for training physicians in public health nutrition at the Institute of Nutrition of the University of Recife.

Brazil 63  Training of Nursing Auxiliaries (April 1963 - 1967) PAHO UNICEF
To increase the number and improve the quality of the training of nursing auxiliaries.

Brazil 64  Paediatric Education, Recife (Oct. 1963 - 1968) PAHO UNICEF
To improve the teaching of paediatrics in the School of Medicine of the University of Recife, and to provide training in paediatrics, outside the regular medical courses, to professional and auxiliary personnel.

Brazil 68  Air and Water Pollution Control (1963 - 1966) EPTA
To plan and carry out programmes for the control of air and surface water pollution in the state of São Paulo, its capital, and neighbouring municipalities.

Brazil 78  Nursing (1953 - 1966) PAHO
To develop basic research in nursing and the education of professional and auxiliary nursing and midwifery personnel, and to improve the organization of nursing services.

Brazil 79  Veterinary Public Health (1959 - 1965) R
To study and apply control techniques against zoonoses prevalent in the country.

Brazil 81  Health Services, São Paulo (1964) PAHO
A consultant was provided for two and a half months to make a study of the functioning of the Public Health Secretariat of São Paulo state.

Brazil 82  Institute of Sanitary Engineering (1964 - 1968) United Nations Special Fund
To organize a sanitary engineering institute for training professional and auxiliary personnel for research work in environmental sanitation problems.

Brazil 200  Fellowships R: Clinical and social paediatrics (one for one month, two for three months), maternal and child health (three months), nutrition (eleven months), parasitology of zoonoses (eight months), pedagogic methods in medical education (two for two and a half weeks), radiochemistry (four and a half months), rehabilitation (ten months), tissue culture of arboviruses (four months).

Brazil 201  Fellowships EPTA: Accident prevention (fifteen weeks), dental care and hygiene (five and a half months), nursing education (four months).

British Guiana 5  Malaria Eradication Programme (1961 - 1968) PAHO Special Malaria Fund UNICEF
To eradicate malaria from the country.

To reorganize, expand, and integrate the health and environmental sanitation services in the heavily populated coastal area and in isolated communities in the interior.

British Honduras 1  Malaria Eradication Programme (1956 - 1965) PAHO Special Malaria Fund UNICEF
To eradicate malaria from the country and prevent its re-introduction.

British Honduras 5  Health Services (1962 - 1968) R UNICEF
To reorganize, expand, and improve the general health services, including environmental sanitation.

British Honduras 7  Water Supplies (1964 - 1967) PAHO Community Water Supply Fund
To organize under a central authority the management of water supply and sewerage services; and to expand the water supply services of Belize.
Chile 21 Rehabilitation Services (1960 - 1966) EPTA

To plan a medical rehabilitation programme for the whole country, co-ordinating all available resources; to organize a rehabilitation centre in Santiago, with a prosthetics workshop and facilities for training personnel; and to establish rehabilitation services in certain provincial cities.

Chile 22 Institute of Occupational Health and Air Pollution (1961 - 1968) EPTA United Nations Special Fund

To establish an institute of occupational health and air pollution to provide services and training facilities.

Chile 25 Fellowships R: Gynaecology and obstetrics (thirteen weeks), hospital administration (twelve months), immunohaematology (five months), internal medicine (thirteen weeks), medical librarianship (six months), public health administration (thirteen weeks), venereal disease control (three months), virology (ten and a half months).

Chile 26 Fellowships PAHO: Alcoholism (three months), BCG vaccine production (two and a half months), cancer control (five and a half months), tuberculosis (three and a half months).

Chile 31 School of Public Health (1958 - 1966) R

To strengthen the teaching at the school of public health of the University of Chile, and to expand its facilities for training students from other countries of the Americas.

Chile 35 Nutrition (1960 - 1966) R UNICEF (FAO)

To carry out a co-ordinated programme to improve the nutritional status of the population of the Provinces of Atacama, Coquimbo, and Linares, providing for an increase in the number of school breakfasts, vegetable gardens in certain schools, and a nutrition education programme for teachers and the general public. Also, during 1964, to carry out a study to determine the most adequate commercial method of controlling the quality of fish meal for human consumption.

Chile 37 Medical Education (1962 - 1966) PAHO

To provide courses in medical teaching methodology at the School of Medicine of the University of Chile, Santiago.

Chile 39 Training in the Medical Use of Radioisotopes (1962 - 1966) PAHO (Kellogg Foundation)

To set up at Salvador Hospital, in connexion with the University of Chile, a Latin American centre for training physicians in the medical uses of radioisotopes.

Chile 40 Water Supplies (1960 - 1967) PAHO Community Water Supply Fund

To plan and carry out a national water supply programme and to expand the Santiago water supply system.

Chile 41 National Planning for Nursing (1960 - 1969) R UNICEF

To improve the quality of the nursing care given by the health services, and to train professional and auxiliary personnel.

Chile 49 Health Services (1961 - 1967) EPTA UNICEF

To strengthen the health services in the southern part of the country in order to meet the needs of the population of the area devastated by an earthquake in 1960 (34 per cent. of the total population); and to provide water supply and sewerage services to the 960 000 rural inhabitants of the area.

Chile 6400 Sanitary Engineering Education (1964 - 1966) PAHO

To strengthen the teaching of sanitary engineering in the School of Engineering of the University of Chile.

Colombia 4 National Health Services (Sept. 1951 - 1969) EPTA PAHO UNICEF (AID)

To prepare a national health plan; to strengthen the Ministry of Health and the departmental and local services; to extend integrated health services to the entire population; and to train professional and auxiliary personnel.

Colombia 5 Malaria Eradication Programme (1959 - 1967) PAHO Special Malaria Fund UNICEF

To eradicate malaria from the country.

Colombia 18 Fellowships R: Dental care and hygiene (eleven months), public health administration (two for ten and a half months), sanitary engineering (ten and a half months).

Colombia 21 Fellowships PAHO: Clinical and social paediatrics (three for one month), dental care and hygiene (eleven months), health planning course (two for three and a half months), hospital administration (six months), medical use of radioisotopes (eight months), orthodontics teaching (three months), public health administration (one for ten months, one for ten and a half months), public health nursing administration
and supervision (ten months), veterinary public health (eleven months).

Colombia 22 Aedes aegypti Eradication (1951 - 1965) PAHO

To eradicate Aedes aegypti.

Colombia 24 School of Public Health (1959 - 1969) PAHO UNICEF

To develop and improve the organization of the school of public health of the University of Antioquia.

Colombia 25 Water Supplies (1960 - 1969) PAHO Community Water Supply Fund (Inter-American Development Bank)

To plan and carry out a national water supply programme, and to make a study of the planning, design, financing, construction, and operation of municipal water supply services.

Colombia 26 Nutrition (1961 - 1966) PAHO UNICEF (FAO)

To improve the level of nutrition in the Departments of Cauca, Cauca, and Norte de Santander, especially in the rural areas, in collaboration with the local health, education, and agricultural services; to train personnel at the local and intermediate levels; and to establish food-preparation and school garden demonstration services in the schools of the area.

Colombia 27 Teaching of Preventive Dentistry (1961 - 1966) PAHO (Kellogg Foundation)

To incorporate preventive dentistry into the curriculum of the dental school of the University of Antioquia, and to establish a centre for research on dental public health and dentistry in general.

Colombia 28 Health Manpower Studies (1964 - 1966) PAHO/Milbank Memorial Fund

To carry out a pilot study of the needs regarding health manpower, taking into account available resources; and to determine ways and means to plan for increasing the resources, in Colombia and other Latin American countries, as recommended in the Charter of Punta del Este.

A WHO consultant participated in the discussions for the elaboration of the plan of operations on the study, which is to be carried out with the assistance of the Milbank Memorial Fund. The main emphasis was laid on the need to have the study closely linked with the formulation of national health plans.

Colombia 52 National Institute of Health (Carlos Finlay) (1950 - ) PAHO

To strengthen the services (research, laboratory diagnosis, and vaccine preparation) which the yellow fever department of the National Institute of Health provides to other countries in connexion with the yellow fever eradication campaign in the Americas.

Colombia 200 Fellowships R: Biochemistry of nutrition (twelve months), nutrition (two and a half months), paediatric odontology teaching (twelve months), paediatrics (twelve months), rural sanitation planning (two and a half months), sanitary engineering (ten and a half months).


To improve the technical training of engineers working in sanitary engineering, and to promote the development of a sanitary engineering research centre in the National University of Colombia.

Costa Rica 2 Malaria Eradication Programme (1956 - 1967) MESA PAHO Special Malaria Fund UNICEF

To eradicate malaria from the country.

Costa Rica 14 National Health Services (1959 - 1969) PAHO UNICEF

To prepare and implement a national health plan as part of the national economic and social development plan; to expand and improve the administration of the health services, including the medical care services; to train professional and auxiliary personnel; and to carry out an extensive rural sanitation programme.

Costa Rica 18 Advanced Nursing Education (1959 - 1966) PAHO

To set up, at the school of nursing of Costa Rica, an advanced education centre to train nurses in teaching, in supervision, and in other specialties; and to evaluate the work of the school.

Costa Rica 22 Water Supplies (1960 - 1968) PAHO Community Water Supply Fund

To draw up programmes for providing public water supply and sewerage systems to urban and rural communities; and to establish a national water supply and sewerage service.

Costa Rica 24 Laboratory for Diagnosis of Virus Diseases (Sept. 1962 - 1966) PAHO (Lederle Laboratories)

To organize a section for the diagnosis of virus diseases in the national health laboratory.

Costa Rica 200 Fellowships R: Maternal and child health (ten and a half months), paediatrics (two for twelve months), pedagogic methods in medical education (two and a half weeks), public health administration (ten months), veterinary public health (eleven months).

Costa Rica 201 Fellowships EPTA: Sanitary engineering (three weeks).

Cuba 1 Aedes aegypti Eradication (1953 - 1967) PAHO

To eradicate Aedes aegypti.
Cuba 3  Public Health Services  
(June 1959 - 1969) EPTA PAHO UNICEF  
To improve the organization of health services at the national, intermediate, and local levels, and to set up a demonstration and training area.

Cuba 5  Malaria Eradication Programme  (1959 - 1969) MESA  
To eradicate malaria from the country and prevent its reintroduction.

Cuba 200  Fellowships R: Health statistics (two for seven and a half months).

Dominican Republic 2  Malaria Eradication Programme  
(1957 - 1971) PAHO Special Malaria Fund UNICEF  
To eradicate malaria from the country.

Dominican Republic 3  Nursing Education  
To strengthen the National School of Nursing by preparing nurses for the faculty, improving physical facilities and areas for field practice, and expanding the curriculum to include public health nursing and courses in teaching and supervision.

Dominican Republic 4  Public Health Services  
(1953 - 1967) R EPTA PAHO UNICEF  
To improve the organization of health services at the national and regional levels; and to expand the local services in order to provide integrated services to the whole country.

Dominican Republic 9  Fellowships R: Epidemiology (ten months), nursing education (ten and a half months), paediatrics (eleven months), public health administration (ten and a half months).

Dominican Republic 11  Fellowships PAHO: Health planning course (three and a half months), integrated public health services (three months), sanitary engineering (one for two and a half months, one for ten and a half months), sanitary inspection (six and a half months), water control laboratories (one month).

Dominican Republic 14  Medical Education  
(1962 - 1966) R PAHO  
To reorganize the administration and the teaching methods of the school of medicine of the University of Santo Domingo, and to establish a one-year premedical course.

Dominican Republic 15  Water Supplies  
(1961 - 1969) PAHO Community Water Supply Fund  
To design water supply and sewerage systems and to obtain loans for constructing them from international credit agencies.

Dominican Republic 52  Yaws Eradication  (1953 - 1966) PAHO  
To eradicate yaws and control venereal disease; and to strengthen and regionalize public health laboratories, especially as regards the serological diagnosis of syphilis.

Ecuador 4  National Health Services  
(1953 - 1969) E EPTA PAHO UNICEF  
To develop integrated public health services at the national and local levels, and especially in the Province of Manabi.

Ecuador 14  Malaria Eradication Programme  
(1956 - 1968) EPTA PAHO Special Malaria Fund UNICEF (AID)  
To eradicate malaria from the country.

Ecuador 16  Nursing Education  (May 1957 - 1966) R PAHO  
To improve the organization and teaching at the school of nursing attached to the School of Medical Sciences of the University of Guayaquil, by preparing instructors, broadening the curriculum to include public health nursing and principles of teaching and supervision, and improving the physical facilities.

Ecuador 19  Fellowships PAHO: Health planning course (three and a half month), public health administration (one for six months, one for ten months), sanitary engineering (eleven months).

Ecuador 20  Smallpox Eradication  (1953 - 1965) EPTA PAHO  
To eradicate smallpox from the country.

Ecuador 21  Water Supplies  
(1961 - ) PAHO Community Water Supply Fund  
To expand the Quito water supply system and to plan the construction of water supply systems for several other cities.

Ecuador 22  Rural Medical Services  
(1956 - 1970) EPTA UNICEF (UN) (FAO) (ILO) (UNESCO)  
To promote the economic, social and health development of the rural populations of the Andean Highlands, in order to facilitate their integration into the national community.

El Salvador 2  Malaria Eradication Programme  
(1955 - 1968) MESA PAHO Special Malaria Fund UNICEF (AID)  
To eradicate malaria from the country.

El Salvador 8  Fellowships R: Hospital administration (six months), sanitary engineering (one for two and a half months, one for eleven months).

El Salvador 9  Fellowships PAHO: Health planning course (two for three and a half months), medical use of radioisotopes (seven months), tuberculosis (twelve months).

El Salvador 14  Promotion of Community Water Supplies  
(1960 - 1969) PAHO Community Water Supply Fund  
To organize and administer a central water supply and sewage disposal service and to extend the country's water supply systems.
To carry out a public health laboratory programme covering the whole country and including the setting-up of laboratories in areas where none exist, the establishment of work regulations and techniques, and the training of professional and auxiliary personnel.

El Salvador 19  National Health Services
(1963 - 1968) EPTA PAHO UNICEF
To plan and carry out integrated health programmes as part of a national health plan.

French Antilles and Guiana 4  Malaria Eradication Programme
(1963 - 1970) PAHO Special Malaria Fund
To eradicate malaria from the departments.

Guatemala 1  Malaria Eradication Programme
(1955 - 1969) PAHO Special Malaria Fund UNICEF (AID)
To eradicate malaria from the country.

Guatemala 6  Nursing Education
(1955 - July 1964) EPTA PAHO
The aim was to improve the nursing services by strengthening the National School of Nursing, establishing advanced nursing education programmes and training nursing auxiliaries. WHO provided two nurse educators—one from July 1955 to February 1963 and the other from May 1959 to July 1964; consultants from July to September 1963 and in January and February 1964; thirteen fellowships, of from eight to twelve months, for advanced nursing studies, and fourteen other fellowships, of up to six months. Supplies and equipment were also provided. (See also page 96.)

Guatemala 7  Fellowships EPTA: Epidemiology (ten and a half months), nursing education (ten and a half months), preventive-medicine teaching (two months), public health administration (two for ten and a half months), tuberculosis (ten and a half months).

Guatemala 8  National Health Services
To formulate and carry out a national health plan which will include the extension of health services to cover the whole population and the training of professional and auxiliary personnel.

Guatemala 14  Teaching of Public Health in Schools of Veterinary Medicine (1957 - 1967) PAHO
To strengthen the School of Veterinary Medicine of the University of San Carlos, especially as regards the teaching of public health and preventive medicine.

To study and evaluate the services provided by the central and local public health laboratories; to plan programmes for the Biological Institute and for all laboratories functioning at other levels; to set up local laboratories where necessary; and to train personnel.

Haiti 1  Yaws Eradication (June 1950 - 1966) R UNICEF
To eradicate yaws from the country, and at the same time to vaccinate 80 per cent. of the population against smallpox in four years, beginning in 1962.

Haiti 4  Malaria Eradication Programme
(1961 - 1968) MESA PAHO Special Malaria Fund UNICEF (AID)
To eradicate malaria from the country.

Haiti 9  Public Health Laboratory (1953 - 1966) PAHO
To strengthen the organization of the public health laboratory; to set up subsidiary laboratories in three local areas; and to improve the organization of hospital laboratories and dispensaries in the region damaged by the hurricane Flora.

Haiti 16  National Health Services
(1957 - 1968) EPTA PAHO UNICEF
To develop integrated public health services at the national and local levels, and to establish an area for demonstration and training of personnel.

Haiti 20  Nutrition
(1961 - 1966) PAHO PAHO/Williams Waterman Fund UNICEF (FAO)
To carry out a nutrition programme; and to establish an agency to co-ordinate the nutrition work of the Ministries of Health, of Education, and of Agriculture.

Haiti 22  Water Supplies
(1960 - ) PAHO Community Water Supply Fund
To plan, design, and finance an extension of the water supply system of Port-au-Prince and, later, to plan systems for the rest of the country.

Honduras 1  Malaria Eradication Programme
(1956 - 1968) PAHO Special Malaria Fund UNICEF (AID)
To eradicate malaria from the country.

Honduras 4  National Health Services
To organize integrated public health services at the central and local levels and to train personnel.

Honduras 6  Fellowships PAHO: Health planning course (three and a half months), medical librarianship (six months), sanitary engineering (two and a half months), tuberculosis (ten and a half months).

Honduras 7  Fellowships R: Health education (eleven and a half months).

Honduras 9  Water Supplies
(1960 - ) PAHO Community Water Supply Fund
To plan and carry out national programmes for the construction of water supply systems and for the improvement of existing services.
Honduras 10  Port Environmental Health Development (1961 - 1963) EPTA

The aim was to improve the sanitary conditions in Puerto Cortés by expanding the water supply service and installing sewerage and general drainage facilities. The Organization provided the services of a firm of consultant engineers, and also assistance from its own personnel.

The field work of the project was completed as planned, and the firm of consultant engineers obtained all the necessary information for the design of the first stage of the works.


To revise the country's health legislation to adapt it to progress in medicine and public health.

Jamaica 2  Malaria Eradication Programme (1957 - Dec. 1964) PAHO Special Malaria Fund UNICEF (AID)

The aim of the programme was to eradicate malaria from the country. The Organization provided a malarialogist, a sanitary engineer and two sanitarians until the end of 1962, and one sanitary up to November 1963. Thereafter, advice was given by Zone I malaria technical advisory services. Fellowships, antimalarial drugs and other supplies and equipment were also provided. (See also page 93.)

Jamaica 4  Department of Preventive Medicine, University College of the West Indies (Aug. 1963 - 1966) R PAHO

To improve the courses given by the Department of Preventive Medicine of the University College of the West Indies, and to expand the teaching of medicine in the Caribbean area.

Jamaica 12  Nursing Education (1960 - 1966) PAHO

To improve basic training in the schools of nursing; and to organize advanced courses for instructors and supervisors.

Jamaica 15  Health Legislation (Dec. 1962 - March 1964) EPTA PAHO

The Organization provided a consultant for three periods, totalling about six weeks, in 1963, and for a month in 1964, to assist in drafting health laws and supporting regulations designed to adapt the country's health legislation to recent advances in medicine and public health.

Jamaica 16  Rural Water Supplies (1963 - ) R UNICEF

To improve water supply systems and construct new ones in rural areas.


To make an evaluation of health problems, needs and resources, and the cost of public health services; and to prepare and implement a national health plan as part of the plan for social and economic development of the country.


A training course for thirty sanitary inspectors from Antigua, Aruba, British Guiana, British Honduras, Cayman Islands, Curacao, Jamaica and Trinidad. The Organization provided a consultant, and fellowships for the trainees were provided by UNICEF.

Mexico 14  Nursing Education (1958 - 1967) PAHO

To improve basic nursing education by preparing graduate nurses to serve as instructors; and to prepare professional nurses for the training of auxiliary nursing personnel.


To improve the organization and co-ordination of health services at the national, regional, and local levels.

Mexico 18  Fellowships R : Food control (five months), sanitary engineering (two for two and a half months).


To carry out a nutrition programme covering the whole country, using the resources of the National Institute of Nutrition. The programme includes nutrition surveys in various regions and training of professional and auxiliary personnel.

Mexico 24  Fellowships EPTA : Epidemiology (twelve months), tropical diseases (nine months).

Mexico 25  Fellowships PAHO : Health planning course (two for three and a half months), industrial hygiene (two months), medical use of radioisotopes (seven months), sanitary engineering (two for three weeks).


To expand the services of the national public health laboratory, and particularly those for the control of biological products, food, and drugs.

Mexico 29  Leprosy Control (Nov. 1960 - 1968) R UNICEF

To carry out a national leprosy control programme based on modern methods and techniques.

Mexico 30  School of Public Health (May 1954 - ) R PAHO

To strengthen and expand the teaching programme of the School of Public Health of the University of Mexico.

Mexico 32  Medical Education (1958 - ) R

To improve medical education by providing special training in the preventive and social aspects of medical practice for teaching staff.
To organize courses in sanitary engineering and in public health for graduate engineers in the schools of sanitary engineering of the Universities of Mexico and Nuevo León.

Mexico 38 Tuberculosis Control
(June 1960 - 1968) R EPTA UNICEF
To carry out a series of epidemiological surveys in various parts of the country; and to demonstrate the effectiveness of tuberculosis control measures in a pilot area.

Mexico 39 Water Supplies
(1961 - ) PAHO PAHO Community Water Supply Fund
To plan a national water supply programme.

Mexico 53 Malaria Eradication Programme
(1956 - 1966) MESA EPTA PAHO Special Malaria Fund UNICEF
To eradicate malaria from the country.

Netherlands Antilles 1 Aedes aegypti Eradication
(1952 - ) EPTA
To eradicate Aedes aegypti.

Nicaragua 1 Malaria Eradication Programme
(1957 - 1969) PAHO Special Malaria Fund UNICEF (AID)
To eradicate malaria from the country.

Nicaragua 3 Public Health Services (1963 - 1970) R EPTA
To draft a national health plan that will serve as a basis for the planning and execution of specific programmes.

Nicaragua 5 Nursing Education (March 1955 - 1966) R PAHO
To strengthen the teaching at the National School of Nursing by preparing nursing instructors, broadening the curriculum to include public health nursing and advanced courses in teaching and supervision, and improving physical facilities and clinical practice areas in hospitals and health centres.

Nicaragua 7 Fellowships PAHO: Organization of medical education (three weeks), sanitary engineering (two and a half months).

Nicaragua 10 Water Supplies
(1963 - 1967) PAHO Community Water Supply Fund
To plan a national water supply programme and to establish a central agency responsible for water and sewerage services.

Panama 2 Malaria Eradication Programme
(1956 - 1968) PAHO Special Malaria Fund UNICEF
To eradicate malaria from the country.

Panama 7 Fellowships R: Chromatography (four and a quarter months), clinical and social paediatrics (three months), food and drug control (one for six weeks, one for two months, one for nine weeks, one for three months), sanitary engineering (three months).

Panama 8 Fellowships PAHO: Health planning course (three and a half months), sanitary engineering (two and a half months).

Panama 9 Water Supplies
(1960 - ) PAHO Community Water Supply Fund
To organize a national water supply and sewerage authority, and to carry out a water supply programme.

Panama 10 Health Services (Jan. 1955 - 1966) EPTA UNICEF
To plan a ten-year health programme as an integral part of the national plan for economic and social development; to develop integrated health services throughout the country; and to train professional and auxiliary personnel.

Panama 12 Fellowships R: Clinical and social paediatrics (two for one month, one for three months), maternal and child health (ten months).

Panama 13 Fellowships PAHO: Clinical and social paediatrics (one month), health education (twelve months), health planning course (three and a half months), medical librarianship (six and a quarter months), public health administration (two for three months, one for ten months, two for eleven months), tuberculosis (two for two months).

Panama 19 Water Supplies
(1961 - 1966) PAHO Community Water Supply Fund
To plan and implement a national water supply programme.

Panama 21 Medical Education (1964 - 1966) PAHO
To develop the teaching of preventive medicine and public health at the school of medicine of the National University of Asunción.

Peru 5 Malaria Eradication Programme
(1956 - 1971) PAHO Special Malaria Fund UNICEF
To eradicate malaria from the country by a phased programme.
Peru 15 Nursing Education (April 1959 -1968) R

To improve basic nursing training by organizing a school of nursing at the National University of San Marcos, and strengthening the existing nursing schools so that they may obtain university recognition.

Peru 21 Fellowships R: Health physics (nine months), hospital administration (two and a half months), microbiology teaching (three months), public health laboratory organization (one for seven weeks, one for four months), public health nutrition (two and a half months), sanitary engineering (seven weeks).

Peru 22 National Health Services
(Jan. 1956 - 1967) EPTA PAHO UNICEF

To improve health services at the national, regional and local levels; and to organize health areas, beginning with one in the Department of Junin.

Peru 23 Andean Region Development Programme
(1955 - ) EPTA UNICEF (UN) (FAO) (ILO) (UNESCO)

To promote the economic, social and health development of the indigenous populations of the Andean Highlands, so as to facilitate their integration into the national community.

Peru 25 Fellowships PAHO: Clinical radiodiagnosis (eight months), clinical and social paediatrics (two for one month), health planning course (two for three and a half months), plastic surgery and treatment of burns (eight months), radiation (three months).

Peru 29 Tuberculosis Control, Tacna (1961 - 1966) R UNICEF

To demonstrate, in the Tacna health area, the application and evaluation of practical methods of tuberculosis control and to train medical and auxiliary personnel; and to extend the tuberculosis programme gradually to other areas.

Peru 29(a) Tuberculosis Control, Junin
(1964 - 1965) R UNICEF

To carry out a tuberculosis control programme, including the training of professional and auxiliary personnel, in Huancayo, Department of Junin.

Peru 30 Water Supplies
(July 1960 - 1966) EPTA PAHO Community Water Supply Fund (Inter-American Development Bank)

To plan and implement a national programme for the construction of new water supply and sewerage services, and the extension of existing systems. (See page 94.)

Peru 31 Medical Education (1964 - ) PAHO

To improve the medical education programmes of the country's medical schools.

Peru 32 Infantile Diarrhoea and Malnutrition
(1960 - 1965) PAHO/United States National Institutes of Health

To study the nature of the water metabolism and electrolyte changes in children suffering from diarrhoea and malnutrition and to determine the best therapy for such children.

Peru 33 Training of Health Workers
(1963 - 1966) PAHO UNICEF

To establish a centre for training professional, technical, and auxiliary health personnel for the public health services.

Peru 0900 Plague Control (1963 - 1966) PAHO

To study the Huancabamba-Ayabaca area with a view to using it for a research programme on plague epidemiology.

Surinam 1 Malaria Eradication Programme
(1957 - 1968) PAHO Special Malaria Fund UNICEF

To eradicate malaria from the country.

Surinam 8 Fellowships PAHO: BCG vaccination (one month), bilharziasis (two months), maternal and child health (two months), medical technology (four months), virological serology (three months).

Surinam 9 Health Services (1964 - 1966) PAHO

To develop the nursing service in preparation for drawing up and implementing a health plan.

Surinam 10 Water Supplies (1964 - 1966) R

To plan a rural water supply programme.

Surinam 51 Aedes aegypti Eradication (1952 - ) EPTA

To eradicate Aedes aegypti.

Trinidad and Tobago 3 Malaria Eradication Programme
(1958 - Dec. 1964) PAHO Special Malaria Fund UNICEF

The aim of the programme was the eradication of malaria from the country. The Organization provided technical advice through a field office in Trinidad staffed by an epidemiologist, fellowships, drugs, and other supplies and equipment.

Malaria control work had been carried out for some years before the malaria eradication programme was launched in 1958, and the number of malaria cases occurring in the country had dropped from 20,000 a year, with over 500 deaths, in the early nineteen-forties, to 640 with six deaths in 1957. Two vector mosquitos were responsible for transmission—Anopheles aquasalis and A. bellator. The former was susceptible to routine residual house-spraying of insecticides, but the latter, which bred in bromeliads, was an outdoor biter. Total coverage attack measures were started in Trinidad in January 1959, using DDT spraying throughout the island, supplemented by mass drug administration to the population in the A. bellator areas. The island of Tobago, where the last case of malaria was reported in 1953, was covered by surveillance operations only. The last indigenous case of malaria in Trinidad was recorded in September 1960 and in January 1962 the whole country was placed in the consolidation phase. The eradication of malaria in Trinidad and Tobago has thus been completed and the certification of this status is being undertaken.

Trinidad and Tobago 6 Public Health Legislation (1964) PAHO

Two consultants were provided to review the legislation bearing on international quarantine procedures and practices and to draft a proposed law and supporting ordinances.
Trinidad and Tobago 10 Water Supplies
(1963 - 1967) PAHO Community Water Supply Fund
To set up a central water supply and sewerage authority, and prepare plans for water supplies for rural populations.

Trinidad and Tobago 11 Pathogenesis and Prevention of Anaemias (1963 - 1965) PAHO/United States National Institutes of Health
To study the pathogenesis and prevention of anaemias in Trinidad and Tobago, in order to obtain information on the main environmental (including nutritional) and hereditary factors involved and their relative importance for use in determining measures to reduce anaemia prevalence.

Trinidad and Tobago 12 Nursing Services (1959 - 1966) EPTA
To strengthen and improve the nursing services in Trinidad and Tobago.

Trinidad and Tobago 13 Fellowships R: Environmental sanitation (two months), medical technology (eleven months), sanitary engineering (one for one month, one for one and a half months, one for twelve months), public health administration (twelve months), virology (nineteen weeks).

United States 10 Consultants in Specialized Fields of Public Health (March 1958 - ) R
To provide consultant services on specialized problems in public health.

United States 11 Fellowships PAHO: Composting (two and a half months), chronic diseases and geriatric care (two months), environmental sanitation (three months), industrial hygiene (two months), maternal and child health (two months), occupational health (nine weeks), public health nursing (one for six weeks, one for two months), social work (two months).

United States 12 Medical and Public Health Training (1963 - ) PAHO
To enable officers of the Division of International Health of the federal Public Health Service to obtain first-hand knowledge of health conditions and problems in the countries which send fellows to study in the United States of America.

United States 200 Fellowships R: Epidemiology (two and a half months), hospital administration (six weeks), medical care administration (nine weeks), mental health (two months), public health administration (three months), sanitary engineering (one for two months, one for two and a half months).

To organize integrated health services in five departments, and later to extend such services to the whole country.

Uruguay 8 Fellowships R: Clinical and social paediatrics (two for one month, one for three months), hospital administration (two for six months).

Uruguay 9 Chagas' Disease (1964 - 1966) PAHO
To plan a programme for the control of Chagas' disease.

Uruguay 10 Fellowships PAHO: Clinical and social paediatrics (two for one month), medical use of radioisotopes (seven months), nursing education (two months), public health administration (three months).

Uruguay 13 Training of Health Personnel (1960 - 1968) PAHO UNICEF
To strengthen the Dr Carlos Nery School of Nursing, and to train auxiliary personnel for the health services.

Uruguay 16 Chronic Diseases (1961 - 1966) PAHO
To study the epidemiology of chronic diseases; and to plan and implement a programme to control the most prevalent of them.

Uruguay 24 Medical Education (1964 - 1966) PAHO
To organize courses on the methodology of medical teaching at the school of medicine of the University of Uruguay.

Venezuela 9 Fellowships PAHO: Clinical and social paediatrics (two for one month, food technology (twelve months), health education (twelve and a half months), health planning course (three for three and a half months), preventive medicine (twelve months), sanitary engineering (two for twelve months), water supply design course (eleven and a half months).

Venezuela 10 Fellowships R: Clinical and social paediatrics (two for one month, two for three months), food control (two for one month), epidemiology of leprosy (twelve months), laboratory services (six weeks), mental health (twelve months), microbiology and immunology (leprosy) (six months), nutrition (two for two and a half months), sanitary engineering (one for ten and a half months, five for twelve months).

Venezuela 11 Plague Investigation (1963 - 1965) PAHO
To determine the extent and nature of plague foci in the country.

Venezuela 14 Nursing Education (April 1959 - 1969) EPTA PAHO
To broaden nursing education to include the preventive and curative aspects of nursing and specialization in administration and supervision; and to establish centres for training nursing auxiliaries.

Venezuela 16 Aedes aegypti Eradication (1958 - ) PAHO
To eradicate Aedes aegypti.

Venezuela 17 Medical Education (1958 - 1966) PAHO
To improve medical education in Venezuela, in particular as regards preventive medicine and the teaching of basic sciences.
Venezuela 18 National Institute of Hygiene (1964 - 1966) PAHO
To develop virological studies and the preparation of freeze-dried vaccines at the National Institute of Hygiene.

Venezuela 19 School of Public Health (1959 - 1967) R
To broaden the scope of the School of Public Health of the Central University, Caracas, and improve the teaching.

To prepare long-term plans for urban water supply programmes; to establish water rates for financing the construction of new water supply systems and for expanding the existing ones; and to reorganize the management of the water supply service of Caracas.

Venezuela 28 Industrial Hygiene (1962 - 1966) PAHO
To strengthen the industrial hygiene and occupational health services of the Ministry of Health.

To prepare plans for water supply systems in rural areas.

Venezuela 37 Rehabilitation (1963 - 1966) PAHO
To provide rehabilitation services, by the establishment of a national rehabilitation institute and rehabilitation units attached to hospitals and health centres.

Venezuela 38 Rural Housing (1963 - 1966) PAHO
To plan rural housing programmes.

Venezuela 40 Food and Drug Control (Oct. 1963 - Feb. 1964) R
A consultant provided by the Organization made a comprehensive study of the control of foods, drugs, and biological products; and prepared a plan for setting up a food and drugs department and for training the necessary personnel.

To strengthen the sanitary engineering courses within the regular civil engineering curriculum in four universities; to organize a course of post-graduate studies at the Central University of Venezuela; and to establish laboratories for research and teaching.

West Indies 3 Nursing Services (Aug. 1959 - 1968) R PAHO
To improve the nursing services in Barbados, Dominica, Montserrat, and St Lucia and, later, in other islands in the eastern Caribbean.

West Indies 4 Fellowships PAHO: Antigua—environmental sanitation (ten months); Barbados—sanitary engineering (one month); Grenada—public health nursing (twelve months); St Vincent—nursing education (twelve months).

West Indies 5 Fellowships R: Antigua—medical technology (six months); Bahamas—medical technology (twelve months), Barbados—health planning (twelve months), Dominica—medical technology (eleven months); Grenada—laboratory technology (eleven months), rural water supplies (two months); St Kitts—medical technology (eleven months); St Lucia—bilharziasis control (two months).

West Indies 12 Nursing Education (1963 - 1966) PAHO
To assess the nursing resources in islands of the Caribbean; and to carry out a long-term plan for the improvement of nursing services.

West Indies 17 Malaria Eradication Programme (1958 - 1966) PAHO Special Malaria Fund UNICEF
To eradicate malaria from the three island groups of Dominica, Grenada and St Lucia, the last two of which are now registered in the list of countries from which malaria has been eradicated.

West Indies 18 Promotion of Community Water Supplies (1962 - 1966) EPTA PAHO Community Water Supply Fund
To plan water supply systems for several islands in the Caribbean.

West Indies 29 Medical Care, Barbados (1963 - 1966) PAHO
To organize the 500-bed general hospital at Bridgetown, which is the medical centre for Barbados and will be used for the teaching of medicine (see project West Indies 4801 below).

West Indies 4801 Hospital Administration, Barbados (1963 - 1966) EPTA
To organize the Barbados general hospital as a teaching hospital for the medical school of the University College of the West Indies, Kingston, Jamaica.
SEARO 3.3 BCG Assessment Team, Indonesia
(May 1963 - end of 1964) R
To strengthen BCG vaccination programmes and to introduce the use of freeze-dried BCG vaccine.

SEARO 7 Regional Assessment Team on Malaria Eradication
To make an independent appraisal of the status of malaria eradication, or of any special aspect of it, in countries of the Region, as required.

SEARO 30 Smallpox Eradication
(Oct. 1962 - end of 1967) EPTA
To assist the governments of the Region in carrying out the control, and ultimately the eradication, of smallpox.

SEARO 38 Production of Freeze-dried Smallpox Vaccine
To assist the countries of the Region with the production of freeze-dried smallpox vaccine. (See page 100.)

SEARO 42 Radiation Protection
The WHO consultant who advised Burma and Thailand on radiation protection in 1959-1960 went to Ceylon and India for the same purpose for ten months in 1963.
In Ceylon he visited various radiology departments, the Cancer Institute at Maharagama, the University of Ceylon, the School of Radiography in Colombo and the Electro-medical Division of the Department of Health; he discussed radiation protection, radiotherapy, and the introduction of further teaching on radiation protection into the undergraduate medical curriculum, and made recommendations on the prevention of radiation injury and on protection of the public against radiation hazards.
In India he gave advice in connexion with the setting-up of a cancer institute at Ahmedabad. In Madras he visited the departments of radiology and radiotherapy of various hospitals, including those of the medical colleges and the Cancer Institute, and discussed the radiation protection programme and the introduction of further teaching on radiation protection into the undergraduate medical curriculum. He also gave advice on radiation protection in Uttar Pradesh, Andhra Pradesh, Mysore and Kerala.
His reports emphasized the importance of national health authorities' accepting responsibility for safeguarding the public against the harmful effects of ionizing radiation and of including medical physicists on the staff of the main radiological institutions, and the need for improving medical undergraduate teaching in radiation.

SEARO 50 Reorganization of Rural Health Records and Reports
To organize in certain rural health centres a system of rural health service records and reports and to train personnel in the collection, processing and presentation of vital and health statistics at rural health centre level.

SEARO 61 Hospital Records Training Course
(June 1964 - end of 1966) R
To assist in training personnel of various grades to work in hospital records and statistics departments.

SEARO 72 Hospital Statistics
(Jan. 1963 - end of 1968) EPTA
To assist governments of the Region in organizing an efficient system for the maintenance and flow of records in certain hospitals; in collecting, processing and presenting hospital statistical data on a national scale; and in training medical records and hospital statistical personnel. (See page 101.)

SEARO 75 Medical Education Study Tour, India and Thailand
(26 Jan. - 23 Feb. 1964) EPTA
Nine deans and principals from medical institutions in Afghanistan, India, Indonesia and Thailand studied the organization and administration of medical education in eleven medical colleges and public health institutes in Delhi, Madras, Vellore and Bangkok. After visiting a factory manufacturing physiological instruments they discussed the possibilities of training technicians for medical colleges' instrument repair shops. The participants in the tour also took part in the Annual Conference of the Indian Association for the Advancement of Medical Education, on clinical sciences, held in Madras in February 1964. WHO provided a consultant for six weeks and the cost of attendance of the participants.

SEARO 76 Studies on Filariasis
(Nov. 1962 - end of 1967) R
To carry out further research on filariasis in order to evolve more effective methods of control.

SEARO 94 External Cross-checking of Blood Films
(June 1963 - end of 1966) MESA
To provide facilities for the external cross-checking of blood films received from malaria eradication programmes in the Region.
SEARO 95.1 Maternal and Child Health Assessment Team, Thailand (Dec. 1963 - March 1964) R

WHO provided a consultant in maternal and child health for three months and a public health nurse for six weeks to study the administration and organization of maternal and child health services in Thailand. Special attention was paid to the standard of services, workload, range of activities, administration and supervision, record-keeping, supporting services, and training of health personnel in maternal and child health work at all levels. Recommendations were made on the expansion of health centres in rural areas, particularly for maternal and child health work, and on training of personnel.


To assist the Nutrition Research Laboratories, Hyderabad, India, in carrying out a programme of training in applied nutrition.

SEARO 99 Haemorrhagic Fever Control (Jan. 1964) R

WHO provided a consultant for two weeks to study the situation as regards haemorrhagic fever and dengue-like disease in Thailand, the Rangoon area of Burma, and the Calcutta area of India. He submitted recommendations on epidemiological surveillance and on measures for the control of Aedes aegypti.


To train personnel of Member and Associate Member countries of the area served by the Economic Commission for Asia and the Far East in planning and economic development; to undertake research and to provide advisory services.

SEARO 114.1 Special Course on Advanced Malaria Epidemiology, New Delhi (9 - 30 March 1964) MESA

The course was organized in collaboration with the National Institute for Communicable Diseases, Delhi, and the Indian National Malaria Eradication Programme to provide training in advanced malaria epidemiology to senior national medical officers responsible for the planning and execution of epidemiological evaluation of malaria eradication programmes, and to prepare them for organizing similar courses in their own countries. It consisted of lectures and group discussions on basic epidemiology, specific malaria epidemiology, use of statistical methodology, epidemiological requirements of the maintenance phase in an integrated health service, training of staff in epidemiology, and health education. These were followed by field visits in which the value of sound epidemiological organization and the failures caused by defective epidemiological planning were demonstrated. In addition to the training it provided, the course also served to focus attention on the epidemiological problems in the participants' countries.

WHO provided allowances for temporary advisers, the cost of attendance of the nine participants, who came from Ceylon, India, Iran, Nepal, Pakistan and Thailand, and technical literature.

SEARO 115 Post-graduate Medical Education (Aug. - Dec. 1964) R

To assist in the development of post-graduate medical education.


To introduce senior nurses to the latest developments in the application of certain managerial techniques to nursing administration.


To eradicate malaria from the entire country and prevent the re-establishment of endemicity.


To build up departments of the Faculty of Medicine of the University of Kabul, and to train staff.


To organize, expand and improve facilities for vaccine production for the national health programme, and to train local personnel in the production of biological substances.


To set up a health education section in the Institute of Public Health, Kabul; to develop health education services in the country; and to train teachers and health workers in health education.

Afghanistan 26 Rural Health (April 1956 - end of 1968) EPTA UNICEF

To further the development of rural health services in which effectively directed and supervised curative and preventive services are integrated at all levels.

Afghanistan 28 School for Sanitarians, Kabul (July 1955 - end of 1965) EPTA

To train sanitarians for community health services throughout the country.


To develop the Institute of Public Health for investigations, research and training of public health workers.
Afghanistan 33  Tuberculosis Advisory Services  
EPTA UNICEF  

To expand tuberculosis control services in Kabul and in the surrounding districts.

Afghanistan 35  Nursing Advisory Services  
(June 1957 - end of 1969) EPTA  

To organize and develop nursing and midwifery training programmes and to co-ordinate and expand nursing education and nursing services.

Afghanistan 43  Leprosy Control (Aug. 1964) R  

WHO provided a consultant for one month to make a survey for determining the prevalence of leprosy in the provinces where the disease is known to be endemic, and to advise on case-finding, contact-tracing and treatment of leprosy patients. He confirmed that leprosy is endemic in some areas of Bamian Province, and recommended a training and control programme.

Afghanistan 44  Trachoma Control  

To study the epidemiological aspects of trachoma in Herat Province, start control work and carry out a programme of health education related to communicable eye diseases; on the basis of the data and experience so gained, to develop a control programme on a larger scale.

Afghanistan 54  Communicable Disease Control (Smallpox Eradication) (July 1964 - end of 1968) EPTA  

To extend the smallpox eradication programme; to plan field epidemiological investigations of major communicable diseases other than smallpox; and to train personnel in field epidemiology and communicable disease control.

Afghanistan 200  Fellowships R: Maternal and child health (one month), nursing (twelve months), organization of a national medical association (two weeks).

Afghanistan 201  Fellowships EPTA: Food and water analysis (twelve months), health education (twelve months), medical radiology (two for twelve months).

Burma 17  Leprosy Control  
(April 1960 - end of 1968) R UNICEF  

To expand and intensify the leprosy control programme to cover all endemic areas of the country and to train personnel for this purpose.

Burma 22  Vital and Health Statistics, Rangoon  

To establish machinery for prompt notification of health statistical data; to improve processing of the data, and to train staff in statistical methods.

(The specific aims in the present phase of the project are to organize an efficient system for the maintenance and flow of records in selected hospitals; to collect, process and present hospital statistical data efficiently on a national scale, and to train medical records and hospital statistics personnel.)

Burma 28  Faculty of Medicine, Rangoon  

To strengthen certain departments of the Faculty of Medicine, Rangoon; to improve the teaching of undergraduates; and to promote research and post-graduate activities.

Burma 31  Malaria Eradication  
(Feb. 1957 - end of 1967) MESA UNICEF  

To eradicate malaria throughout the country in progressive stages.  

In accordance with the Government's decision in April 1962 to continue the programme without WHO field staff, WHO assistance in the period under review was limited to fellowships.

Burma 44  Strengthening of Health Services (Epidemiology)  

To strengthen the Epidemiological Unit in the Health Directorate; to study further the prevailing pattern of communicable diseases in the country in order to provide information for sound public health planning and appropriate control measures; and to develop public health laboratory services to support the work of the Epidemiological Unit.

Burma 56  Nursing Advisory Services  
(March 1959 - end of 1968) EPTA  

To upgrade and co-ordinate basic and post-basic education for nurses and midwives throughout the country in order to establish satisfactory standards of nursing and midwifery training and services.

Burma 59  Medical College, Mandalay  

To assist in upgrading certain departments of the Medical College, Mandalay, WHO provided a professor of anatomy, from November 1959 to March 1960 and from January 1962 to March 1963, and a professor of pathology, from October 1960 to April 1961 and from August 1963 to June 1964. Supplies and equipment were also provided.  

The content of the anatomy curriculum was revised, lectures were given and practical classes held, and improvements in practical teaching were made. A department of histology was set up.  

In pathology, the teaching was improved and the number of post-mortem examinations was increased. Working relations with the hospital were strengthened. A research project on anaemia in pregnancy and on subcutaneous phycomycosis was started.

Further assistance to the College will be given under a new project, Burma 79 — Medical Education.
An eight-week fellowship in filariasis control was awarded under this project, for which a consultant and fellowships were provided in 1961.

**Burma 65 Tuberculosis Control**  
*(Jan. 1964 - end of 1968) EPTA UNICEF*

To set up community-oriented tuberculosis control services in the country, starting with Rangoon and Mandalay, and to collect basic epidemiological data on tuberculosis for future planning and assessment.

**Burma 67 Paediatric Education**  
*(June 1964 - end of 1967) R UNICEF*

To strengthen the departments of paediatrics in the country's three medical colleges; to improve the teaching of paediatrics, particularly as regards its preventive aspects; and to develop peripheral services as training fields.

**Burma 75 School of Public Health and Tropical Medicine**  
*(Oct. 1964 - end of 1968) R*

To establish a school of public health and tropical medicine.

**Burma 76 Survey of Economic and Social Requirements of an Opium-producing Region in Burma** *(March - April 1964) EPTA*

WHO provided a consultant for three weeks to collaborate with a United Nations consultant in making a survey in the Kachin State—the poppy-growing area of Burma—in order to assess the problem of opium addiction and advise on measures for the treatment and rehabilitation of opium addicts. His recommendations dealt with measures for a gradual reduction in poppy growing and opium production, the control of licenced premises, the registration of addicts and the expansion of services for their treatment, education of the public on the dangers of opium dependence, and legislative measures.

**Burma 77 Burma Pharmaceutical Institute, Rangoon**  

To introduce modern methods of production of vaccines, antitoxins and toxoids, and other biological products.

**Burma 201 Fellowships EPTA**: Freeze-dried smallpox vaccine manufacture (one for two months, one for three and a half months), laboratory technology (twelve months), preventive and social medicine (ten months), public health (two for ten months).

**Ceylon 4 Maternal and Child Health**  
*(Sept. 1955 - Nov. 1963) EPTA UNICEF*

The project started in 1955 in the Children's Department of the Kalutara Health Unit Hospital, with the aim of upgrading the department, integrating the preventive and curative aspects of child care at the hospital and in the field, improving public health nursing in the Health Unit, and training various categories of health personnel. In 1961 it was converted into a maternal and child health project, based in Colombo, the objectives being to upgrade the child health services in a number of provincial hospitals and to link them with the child care work carried out in rural areas. WHO provided a paediatrician, a public health nurse, a medical officer and a paediatric nurse tutor, a consultant in public health administration, and three fellowships—of three months, ten months and thirteen months.

During the period of WHO assistance a number of paediatric wards in hospitals throughout Ceylon were opened and several paediatricians were appointed. A well-organized referral system between the paediatric hospital and domiciliary services was established in Kalutara and similar systems were introduced in other areas. Special attention was paid to nutrition education; demonstrations of the preparation of infant food were given and a series of leaflets on feeding and nutrition were issued. Longitudinal studies on premature infants and preschool children, and on anaemia in pregnant women, were organized.

The project was successful in assisting the development of comprehensive maternal and child health services throughout the country.

**Ceylon 5 Venereal Disease Control**  
*R*

Two three-month fellowships in venereal disease control were awarded under this project, for which consultant services were provided between October 1959 and January 1960.

**Ceylon 5.2 Venereal Disease Control (Fluorescent Laboratory Technique)** *(Sept. 1964) R UNICEF*

WHO provided a consultant for three weeks to advise on the installation of fluorescent microscopy equipment and instruct staff in immuno-fluorescent test techniques in syphilis and gonorrhoea.

**Ceylon 38 Strengthening of Health Services (Epidemiology)**  

The aim was to establish an epidemiological unit in the Health Directorate, Colombo; to make epidemiological surveys of disease distribution in Ceylon; to train undergraduate and postgraduate students; and to plan future veterinary public health work, particularly on zoonoses and their control. WHO provided two epidemiologists, a specialist in infectious diseases, a consultant in veterinary public health for six weeks and a consultant in poliomyelitis for ten weeks; and three twelve-month fellowships.

A description of the work done up to 1959 was given in the Annual Report for that year. Since then, recording and reporting procedures have been simplified and rendered more efficient. The Epidemiological Unit has carried out investigations of typhoid fever and pyrexias of unknown origin and has advised on and directed field investigations of communicable diseases.

In 1962 a consultant in veterinary public health helped to make investigations on the prevalent zoonoses and advised on their control. He recommended a four-year plan for further development of veterinary public health services and for the

---

control of rabies, brucellosis and food-borne diseases. In the
same year the Epidemiological Unit undertook investigations
on a poliomyelitis outbreak and on diarrhoeal diseases in the
Colombo area. An epidemiologist who had been studying on a
WHO fellowship joined the Unit, and a twelve month fellowship
was awarded to a veterinary public health officer.

Between August and October 1964 a consultant made an
assessment of the poliomyelitis vaccination campaign carried
out in 1962 and 1963 and studied the problem of viral ence-
phalitis in the country.

The Epidemiological Unit has been successfully established
and is fully participating in the investigation and control of
communicable diseases.

Ceylon 45 Health Statistics EPTA

A twelve-month fellowship in health statistics was awarded
under this project, for which a health statistician and supplies
and equipment were provided between April 1957 and December
1961.

Ceylon 47 Medical Education

To organize the departments of the new medical college at
Peradeniya.

Ceylon 53 Nursing Advisory Services (July 1960 - end of 1968) R

To develop all aspects of basic, post-basic and auxiliary
nursing education, with emphasis on planning, organizing and
developing a post-basic school of nursing; and to set up a nursing
unit in the Department of Health responsible for the overall
administration of nursing education.

Ceylon 56 Filariasis Control
(Dec. 1959; April - July 1961; Sept. 1961; Aug. 1963 - end
of 1967) EPTA

To strengthen the filariasis control programme and introduce
new control methods as necessary.

Ceylon 58 Malaria Eradication (Aug. 1960 - end of 1966) MESA

To eradicate malaria from the entire country and prevent the
re-establishment of endemicity.

Ceylon 63 Medical Rehabilitation (Poliomyelitis)
(April 1962 - end of 1966) EPTA

To provide advisory services and facilities for the manage-
ment and rehabilitation of paralytic cases of poliomyelitis.

Ceylon 64 Community Water Supply (Oct. 1963 - end of 1967) R

To provide piped water supplies for major towns and for other
community areas.

Ceylon 66 Study on Diarrhoeal Diseases
(Sept. 1964 - end of 1967) R

To make long-term studies of the epidemiology and control of
diarrhoeal diseases.


A consultant was provided for a month to advise on the fluo-
ridation of the Colombo water supply as a means of reducing
the high incidence of dental caries.

Ceylon 73 Course in Hospital Administration and Management
(21 Jan. - 4 April 1964) R

WHO provided a consultant for four months to organize and
direct a three-month course on hospital administration and
management for twelve senior hospital staff members and to
draw up a syllabus for similar courses for the future. Lectures
on hospital statistics were given by the regional adviser for the future in
health statistics.

Ceylon 74 Institute of Hygiene, Kalutara (July - Sept. 1964) R

To assist in developing the Institute of Hygiene, Kalutara, as
a centre for training and orientation of public health staff, WHO
provided a consultant for three months to make a study of its
programmes and services.

Ceylon 200 Fellowships R.: Electro-medical engineering (four
months), physical therapy (twelve months).

Ceylon 201 Fellowships EPTA: Biostatistics (twelve months),
laboratory technology (one for two months—extension of
previous award, one for twelve months), sanitary engineering
(one for six months, one for twelve months).

India 53 Tuberculosis Chemotherapy Centre, Madras
(Dec. 1955 - end of 1969) EPTA (British Medical Research
Council) (Indian Council of Medical Research)

To carry out controlled trials of domiciliary chemotherapy of
ambulant tuberculosis patients in order to find methods that
are simple, cheap, and effective in controlling the disease.

India 71.2 Mental Health (Aug. - Oct. 1964) R

WHO provided a consultant for three months who visited
mental health institutes and hospitals in Bangalore, Ranchi,
Agra and Ahmedabad and advised on the upgrading of mental
health services and on the improvement of methods of teaching
psychiatry at undergraduate and post-graduate levels.

India 81.1 Leprosy Control (National Programme)
(Jan. 1961 - end of 1968) R UNICEF

To carry out a programme of leprosy control covering the
whole country.

India 81.2 Leprosy Control, Srikakulam
(Jan. 1962 - end of 1968) R UNICEF

To provide technical direction for a leprosy control project
organized and maintained by the Danish " Save the Children "
Fund, and to train leprosy auxiliary personnel.

India 84 Environmental Sanitation, Uttar Pradesh
(March 1958 - end of 1964) EPTA UNICEF

To set up in a rural area a pilot project for improving water
supplies and excreta disposal; to plan and carry out a sanitation
programme including the design, operation and maintenance of
simple, practical and cheap sanitary installations; to organize a programme of health education; to train technicians, sanitarians and other personnel.

**India 91 Training in Preventive and Social Medicine**


The aim was to develop the departments of preventive and social medicine in selected medical colleges, incorporating preventive medicine into the general curriculum and organizing courses in preventive and social medicine for undergraduates; and to establish urban and rural public health practice fields for training. WHO provided six professors of preventive and social medicine, a consultant and two twelve-month and nine two-year fellowships.

The WHO professors were assigned to medical colleges in Assam, Nagpur, Bombay, Lucknow, Kanpur and Pondicherry, where the following work was carried out:

**Assam Medical College.** The WHO professor assisted in drawing up a curriculum and in establishing a centre for the field training of undergraduates. A Chair of Preventive and Social Medicine and staff for the department on a full-time basis were sanctioned.

**Medical College, Nagpur.** The WHO professor worked in the Department of Preventive and Social Medicine while his counterpart was training at Harvard University on a two-year WHO fellowship. During that time the Department was firmly established and adequately staffed; a preventive and social medicine curriculum, spread over four years of the medical course, was introduced; field practice work was developed, and three field research projects were undertaken in collaboration with other university departments. A public health museum was set up and a national staff member was trained as curator. The professor also made a survey of the teaching of preventive and social medicine in the three medical colleges in Bombay and discussed planning of teaching with the authorities.

**Topiwala National Medical College, Bombay.** The WHO professor assisted in revising the teaching of social medicine and in training staff and students of the College. He also lectured at other institutions in Bombay. A Chair of Preventive and Social Medicine was established in the College. Students of the Department carried out studies on stillbirth and on the incidence of cancer and suicides in Bombay.

**K.G. Medical College, Lucknow.** Teaching in preventive and social medicine was extended to four of the five years of the Bachelor of Medicine and Bachelor of Surgery course. The hours of formal teaching were reduced to allow more time for practical demonstrations. Postgraduate training was developed; research was started on problems of immediate public health interest to India and several studies were completed.

**G.S.V.M. Medical College, Kanpur.** The WHO professor helped to prepare a preliminary report on the teaching of preventive and social medicine. A course of lectures, based on a new programme, was begun with first-year students.

**Medical College, Pondicherry.** The WHO professor took part in the lecture and training programmes. The possibility of providing facilities for practical training in preventive and social medicine was explored; classes were started in which modern methods of teaching paediatrics, preventive medicine and psychiatry were introduced.

From January to March 1962 a WHO consultant investigated the effect of the WHO fellowships programme on the teaching of preventive and social medicine in thirteen main medical centres of India. He visited twenty-four medical colleges and the All-India Institute of Hygiene and Public Health, Calcutta, which has a course for training professors of preventive and social medicine. His report contains recommendations not only for improving the level of teaching in preventive and social medicine, but also for the general upgrading of medical education in India.

**India 98 Short Courses for Nursing Personnel, Ahmedabad**


A course on nursing education was held at Ahmedabad from 19 August to 12 October 1963 for twenty hospital nurse tutors. The aims were to foster good principles and methods of teaching, to help the trainees to see the programme of nursing education as a whole, and to develop public health concepts and attitudes.

A course on the role of the nursing superintendent in improving nursing education, attended by twenty nursing superintendents, was held at Chandigarh from 7 October to 2 November 1963 and a further course, attended by nineteen nursing superintendents, took place, also at Chandigarh, from 7 September to 3 October 1964.

**India 99.3 Integration of Public Health into Nursing Education, Orissa (May 1958 - end of 1964) EPTA**

To integrate training in public health into the basic training of nurses and to provide supervised practical observation and experience for student nurses in a selected undergraduate school of nursing.


A public health nurse was provided to Snowdon Hospital, Simla, to assist in integrating training in public health into the basic training of nurses and in providing supervised practice and experience for student nurses in an undergraduate school of nursing. Public health nursing was made an integral part of the general nursing curriculum at the hospital. Urban and rural practice fields were set up and the preventive aspects of patient care were introduced into the hospital wards and outpatient clinics. Special courses in public health, nutrition and mental hygiene were organized as part of the total curriculum study in order to include the teaching of the preventive aspects of health care.

**India 99.5 Integration of Public Health into Nursing Education, Goa (Sept. 1963 - end of 1965) R**

To introduce patterns of basic nurse-midwife and auxiliary nurse-midwife education similar to those laid down by the Indian Nursing Council; to arrange in-service training in all teaching hospitals; and to improve methods of administration of the nursing component of all health services.

**India 101 National Trachoma Control Programme**


To pursue a programme of trachoma control aimed at reducing the transmission of infection, morbidity and disabling conditions in the community to a level where trachoma and secondary bacterial infections are no longer public health prob-
lems in the areas covered; to train ophthalmologists, general physicians and field personnel in control measures; to carry out a programme of health education at all levels; and to integrate the control of communicable eye diseases into the general health services.

India 103 National Tuberculosis Programme
(Oct. 1956 - end of 1968) EPTA UNICEF

To carry out a national tuberculosis control programme, using the experience gained in model rural and urban programmes and the results of epidemiological findings and operational research; to train public health workers of various categories for state and district tuberculosis control centres; and to evolve methods and procedures for assessment of the national programme.

India 108.5 Health Education, Orissa
(July 1964 - July 1966) EPTA

To develop the Health Education Bureau in the Health Directorate along modern lines and to set up a field study and demonstration centre attached to the Bureau; to train health workers and teachers in health education; and to plan for health education of the general public.

India 110.3 Nursing Adviser to Punjab
(Aug. 1961 - end of 1965) EPTA

India 110.4 Nursing Adviser to Orissa
(Oct. 1962 - end of 1966) EPTA

India 110.5 Nursing Adviser to Gujarat
(Sept. 1963 - end of 1966) EPTA

To organize and expand nursing education and nursing services in the state and to co-ordinate supervisory services so as to ensure uniformly high standards of nursing and midwifery in the health programme.

India 114.1 Paediatric Education, Kerala

The aim was to expand and upgrade the teaching of paediatrics in the state medical colleges. WHO provided a professor of paediatrics from May 1961 to May 1962 and from October 1962 to March 1964, and a paediatric nursing tutor from October 1961 to December 1963 at Sarojini Naidu Medical College, Agra; and a consultant paediatrician for six weeks in 1964 at Kanpur Medical College.

In Agra, the services in the Department of Paediatrics and the outpatient clinic were developed, and three peripheral paediatric centres were established. Undergraduate and Diploma of Child Health courses were revised to give more training in the social aspects of paediatrics, and the training given by the Department was co-ordinated with that of the Department of Obstetrics and of Preventive and Social Medicine. The staff of the Department of Paediatrics was strengthened. Improved nursing techniques were introduced in the college hospital and clinical instruction, with emphasis on health teaching and the participation of mothers in the care of their children, was started. Thirty-seven nurses were given supplementary training in paediatric nursing in two regular all-India paediatric nursing refresher courses.

The project was fairly successful in improving paediatric services and in making the social aspects of paediatrics an integral part of the paediatric courses.

In Kanpur the WHO consultant made an assessment of the courses for medical undergraduate and postgraduate students and studied the local pattern of child health services. He also assisted in improving the teaching of paediatrics and developing peripheral paediatric services for teaching purposes. His report included a recommendation for the further upgrading and expansion of paediatric education and services of the Kanpur Medical College.

India 114.3 Paediatric Education, Mysore
(Oct. 1961 - May 1964) R UNICEF

The aim was to expand and upgrade the teaching of paediatrics in the four medical colleges in Mysore; to establish a paediatric unit in a district hospital, and to form the nucleus of a consultative paediatric service for referral hospitals and primary health centres in the district. WHO provided a professor of paediatrics and a paediatric nursing tutor, stationed at Bangalore, and supplies and equipment.

The new buildings and extensions were completed according to plan. The national medical staff of the Departments of Paediatrics of the medical colleges was strengthened by the appointment of seven qualified paediatricians, eleven medical officers with a Diploma in Child Health and thirteen house physicians. There was no significant increase in nursing staff in any of the hospital departments or in the units included in the project. A comprehensive paediatric course for medical undergraduates was introduced and demonstrations were given of the co-ordination of teaching of paediatrics with the teaching of related subjects. Considerable success was achieved in establishing peripheral paediatric clinics for teaching purposes. Attention was given to the development of research as an integral part of teaching activities. Paediatric services in the pilot district were developed satisfactorily and consultative services introduced at sub-district level. A number of nurses received reorientation training in three all-India refresher courses in paediatric nursing held in Bangalore while the project was in operation.
The project was successful in improving the standard of teaching in the Departments of Paediatrics and in stimulating the introduction of modern teaching methods in all the medical colleges of the state.

**India 114.4 Paediatric Education, Maharashtra**  
(Oct. 1963 - end of 1965) R UNICEF  
To expand and upgrade the teaching of paediatrics in the state medical colleges.

**India 114.5 Paediatric Education, Madhya Pradesh**  
WHO provided a consultant for two months to assist in establishing a biochemical section in the laboratory of the Paediatric Department of the M.G.M. Medical College, Indore.

**India 121 Indian Council of Medical Research**  
To set up a statistical unit at the headquarters of the Indian Council of Medical Research, to organize and co-ordinate medical research work, and to train national personnel.

**India 136.2 Post-basic Nursing Education, Gujarat**  
(Jan. 1963 - end of 1966) R  
To expand post-basic nursing education and to upgrade public health and institutional nursing services.

**India 136.3 Post-basic Nursing Education, Punjab**  
(March 1964 - end of 1970) R  
To set up a post-basic school of nursing affiliated to a university.

**India 136.4 Post-basic Nursing Education, Mysore**  
(Feb. 1964 - end of 1968) R  
To expand post-basic nursing education and to upgrade public health and institutional nursing services.

**India 136.5 Post-basic Nursing Education, Madras**  
(June 1964 - end of 1968) R  
To set up a post-basic school of nursing affiliated to a university.

**India 145 Public Health Programme, Bihar**  
(Jan. 1958 - Feb. 1964) R UNICEF  
The project, the aim of which was to train personnel and to expand the health services in community development areas, was developed from an earlier project—Maternal and Child Health/Nursing, Bihar (India 56)—assisted by WHO and UNICEF since 1954.  
WHO provided a public health officer, a public health nurse and a midwifery tutor.  
The project concentrated on the establishment of an orientation training programme for medical officers in charge of primary health centres; the setting-up of a rural training centre; assistance to primary health centres, referral hospitals and laboratories, and assistance in drawing up curricula for training nursing personnel, and in integrating teaching of public health into the basic curriculum and training programmes for auxiliary nurse-midwives. UNICEF provided supplies and equipment for training programmes and for upgrading paediatric units.

**India 147 Public Health Programme, Kerala**  
(June 1960 - end of 1965) R UNICEF  
To train personnel and to expand the health services in community development areas.

**India 150.2 Public Health Programme, Maharashtra**  
(April 1963 - end of 1965) EPTA UNICEF  
To carry out a rural environmental sanitation programme and to improve the training of environmental sanitation staff.

**India 153 Malaria Eradication**  
To eradicate malaria from the whole country and prevent the re-establishment of endemicity.

**India 155 Curriculum Guide for Nursing and Midwifery Training**  
To revise and prepare a curriculum guide to the minimum syllabuses for general nursing and midwifery training.

**India 170 Survey of Water Supply Resources of Greater Calcutta**  
To improve the water supply, sewerage and drainage of Greater Calcutta.

**India 176 Central Public Health Engineering Research Institute, Nagpur**  
To develop the Central Public Health Engineering Research Institute as a major research centre for environmental sanitation problems, to co-ordinate research programmes and to train research workers.  
(See page 99.)

**India 180 Health Education in Schools**  
(July 1964 - end of 1966) R  
To organize training in health education for the staff of teacher-training institutions; and to include the subject in basic teacher-training courses.

**India 181 Applied Nutrition Programme**  
To expand and improve the health components of the applied nutrition programmes assisted by FAO, UNICEF and WHO and particularly to improve the health and nutritional status of mothers and children.
India 182 Strengthening of Health Services (Epidemiology)  
(March 1963 - end of 1968) EPTA  

To establish or improve health intelligence units in state health directorates; to train staff in epidemiology, health statistics, microbiology and communicable disease control; and to develop the National Institute for Communicable Diseases, Delhi.

India 183 Medical Education, Gujarat  
(Dec. 1962 - end of 1968) EPTA  

To develop medical education and medical research in Baroda Medical College.

India 185 Strengthening of District Health Administration  
(Jan. 1964 - end of 1968) R UNICEF  

To study and develop the organization of district health services so as to provide the public with the most effective service possible with the health personnel available.

India 186 Schools of Dentistry (Oct. 1963 - July 1964) R  

WHO provided a professor of dentistry who demonstrated modern techniques and methods of teaching dentistry, and helped to organize training and initiate research work at the Dental College and Hospital, Lucknow, the Government Dental College, Bombay, the Nair Hospital Dental College, Bombay, and the Dental Colleges in Bangalore and Trivandrum.

India 189 Urban Health Services (Nov. - Dec. 1963) R  

WHO provided a consultant who made a study of urban health problems in Bangalore and submitted recommendations on health services to be provided, including priorities to be accorded to the different types of service.

India 194 Medical Rehabilitation  
(Nov. 1963 - end of 1967) R UNICEF  

To expand medical rehabilitation services throughout India and the facilities available at the All-India Institute of Physical Medicine and Rehabilitation, Bombay; to set up a Central Institute of Orthopaedics in Delhi for training and research; to set up from eight to fourteen other departments in some cities that already have well developed orthopaedic departments; and to establish a large plant in Delhi for the manufacture of standard prosthetic components.

India 195 Course in Radiological Physics, Bombay  
(March 1963 - 1966) R  

To strengthen the training of radiological physicists.

India 196 Manganese Poisoning (Nov. - Dec. 1963) R  

WHO provided a consultant for three weeks to advise on the prevention of manganese and ferro-manganese poisoning. He visited the ferro-manganese mines and plants in Mysore and Orissa and the All-India Institute of Hygiene and Public Health and discussed the situation with the authorities concerned. He also addressed the Indian Academy of Medical Sciences, New Delhi, on the subject "Exploring the Dangerous Trades".

India 197 Industrial and Occupational Health  
(April - Sept. 1964) R  

WHO provided a consultant for five months, who made a study of the medical facilities and the occupational health hazards in industrial and other undertakings and in training institutions in some fifteen cities and industrial areas. Also, in September 1964, he assisted in preparing and lectured at the first Conference of Medical Inspectors of Factories to be held in India. He submitted recommendations on regulations to govern the establishment of new industries, co-operation between agencies and ministries concerned with occupational health problems, the preventive aspects of occupational health, education and training, and the setting-up of a central institute of occupational health.

India 198 Plague Control (Jan. - April 1964) R  

The aim was to ascertain the factors responsible for the persistence of foci of plague in South India and to determine suitable control measures. WHO provided a consultant for four months and supplies and equipment. The consultant made a study of wild and domestic rodents and of their ectoparasites to determine their role in the persistent transmission of plague in the affected zones. Pasteurella pestis was isolated from three species of wild rodents and their fleas.

Co-ordination of the investigations and control measures was undertaken by a team from the National Institute for Communicable Diseases, Delhi, in collaboration with the antiplague services of Andhra Pradesh, Madras and Mysore.

India 200 Fellowships R: Health education (one month), neuro-virulence testing (three months), nursing (four months), physical therapy (twelve months).

India 201 Fellowships EPTA: Anatomy (twelve months), pathology (seven months), pharmacology (twelve months), public health engineering (six months), quarantine administration and yellow fever control (two for ten weeks).

India 209 Community Water Supply  
(March 1964 - end of 1966) Special Account for Community Water Supply  

To organize a seminar on financing and management of waterworks and sewerage systems; to assess the feasibility and prepare definitive water supply and associated drainage schemes, in accordance with the conditions and requirements for World Bank loans.

India 215 All-India Institute of Medical Sciences, New Delhi  
(12 - 26 Nov. 1964) R  

A reviewing committee, composed of four Indian medical education specialists and two WHO consultants, assessed the standard of teaching and evaluated the research programmes of the All-India Institute of Medical Sciences, New Delhi, with a view to determining how far the Institute has achieved its objectives, and advised on its future development.
Indonesia 29 Strengthening of Health Services (Epidemiology) (Dec. 1958 - March 1964) EPTA

The aim was to set up an epidemiological unit in the Ministry of Health and epidemiological sections in the provinces of Indonesia in order to determine the prevailing disease pattern and plan control measures; and to advise all branches of the medical services on the use of epidemiological methods. WHO provided an epidemiologist from December 1958 to September 1960 and from January 1961 to March 1964, four fellowships—one for nine months, two for twelve months and one for fourteen months—and supplies and equipment.

Emphasis was placed on demonstrating the functions and value of the Epidemiological Unit, establishing epidemiological services separate from the quarantine services, and training national epidemiologists. In addition to the fellowships in epidemiology awarded to the counterpart of the WHO epidemiologist and other national staff, training in epidemiological methods was given to medical undergraduates in the Department of Preventive Medicine of the Medical Faculty of the University of Indonesia, Djakarta, to groups of doctors and sanitarians, and to the staff of provincial health departments.

The Epidemiological Unit studied and assessed national and local problems, defined the most urgent duties of the epidemiological services and carried out demonstrations, in collaboration with institutions and authorities concerned, to promote their accomplishment. The Unit also assisted in establishing epidemiological sections in five provinces.

During the five years of WHO assistance, the project achieved its primary objective—the strengthening of the Epidemiological Unit. The Unit will continue the strengthening of the recently established epidemiological sections in the provincial health departments in Java and help to establish similar sections in other islands.

Indonesia 32 (a) Malaria Eradication (May 1955 - end of 1974) MESA EPTA (AID)

To eradicate malaria throughout the country in progressive stages.

Indonesia 32 (b) Malaria Pre-eradication Programme, West Irian (1962 - ) MESA UNICEF

To build up the operational facilities for a full malaria eradication programme in West Irian.

Indonesia 40 Vaccine and Sera Production (April 1959; June 1960; Feb. - March 1963; Sept. 1963 -end of 1966) EPTA UNICEF

To improve methods of production of vaccines, antitoxins and toxoids.

Indonesia 41 Nursing Advisory Services (Oct. 1957 - July 1959; Nov. 1960 - end of 1968) EPTA

To set up a Division of Nursing in the Ministry of Health to co-ordinate institutional and public health nursing services; and to upgrade and expand training programmes for nurses and midwives.

Indonesia 50 Tuberculosis Control (July 1961 - end of 1967) R UNICEF

To carry out the national tuberculosis programme and establish a central tuberculosis epidemiological unit which will direct the control operations throughout the country; and to train staff in case-finding and ambulatory treatment techniques and methods.


To organize a comprehensive health service that will provide the population with health coverage of adequate quality and quantity.

Indonesia 62 Medical Education (May 1964 - end of 1968) R

To assist certain departments of the faculties of medicine.

Indonesia 65 School of Physical Therapy, Solo (March 1963 - end of 1966) R

To improve, extend and upgrade the training of physical therapists and to develop physical therapy and rehabilitation services.

Indonesia 200 Fellowships R : Health education (twelve months).

Indonesia 201 Fellowships EPTA : Anatomy (twelve months), physiology (twelve months), public health (two for twelve months).

Maldive Islands 5 Public Health Administration (Oct. 1959 - end of 1970) R

To organize health services and facilities and to train health personnel.

Mongolia 1 Strengthening of Health Services (Epidemiology) (July 1963 - end of 1967) R

To carry out epidemiological surveys of the prevailing communicable diseases in order to plan practical control measures; and to train all branches of the medical and health services in the use of epidemiological methods.

Mongolia 2 Public Health Laboratory Services (May 1964 - end of 1967) EPTA

To develop the health laboratory services and to train personnel in health laboratory procedures and practices.

Mongolia 3 Tuberculosis Control (Dec. 1963 - end of 1966) EPTA

To study the epidemiology of tuberculosis in order to develop the control programme.

Mongolia 201 Fellowships EPTA : Dermatology and venereology (six months), gynaecology (six months), paediatric surgery (six months).
Nepal 1 Malaria Eradication
(June 1954 - end of 1970) R MESA (AID)
To eradicate malaria throughout the country in progressive stages.

Nepal 2 Nursing Education (Nov. 1954 - end of 1968) EPTA
To set up a nurse training school to prepare qualified nurses-midwives for the health services.

Nepal 3 Training of Health Assistants, Kathmandu
(June 1955 - Jan. 1962; Dec. 1962 - end of 1968) EPTA
To establish a school for health assistants for service in rural areas and to plan for their effective use in the rural health services.

Nepal 8 Maternal and Child Health
To develop the maternal and child health services and establish referral facilities.

Nepal 9 Smallpox Control Pilot Project
To start a smallpox control pilot project in the Kathmandu valley, and to expand the programme gradually as and when the situation permits.

Nepal 14 Community Water Supply (June 1964 - end of 1967) R
To plan and co-ordinate the development of community water supplies.

Nepal 200 Fellowships R : Laboratory technology (twelve months), medical coding (three for three months—one of them an extension of a previous award).

Nepal 201 Fellowships EPTA : Laboratory technology (two for twelve months).

Thailand 2.1 Yaws Control
(May 1950 - June 1964) EPTA UNICEF
The aim was to maintain surveillance of yaws throughout the country in order to keep the reservoir of infection at a level at which the disease can be controlled by the rural health authorities; to train local personnel; and to incorporate yaws control into the work of the public health services. WHO provided a serologist, a yaws specialist, a public health officer, a public health nurse, a statistician and a laboratory technician; a consultant in venereal diseases for two months; three fellowships—two of three weeks and one of seven months; and supplies and equipment.

The yaws control campaign, which began in 1950, had reached the consolidation stage by 1956; the prevalence, which had been high, had been reduced in all areas to less than 2 per cent. active and 0.5 per cent. infectious yaws. A description of the work done up to 1962 is given in the Annual Report for that year. By the time the project ended the prevalence of yaws had been reduced to a low level, and surveillance activities were being integrated into the work of the public health services in forty-five provinces where the disease had been endemic. The original objectives were thus being achieved. In addition, the project has helped to promote the development of the rural health services.

Thailand 2.2 Strengthening of Health Services
(Jan. 1964 - end of 1966) EPTA UNICEF
To integrate communicable disease control programmes into the general health services; and to develop and improve the organization of the rural health services.

Thailand 17.2 Mental Health Services
(June 1963; Dec. 1963 - end of 1968) R
To strengthen programmes for training psychiatric nurses and to improve mental health services.

Thailand 21 Nursing Advisory Services
To set up in the Ministry of Health a division of nursing to co-ordinate nursing service and nursing education.

Thailand 30 Leprosy Control
In accordance with experience with a pilot project covering an urban and a rural area, to demonstrate the organization of applicable tuberculosis case-finding and treatment services and to train personnel for the national tuberculosis programme; and to set up an epidemiological centre for the collection and study of information on the tuberculosis problem in the country.

Thailand 42 National Tuberculosis Programme
In accordance with experience with a pilot project covering an urban and a rural area, to demonstrate the organization of applicable tuberculosis case-finding and treatment services and to train personnel for the national tuberculosis programme; and to set up an epidemiological centre for the collection and study of information on the tuberculosis problem in the country.

Thailand 43 Trachoma Control
To carry out a trachoma control programme, integrating it into the public health services in the areas where trachoma is known to be endemic.

Thailand 57 Faculty of Tropical Medicine and Endemic Diseases
To establish a post-graduate school of tropical medicine and endemic diseases in the University of Medical Sciences, Bangkok.
Thailand 58  Departments of Paediatrics
(May 1962 - July 1964) R UNICEF

To improve the child health services of the maternal and child
health centres in Bangkok and to provide practical teaching in
the promotional and preventive aspects of child care for the
undergraduate medical students of the Chulalongkorn and
Siriraj medical faculties. (See page 100.)

Thailand 60  School of Pharmacy, Bangkok
(Nov. 1962 - end of 1967) R

To train qualified pharmacists and post-graduate students for
teaching in schools of pharmacy; to carry out pharmaceutical
research; and to build up a cadre of qualified pharmacists to
staff pharmaceutical departments.

Thailand 62  Medical Education (Sept. 1960 - June 1964) R

The aim was to develop the departments of preventive and
social medicine in the two faculties of the University of Medical
Sciences, at Chulalongkorn and Siriraj, Bangkok. WHO pro-
vided a visiting professor of preventive and social medicine for
the duration of the project, and fellowships. The programme of teaching in preventive and social medicine
was extended over the four years of the medical curriculum.
Urban training centres, with a "family study and advice serv-
ice", were set up near the medical faculties. Seminars were
organized for discussion of the results of surveys carried out by
students on the immunization status of children and commu-
nities. Surveys were made of blood pressure levels in adults
over forty years of age, tendencies towards developing essential
hypertension, problems resulting from consumption of foods
containing a high percentage of saturated fats, and the use of
alcohol and tobacco, the proportion of family incomes spent on
food and the percentage of families in which the amount spent
was not sufficient for adequate nourishment, haemoglobin
content of blood and the incidence of helminthic bowel infesta-
tions, and the use of the well-baby clinic by the population.

Two national staff members studied abroad on WHO fellow-
ships, and fellowships were awarded to two counterparts for a
short visit to India and China (Taiwan) to observe trends in the
teaching of preventive and social medicine.

Preventive and social medicine have been fully established in
the Chulalongkorn and Siriraj medical faculties, and the purpose
of the project has thus been achieved.

Thailand 63  Nutrition

To strengthen the Nutrition Department of the Ministry of
Public Health and to develop laboratory, clinical and field
nutrition work, including an applied nutrition programme.

Thailand 65  Malaria Eradication
(Jan. 1962 - end of 1969) MESA (AID)

To eradicate malaria from the entire country.

Thailand 66  Food and Drug Control (Aug. - Oct. 1964 ) EPTA

WHO provided a consultant for nine weeks to advise on
improving the Department of Food and Drug Administration,
and on legislative and other measures for the control of cos-
metics, medical appliances, toxic substances, etc.

Thailand 68  Narcotic Drugs Control (Feb. - March 1964) R

WHO provided a consultant for five weeks to advise on
measures to reduce drug abuse, in particular by improvement of
the treatment and rehabilitation of drug addicts.

Thailand 69  Urban Public Health Administration
(Oct. - Dec. 1963) R UNICEF

WHO provided a consultant in public health administration
for three months to assist the Bangkok Municipal Corporation
in assessing the health needs of the city and in planning the
phased development of comprehensive and integrated basic
health services.

Thailand 70  Vector-Borne Disease Control (Haemorrhagic
Fever) (June 1963 - end of 1967) R

To study the epidemiological factors responsible for the
persistence of haemorrhagic fever, and especially the bionomics
of the responsible vectors, in order to take effective control
measures.

Thailand 200  Fellowships R : Isolation and identification of
enteric pathogens (four months), sanitary engineering (twenty
days), venereal disease control (fifteen days).

Thailand 201  Fellowships EPTA : Nutrition (three months),
public health (ten months).
EUROPE

EURO 61.2 Training Course in Public Health Practice, Helsinki (8 - 30 Sept. 1964) R

A course for public health doctors whose responsibilities lie mainly in rural areas or who are concerned with the teaching of public health.

WHO provided a temporary adviser and fellowships for ten trainees from Denmark, Federal Republic of Germany, Finland, Greece, Hungary, Ireland, Netherlands, Norway, Poland and Yugoslavia.

EURO 77.1 Post-basic Nursing and Midwifery Education Institutions (1954 - ) R

To assist with the development of advanced nursing education programmes in the Region by preparing nurses, through study abroad, for administrative and teaching posts in post-basic schools of nursing.

EURO 77.2 International School of Advanced Nursing Education (in French), Lyons (1962 - 1967) R

To set up a school of advanced nursing education that will prepare nurses from countries in and outside Europe for positions of leadership in specialized branches of nursing, for nursing education and administration and for research in nursing.

EURO 77.3 International School of Advanced Nursing Education (in English), Edinburgh (1963 - 1966) R

To set up in the Nursing Studies Unit of the University of Edinburgh an international school of advanced nursing education that will prepare nurses from countries in and outside Europe for leading positions in specialized branches of nursing; and to institute a diploma in nursing education and administration and in nursing specialties.

EURO 110 European Schools and Training Centres of Public Health (Jan. 1956 - end of 1964) R

To give support to schools of public health and similar training centres in the European Region, especially by means of a programme of exchange of personnel and study visits.

EURO 115 Training Institutions for Sanitation Personnel (1956 - 1965) R

To strengthen the teaching of sanitary engineering by providing lecturers and awarding fellowships to members of the teaching staff; to organize and promote training courses for sanitary engineers.

EURO 119 Monograph on Health Services in Europe (1955 - 1958; 1963) R

A monograph on health services in Europe was prepared in 1963 by three consultants on the basis of replies to a questionnaire sent to Member States in the Region, and was submitted to the European Conference on Public Health Administration held in Zagreb in June 1964 (see page 106).

EURO 128.3 Public Health Laboratories (1959 - 1963) R

The aim was to help to develop public health laboratories in the Region and to establish closer co-operation among them. In 1959 WHO provided a consultant and a fellowship to the Institute of Epidemiology and Microbiology, Prague, in connexion with the establishment of a streptococcus reference laboratory. In 1960 a consultant compiled and produced a Directory of Public Health Laboratories in Europe, which was later sent to all countries of the Region. In 1963 a fellowship was provided to Yugoslavia, and a consultant visited Turkey to advise on the organization of a network of regional public health laboratories.

EURO 134.1 Epidemiology of Cancer (1963 - 1964) R

Two consultants carried out epidemiological studies on cancer, based on cancer registers and oncological dispensaries, in Bulgaria and Hungary, and in Belgium, France and Italy. In addition two fellowships in this field were awarded, one to Belgium and one to Bulgaria.

EURO 138.2 Training Course on Hospital and Medical Administration (in French), Brussels (Oct. 1963 - July 1964) R

WHO provided fellowships to three trainees from Belgium, Greece and Turkey to attend the third diploma course in hospital and medical administration given in French at the Free University of Brussels. WHO lecturers took part in the teaching.

EURO 138.3 Training Course on Hospital and Medical Administration (in Russian), Moscow (15 Oct. 1963 - 15 July 1964) R

WHO provided fellowships to six trainees from Bulgaria, Czechoslovakia, Hungary, Poland, Romania and Yugoslavia to attend the first diploma course in hospital and medical administration given in Russian at the Central Institute of Post-graduate Training in Moscow. WHO lecturers took part in the teaching and some equipment was also provided.

EURO 151.3 Dental Health Services (1964 - ) R

To follow up the Seminar on Dental Health Services for Children, held in Göteborg in 1960, by providing consultants to survey the progress made, and to assist certain countries to develop dental health services by means of fellowships for teachers in child dentistry subjects.

EURO 159.3 Water Pollution Control Studies in Europe (1962 - 1963) R

To follow up previous studies and the ECE/FAO/IAEA/WHO Conference on Water Pollution Problems in Europe, held in Geneva in 1961. WHO provided a consultant in 1962 to assist the Economic Commission for Europe in planning its Travelling Seminar on the Rhine. In 1962 and 1963 a study on water-borne virus infections in the Region was initiated.
EURO 160.2 Training Course in Veterinary Public Health, Zagreb (7 Oct. - 1 Nov. 1963) R

A four-week training course, in French, for qualified veterinarians with three years’ field experience. Experts from Yugoslavia and other countries gave lectures on public health principles and practice, major zoonoses, food hygiene and comparative medicine.

WHO provided three temporary advisers and fellowships for eleven participants from Belgium, Bulgaria, France, Hungary, Italy, Poland, Romania, Switzerland and Yugoslavia.

EURO 179.3 Study of Cardiovascular Diseases (1960 - ) R

A study of registration, coding and reporting of deaths from cardiovascular diseases, including prevalence surveys of ischaemic heart diseases in some European countries showing contrasting mortality rates.

EURO 183 Participation in Seminars and Conferences of the United Nations and other Agencies (1959 - ) R

EURO 185 Follow-up of Inter-country Activities on a National Basis (1958 - ) R

To assist governments in developing national activities arising out of the inter-country programmes of the European Region.

EURO 192 Epidemiology of Mental Disorders (1960 - 1965) R

To study and provide for exchange of views on systems of statistical reporting of psychiatric morbidity in certain European countries; to examine the requirements for making psychiatric statistics internationally comparable; and to assist projects in countries of the Region in the registration of, and the assessment of changes in, psychiatric morbidity.

EURO 195.2 Symposium on Sanitary Inspection Services, Copenhagen (20 - 24 April 1964) R

A symposium to discuss the findings of the preliminary study, begun in 1961 and completed in 1963, on the need for, and the utilization and training of, sanitary public health inspectors, sanitarians and equivalent auxiliary personnel, and to review methods of improving and increasing facilities in Europe for the training of sanitation personnel.

WHO provided a consultant, two temporary advisers, and the cost of attendance of fourteen participants from Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Hungary, Italy, Luxembourg, Netherlands, Poland, Spain, Sweden, Union of Soviet Socialist Republics, United Kingdom and Yugoslavia.

EURO 207 Undergraduate Medical Education (1961 - ) R

To stimulate improvements in undergraduate medical teaching, and particularly the introduction of preventive and social medicine at all stages and in all sections of the curriculum.

EURO 211 Exchange of Information on Placement, Supervision and Follow-up of WHO Fellows (1962 - 1966) R

To enable national officials supervising WHO fellowship matters to visit each other and the Regional Office in order to compare the work carried out in different countries, and to meet the deans of institutions receiving the greatest number of WHO fellows.

EURO 213.2 Technical Conference on the Public Health Aspects of Chronic Rheumatoid Arthritis and Related Diseases, Rome (12 - 20 Nov. 1963) R

A conference to define as far as possible the prevalence of chronic rheumatism and rheumatoid arthritis in the Region, using data from the study made by two temporary advisers in 1962 and from answers to a questionnaire sent to Member States of the Region in the same year. Discussions were held on the types of services available for diagnosis and treatment of rheumatoid arthritis and on the training of medical and paramedical personnel for them. The conference drew attention to the need for further research in all aspects of the problem.

WHO provided three temporary advisers and the cost of attendance of nineteen participants from Austria, Belgium, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Hungary, Italy, Luxembourg, Netherlands, Poland, Spain, Sweden, Union of Soviet Socialist Republics, United Kingdom and Yugoslavia.

EURO 215 Health Statistical Services (1962 - 1965) R

A series of studies on the accuracy and comparability of statistics of causes of death, carried out by national statistical services and co-ordinated by WHO.


Two courses—on vital and health statistics and biometrics and epidemiology—organized in collaboration with the London School of Hygiene and Tropical Medicine, to give physicians and health statisticians training in the application of statistical methods to public health and to epidemiological and clinical studies.

For the course on vital and health statistics (2 October - 9 December 1963) WHO provided fellowships to trainees from Czechoslovakia, Federal Republic of Germany, Finland and Sweden (two), and, for the course on biometrics and epidemiology (January - April 1964), fellowships to trainees from Czechoslovakia, Netherlands and Norway.

EURO 216.2 Training Course in the Application of Statistical Methods to Medicine and Public Health (in French), Brussels (Feb. - June 1964) R

A course, organized in collaboration with the Free University of Brussels, to give physicians and health statisticians training in the application of statistical methods to public health and to epidemiological and clinical studies. WHO provided fellowships for two trainees from Bulgaria and Czechoslovakia.

EURO 216.3 Training Course in the Application of Statistical Methods to Medicine and Public Health (in Russian), Prague (1964) R

WHO awarded fellowships to three future teachers for the training course, similar to those described above under projects EURO 216.1 and 216.2, that is being organized in Prague.
EURO 223.2 Planning Conference on the Endemic Nephropathy of South-Eastern Europe, Dubrovnik (12 - 16 Oct. 1964) R

The conference, which had fifteen participants, including five temporary advisers and two consultants provided by WHO, evaluated present knowledge of endemic nephropathy and made suggestions for research.

✓ EURO 225 Training in Health Education (1963 - 1964) R

A Working Group met in Copenhagen to consider how physicians might play a more active part in health education and to discuss the organization of specialized courses for physicians in key positions and the inclusion of health education in undergraduate medical curricula.

WHO provided the cost of attendance of the seven participants, from the Federal Republic of Germany, France, Italy, Netherlands, Poland, Sweden and Union of Soviet Socialist Republics.

In addition, ten fellowships were awarded for an international course on health education, to be held in Rennes in March 1965.

EURO 232 Malaria Eradication Evaluation Team (1963 - 1964) MESA

A team to visit countries on request in order to assist in determining whether eradication of malaria has been achieved.

EURO 241.1 European Symposium on Viral Hepatitis, Prague (29 Sept. - 3 Oct. 1964) R

A symposium to review methods of epidemiological study of viral hepatitis in the light of recent advances in virology and to consider preventive measures.

WHO provided five temporary advisers and the cost of attendance of seventeen participants from Belgium, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Hungary, Italy, Netherlands, Poland, Romania, Sweden, Switzerland, Turkey, Union of Soviet Socialist Republics, United Kingdom and Yugoslavia.

✓ EURO 244.4 International Children's Centre Course on Mother and Child Care (for Social and Administrative Personnel), Paris (14 Oct. - 22 Dec. 1963) R: Fellowships for attendance of two participants from Italy and Switzerland.


A seminar to study current techniques of treatment and methods of referral, rehabilitation and discharge of children admitted to institutions because of psychiatric disorders.

WHO provided nine temporary advisers and the cost of attendance of thirty-four participants from Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Greece, Hungary, Italy, Malta, Netherlands, Norway, Poland, Spain, Sweden, Switzerland, Union of Soviet Socialist Republics, United Kingdom and Yugoslavia.

✓ EURO 249 Symposium on Post-graduate Medical Education in Europe, Prague (22 - 29 Oct. 1963) R

A symposium to develop schemes for the post-graduate training of doctors, including refresher courses for general practitioners.

✓ EURO 259.1 Course in Geriatrics, Glasgow (4 - 29 May 1964) R

A course, for clinical teachers in medical schools, on recent advances in the care of the elderly, including the preventive and social aspects. It also covered the contribution which can be made by ancillary services to the care of the elderly and various ways of organizing geriatric services.

WHO provided fellowships for the eleven participants, who came from Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Ireland, Netherlands, Norway, Sweden, United Kingdom and Yugoslavia.

EURO 260 European Symposium on the Role of Obstetricians in Maternal and Child Health Programmes, Copenhagen (22 - 29 Oct. 1964) R

The symposium was attended by fourteen obstetricians and five paediatricians from Austria, Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Hungary, Ireland, Morocco, Netherlands, Poland, Portugal, Romania, Sweden, Turkey, Union of Soviet Socialist Republics, United Kingdom, and Yugoslavia, and an observer from the International Federation of Gynecology and Obstetrics. A review was made of new knowledge of the biology of human reproduction, and its possible influence on the practice and teaching of obstetrics, paediatrics and maternal and child health was discussed, as also the need for co-operation between obstetricians and paediatricians. A panel discussion took place on adolescents as future parents.

WHO provided a consultant, five temporary advisers and the cost of attendance of the participants, and a staff member from headquarters attended.

EURO 263 Study on Health Problems Created by Noise (1964 - 1964) R

To review the effects of noise on human health in European countries and to study the factors involved and remedial measures.

✓ EURO 265 Conference on Midwifery Services and Education, Moscow (18 - 27 Nov. 1964) EPTA

A conference to consider the role of midwives in relation to developments in public health nursing services and maternal care in Europe, and to review midwifery services and the education of midwives and nurse-midwives.

WHO provided five temporary advisers, a consultant, and the cost of attendance of twenty-nine participants, who came from Cyprus, Greece, Hungary, Iran, Israel, Morocco, Poland, Romania, Spain, Turkey and Yugoslavia.

EURO 268 European Conference on Public Health Administration, Zagreb (4 - 12 June 1964) R

See page 106.
EURO 269 Study on the Epidemiological Use of Medical and Social Security Records (1964) R

In technically developed countries, where most disease is chronic and non-infectious, the epidemiological information available from mortality data and notification of communicable diseases is not sufficient for a comprehensive evaluation of the status of health, and interest in the epidemiological use of information from other sources, such as health insurance or social security records and records from medical institutions or private practice, is increasing. WHO therefore appointed a consultant and a temporary adviser to make a study of the epidemiological use of such records by means of questionnaires and visits to selected countries and institutions.

EURO 270 National Seminars on Home-Care Nursing Services (1964 - ) R

To follow up the Symposium on Hospital and Domiciliary Care held in Amsterdam in 1962, by providing support to national seminars for studying the organization and functioning of home-care nursing services, the categories of personnel necessary, and the relationship of these services to and their co-ordination with hospital and public health nursing services.

EURO 276.1 International Children’s Centre Course on Epidemiology applied to Problems of Child Health, Paris (17 Feb. - 22 March 1964) R: Fellowships for five physicians from Hungary, Italy, Poland, Portugal and Spain.

EURO 276.2 International Children’s Centre Course on Social Paediatrics, Paris (20 April - 28 June 1964) R: Fellowships for four physicians from Algeria, Hungary, Morocco and Portugal.


EURO 278 Seminar on Public Health Practice and the Prevention of Mental Illness, London (6 - 17 July 1964) R

A seminar to discuss public health and mental health services in relation to the prevention of mental disorders, including early case-finding and treatment and health education.

WHO provided four temporary advisers, a consultant, the cost of attendance of thirty participants from Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Greece, Hungary, Ireland, Malta, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, Turkey, Union of Soviet Socialist Republics, United Kingdom, United States of America, and Yugoslavia, and supplies and equipment.

EURO 279 European Symposium on the Teaching of the Preventive Aspects of Medicine in Medical Schools, Nancy (22 - 30 July 1964) R

A symposium to bring together teachers in public health (social medicine, social hygiene, organization of public health, etc.) to discuss the content of curricula and methods for teaching preventive medicine in medical schools.

WHO provided six temporary advisers, the cost of attendance of twenty-seven participants from Albania, Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Greece, Hungary, Ireland, Italy, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, Turkey, Union of Soviet Socialist Republics, United Kingdom, and Yugoslavia, and supplies and equipment.

EURO 285 Symposium on the Toxicology of Drugs, Moscow (24 - 28 Feb. 1964) R

See page 106.

EURO 309 Conference on the Application of Automatic Data Processing Systems in Health Administration, Copenhagen (17 - 21 Nov. 1964)

A conference for public health officials in key positions, on the application of automatic data processing systems in health administration. There were eighteen participants, from Austria, Belgium, Bulgaria, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Hungary, Italy, Netherlands, Norway, Poland, Sweden, Switzerland, Union of Soviet Socialist Republics, United Kingdom and Yugoslavia. They discussed the characteristics of different systems of automatic processing of information and their use in public health administration, epidemiology and statistics, medical research, hospital administration, laboratory work, clinical medicine, and medical bibliography, and considered possible future developments. Visits were paid to Danish centres equipped with computers and a demonstration was given of direct processing of data for several programmes, dealt with simultaneously, by intercontinental liaison between Copenhagen and Los Angeles.

WHO provided a consultant, eight temporary advisers and the cost of attendance of the participants.

Albania 1 Fellowships R: Electro-encephalography (six months), oncology (six months), radiotherapy (six months).

Albania 5 Cancer Control (1962 - ) EPTA

To develop a specialized cancer control programme by building up a central institute with up-to-date equipment, and by training physicians, physicists and engineers for the medical and technical aspects of the programme.

Algeria 1 Communicable Eye Disease Control (1956 - ) EPTA UNICEF

To develop a programme for the control of communicable eye diseases, so that they cease to be a serious public health problem. The immediate measures to be taken include the organization of a self-treatment mass campaign based on methods already tried out in a rural pilot sector; the organization of collective treatment in schools; the elaboration of better methods of controlling trachoma and related diseases in the family environment; health education, and the training of the necessary technical personnel.

Algeria 2 Malaria Pre-eradication Programme (1963 - ) MESA

To prepare technical, administrative and operational services for a malaria eradication programme within the framework of the rural health services; to organize the network of rural health
services which, in the course of the preparatory, attack and consolidation phases of the malaria eradication programme, will carry out malaria case-finding and treatment and which, during the maintenance phase, will be responsible for surveillance and for measures to prevent the reintroduction of malaria into the country.

Algeria 6 Rehabilitation (Oct. 1963 - ) EPTA
To promote rehabilitation services for the disabled; to make a general rehabilitation plan for the country; and to train national personnel in the techniques of rehabilitation.

Algeria 8 Fellowships R: Nutrition (ten months), virology (eight months).

Algeria 11.1 Public Health Administration (1963 - ) R
To organize and put into operation the national public health services and related programmes.

Algeria 11.2 and 11.3 Environmental Sanitation (1963 - 1968) R EPTA
To organize and develop the environmental sanitation services and programme, concentrating particularly on the public health problems connected with water supply, sewerage and sewage disposal, refuse disposal, urbanization and housing.

Algeria 11.4 Health Education (1963 - ) EPTA UNICEF
To promote health education work; to train personnel of various categories in the subject; to develop methods and techniques of health education and to prepare material adjusted to the conditions in and needs of the country.

Algeria 11.5 Nutrition (1963 - ) R
To improve the nutritional status of the population and to deal with the problems arising from malnutrition.

Algeria 11.6 Epidemiology and Health Statistics (1963 - ) EPTA
To organize health statistical services and to train national personnel in health statistics; to use the statistical data collected for determining priorities in public health planning.

Algeria 11.7 Nursing (1963 - ) EPTA
To reorganize and improve nursing services.

Algeria 12 Maternal and Child Health (1963 - ) EPTA UNICEF
To reorganize and extend maternal and child health work in health centres throughout the country; and to develop training facilities for maternal and child health workers and related health personnel.

Algeria 14 Nursing Education (1963 - ) EPTA UNICEF
To prepare nurses for administrative and teaching responsibilities through short intensive courses.

Algeria 16 Hospital Administration (April - May 1964) EPTA
WHO provided a consultant in April and May 1964 to prepare a course for training hospital administrators.

Austria 11 Fellowships R: Cancerology (six weeks), drug and food control (six weeks), food control (one for one month, two for six weeks), industrial health (one month), nursing education (three months), public health administration (one for two weeks, one for one month), quarantine (one month), social and preventive medicine (one month), water chemistry (one month).

Austria 14 Development of Environmental Sanitation Services (1960 - 1965) R
To strengthen environmental sanitation services and train personnel.

Austria 15 Nursing Education and Administration (1961 - 1966) R
To prepare nurses for administrative and teaching posts in schools of nursing and for leadership in nursing services.

Belgium 9 Fellowships R: Audiology (three months—extension of previous award), domiciliary care (two months), medical care administration (one for two months, one for three months), public health protection (two weeks), radiology (three months), rehabilitation (one for six weeks—extension of previous award, one for three months), thoracic surgery (three months).

Belgium 10 Mental Health (1960 - end of 1964) R
To develop psychiatric services by training personnel of university teaching centres in psychiatry.

Bulgaria 7 Fellowships R: Anaesthesiology (four months), cancer (four months), environmental sanitation (four months), gastro-enterology (three months—extension of previous award), haematology (four months), histochemistry (two months—extension of previous award), morphology and histology of the nervous system (four months), physiology (three months), public health administration (three months), surgery (four months).

Czechoslovakia 8 Fellowships R: Biochemistry (six months), dental health (three months), hygiene of water (three months), maternal and child health (three months), nutrition (three months), pathophysiology (three months), thoracic surgery (six months), tropical medicine (three months).

Czechoslovakia 9 Training Institutes (1960 - ) R
To assist national institutes in the development of training in medicine and public health.

Czechoslovakia 10 Study on Tuberculosis Epidemiology and Control (1960 - 1966) R
To study the epidemiological characteristics of tuberculosis in different population groups, so as to determine which groups should be given priority by tuberculosis control services; to assess the efficacy of various control measures in Czechoslovakia; and to carry out trials for comparing the value of hospital and home treatment in Czechoslovak communities.
Denmark 8 Post-graduate Training in Psychiatry (1953 - end of 1964) R

To assist a national training course for post-graduate specialization in psychiatry.

Denmark 11 Fellowships R: Health statistics (three weeks), nursing (four months), nursing administration and education (twelve months), problems related to hypotension (three months).

Finland 12 Fellowships R: Child psychiatry (two months), clinical chemistry (three months), food chemistry (six weeks), maternal and child health (two and a half months), nursing education (three months), occupational therapy (two for one month, one for six months), production of culture media for bacteria and viruses (one month), public health nursing (two months), radiochemistry (two months), rehabilitation (two months).

Finland 14 Child Psychiatry (1959 - end of 1964) R

To extend and improve child guidance and child psychiatric services.

France 28 Fellowships R: Alcoholism (one month), dermatology (one month), environmental sanitation (one month), geriatrics (two for one month), hospital organization (one month), nursing (one month), radiophysics (one month), traumatology (one month), traumatology and medical care (three for one month), tuberculosis control (one month).

Germany 16 Fellowships R: Bilharziasis (six months), geriatrics (two months), mental nursing (three months), nursing education (two and a half months), paediatrics (six months), public health nursing (four months), rehabilitation (three months), smallpox (two months), surgery (two months), virus disease control (three months).

Greece 6.1 Tuberculosis Control (1952 - end of 1964) EPTA

To improve tuberculosis morbidity statistics; to establish a pilot area for tuberculosis control, to be set up in the public health demonstration area in Larissa, where, as part of a comprehensive public health programme, available knowledge and resources will be applied as effectively and economically as possible to reducing the problem of tuberculosis, and where personnel will be trained for the national programme.

Greece 20 Mental Health Services (1956 - end of 1964) R

To strengthen national psychiatric services, particularly as regards mental hospital practice.

Greece 21 Fellowships R: Cardiology (two for three months—extensions of previous awards), cardiovascular diseases (three months), chronic respiratory diseases (two months), epidemiology and bacteriology of enteric infections (one month), ergometry (two months), neurophysiology (four months), nursing education (twelve months), surgery (two for three months—extensions of previous awards, one for four and a half months).

Greece 23 Rehabilitation of the Physically Handicapped (1959 - 1963) R EPTA UNICEF

To assist the Government’s rehabilitation programme WHO provided five consultants—on the organization of rehabilitation services, rehabilitation of the blind and the deaf, psychiatric problems and teaching of physical therapy. Four fellowships—two of three months, one of four months and one of eight months—were awarded.


To organize comprehensive and co-ordinated health services in a rural area where new methods of public health administration can be tested, all categories of public health personnel given practical training, and demonstration and research carried out. The project includes the organization of a vital and health statistical service in the demonstration area.

Greece 31 Occupational Health Services (Oct. - Nov. 1964) R

WHO provided a consultant for a month to assist the Government in assessing the country’s occupational health problems and in adjusting the occupational health services to the growing needs arising from the development of industry.

Greece 34 Community Water Supply (1963 - ) Special Account for Community Water Supply

To promote community water supplies in an area where general socio-economic development is taking place.

Hungary 6 Fellowships R: Abdominal surgery (three months), biology (five months), cardiac surgery (two months), clinical enzymology (three months), clinical physiology (four and a half months), electro-encephalography (four months), haematology (six months), health statistics (two for four months), immunobiology (three months), metabolic diseases (five months), microbiology and virology (three months), neuro-endocrinology (five weeks), neurosurgery (three months), paediatric surgery (three months), physiology of the nervous system (six months), radiology (three months), surgery (two for one month, one for two months, one for six months), transplantation and immunity (two months), thoracic surgery (six weeks), virology (four months).

Iceland 7 Fellowships R: Drug control and toxicology (two and a half months), nutrition (two for twelve months—one of them extension of previous award), public health inspection (ten months).

Ireland 13 Fellowships R: Anaesthesiology (one month), audiology (one month), domiciliary care (one month), electron microscopy (one month), gastro-enterology (one month), gynaecological cancer surgery (two weeks), metabolic diseases of children (one month), pharmacology (two and a half weeks), psychiatry (one month), radiology (one month), school health services (two for one month), surgery (one month), training of health inspectors (three months).

Italy 21 Fellowships R: Air pollution (two for seven weeks, one for two months), cardiology (three months—extension of previous award), electro-encephalography (one for two months,
one for three months), environmental sanitation (one for one month, one for two months), health education (one month), mental health (one month), nursing education (four months), pharmaceutical services (three weeks), surgery (two months), virology of influenza (one month), water and sewage analysis (one for three weeks, one for one month).

**Italy 23** Nursing Education and Administration (1960 - 1965) R

To train nurses abroad for teaching and administrative posts in the proposed post-basic school of nursing, which is to prepare nurse tutors and administrators for nursing education programmes and services.

**Luxembourg 4** Fellowships R: Psycho-analysis (six months), sanitary controls (two weeks).

**Malta 3** Fellowships R: Industrial health (four months), occupational health (fifteen weeks), psychiatry (six months).

**Malta 5** Sewage Purification Pilot Scheme (1963 - ) EPTA

To study sewage disposal problems and establish a pilot scheme for the treatment of sewage and its use for irrigation purposes; and to study refuse disposal and composting of solid wastes.

**Morocco 1** Communicable Eye Disease Control (1953 - ) EPTA UNICEF

To develop a nation-wide programme for the control of trachoma and seasonal conjunctivitis, using fully the possibilities offered by the reorganized urban health services; to carry out field surveys in areas of high endemicity and in schools, to serve as a basis for action in future years.

**Morocco 9** Training of Public Health Personnel (Oct. 1957 - ) EPTA UNICEF

To train public health personnel and to develop the health services in accordance with the plan drawn up as part of the three-year plan for economic and social development.

**Morocco 12** Environmental Sanitation (1958 - 1966) EPTA

To develop a national programme of environmental sanitation by establishing for the purpose a sanitary engineering section in the Ministry of Health and training health personnel, including auxiliaries.

**Morocco 15** Fellowships R: Food hygiene (three for three weeks).

**Morocco 21** Epidemiology and Health Statistics (1961 - ) R

To develop the national vital and health statistical services and to organize statistical courses and lectures for various groups of health personnel and students. (See page 106.)

**Morocco 22** Public Health Laboratories (1961 - ) R

To develop laboratory services and train laboratory technicians at the National Institute of Hygiene in Rabat.

**Morocco 23** Medical Education (1960 - end of 1964) R

To further the development of a new medical school.

**Morocco 24** Rehabilitation of the Physically Handicapped (1959 - 1963) EPTA

To develop the original emergency programme set up for the victims of the 1959 outbreak of TOCP poisoning into a permanent programme for the general rehabilitation of the physically handicapped.

**Morocco 28** Malaria Pre-eradication Programme (1962 - ) MESA

To prepare for a malaria eradication programme by the organization of technical, administrative and operational services; and to train medical and paramedical personnel of public health services (especially urban health services) in malaria eradication concepts and techniques.

**Morocco 30** Community Water Supply (1962 - ) Special Account for Community Water Supply

To draw up a programme for community water supply development.

**Netherlands 15** Fellowships R: Epidemiology and statistics (six weeks), health education (four and a half months), veterinary public health (four for two weeks, one for six weeks), water pollution (three months).

**Norway 10** Fellowships R: Public health—DPH course (nine months), public health dentistry (nine months).

**Poland 13** Fellowships R: Bacteriology (three months—extension of previous award), environmental sanitation (three months), food control (three months), industrial hygiene (two months), laboratory studies—phage-typing of enterobacteriaceae (eight months), medical service administration (two months), radiation and isotopes (fifteen weeks), rehabilitation and physical therapy (one month), sera and vaccine manufacture (three months), statistics (four months), tropical medicine (three and a half months), virology (six months).

**Poland 15** Training Institutes (1958 - ) R

To assist national institutes in the development of medical education, especially in the basic sciences.

**Poland 16** Tuberculosis Control (1960 - 1967) EPTA UNICEF

To train staff in tuberculosis control; later, to set up a pilot area project for tuberculosis control; to study the epidemiological characteristics of tuberculosis in different population groups and assess the efficacy of various control measures in reducing the risk of infection, especially among children.

**Poland 18** Occupational Health Services (1961 - end of 1964) EPTA

To expand and improve the Occupational Health Institute at Lodz; to improve training facilities for industrial physicians.
Poland 24 Health Statistical Services (1963 - ) EPTA

To develop health statistical services and improve the national and international comparability of statistical data; and to organize a morbidity survey.

Portugal 17 Fellowships R: Chromatography and electrophoresis (four months), clinical biochemistry (four months), food bacteriology (one month), health education (two for two months), laboratory diagnosis of streptococcal diseases (four months—extension of previous award), public health administration (three months), rural health (one month), rural hospitals (one month), tuberculosis (two for one month).

Portugal 19 Public Health Nursing Education
(1961 - end of 1964) R

To improve and expand public health nursing services and education programmes by preparing nurses, through study abroad, for teaching and administrative posts in public health nursing.

Portugal 23 Child Mental Health (1961 - 1963) R

WHO provided a consultant for one month in 1963 to advise on mental health services and two fellowships of two and a half months for study of child psychiatry.

Portugal 26 Hospital Administration (Oct. 1962 - ) EPTA

To develop hospital organization and administration.

Portugal 30 Post-basic Nursing Education (1963 - ) EPTA

To set up a post-basic school of nursing in Lisbon.

Portugal 35 Public Health Administration (1963 - ) EPTA

To develop the public health services by training public health personnel.

Romania 1 Fellowships R: Anaesthesiology (three months), backbone diseases (four months), child welfare (two months), children's diseases (two months), chronic diseases (three months), cyto-histochemistry (four months), dental health (four months), haematology and tissue conservation (two months), malignant haemopathies (three months), mediastinus surgery (two months), mental health (three months), neurosurgery (six months), nutrition—metabolic diseases (four months), physical therapy (two months), radiobiology (three months), rehabilitation (three months), sera and vaccine production (three months), virology (four months).

Spain 11 Communicable Eye Disease Control
(1955 - end of 1964) EPTA UNICEF

To learn more of the local epidemiology of trachoma and associated infections in Spain; to develop and apply throughout the endemic area effective methods of case-finding and treatment, family supervision and health education; and to train personnel.

Spain 17 Fellowships R: Anatomy (two months), food control in industry (two months), health statistics (one month—extension of previous award), mental health (two months), rehabilitation (three months), thoracic surgery (two months), trachoma (three months), tuberculosis (one month), venereal diseases (two months), virology (two months).

Spain 19 Nursing Education (1957 - end of 1964) R

To set up a school of post-basic nursing and to strengthen nursing education programmes by preparing nurses for administrative and teaching posts in the new school and in the existing schools of basic nursing.

Spain 20 Water Supplies and Sewage Disposal
(1958 - 1963)

WHO provided nine fellowships of one month in sanitation problems, one of one month in waterworks operation, and three of three weeks—in water supply, sanitation problems, and health education—to assist in improving public water supplies and sewage disposal, particularly in areas where typhoid fever is endemic.

Spain 22 Health Statistical Services (1960 - ) R

To develop national statistical services and to set up a new department of biostatistics in the National School of Public Health, Madrid.

Spain 23 Rehabilitation of Physically Handicapped Children
(1959 - 1965) EPTA UNICEF

To develop a national programme for the rehabilitation of handicapped children; to establish training centres and expand the services for handicapped children throughout the country.

Spain 25 Epidemiological Studies of Virus Diseases of Public Health Importance (1963 - ) EPTA

To develop methods of prevention and control of virus diseases.

Spain 26 Health Education Programme (1960 - end of 1964) R

To improve and expand health education services, including those connected with the nutrition education project assisted by FAO and UNICEF.

Sweden 12 Fellowships R: Food control (two months), dental health (two months), nursing (two for three months—one of them extension of previous award), occupational health (five weeks), pharmacology (one month), public health administration (two for three months).

Switzerland 15 Fellowships R: Hospital administration (one month), psychotherapy (two months), radiology (three months).

Switzerland 17 Mental Health Services (1962 - 1963) R

To assist in strengthening psychiatric services in the Canton of Geneva and in planning the new psycho-social centre that was opened in Geneva in 1963, WHO provided a fellowship for the study of child psychiatry, particularly in relation to psychotherapeutic methods, and another for the study of modern developments in social psychiatry. A consultant was also provided to help in drafting the report to the Canton of Geneva on the development of services for subnormal children.
Turkey 11 Leprosy Control (1961 - end of 1965) EPTA UNICEF
To carry out a leprosy control programme covering the whole country and to integrate it progressively into the general health services.

Turkey 13 Tuberculosis Control
(Sept. 1952 - 1967) EPTA UNICEF
To continue the mass BCG campaign; to carry out a sample prevalence survey on population groups living in different geographical, climatic and socio-economic conditions; and to establish a pilot area in the Province of Yozgat, where applicable methods of control will be developed within the existing network of general health services.

Turkey 15 Health Education (May 1964) R
WHO provided a consultant for a month to advise on measures to meet the increasing need for health education in connexion with the malaria eradication and other programmes.

Turkey 16 School of Public Health, Ankara (1952 - ) R
To reorganize the School of Public Health in Ankara.

Turkey 22 Malaria Eradication Programme
(1957 - ) MESA EPTA UNICEF
To achieve malaria eradication throughout the country.

Turkey 29 Nursing Education (Oct. 1955 - 1966) R
To organize and develop nursing education at all levels, and particularly post-basic nursing education, so as to prepare nurses for positions of leadership in specialized fields of nursing, including midwifery, and for the administration of hospital and public health nursing services and nursing education.

Turkey 31 Communicable Eye Disease Control
(1955 - 1966) EPTA UNICEF
To continue studies of the local epidemiology of trachoma and associated infections; to develop suitable control methods; to train personnel; to introduce and expand progressively a system of control of these diseases in the southern provinces of Anatolia.

Turkey 36 Fellowships R: Health statistics (six months), hospital construction (three weeks), pharmacology (three months), public health administration (one month), serology (two months), tuberculosis (five weeks).

Turkey 40 Development of Public Health Services and Training of Personnel (1964 - ) EPTA
To develop the health services and train health personnel; and to co-ordinate the work of other health and sanitation projects. Pilot areas are to be set up in the provinces where the new law on the nationalization of the health services is being applied and in those where the maternal and child health or malaria eradication services have been integrated into the general public health services.

Turkey 44 Community Water Supply
(1962 - ) Special Account for Community Water Supply
To draw up a programme for community water supply development.

Turkey 45 Social and Economic Development, Antalya
(1963 - ) United Nations Special Fund (FAO)
To further the economic development of an important area in south-west Turkey. FAO is the Executing Agency for this project, in which WHO is collaborating in the health aspects, especially as regards public health administration and environmental sanitation.

United Kingdom 13 Fellowships R: Cancer surgery (six weeks), general medicine (six weeks), maternal and child health (three weeks), medical care administration (six weeks), nursing (two for two weeks), ophthalmology (one month), orthopaedic surgery (one month), smallpox (one month).

USSR 1 Fellowships R: Anaesthesiology (three months), biochemistry (six months), cancerology (three months), embryology (six months), epidemiology (two weeks), genetics (two and a half months—extension of previous award), histochemistry (four months), immunology (six months), microbiology (one for two weeks, one for three months), neurophysiology (one for three months, one for six months), obstetrics (nine weeks), public health—DPH course (four and a half months), radiodiagnosis and therapy (four months), radiology (three months), virology (two for six months).

Yugoslavia 16.4 Tuberculosis Control
(1961 - end of 1964) EPTA UNICEF
To prepare for a nation-wide tuberculosis control programme by establishing a long-term federal pilot area project for tuberculosis control, including mass examination and home treatment, which at the same time would serve for field training of Yugoslav personnel. This project is a continuation of the one (under the same number) assisted by WHO from 1953 to 1960.

Yugoslavia 16.9 Maternal and Child Health
(1953 - end of 1964) EPTA UNICEF
To strengthen maternal and child health services, including school health services and rehabilitation services for handicapped children, at republic and district levels.

Yugoslavia 20 Public Health Administration (1956 - ) EPTA
To train various categories of health personnel for the federal and republic institutes of public health.

Yugoslavia 23 Fellowships R: Biochemistry (one for one month, one for six months—extension of previous award), clinical physiology (five months), dietetics (six months), electrophysiology (six months), food control (three weeks), food hygiene (three weeks), health education (two months—extension of previous award), pathophysiology (one for six months, one for ten months), psychiatry (five months).
Yugoslavia 25  Nursing Education (1959 - ) EPTA

To improve and expand nursing education programmes and services by preparing nurses for senior posts in nursing education and administration.


The aim was to improve and extend mental health services, particularly those for children. WHO provided a consultant for a month in 1959 to assist in training staff and to examine child mental health services; and another, specialized in the needs of subnormal children, for three weeks in 1963. Eight fellowships were also provided.

In 1960 and 1961, the Federal Institute of Public Health organized two national seminars on mental health, each lasting a week, for which WHO provided lecturers and discussion leaders.

Yugoslavia 30  Malaria Eradication Programme
(1959 - 1965) MESA

To complete the eradication of malaria throughout the country.

Yugoslavia 31  Medical Education (1962 - 1963) R

WHO provided two lecturers for national educational meetings and four fellowships, of one, two, three and nine months respectively, for training specialists with teaching responsibilities, in various branches of medicine.

Yugoslavia 35  Fellowships EPTA: Clinical audiology (two months), dental health (three months), enzymology (three months), epidemiology and virology (six months), food control (three months), haematology (three months), histopathology (six months), human genetics (three months), mental health in industry (two months), physical therapy (three months), physiology (three months), plastic surgery (six months), tropical medicine and hygiene (six months), virology (two for six weeks, one for six months).

Yugoslavia 36  Public Health Administration (Emergency Relief)
(1963 - 1964) R UNICEF

Following the earthquake in Skoplje, a WHO staff member visited the devastated region and prepared recommendations on the public health aspects, and particularly the maternal and child health aspects, of the emergency relief to be provided through the United Nations.
EMRO 5 Higher Institute of Nursing, University of Alexandria (Oct. 1953 - Oct. 1964) EPTA UNICEF

The aim was to prepare nurses at the Higher Institute of Nursing, University of Alexandria, for leading posts in nursing education and nursing services administration. WHO provided a senior nursing instructor from October 1953 to June 1957, from September 1958 to August 1962 and from February 1963 to June 1964, seven nursing instructors in various specialties for periods ranging from four months to almost nine years, an administrative assistant for the duration of the project, and supplies and equipment.

The first class of twenty students was enrolled in 1955; five of them graduated in 1959. The number of students increased steadily; in 1964 there were 225, 124 of whom graduated in that year—from Iran, Pakistan, Sudan and Syria and the rest from the United Arab Republic. Twenty-two graduates (nineteen from the United Arab Republic and three from Sudan) have been awarded WHO fellowships to study for a Master's degree in nursing. Six graduates are studying for a doctor's degree in nursing education.

The staff of the Institute paid by the Government of the United Arab Republic consists of thirty-one nursing instructors and four nurse-midwives. Since October 1964, when WHO assistance ended, the Government has employed one nursing instructor from abroad, and two staff members have been appointed under bilateral assistance; one of these acts as adviser to the Dean and the other—a nursing services administrator—is developing further facilities for clinical practice.

Owing to the increase of students in basic nursing education and the limited number of qualified teaching staff, the Institute is not yet offering post-graduate courses, but will soon do so.

EMRO 7 Arab States Training Centre for Education for Community Development, Sirs-el-Layyan (Jan. 1953 - end of 1966) EPTA (UNESCO)

To train physicians, nurses, sanitarians, teachers and agricultural and social workers from all Arab States in subjects and techniques related to community development. This is primarily a UNESCO-assisted project, in which WHO collaborates and provides training in health subjects.


The aim was to give guidance on the development of health education in the Region. WHO provided an adviser in health education from 1958 to 1961 and from June 1962 to April 1964, when the post was replaced by one of regional adviser.

The adviser assisted all the countries of the Region in developing and improving their health education services and helped with the health education aspects of other projects and activities. She also helped to organize and follow up a seminar on health education for the countries of the Region and to teach health education to students of the High Institute of Public Health, Alexandria, and to the trainees of the Arab States Training Centre for Education for Community Development, Sirs-el-Layyan. Special attention was paid to school health education and to the preparation of teachers for health education.

The project has contributed significantly to recognition of the role of health education in the prevention of disease and the promotion of health in the Region. During the period of its operation a number of countries organized central divisions of health education and education activities. There has also been an increase in the funds and personnel devoted to health education.

EMRO 23 Dental Health (1964 - 1966) R

To advise various countries in the Region on the establishment of dental health and dental care programmes.


A seminar at which twenty-five health administrators and health statisticians considered measures to improve vital and health statistics in countries of the Region. WHO provided the cost of attendance of the participants, who came from Ethiopia, Iran, Iraq, Jordan, Kuwait, Lebanon, Pakistan, Somalia, Sudan, Syria, Tunisia and Yemen, and medical literature. (See also page 110.)

EMRO 38 Seminar on Food Hygiene, Zoonoses Control and Veterinary Public Health Practice, Lahore and Teheran (29 Oct. - 11 Nov. 1964) R (FAO)

A seminar, organized in collaboration with FAO, at which medical officers, sanitary engineers, veterinarians and laboratory experts discussed means of improving food hygiene and the control of zoonoses. The meetings were held in Lahore from 29 October to 6 November 1964 and were followed by a field visit to Teheran, lasting from 7 to 11 November. There were twenty-four participants from Cyprus, Ethiopia, Iran, Iraq, Jordan, Lebanon, Pakistan, Sudan, Syria, Tunisia, Turkey and the United Arab Republic, nineteen observers from East and West Pakistan and the United States Agency for International Development, and a representative from UNICEF.

WHO provided a temporary adviser for two weeks and the cost of attendance of the participants. FAO provided two discussion leaders, and two staff members from FAO headquarters attended.

EMRO 42 (b) Special Group Meeting on Medical Education, Alexandria (16 - 18 Dec. 1963) R

See page 114.

EMRO 43 Advisory Services (1958 - beyond 1966) R

To provide countries of the Region with consultant services on subjects for which there is no regional adviser, in cases where it is impracticable to obtain assistance from headquarters staff.
EMRO 45 Participation in Educational Meetings
(April 1959 - end of 1966) R

To enable countries of the Region to participate in seminars, conferences and training courses organized in other regions and by other agencies.

EMRO 51 Epidemiological and Statistical Centre

To assist in carrying out surveys in connexion with tuberculosis and other projects in the Region and in analysing their results, and to advise on the planning and assessment of health programmes.

EMRO 55 Medical Libraries

To make surveys of medical libraries attached to medical and health institutions in the Region; to advise countries on their organization and administration, and in special cases to provide them with medical literature; to train medical librarians in particular aspects of medical library work.

In 1964 a six-week course in library science was organized at the American University of Beirut, followed by a four-week course in medical librarianship. WHO provided a lecturer, some teaching supplies and equipment, and fellowships for nine trainees from Iran, Iraq, Pakistan, Syria and the United Arab Republic.

EMRO 56 Community Water Supply
(Oct. 1961 - end of 1964) Special Account for Community Water Supply

To assist in developing the organization and management of community water supply programmes and provide advice on the technical, legal, financial and administrative aspects.

EMRO 58 Malaria Eradication Evaluation Team
(April 1961 - beyond 1966) R MESA

To assist the Governments of Cyprus, Iran, Iraq, Jordan, Lebanon and Syria to evaluate their malaria eradication programmes and to co-ordinate their activities, particularly with regard to frontier malaria problems.

EMRO 59 Regional Study on Diarrhoeal Diseases
(July - Aug. 1964) R

Two WHO consultants, an epidemiologist and a paediatrician, visited Iraq for three weeks, and Jordan for two weeks, to assess the control and research work on diarrhoeal diseases, which cause high mortality and morbidity among children and infants in both countries.

Recommendations for the improvement of bacteriological examinations and treatment have been accepted by the health authorities.

EMRO 61 Training Courses for Laboratory Technicians
(May 1962 - mid-1966) R

To train laboratory technicians from a number of countries of the Region as tutors. The courses are given in Beirut.

EMRO 63 (b) Training Courses for Psychiatric Nurses
(Jan. 1962 - end of 1966) R

To train nurses of the Region in psychiatric patient care and mental health techniques at the Lebanon Hospital for Mental and Nervous Disorders, Asfourieh, Beirut.

EMRO 66 Rural Housing
(1962 - end of 1965) R

To study housing programmes, especially for rural areas; to stimulate the interest of health administrations and to promote the development of healthy housing.

EMRO 75 National Tuberculosis Training Centre, with Regional Training Programme
(Jan. 1962 - Dec. 1964) R

A continuation of project Tunisia 28, under which a tuberculosis demonstration and training centre was set up in Tunis. It is to assist in training, at the centre, professional and technical personnel of countries in and outside the Region in public health methods for the control of tuberculosis, and to help in setting up a centralized unit for planning, co-ordinating and supervising the training activities.

EMRO 76 Pharmaceutical and Medical Stores Adviser
(Jan. 1963 - end of 1966) R

To assist governments of the Region in organizing medical stores and pharmacy services for the whole of their countries. Under this project help is given in training pharmacy attendants and medical storekeepers, improving the procedures for procurement, storage and distribution of medical stores and pharmaceuticals, drafting pharmaceutical legislation, and improving the quality control and the local production of pharmaceuticals.

EMRO 98 Meeting of National Fellowships Officers, Alexandria
(26 - 28 Nov. 1963) R

Fourteen national fellowships officers from Ethiopia, Iran, Iraq, Jordan, Lebanon, Libya, Pakistan, Somalia, Sudan, Syria, Tunisia, United Arab Republic and Yemen met at the Regional Office to exchange views on the selection and briefing of applicants for WHO fellowships and on their placement. An observer from the American University of Beirut also attended, as well as staff members from WHO headquarters and the Regional Office for Europe. The subjects discussed included the planning of the WHO fellowships programme in each country, the selection of candidates for study abroad, the placement of fellows and their utilization on return to their countries of origin. The report of the meeting contains recommendations for promoting the WHO fellowships programme, especially at country level.

Cyprus 1 Nursing Education
(Aug. 1962 - mid-1965) EPTA

To promote nursing education and training programmes in order to meet the country’s needs for nurse educators, administrative staff and nursing service personnel.

Cyprus 6 Tuberculosis Control (National Pilot Area)
(Nov. 1962 - Dec. 1963) EPTA UNICEF

WHO provided a medical officer and a public health nurse to study and report on the factors to be taken into consideration in establishing tuberculosis control services for the whole of Cyprus. The programme included the collection of epidemio-
logical and operational data by means of tuberculin testing in elementary schools in Nicosia, a comprehensive tuberculosis survey in rural areas and four pilot investigations—case-finding among household contacts of tuberculin reactors, an X-ray survey in outpatients at Nicosia General Hospital, case-finding in a suburb of Nicosia, and a study of tuberculosis home visiting in Cyprus.

The project is now entirely operated by the national staff with WHO technical guidance and material assistance from UNICEF.

Cyprus 15 Public Health Laboratory (Jan. 1964 - end of 1965) R
To improve and develop public health laboratory services; to introduce sound technical methods for laboratory investigations; and to provide training facilities, including in-service training, for technical personnel at all levels.

Cyprus 20 Hospital Planning and Administration (Nov. 1964) R
WHO provided a hospital architect consultant for two weeks to advise the Government on the design of hospital buildings, including children’s and gynaecological wards to accommodate 250 patients.

Cyprus 200 Fellowships R: Laboratory techniques (two for twelve months), undergraduate medical studies (seven for twelve months—six of them extensions of previous awards).

Cyprus 201 Fellowships EPTA: Electroencephalography (twelve months), mental nursing (twelve months), psychiatry (twelve months), undergraduate medical studies (seven for twelve months—five of them extensions of previous awards).

Ethiopia 3 Advisory Services in Epidemiology and Health Statistics (Oct. 1952 - ) EPTA
To improve and develop the epidemiological and statistical services; to provide for assistance in preparing annual reports; to develop routine statistical procedures in hospitals, and to improve hospital statistics.

Ethiopia 4 Venereal Disease Control (Oct. - Nov. 1964) R
WHO provided a consultant for a month to follow up, with national authorities, the venereal disease control programme which has been carried out since 1952 with assistance from UNICEF and WHO.

Ethiopia 6 Tuberculosis Control (March 1959 - end of 1966) EPTA UNICEF
To plan and carry out a comprehensive national tuberculosis control programme, well integrated into the national public health system and based on the results obtained in a pilot area outside Addis Ababa; to set up a tuberculosis control demonstration centre in Addis Ababa to train health workers; to extend BCG vaccination campaigns in Ethiopia; to collect epidemiological information about infection and incidence of tuberculosis; to extend co-operation with social welfare agencies; and to establish in Eritrea a tuberculosis centre for training and demonstration in that region.

To provide at Gondar a centre for training health personnel; to organize a model health service for the Province of Begemedir and the town of Gondar; to investigate local health conditions; to establish training health centres as required; and to extend health services to the whole country.

Ethiopia 14 (b) Malaria Eradication Training Centre (1960 - beyond 1966) MESA
To train auxiliary personnel for the malaria eradication programme.

Ethiopia 14 (c) Malaria Pre-eradication Programme (1962 - beyond 1966) MESA (AID)
To build up the technical, administrative and operational facilities for a full-scale malaria eradication programme; and to develop at the same time the rural health services so that they may provide efficient collaboration in the eradication programme.

Ethiopia 17 Medical Education (1964 - 1966) R
To set up in the Haile Selassie I University, Addis Ababa, a faculty of medicine, with a department of public health and preventive medicine.

To give professional supervision and guidance to the sub-professional and auxiliary personnel working in the health centres, and advice on overall policies for integrated services provided through the health centres. (See page 113.)

To organize a two-year course to train X-ray technicians for the hospital radiology installations.

To develop nutrition policies in the Ministry of Health and to co-ordinate the nutrition programmes of other ministries and agencies.

Ethiopia 33 Public Health Laboratory Services (5 - 20 Feb. 1964) R
WHO provided a consultant who made a survey of public health laboratory services in Addis Ababa. His recommendations, which include suggestions for immediate improvements and a long-term plan for reorganization, have been submitted to the Government.
Ethiopia 34 Municipal Health Department, Addis Ababa  

The aim was to study the public health and sanitation problems in Addis Ababa. WHO provided a medical officer and a sanitary engineer, both for two months. Before their arrival, a working party consisting of municipal, public health and WHO officials had defined the problems to be studied. The consultants made recommendations concerning the organization of municipal health services and the health and sanitation programmes needed, in particular for adequate collection and disposal of sewage and solid wastes.

Ethiopia 35 Hospital Planning and Administration (Aug. 1964) R

WHO provided a consultant for a week to advise on the planning and development of hospital services in general and particularly on the planning of the Duke of Harrar Hospital in Addis Ababa.

Ethiopia 200 Fellowships R: Maternal and child health (two for one month), undergraduate medical studies (one for five months—extension of previous award, six for twelve months—four of them extensions of previous awards), X-ray technology (twelve months).

Ethiopia 201 Fellowships EPTA: Undergraduate medical studies (eleven for twelve months—extensions of previous awards).

Iran 26 Public Health Laboratory, Teheran  
(March 1955 - Aug. 1964) R

The aim was to improve the public health laboratory in Teheran, including the setting up of a food and drug analysis section, and to train technical personnel. WHO provided a scientist from August 1957 to August 1964, and supplies and equipment.

At the start of the project, various clinical and public health laboratory services were grouped together to form the nucleus of a central public health laboratory. Food and drug control departments, a narcotics section, working in collaboration with the Narcotic Control Administration, and a tuberculosis section were added and the laboratory became the reference laboratory for the country. Many surveys have been carried out, the most important of which was a nutrition survey undertaken in cooperation with the United States Interdepartmental Committee on Nutrition in National Development. A number of epidemiological studies, including investigations of a meningitis outbreak in Iran, have also been made. The laboratory also made a daily check of the products of pasteurized milk plants. In 1960 the laboratory helped in taking measures to prevent cholera outbreaks in Afghanistan and Pakistan from spreading to Iran.

Training was organized for two classes of staff: scientific staff were given a one-year course leading to a diploma of medical laboratory technologist, and technical staff were trained in courses leading to a diploma of laboratory technician. Ninety-seven obtained the technologist diploma, twelve a diploma in food analysis, and 197 the laboratory technician's diploma. The present staff of the Central Public Health Laboratory consists of sixty-eight persons.

Ten years ago no unified health laboratory service existed in Iran. There is now a closely knit, country-wide organization, consisting of fifty-seven laboratories, reasonably well equipped and adequately staffed with technical and scientific personnel, for which the Central Public Health Laboratory acts as a reference and training centre.

Iran 1 (b) Malaria Eradication Programme  
(1957 - beyond 1966) MESA UNICEF (AID)

To eradicate malaria progressively throughout the country, by residual spraying and other measures.

Iran 7 Nutrition Institute  
(1963 - end of 1966) EPTA UNICEF (FAO)

To investigate, by field surveys, the nature and incidence of the main nutritional diseases and deficiencies, especially in mothers and children in rural and in over-populated areas; to plan and implement measures for improving nutrition in various population groups (including the assessment of the nutritional value of indigenous foodstuffs, the promotion of production and distribution of food, the training in nutrition of medical, nursing and other professional staff, and the carrying-out of nutrition education in general health centres, maternal and child health centres and in hospitals).

Iran 28 Mental Health (May 1959 - mid-1966) R

To reorganize and integrate the mental health services at all levels; to study the feasibility of establishing extra-mural services and other types of services on a large community scale, having regard to the shortage of trained personnel; to train staff at all levels, and to promote the standardization of research on data for the purpose of assessing the value of the existing provisions for care and treatment.

Iran 25 Communicable Eye Disease Control  
(Aug. 1963 - Jan. 1964) EPTA

WHO provided a medical officer who made a morbidity survey of communicable eye diseases in twelve villages in the Shiraz area, to provide information for drawing up a trachoma control programme.
Iran 38  Bilharziasis Control (Nov. 1958 - end of 1965) EPTA

To carry out field studies on the epidemiology of bilharziasis and on its prevention; to train staff; and to plan a control programme, integrated as far as possible into the programme for economic development.

Iran 43  Post-graduate Education in Public Health (1964 - 1967) R

To develop the post-graduate training programme at the Institute of Parasitology, Tropical Medicine and Hygiene in Teheran, particularly as regards public health practice and community medicine.

Iran 50  Training School for Sanitarians (Feb. - Dec. 1964) EPTA UNICEF

To extend training facilities for sanitation personnel with a view to implementing the health part of the Government's third plan.

Iran 52  Post-basic Nursing Education (1963 - beyond 1966) R

To strengthen nursing services through post-basic nursing education to prepare teachers, supervisors and administrators for leading posts in nursing.

Iran 57  High School of Midwifery, Meshed (Oct. 1963 - end of 1965) R

To strengthen and expand midwifery services by training qualified nurses in midwifery and public health as related to maternal and child health care.


To incorporate courses in sanitary engineering in the teaching programme of the University of Teheran.

Iran 61  School of Physical Therapy, Teheran (1964 - end of 1966) R

To set up a school of physical therapy in collaboration with the University of Teheran; and to develop physical therapy and medical rehabilitation services in Teheran. The work previously undertaken in the Jamalabad Rehabilitation Centre and the Shiraz School of Physiotherapy is being continued under this project.

Iran 200  Fellowships R: Allergic diseases (nine months), health insurance schemes (three months), hormonology (twelve months), industrial hygiene (twelve months), nutrition (ten weeks), paediatrics (twelve months), poliomyelitis (three months), psychiatry (twelve months), public health administration (three for twelve months, one for three months), sanitary engineering (twelve months), venereal diseases (four months).

Iran 201  Fellowships EPTA: Nutrition (twelve months), public health administration (twelve months), radiology (twelve months).

Iran 11  Malaria Eradication Programme (1957 - 1969) R MESA UNICEF

To eradicate malaria from the whole country, as an extension of the malaria control programme with which WHO has assisted since 1952.

Iran 15  Bilharziasis Control (Nov. 1955 - end of 1967) EPTA

To evolve effective methods for bilharziasis control, particularly for the prevention of infection in newly developed areas, and to conduct pilot engineering studies in various irrigation systems.

Iran 18  Communicable Eye Disease Control (Jan. 1961 - 1965) R UNICEF

To evolve suitable methods of controlling communicable eye diseases in Iraq and to carry out a programme, first in a pilot area and later in the rest of the country, based on centres in the capitals of the country's thirteen provinces.

Iraq 33 (a)  College of Medicine, Baghdad (1958 - 1967) R

To build up a department of social and preventive medicine in the College of Medicine, Baghdad, in order to provide modern teaching and demonstration in the subject.


To train sanitarians to assist in the development of local health services.

Iraq 37  College of Nursing, Baghdad (March 1962 - end of 1967) R

To train nursing teachers and administrators and to raise the standard of nursing education, and consequently of nursing practice.

Iraq 38  Virology Laboratory (1964 - 1965) R

To set up a virology laboratory in Baghdad to serve as the nucleus of a central public health laboratory.

Iraq 42  Advisory Services in Epidemiology (1964 - 1965) EPTA

To plan, develop and operate epidemiological services at all levels of the health services.

Iraq 46  Study of Water Supply Quality (1963 - end of 1964) EPTA

To improve the operation and maintenance of water supplies in rural areas, and to find means of improving the quality of brackish water.

Iraq 49  Rural Health Advisory Services (1964 - 1968) EPTA

To plan and develop rural health services and to strengthen the supervisory system through provincial health departments.
183

PROJECT LIST: EASTERN MEDITERRANEAN

Iraq 200 Fellowships R: Freeze-dried smallpox vaccine preparation (three weeks), industrial hygiene (three months), nursing (twelve months), quarantine measures (three months), sanitary engineering (twelve months), statistics (seven and a half months), tuberculosis control (twelve months), use of machinery for freeze-drying smallpox vaccine (five weeks).

Iraq 201 Fellowships EPTA: Child health (twelve months).

Israel 5 Malaria Eradication Programme (1959-1966) MESA

To achieve complete eradication of malaria and prevent its reintroduction.

Israel 11 Tuberculosis Control (May 1964) R

A WHO consultant made a survey of the tuberculosis situation and advised the authorities on the development of the programme.

Israel 24 Child Psychiatry and Mental Health
(Oct. 1961 - 1965) R

To reorganize mental health services, with particular reference to psychiatric services for children.

Israel 25 Hadassah Medical School, Jerusalem (1964-1966) R

To develop at the Hadassah Medical School, Jerusalem, a special training course for undergraduate students from Africa and Asia.

Assistance has been given to the School since 1957, first in establishing a department of anatomy and then in stimulating research activities.

Israel 29 (b) Hadassah Medical School, Jerusalem: Preventive and Social Medicine (Jan. 1959 - June 1964) R. Funds-in-trust

The aim was to improve and extend the teaching of preventive and social medicine, including the post-graduate training programmes, in the Hadassah Medical School; to set up a public health demonstration and training area; to organize field training and in-service training for physicians and other health workers; and to carry out research projects in preventive and social medicine. WHO provided two visiting professors.

A full-time Master of Public Health course of one academic year has been established as well as a longer special public health programme. A five-year residency programme in social medicine has been set up in order to train a limited number of specialists in this field. An internship programme of one month, part of the compulsory internships, has been organized in the Department of Social Medicine. A three-week clerkship in the fifth year of undergraduate medical studies has been introduced. Training of paramedical workers has also been considered and a diploma programme in public health nursing is under consideration. Particular attention has been given to research in which students have participated: seventy-two studies have been made, including studies of the epidemiology of anaemia in pregnancy, of rheumatoid arthritis, and of disability, child health studies, and epidemiological and evaluation studies in medical practice, public health administration, culture and health practices and social medicine.

A Division of Social Medicine and Public Health comprising three departments—social medicine, medical ecology and public health administration—has been established in the Medical School.

Israel 37 Hadassah Medical School, Jerusalem: Lecturer on Tick-borne Encephalitis (19 Feb. - 13 March 1964) R

WHO provided a consultant to lecture to members of the medical profession and medical undergraduates on his research and findings in tick-borne encephalitis.

Israel 200 Fellowships R: Hospital administration (one for twelve months, one for three months), physical therapy (twelve months), public health administration (twelve months), vector control (eight weeks).

Jordan 6 Malaria Eradication Programme
(June 1958 - end of 1966) EPTA UNICEF (AID)

To eradicate malaria from the whole country and prevent its reintroduction.

Jordan 11 Communicable Eye Disease Control
(April 1960 - 1966) EPTA UNICEF

To plan and implement a campaign against communicable eye diseases, including epidemiological surveys, pilot control studies and extended treatment programmes.

Jordan 23 Production of Vaccines
(1959-1966) R UNICEF (AID)

To develop the production of diphtheria and tetanus vaccines, and to train technical personnel.

Jordan 24 Children's Hospital, Amman
(Feb. 1961 - Aug. 1964) EPTA

The aim was to improve nursing services at the Children's Hospital, Amman, to give paediatric training to nursing and auxiliary personnel, and to co-ordinate the work of the hospital with that of the maternal and child health demonstration and training centre, Amman. WHO provided a public health paediatric nurse and supplies and equipment.

The WHO nurse trained and supervised the nursing staff in the Children's Hospital, and assisted in the paediatric training of nursing and auxiliary personnel from maternal and child health centres and other government institutions. In-service programmes on the nursing of sick children for practical nurses and other personnel were organized. Mothers were given individual teaching. Weekly visits to the premature unit at the Maternity Hospital and home visits with students were made. A ward manual for nurses and outlines and guides for teaching mothers about infants' feeding were prepared. Orientation programmes for new staff members were developed. Provision was made for training and supervising the staff nurses who continued the work of the WHO nurse after her departure.
Jordan 27 Municipal Water Supplies and Waste Water Disposal (June 1962 - 1965) EPTA

To carry out an extensive programme for community water supplies and waste water disposal.

Jordan 28 Rehabilitation Services (1964 - 1966) R

To formulate a programme for the development of physical therapy services in the rehabilitation of the physically handicapped.

Jordan 29 Tuberculosis Control (1964 - 1965) R UNICEF

To carry out tuberculosis surveys, community screening and control in the urban districts of Amman, and in some adjacent suburban and rural areas, through the Amman tuberculosis centre and the the X-ray and BCG units; and to integrate tuberculosis control into the general public health services.

Jordan 200 Fellowships R : Child health (twelve months), cytology (six months), forensic medicine (twelve months), medical supplies (five weeks), nursing (twelve months), psychiatry (twelve months), public health administration and industrial health (sixteen months), radiology (twelve months), radiotherapy (twelve months), statistics (two for seven and a half months), tuberculosis (four weeks), vaccine preparation (six months).

Jordan 201 Fellowships EPTA : Undergraduate medical studies (five months—extension of previous award).

Kuwait 8 Public Health Advisory Services (Oct. - Nov. 1964) R

WHO provided a consultant to survey the epidemiological problems connected with the public health programme.

Kuwait 200 Fellowships R : Anaesthesiology (twelve months), psychiatry (two for twelve months—extensions of previous awards).

Lebanon 10 Nursing Education (1964 - 1966) R

To strengthen nursing services and to co-ordinate nursing education projects.

Lebanon 17 Environmental Health (1964 - 1967) EPTA UNICEF

To strengthen the Division of Public Health Engineering in the Ministry of Health; and to develop training in environmental health, particularly in rural areas.

Lebanon 31 Rehabilitation of the Physically Handicapped (Second phase: 1963 - 1966) R

To develop physical therapy services at the rehabilitation centre at Ouzai, Beirut.

Lebanon 41 Blood Bank (1963) R

WHO provided supplies and equipment for the blood bank in Tripoli.

Lebanon 42 Municipal Health Services (July - Dec. 1964) R

A consultant was provided to advise on the reorganization of the municipal health services in Beirut, Tripoli, Zahli and Saida; on personnel requirements; and on the improvement of services for the control of communicable diseases, and for environmental health.

Lebanon 45 Bilharziasis Control (May - Aug. 1964) EPTA

A consultant was provided for three months to assist with studies on the epidemiology and transmission of bilharziasis and to demonstrate the control of snails by molluscicides in Saida.

Lebanon 200 Fellowships R : Communicable diseases (two months), sanitary engineering (twelve months).

Libya 3 Nursing Education, Tripoli (Sept. 1955 - end of 1966) R UNICEF

To develop a nursing education programme adapted to local needs and resources in order to provide professional nurses and assistants for the country's expanding health services.

Libya 7 Health Training Institute, Benghazi (Dec. 1955 - end of 1966) EPTA UNICEF

To train health assistants and sanitarians for work in the rural health centres under the supervision of professional staff, and to train laboratory assistants for provincial public health and hospital laboratories; to give in-service training to auxiliary health personnel already employed; and to train male nurses. The long-term objective of this project is to expand and improve the public health services, especially in the rural areas.

Libya 9 Malaria Eradication Programme (April 1960 - end of 1966) MESA (AID)

To eradicate malaria from the whole country. This follows the pre-eradication survey carried out (under the same project number) from June 1958 to September 1959.


To establish a centre for demonstrating modern methods of maternal and child care and for training community midwives to serve in rural and urban maternal and child health centres throughout Cyrenaica.

Libya 22 Tuberculosis Control (March 1963 - 1966) EPTA

To set up a tuberculosis centre in Benghazi to train staff and demonstrate tuberculosis techniques and to serve as the centre of operations for a pilot area project; to plan a national control programme on the basis of the results of the pilot area project.
Libya 200 Fellowships R: Undergraduate medical studies (six for twelve months—five of them extensions of previous awards, one for thirteen months and one for five months—extensions of previous awards).

Libya 201 Fellowships EPTA: Undergraduate medical studies (twelve months—extension of previous award), undergraduate nursing (twelve months—extension of previous award).

Pakistan 30 Nursing Education, East Pakistan (Jan. 1958 - end of 1968) R UNICEF
To strengthen education and training programmes for nursing and midwifery personnel.

Pakistan 33 Public Health Institute, East Pakistan (Oct. 1961 - beyond 1966) EPTA
To develop epidemiological and bacteriological departments in the Public Health Institute, Dacca, East Pakistan.

Pakistan 36 Malaria Eradication Programme (1961 - 1974) MESA UNICEF (AID)
To eradicate malaria from the whole country, by stages. The eradication programme follows a pre-eradication survey carried out with assistance from WHO in 1959 and 1960. (See page 112.)

To undertake leprosy control work. In this project, which follows the visits of WHO short-term consultants in 1959 and 1960, special attention is being paid to East Pakistan, where leprosy is a serious public health problem.

Pakistan 41 Evaluation and Assessment of Smallpox Eradication (Nov. 1964 - 1966) R
To assess the technical and administrative methods employed in the smallpox eradication campaign which has been in operation in East Pakistan since 1961.

Pakistan 42 Prosthetic Appliances (1961 - end of 1965) EPTA UNICEF
To set up a prosthetics workshop and to train workers in the manufacture of braces and prosthetic appliances.

Pakistan 43 Vital and Health Statistics (Jan. 1961 - June 1964) EPTA
The aim was to reorganize and improve the country's health statistical services. WHO provided a health statistician from February 1961 to June 1964, supplies and equipment, and a fellowship. A scheme for the establishment of morbidity statistics in hospitals and health centres was introduced on a pilot basis and was gradually extended to a number of health institutions. Concomitantly a statistical department was set up in the Central Ministry of Health. This department has gradually expanded and is now in the charge of a medically qualified health statistician who completed his fellowship study of health statistics in March 1964. A national committee on vital and health statistics was set up in April 1964, and is formulating proposals for further development of health statistics in Pakistan. The project contributed to establishing the necessary organization for the collection and processing of health statistics in Pakistan.

Pakistan 44 Nursing Education, West Pakistan (Sept. 1961 - mid-1965) EPTA UNICEF
To improve and develop nursing education. Under this project WHO gives assistance in the administration of a model school of nursing set up by the Government.

Pakistan 49 Malaria Eradication Training Centres (Nov. 1960 - beyond 1966) MESA
To train technical staff for the malaria eradication programme and to carry out research on technical problems encountered in malaria eradication.

Pakistan 50 Tuberculosis Control (Pilot Area, Rawalpindi) (Jan. 1963 - mid-1966) EPTA UNICEF
To test in a pilot area certain methods of tuberculosis control, so as to find those most practical and effective in Pakistan, and to train personnel, with a view eventually to integrating tuberculosis control into the general public health services. Training and demonstration are carried out at the tuberculosis centre at Rawalpindi and mobile teams are working in three sectors of the pilot area.

Pakistan 51 Public Health Advisory Services, East Pakistan (1963 - 1966) R UNICEF
To plan and organize health services in East Pakistan.

Pakistan 52 Public Health Advisory Services, West Pakistan (1964 - 1966) R UNICEF
To plan and organize health services in West Pakistan.

Pakistan 55 Environmental Health Services (1964 - end of 1967) R
To establish, in the Ministry of Health, a department of environmental health responsible for planning and administering a national programme.

Pakistan 200 Fellowships R: Anaesthesiology (twelve months), hospital administration (twelve months), immuno-haematology (two and a half months), leprosy control programmes (five weeks), nutrition (sixteen and a half months), psychiatry (twelve months), physical therapy (twelve months), public health administration (four for twelve months), sanitary engineering (twelve months), statistics (twelve months).

Pakistan 201 Fellowships EPTA: Anaesthesiology (one for twelve months, one for six months), nursing administration (twelve months), statistics (twelve months), venereal diseases (twelve months).
Saudi Arabia 4 Malaria Pre-eradication Programme
(1962 - beyond 1966) MESA

To build up the technical, administrative and operational facilities for a full-scale malaria eradication programme; and to develop at the same time the rural health services, so that they may provide efficient collaboration in the eradication programme. The programme follows the pre-eradication survey carried out with the assistance of WHO from July 1959 to March 1962.

Saudi Arabia 5 Environmental Sanitation

The aim was to set up an environmental sanitation service in the Ministry of Health, Riyadh, to co-ordinate the work of all branches of the national administration that deal with environmental sanitation. WHO provided a sanitary engineer from October 1958 to September 1963, and supplies and equipment.

The WHO engineer advised and assisted the Government in the following work: provision of safe water and latrine facilities and improvement of slaughterhouse sanitation in the Mecca Pilgrimage area; training and utilization of sanitary aides; review of plans and contract criteria for new water supply and sewerage projects; selection of engineering staff for municipal water supply and sewerage projects; promotion of sanitation activities in community development projects, and establishment of sanitary regulations governing water, food preparation, handling and storage, etc.

A sanitation unit with three sections—engineering, insect control and disinfection, and sanitary laboratory—was set up in the Ministry of Health. The staff consisted of a civil engineer, a chemist, an entomologist, three sanitarians, and clerical staff, who worked under the technical supervision of the WHO sanitary engineer.

A good start on solving important environmental sanitation problems by engineering methods has been made and should be followed up, particularly through the training of national sanitary engineers. Unfortunately, the government engineer left the sanitation unit at about the time the WHO engineer completed his assignment.

Saudi Arabia 6 Leprosy Control (Nov. - Dec. 1963) R

WHO provided a consultant for three weeks to make a survey of leprosy and advise the Government on its control. His recommendations included measures to improve the staffing and physical facilities of leprosy institutions and the treatment of patients. The Ministry of Health has decided to set up a general register for all leprosy patients, including foreigners, in the country.

Saudi Arabia 7 Public Health Laboratory

To set up a national health laboratory in Riyadh.

Saudi Arabia 13 Tuberculosis Control, Riyadh
(Feb. 1963 - end of 1966) R

To set up in Riyadh a tuberculosis control centre to train staff, carry out tuberculin testing in order to ascertain infection rates, demonstrate control measures and determine those most suitable for Riyadh and the surrounding rural areas; later, to extend the control programme to other areas of the country.

Saudi Arabia 15 Health Assistants' and Sanitarians' Institute, Riyadh (Feb. 1959 - mid-1966) R Funds-in-trust

To train health assistants and sanitarians for work under the supervision of professional staff; and to provide in-service training facilities for health personnel already employed.

The long-term objective of this project is to expand and improve the public health services throughout the country.

Saudi Arabia 23 Public Health Advisory Services
(Oct. 1960 - Dec. 1963) EPTA

The aim was to advise the Ministry of Health on the establishment of a Department of Preventive Medicine within the Ministry, whose functions would be particularly to develop and co-ordinate the epidemiological aspects of national health work, through collection and evaluation of epidemiological data, control of epidemic diseases, development of vital and health statistical services and legislation, and establishment of infectious disease hospitals and isolation facilities; to provide training for national health personnel in preventive medicine; and to develop international quarantine activities in Saudi Arabia. WHO provided a public health adviser and six fellowships for training of national personnel in health statistics at the International Statistical Education Centre in Beirut.

Early in 1961, following a reorganization of services in the Ministry of Health, new emphasis was given to preventive activities by the introduction of specific responsibilities for environmental sanitation, maternal and child health, nutrition, mental health, health statistics, etc., in the Directorate-General of Health.

The WHO adviser made surveys of the general health situation in a number of areas with a view to assisting the Government in determining priority needs. He also advised the national health authorities on the control of various communicable diseases, and assisted the local public health officers in investigating outbreaks of epidemic diseases and taking appropriate measures.

During 1961 and 1962 the adviser assisted in drafting legislation, which was promulgated in 1962, on the compulsory notification and registration of births and deaths, and in preparing specifications and models for the official documents required under this legislation. He also assisted in the development of health statistical services by conducting a course in hospital statistics for national personnel, and by advising on the revision of statistical forms and tables to meet the needs of health statistical reporting.

At the request of the Minister of Health, the WHO adviser visited the Eastern Province soon after his arrival in the country, to advise on the establishment of isolation and quarantine facilities in Damman in view of the rapidly increasing air traffic in that area. The isolation annex of the new hospital in Damman, then under construction, was recommended as the most suitable location for these facilities. The hospital was opened at the end of 1963, and is to be used as a model "base hospital" to demonstrate a type of organization which may later be extended to other parts of the country, as part of the basic public health and medical care services project (Saudi Arabia 29).

The adviser took part in planning WHO assistance in this project, which has an important training content. He also advised on the training programme of the Health Assistants' and Sanitarians' Institute in Riyadh (Saudi Arabia 15) to meet some of the country's special needs in quarantine matters, and provided liaison with the Ministry of Health in connexion with the establishment of a nursing school for girls which was opened in October 1961, and to which WHO gave advice through visits of nursing consultants.
In international quarantine matters—of special importance in Saudi Arabia in view of the annual Pilgrimage to Mecca—the adviser was constantly consulted by the national health authorities on matters connected with the International Sanitary Regulations, and on measures to be taken to safeguard the health of the pilgrims. He helped with the health surveillance of all annual Pilgrimages during his assignment.

In providing liaison between the national health authorities and the WHO Regional Office, the adviser was also able to facilitate the planning of the WHO-assisted projects which were being developed during his assignment; he helped in the negotiations of plans of operation, in discussion of requirements for projects, and in assignment of WHO staff. On completion of the project, the WHO public health adviser was replaced by a WHO representative.

Saudi Arabia 27: Hospital Planning and Administration
(Sept. - Oct. 1964) Funds-in-trust
WHO provided a consultant for five weeks to review the prefabricated hospitals plan in the context of the country's public health programme, and to advise the Government on the feasibility of the plan and the priority to be given to it.

Saudi Arabia 29: Basic Public Health and Medical Care Services
To set up a provincial health organization, a model community health centre and a base hospital in the eastern province of the country.

Saudi Arabia 31: Nursing Advisory Services
(1964 - 1970) Funds-in-trust
To develop the nursing profession—WHO providing advisory services, initially on the recruitment, preparation and utilization of expatriate nurses, and later on the development of a national nursing force.

Saudi Arabia 33: Community Water Supply
(May 1964 - end of 1966) Funds-in-trust
To plan and organize a community water supply programme.

Saudi Arabia 34: Advisory Services for Health Programming
To provide assistance in health programming to the Supreme Planning Board.

Saudi Arabia 35: Training of Medical and Health Personnel
(1964 - 1966) Funds-in-trust
To set standards for the education and training of health personnel and define the technical responsibility of each category; to carry out manpower surveys of health personnel and determine short-term and long-term needs; and to develop educational facilities for professional health personnel, particularly with a view to the establishment of the country's first medical school.

Saudi Arabia 38: Sanitary Engineering and Municipal Programming
(1963 - end of 1966) Funds-in-trust
To draw up a municipal programme, with emphasis on environmental sanitation, to be carried out by the Ministry of Interior.

Saudi Arabia 200: Fellowships R: Ophthalmology (eight and a half months—extension of previous award), psychiatry (twelve months), public health administration (twelve months), tropical medicine (twelve months), tuberculosis and chest diseases (eight months), undergraduate medical studies (five for twelve months, one for four months and one for thirteen months—extensions of previous awards).

Saudi Arabia 201: Fellowships EPTA: Undergraduate medical studies (twelve months—extension of previous award).

Saudi Arabia 204: Fellowships Funds-in-trust: Undergraduate medical studies (twelve months).

Somalia 2: Malaria Pre-eradication Programme
(May 1962 - beyond 1966) MESA EPTA
To build up the technical, administrative and operational facilities for a full-scale malaria eradication programme; and at the same time to develop the rural health services, so that they may provide efficient collaboration in the eradication programme. This programme continues the work of the malaria eradication pilot project (1955-1962) and of the pre-eradication survey (1957-1962) carried out under the same project number.

To organize, strengthen and reorient all the existing arrangements for training auxiliary personnel in Somalia so as to contribute to the strengthening of the regional health services; to extend regional health services throughout the country, paying particular attention to the health and welfare of mothers and children; and to integrate health services more fully into other work for raising the standard of living and securing community participation.

Somalia 11: Tuberculosis Control
(March 1960 - end of 1966) EPTA UNICEF
To set up a tuberculosis centre in Mogadishu to demonstrate tuberculosis control techniques and train local health personnel; to carry out, in areas outside Mogadishu, a tuberculosis control programme, including mass BCG vaccination, case-finding by sputum and X-ray examination, and domiciliary treatment, for the settled and nomadic populations.

Somalia 13: Basic Health Services
(March 1962 - 1966) EPTA UNICEF
To set up a rural demonstration and training area which will provide practical training for the students of the WHO-assisted project Somalia 8 (Training of Health Personnel) and experience of the development of an integrated public health service in a rural area.

Somalia 14: Public Health Advisory Services
(May 1961 - Dec. 1963) R
The aim was to reorganize the central health administration, to develop the national health services, both preventive and curative, throughout the country, and to co-ordinate the expansion of health activities with the country's general economic and social development. WHO provided a public health adviser, with temporary secretarial assistance, and supplies and equipment.

From the beginning of the project, efforts were made to co-ordinate the projects in Somalia assisted by UNICEF and by WHO, and close working relationships were established with various medical missions assisting the country under bilateral
arrangements, with projects sponsored by United Nations agencies and with the resident technical assistance representative. During the severe floods in 1961 the project served to co-ordinate and direct the efforts of all foreign relief missions.

The project contributed significantly to the preparation of Somalia's first five-year health plan, which was accepted in full by the Planning and Co-ordinating Committee of the Republic. The development of the health services and the implementation of specific health projects was started in accordance with the plan, and the integration of the existing services began. WHO has received a request for a health planning team (see Project Somalia 27) whose main task will be to give detailed advice on the elaboration of the plan.

The project has also served to promote a training and fellowships programme which will be of particular importance for the further development of the health services. After December 1963 the public health adviser continued his work as WHO representative to Somalia.

**Sudan 7** Nursing Education, Khartoum (Oct. 1955 - mid-1966) R
To establish a college of nursing, providing a course of basic professional education, that will train nurses for leading posts in the country's health programme.

**Sudan 15** Communicable Eye Disease Control
(Dec. 1960 - end of 1965) EPTA UNICEF
To make a survey of communicable eye diseases and to carry out a control project, starting in the Athbara Berber area and extending progressively to highly infected areas of the Northern Province.

**Sudan 26** Onchocerciasis Control
(March 1963 - end of 1966) R
To carry out a survey of onchocerciasis infection in the main section of the Nile north of Khartoum and in Bahr-el-Ghazal and Equatoria Provinces, so as to determine the prevalence and severity of the disease, its economic and social implications, and the relationship between the disease in man and the breeding places of the insect vector; to develop a programme for the control and prevention of onchocerciasis; and to train personnel.

**Sudan 28** Smallpox Eradication
(Jan. 1962 - end of 1966) R
To carry out a mass vaccination campaign against smallpox, aiming at the eventual eradication of the disease.

**Sudan 30** Cancer Control
(1963 - 1965) R
To develop, in Khartoum Hospital, radiation and isotopes services for the treatment of cancer patients.

**Syria 2** Malaria Eradication Programme
(March 1956 - end of 1966) MESA UNICEF
To eradicate malaria from the whole country, where nearly one and three-quarter million people out of a population of over five million live in areas which were originally malarious.
Syria 4 Bilharziasis Control (Nov. 1964 - 1965) R
To assess the situation as regards the prevalence and control of bilharziasis, especially in the Kamichlie area; to devise new methods for controlling the intermediate hosts; to improve health education, environmental sanitation and the treatment of bilharziasis; and to draw up a programme for training professional and auxiliary personnel.

Syria 16 Rural Health Unit (Jan. 1958 - 1966) EPTA
To provide, in one area, combined preventive and curative health services, so administered that they can be integrated into the sub-district, district and central administrations; to establish a rural health demonstration and training centre for various categories of health personnel; and to provide facilities for testing administrative and technical procedures.

Syria 30 Public Health and Endemic Diseases Laboratory (1959 - end of 1966) R
To develop the services of the public health and endemic diseases laboratory, and particularly the food microbiology section.

Syria 37 Nursing Education, Damascus (Nov. 1960 - end of 1968) R UNICEF
To set up a national school of nursing that will provide the country with better-qualified nurses and thus contribute to raising the standard of nursing education and nursing services.

Syria 39 Training of Sanitarians (July 1962 - end of 1966) EPTA
To provide a training course for sanitarians.

Syria 47 Medical School (April - May 1964) EPTA
Following a visit by the regional medical officer for education and training in 1963, WHO provided a consultative group on medical education, consisting of three professors, to advise the Government on the establishment, probably in Aleppo, of a second medical school for the country.

Further assistance is planned for 1966.

Syria 48 Medical Rehabilitation Centre (July - Aug. 1964) R
A WHO consultant advised on the setting-up of a comprehensive medical rehabilitation centre.

Syria 200 Fellowships R: Public health administration (four for twelve months), quarantine measures (one for one month, one for two months), statistics (six for seven and a half months).

Syria 201 Fellowships EPTA: Training of village midwives (two for twelve months).

Tunisia 3 Communicable Eye Disease Control (Nov. 1953 - 1966) EPTA UNICEF
To carry out a mass campaign against seasonal conjunctivitis, collective treatment of trachoma in schools, and a programme of research on communicable eye diseases.

Tunisia 6 Maternal and Child Health (Second phase: May 1959 - end of 1965) EPTA UNICEF
To establish a maternal and child health demonstration and training centre in Tunis; to expand the maternal and child health programme as an integral part of the general public health programme; and to train professional and auxiliary personnel.

Tunisia 17 Malaria Eradication (Preparatory Phase) (1958 - end of 1966) MESA EPTA
To assess the malaria control work and the malaria epidemiological situation in the country; and to extend the basic health services in preparation for an integrated eradication campaign planned to begin in 1967.

Tunisia 18 Environmental Health (May 1962 - end of 1967) EPTA UNICEF
To develop a national programme of environmental health and to train personnel for the purpose.

Tunisia 20 Public Health Laboratory (1964) R
WHO provided supplies and equipment for the public health laboratories, and the regional health adviser on health laboratory services carried out a survey and advised the Government on the establishment of a central public health laboratory.

Tunisia 22 Institute of Ophthalmology, Tunis (Nov. 1957 - end of 1964) R
To establish a virological laboratory, and train staff, for the study of trachoma and related diseases in Tunisia.

Tunisia 27 Medical Education (1961 - 1967) R EPTA
To set up the first medical school in Tunisia, and to organize a medical course, starting with the preclinical sciences.

Tunisia 29 Medical Rehabilitation Centre (1961 - end of 1966) EPTA
To set up a medical rehabilitation centre for the physically handicapped.

To prepare qualified nurses for nursing instructor posts in order to meet the demand for education and training programmes.

Tunisia 33 Central Medical Technical Services (Jan. 1963 - end of 1965) EPTA
To train personnel in the repair and maintenance of medical apparatus.

Tunisia 35 Cancer Control (May 1964 - Dec. 1966) R
To set up in Tunis a Cancer Institute for the diagnosis, treatment and follow-up of cancer cases in the whole country.

Tunisia 38 Survey of Mineral Waters (Spas) (March - April 1964) R
A WHO consultant investigated the possibility of using mineral springs in Tunisia could be so used, but the need for strict control of the quality of the water was emphasized.

Tunisia 200 Fellowships R: Anaesthesiology (six months), histochemistry (six months), orthopaedic surgery (twelve months —extension of previous award), paediatric surgery (twelve months—extension of previous award), statistics (seven and a half months), undergraduate sanitary engineering (two for twelve months—extension of previous awards), virology (twelve months).

Tunisia 201 Fellowships EPTA: Anatomy (twelve months), histomorphology (six months), orthopaedic surgery (twelve months—extension of previous award), tuberculosis (eleven months), undergraduate sanitary engineering (twelve months—extension of previous award).

To develop the High Institute of Public Health so that it may achieve its main objectives of advancing the knowledge and training of professional workers in all fields of public health, promoting research and field work, and solving practical health problems in the United Arab Republic.

United Arab Republic 30 Premature Infants' Unit (Feb. 1964 - Oct. 1965) R UNICEF

To improve health services for infants and children, and particularly the care of the new-born and of premature infants, by helping mothers to understand and meet the health needs of their new-born infants and training health personnel in the care of premature infants in hospital and at home.

United Arab Republic 37 Virology Research Laboratory (March - May 1960; April 1963 - 1965) R

To develop the Central Virology Research Laboratory at the Agouza Laboratories in Cairo.

United Arab Republic 44 Concentrated Sera Production Plant (1957 - 1966) EPTA

To set up a concentrated sera production unit in the central laboratories.

United Arab Republic 48 Drug Control Laboratory (March 1961 - Nov. 1964) EPTA

WHO provided supplies and equipment and medical literature to assist the quality control of drugs and biologicals.

United Arab Republic 49 Bilharziasis Control Pilot Project and Training Centre (Jan. 1961 - end of 1966) R UNICEF

To test measures for controlling bilharziasis, so as to find those cheapest and most effective under conditions in the United Arab Republic. The project is to be developed to serve as a field demonstration and training centre for the Region.


To prepare graduate nurses to assume responsibilities for improving nursing services and nursing education throughout the country by a pilot project at the Ahmed Maher Hospital and School of Nursing. (See page 113.)

United Arab Republic 55 Rural Health Study (March - April 1964) EPTA

WHO provided a consultant for six weeks to carry out a general evaluation of the rural health services.

United Arab Republic 59 Sewage Disposal (Nov. 1964 - 1965) EPTA

To work out improved sewage treatment methods, including standardized plans for small towns throughout the country.

United Arab Republic 200 Fellowships R: Health services planning (three months), hospital administration (two months), immune sera purification (two and a half months), infectious diseases (two months), maternal and child health services administration (two months), medical services planning and organization (three months), nutrition (twelve months), pertussis vaccine production (three and a half months), pesticide residues in foodstuffs (six months), preservation and typing of bacteria (six months), quarantine services (ten days), radiation protection measurements—particularly film dosimetry (three months), radioisotopes (three months), rural health services (three for two months), thoracic surgery (four months), tuberculosis treatment (three months), vital and health statistics (three months).

United Arab Republic 201 Fellowships EPTA: Administration and educational programmes of technical health institutes (two months), cancer registration (three months), immunization of horses for serum production (two months), ophthalmic surgery (three months), schools of nursing and midwifery—regulations and curricula (three months).

Yemen 3 Public Health Adviser (Jan. 1961 - end of 1966) R

To organize health and medical care services at the central level and to improve the public health services generally.

Yemen 4 Malaria Pre-eradication Programme (1964 - beyond 1966) MESA

To undertake the gradual development of the network of rural health services and the building-up of the technical, administrative and operational facilities required for a malaria eradication programme.

Yemen 8 Health Centre and Training School, Sana'a (July 1956 - end of 1966) EPTA

To establish a health centre and training school in Sana'a in order to provide training for auxiliary health personnel (including assistant sanitarians, assistant nurses and laboratory assistants), to demonstrate modern practice in the prevention and cure of some diseases and the control of communicable diseases, to assist the promotion of health, and to facilitate the organization of public health services.

Yemen 15 Local Health Services, Hodeida and Taiz (1963 - 1967) R UNICEF

To organize two health centres—one in Hodeida and one in Taiz—to provide integrated health services to the community, and to train various categories of auxiliary personnel.

Yemen 200 Fellowships R: Sanitation (twelve months), statistics (two for seven and a half months), undergraduate medical studies (one for four months, seven for twelve months, two for thirteen months—extensions of previous awards, and six for twelve months), undergraduate dentistry (twelve months—extension of previous award).

Yemen 201 Fellowships EPTA: Laboratory techniques (three for nine months), nursing (two for twelve months), sanitation (three for six months), undergraduate medical studies (seven for twelve months—four of them extensions of previous awards), undergraduate pharmacy (two for twelve months—one an extension of a previous award).
WESTERN PACIFIC

WPRO 22 Inter-country Treponematoses Team

To carry out an assessment of the yaws control projects in
the British Solomon Islands Protectorate, the New Hebrides
and Western Samoa.

Between November 1954 and January 1963 assistance in
organizing mass examination and treatment campaigns was
provided, under the same project number, to the British Solomon
Islands Protectorate, the Cook Islands, Fiji, the Gilbert and
Ellice Islands, the New Hebrides, Tonga and Western Samoa.¹

WPRO 25 Refresher Course on Tuberculosis, Noumea, New
Caledonia (15 July - 12 Aug. 1964) R (South Pacific Com-
mission)

A course for medical officers and workers from the South
Pacific island territories, organized in co-operation with the
South Pacific Commission. All aspects of tuberculosis work
were reviewed, special attention being paid to prevention, case-
finding and chemotherapy, and instruction was given in practical
methods of control appropriate to the conditions in the area.

There were thirteen participants from Fiji, French Polynesia,
Gilbert and Ellice Islands, New Caledonia, New Hebrides, Niue,
Papua and New Guinea, Ryukyu Islands, Tonga, Trust Territory
of the Pacific Islands, and Western Samoa.

WHO provided the cost of attendance of eleven participants,
a consultant and the services of the regional tuberculosis adviser.
The South Pacific Commission provided consultant services,
the cost of attendance of two participants, and staff, supplies
and services for the course.

WPRO 59 Fellowships (Undergraduate Medical Studies, Fiji
School of Medicine) (Jan. 1961 - 1963) R

To increase the number of assistant medical and dental officers
in the health services of the islands of the South Pacific by
providing fellowships for undergraduate studies at the Fiji
School of Medicine.

WPRO 61 Seminar on Nursing for Territories in the South
Pacific, Fiji (9 - 20 Dec. 1963) R (South Pacific Commission)

A seminar, organized in co-operation with the South Pacific
Commission, to study means of improving nursing education
and nursing service programmes in the South Pacific island
territories; to exchange information on present practices, identify
problems and explore the possibilities of establishing common
objectives and standards for basic nursing programmes in the
territories; and to discuss curriculum planning. There were
eighteen participants from American Samoa, British Solomon
Islands Protectorate, Fiji, French Polynesia, New Hebrides,
Papua and New Guinea, Tonga, Trust Territory of the Pacific
Islands, and Western Samoa, and six observers from the Gilbert
and Ellice Islands, Hawaii and the Trust Territory of the Pacific
Islands.

WHO provided a consultant, two temporary advisers, four
seminar staff members, the cost of attendance of the participants,
and reference material. The South Pacific Commission pro-
vided a consultant in health education, translation and inter-
pretation staff, equipment and technical literature. Other staff
and facilities were provided by the host Government.

WPRO 72 Malaria Eradication Training Centre, Manila
(April 1959 - June 1961; Sept. 1963 - ) MESA (AID)

To provide training in the theory and techniques of malaria
eradication for various categories of personnel needed by
countries of the Western Pacific Region and other regions.

WPRO 75 Regional Tuberculosis Advisory Team
(July 1961 - 1966) R UNICEF

To assist countries of the Region in assessing their tuberculosis
programmes.

WPRO 79 Advisory Services (1961 - ) R

To provide advisory services to countries of the Region on
subjects for which no regional adviser is available and for which
it is not practicable to obtain assistance from headquarters
staff.

During the period under review, the following assistance was
provided to the Republic of Viet-Nam:

Tuberculosis Control. A consultant from February to April
1964 to advise the Government on the expansion of the national
tuberculosis control programme.

Vaccination Programme and Vaccine Production. A con-

WPRO 87 Regional Seminar on Immunization in the Control of
Communicable Diseases, Manila (2 - 13 Dec. 1963) EPTA

A seminar to review the information on the public health
importance of a number of communicable diseases in the
Region, to study the effectiveness of available immunization
procedures in their control, and to consider the planning and
organization of communicable disease control programmes
adapted to local conditions.

There were twenty-five participants from Australia, Brunei,
China (Taiwan), Fiji, Hong Kong, Japan, Macao, Malaysia,
New Zealand, Papua and New Guinea, Republic of Viet-Nam,
Ryukyu Islands and Tonga. Observers attended from UNICEF,
the South Pacific Commission, the Philippines, the missions of
the United States Agency for International Development to the

¹ See Off. Rec. Wld Hlth Org. 114, 96; 131, 134.
Republics of Korea and Viet-Nam, the United States Naval Medical Research Unit, Taiwan, the United States Public Health Service and the United States Civil Administration, Ryukyu Islands.

WHO provided the cost of attendance of the participants, three consultants and supplies and equipment.

WPRO 89 Regional Conference of Deans of Medical Schools, Manila (18 - 27 Nov. 1963) EPTA

See page 123.

WPRO 91 Regional Seminar on Health Surveys and Reporting, Manila (21 Oct. - 8 Nov. 1963) EPTA

A seminar to discuss the aims, components and coverage of health surveys, the methods used and their value in defining the health problems and needs of the population, in planning public health programmes and in assessing medical and health services; and to review in detail the objectives, content and usefulness of national annual health reports, and consider how they might be prepared and published most efficiently.

There were seventeen participants from American Samoa, China (Taiwan), Fiji, Japan, Malaysia, Philippines, Republic of Korea, Republic of Viet-Nam, Ryukyu Islands and the Trust Territory of the Pacific Islands, and five observers from the Government of the Philippines and the South Pacific Commission. The WHO Regional Office for South-East Asia was represented.

WHO provided the costs of attendance of the participants, three consultants, a temporary adviser and supplies and equipment.

WPRO 106 Regional Seminar on Methods to Improve Nutritional Standards at the Village Level, Manila (21 - 30 Jan. 1964) R

A seminar to consider how the health of villagers might be improved by nutrition work and to define the factors that would induce villagers to participate in nutrition programmes. The participants, who belonged to services connected with health, education, community development and agriculture, discussed the multidisciplinary approach to nutrition programmes. Great attention was paid to methods of introducing nutrition programmes, and the role of community development techniques was stressed. A hypothetical situation was studied by three discussion groups, which drafted recommendations for a nutrition programme.

There were nineteen participants from American Samoa, British Solomon Islands Protectorate, China (Taiwan), Fiji, French Polynesia, Guam, Japan, Papua and New Guinea, Philippines, Republic of Korea, Republic of Viet-Nam, Ryukyu Islands, Tonga, Trust Territory of the Pacific Islands, and Western Samoa. Observers attended from UNICEF, UNESCO, the South Pacific Commission, the Peace Corps, the George Williams Hooper Foundation, the Pan Pacific and South-East Asia Women's Association, and the Government of the Philippines.

WHO provided three consultants, and the cost of attendance of the participants and of a temporary adviser from FAO.

WPRO 110 Inter-country Leprosy Consultant, South Pacific (July - Nov. 1964) EPTA

WHO provided a consultant for three and a half months who carried out surveys of the leprosy control programmes in the British Solomon Islands Protectorate, Fiji, Tonga and Western Samoa, and submitted recommendations for strengthening them.

WPRO 111 Regional Seminar on the Control of Communicable Diseases, Manila (19 - 30 Nov. 1964) EPTA

A seminar to review the communicable disease problems and control programmes in the countries and territories of the Region; and to consider the personnel, material resources and research required for the programmes, the adaptation of control measures to local conditions, the international aspects of communicable disease control, and the role of assistance from outside sources, including the international agencies, in control work. There were twenty-eight participants from China (Taiwan), Cambodia, Fiji, French Polynesia, Gilbert and Ellice Islands, Hong Kong, Japan, Laos, Malaysia, New Caledonia, Papua and New Guinea, Philippines, Republic of Korea, Republic of Viet-Nam, Ryukyu Islands, Tonga, Trust Territory of the Pacific Islands and Western Samoa, and observers from the Philippines and UNICEF.

WHO provided the costs of attendance of the participants, three consultants and supplies and equipment.

WPRO 115 Epidemiological Surveys of Dental Diseases (June 1963 - 1966) R

To survey dental diseases and resources and give training in survey methods (1964); to analyse the data gathered through national surveys and make recommendations on the establishment or strengthening of dental services (1965).

A training course on dental epidemiological techniques was held in Singapore from 17 February to 8 May 1964 with participants from China (Taiwan), Hong Kong, Malaysia, Philippines, Republic of Korea and Republic of Viet-Nam.

WPRO 116 Regional Seminar on National Health Planning, Manila (3 - 17 June 1964) R

A seminar to consider the importance of national health planning in health services development and as an essential component of socio-economic planning; to review current practices and experience in national health planning in countries of the Region; to discuss modern concepts and to formulate guide-lines for national health planning, taking into account recent scientific progress and methodological improvements as they apply to country situations; and to assess resources and the means to be used by countries in implementing their national health plans. The subjects discussed included the concepts and principles of health planning; the appraisal of health problems and resources, priorities and aims; the content of the health plan, including the administrative considerations that influence health planning, consultation, co-ordination and public information; the mechanism of the planning process; and provision for implementation and evaluation.

There were twenty-one participants from Australia, China (Taiwan), French Polynesia, Japan, Laos, Malaysia, New Caledonia, New Hebrides, Papua and New Guinea, Philippines, Republic of Korea, Republic of Viet-Nam, Tonga, Trust Territory of the Pacific Islands, and Western Samoa.

WHO provided the cost of attendance of the participants, three consultants and supplies and equipment.

Australia 200 Fellowships R: Clinical pathology (twelve months), public health administration with emphasis on occupational health investigations (three months), steroid biochemistry (twelve months).
To find a method of interrupting malaria transmission in the Protectorate; to collect the data needed for planning malaria eradication; and to train staff in preparation for an eradication programme.

It is planned to follow the pilot project with a pre-eradication programme in 1965.

To carry out a basic programme of general nursing for nurses and medical assistants, and a programme of midwifery and maternal and child health combined with the nursing programme for women nurses.

To build up the technical, administrative and operational facilities for a malaria eradication programme, which is planned to start in 1965.

To build up administrative and operational facilities to the level required for the implementation of a full malaria eradication programme; to complete an epidemiological survey of malaria; and to train national technical staff for the eradication programme.

The pre-eradication programme continues the antimalaria operations with which WHO has been assisting (under the same project number) since October 1950.

To establish a school of nursing in Phnom-Penh; to organize nursing and midwifery training.

To develop a national maternal and child health programme and to improve school health services.

To raise the standard of teaching at the Faculty of Medicine, Pharmacy and Paramedical Sciences to professional level and to increase facilities for training auxiliary staff.

The aim was to reduce the prevalence of yaws by mass treatment with penicillin; to train professional and auxiliary medical personnel in yaws control methods; and to carry out a smallpox eradication campaign in the area as part of the work of the yaws team. The project operated in the provinces of Siem Reap, Battambang and Kampong Thom. WHO provided a medical officer from September 1959 to July 1963, a physician-serologist from September 1960 to January 1962 and from July 1963 to April 1964, and some supplies. Drugs and equipment were supplied by UNICEF.

As of March 1964, 707 801 people (a coverage of 86.8 per cent.) in the three provinces had been surveyed for yaws, and at the same time vaccinated against smallpox; 19 781 cases of active yaws were found (2.8 per cent. of those examined), including 2885 cases of infectious yaws—a prevalence rate of 0.4 per cent. All cases and contacts were treated.

Reserves were made of selected areas where there had formerly been a high yaws endemicity. In resurveys carried out up to three years after the initial surveys in Siem Reap the prevalence of active yaws was found to have fallen from an average of 5.4 to 0.6 per cent. and of infectious yaws from 0.5 to 0.07 per cent. In the areas resurveyed there was no evidence of a recrudescence of the disease.

Control of yaws has been achieved in the three provinces and a well-trained and experienced corps of yaws field workers has been set up. It will be responsible for surveillance and follow-up and at the same time will assist the Government to develop the rural health services.

The project is continuing with technical advice from WHO, and drugs and equipment from UNICEF.

To plan and implement a comprehensive provincial health programme; to build up model public health services in Kandal Province; and to give field training to all categories of medical and health personnel at the Takhmau centre.

To survey and evaluate training resources, and prepare short-term and long-term plans for meeting the nursing needs of the health services; to organize and improve nursing services and education programmes throughout the country; and to review nursing legislation, personnel policies, and terms of service.

To establish a central health laboratory at the Institute of Biology; to plan the expansion of health laboratory services in accordance with the Government’s five-year development plan; to prepare for the Institute a manual of operations that will include standard laboratory procedures and techniques; and to plan and operate training courses for different categories of laboratory personnel and for medical and nursing students.

WHO provided a consultant who made an assessment of this project, for which staff and other assistance were provided.
between 1953 and 1962, and submitted recommendations on future work, with priorities.

\textbf{China 3} Maternal and Child Health, Taiwan 
(First phase: Oct. 1955 - Dec. 1964) EPTA UNICEF

WHO provided a consultant to assess the development of the maternal and child health programme, for which staff and other assistance were provided between 1952 and 1959; and to assist in drawing up plans for expanding the maternal and child health services and in reorganizing programmes for training professional and auxiliary personnel in maternal and child health work.

\textbf{China 6} Nursing Education, Taiwan 
(May 1952 - Aug. 1964) EPTA (China Medical Board)

To improve the standard of nursing education and the quality of nursing services by establishing a school of nursing at the University Hospital in Taipei. (See page 121.)

\textbf{China 7} Malaria Eradication Programme, Taiwan 
(May 1952 - 1965) MESA

To complete the eradication of malaria from Taiwan by the use of residual insecticides and antimalarial drugs and by an effective surveillance system.

\textbf{China 17} Tuberculosis Control, Taiwan R UNICEF

Five fellowships—one of twelve months, two of eight months and two of four months—were awarded under this project, for which staff and other assistance were provided between 1956 and 1960.

\textbf{China 20} Mental Health Programme, Taiwan 

The aims were to make a survey of mental health needs and facilities; to establish a mental health programme, with special emphasis on child guidance and community mental hospitals; to carry out research; and to train local professional and auxiliary personnel.

Between October 1955 and August 1963, five WHO consultants in psychiatric nursing, psychiatric epidemiology and statistics, child development and psychiatric research, were provided for from one to two months. A WHO psychiatric nurse was provided from January 1960 to December 1964. Fourteen fellowships in psychiatry and neurology were awarded, and technical literature was supplied.

The project was based in the Department of Psychiatry and Neurology of the National Taiwan University, Taipei. An epidemiological survey of mental disorders in communities was made and a children's mental health centre was set up in Taipei. Plans are being made for post-basic training in psychiatric nursing.

In the next phase of the project WHO will assist in the development of psychiatric social services.

\textbf{China 27} Institute of Public Health, Taiwan 

To strengthen the training at the Institute of Public Health, particularly in epidemiology and public health practice.

\textbf{China 34} Trachoma Control, Taiwan 

To reduce the prevalence of trachoma in areas of low endemicity to less than 4 per cent, in the age-group showing the highest prevalence (at present the 15 to 20 year age-group, in which the prevalence is 23.4 per cent.); to reduce the prevalence and incidence in areas of moderate and high endemicity to a level at which the disease will no longer be a public health problem, and to prevent disabling complications and sequelae.

\textbf{China 36} Community Water Supply and Sewerage, Taiwan 
(Jan. 1963 - 1968) EPTA

To follow up the recommendations made in 1961 by a WHO team of water supply consultants in connexion with the improvement of community water supply and sewerage; to review and amend as necessary national and provincial legislation pertaining to community water supplies; to develop techniques for financing and administering water supply and sewerage programmes, so as to make the programmes self-supporting; to stimulate regional planning of water supply schemes; to initiate training programmes; and to co-ordinate activities relating to community water supply with other sectors of the nation's economy (industry, agriculture, etc.) which are directly concerned with the use and allocation of water resources.

\textbf{China 200} Fellowships R: Encephalitis vaccine production (six months), food and drug control (three months), health education (twelve months), microbiology—bacterial flora and bacterial diseases of mosquitoes (twelve months), national health insurance (three months), occupational health nursing (two for five months), public health administration—maternal and child health (twelve months), public health administration—occupational health (twelve months), public health administration and preventive medicine (twelve months), public health nursing (twelve months).

\textbf{Fiji 2} Fiji School of Medicine, Suva 
(Feb. 1955 - 1966) R (China Medical Board)

To train assistant medical officers for government service in Fiji and adjacent territories, and to strengthen the staff of the School of Medicine.

\textbf{Fiji 200} Fellowships R: Maternal and child health (twelve months), nutrition (twelve months), orthopaedic surgery (nine months), public health administration (twelve months), tuberculosis control (five months).
French Polynesia 200 Fellowships R: Tuberculosis control
(one month).

Gilbert and Ellice Islands 4 Nursing Education

To develop training programmes for preparing nursing and midwifery personnel for the hospital and health services.

Hong Kong 200 Fellowships R: Dental nursing (two for twelve months, two for sixteen months—extensions of previous awards).

Japan 23 Rehabilitation of the Physically Handicapped

To raise the standard of teaching at the physical and occupational therapy school set up in 1963; to give in-service training to physical and occupational therapy personnel; to train a nucleus of senior physical and occupational therapists, in conformity with internationally accepted standards, for teaching posts in other similar schools to be established in the future; to modify procedures for the admission and classification of patients at rehabilitation centres to enable rehabilitation measures to be undertaken more quickly.

Japan 200 Fellowships R: Cancer treatment (six months), cardiovascular diseases (five and a half months), child mental health—study on rehabilitation of delinquent juveniles (six months), drug control—systems of licensing new drugs for health insurance schemes (two and a half months), food sanitation—sanitary inspection of imported foodstuffs (three months), health statistics—multiple causes of death (six months), maternal and child health (three months), medical technology (three months), nursing service systems in hospitals under social insurance schemes (six months), rehabilitation services (six months).

Korea 4 Leprosy Control (Nov. 1961 - 1967) EPTA UNICEF

To improve the leprosy control programme by co-ordinating the present control work, providing health education, and training medical and other personnel concerned with leprosy control.

Korea 13 Malaria Pre-eradication Programme
(Jan. 1962 - end of 1965) MESA

To survey the malaria situation, organize a national malaria service and train staff, so as to enable an eradication programme to be planned and implemented.

This programme follows the pre-eradication survey that began in June 1959.

Korea 15 National Institute for Public Health Training

To set up two demonstration centres, one for urban health services and the other for rural health services; to implement pilot projects for disease control and health promotion, in which trainees of the National Institute for Public Health Training may gain practical experience; to organize short-term pre-service, in-service and refresher training for government health workers.

Korea 16 Public Health Administration
(March 1963 - Dec. 1964) R

The aim was to survey health conditions and prepare long-term national health plans; to strengthen the administration of the health services at all levels; and to develop and evaluate the national health programme.

UNICEF provided a public health administrator for the duration of the project and a fellowship to enable a medical officer to study for the Diploma in Public Health at the University of Singapore.

Guidance on the areas in which assistance was most urgently required was provided by a joint panel consisting of government representatives, a WHO consultant and staff of the United States Agency for International Development (AID). The project led to the establishment of public health co-ordination and fellowships committees, the creation of a maternal and child health section, improved co-ordination between WHO-assisted projects in the field, and more effective liaison between the Ministry of Health and Social Affairs and WHO and with other agencies, such as the office of the Resident Representative of the Technical Assistance Board, the UNICEF office, AID and voluntary agencies.

The project, which was originally planned for five years, ended with the establishment of the post of WHO representative in Seoul. It enabled the groundwork to be laid for further action in the public health administration field, but further assistance will be needed in the development of a national health planning unit in the Ministry and in adapting the joint panel's recommendations to the changing situation in the country. In view, however, of the broader terms of reference given to the WHO representative, further progress in the work started and in the co-ordination of WHO-assisted projects may be anticipated.

Korea 19 Tuberculosis Control
(March 1962 - 1967) EPTA UNICEF

To develop an effective and comprehensive tuberculosis control programme, so as to reduce, and finally to eliminate, the infection as a public health problem. (See page 121.)

Korea 25 Local Health Services
(March 1963 - 1968) R UNICEF

To strengthen the organization of the health services at various levels in a demonstration province (Chungchong Namdo), with the ultimate objective of strengthening the country's local health services.

Korea 26 Community Water Supply Programme

To provide drinking water to the inhabitants of the area, to survey water resources and to develop a plan for their utilization. The project was carried out in close co-operation with the Ministry of Health and Social Affairs and WHO and with the UNICEF office in Seoul.

WHO provided the services of a firm of consulting engineers to make a survey of the Seoul water system; to estimate the present and future needs of Seoul for water; to estimate in general terms the cost of extensions to the water system required to meet those needs; and to recommend a method of financing the required extensions and a system of organization, operation and management of the enlarged water system.
Laos 2 Central Public Health Laboratory

To establish a public health laboratory service and train laboratory personnel.

Laos 6 Maternal and Child Health
(Sept. 1959 - 1966) R UNICEF

To ascertain the principal maternal and child health needs in Laos and set up training programmes to expand and improve maternal and child health services as an integral part of the general health programme.

Laos 9 Public Health Administration (April 1961 - 1965) EPTA

To survey health conditions and prepare long-range national health plans; to develop a programme of work appropriate to local conditions, and to organize the operation of the national health administration at the central and peripheral levels.

Laos 10 Rural Health Development

To provide practical training courses in nursing and midwifery and in-service training; to promote and develop environmental sanitation; and to carry out health education, particularly as regards home sanitation, maternal, infant and child care and nutrition.

Work carried out under this project is a part of the programme, assisted by the United Nations, for the economic and social development of the rural population. It is planned to set up four centres in rural areas, with staff from the participating agencies.

Laos 12 Nursing Education
(March 1962 - 1968) EPTA UNICEF

To set up a school of nursing and midwifery for training personnel for the country's hospital and health services, which are to be extended and improved.

Laos 201 Fellowships EPTA: Paediatrics (twelve months).

Malaysia 14 Hospital Administration, Malaya
(May 1956 - June 1966) EPTA

To review the hospital administration system and to provide training for non-medical hospital administrators.

Malaysia 15 Hospital Records, Malaya
(Nov. 1956 - 1966) EPTA

To review and reorganize the hospital records system; and to organize a health statistics service in Malaya, and a record-keeping system on a family basis.

Malaysia 20 Malaria Eradication Pilot Project, Malaya
(Feb. 1960 - 30 June 1964) R MESA

The Malay Peninsula is known to be highly malarious. For the last half-century control has depended largely on permanent and temporary antimalaria measures in towns and estates, which are still being carried out. As a result of these measures, the urban population has been protected against malaria, but a large part of the rural population lives in areas that are still malarious.

The WHO-assisted malaria eradication pilot project started in February 1960 with the aim of demonstrating the feasibility of interrupting transmission by spraying all houses with residual insecticide (2 g/m² of DDT sprayed twice a year) and by distributing antimalarial drugs to the whole population in the project area at the time of spraying. WHO provided a malariaologist from March 1960 to June 1964; a sanitary engineer from June 1960 to June 1964; an entomologist from February 1960 to November 1963; a short-term consultant on entomology from January to March 1964; supplies, equipment and transport; and seven fellowships, of from two to four months duration, for training abroad in international malaria eradication training centres and for participation in study tours of malaria eradication programmes.

The area chosen for the pilot project was 501 square miles (1298 km²) in Selangor State, near Kuala Lumpur, with a population of 115 000, which was considered to be representative of the geographical, ethnological and malaria features of Malaya.

The first spraying of the area (with total coverage) was completed in October 1961; it was followed by six more spraying cycles, the last being completed in the first half of 1964. Since October 1962 surveillance procedures have been introduced and an active and passive case-detection programme has been instituted in the whole project area. The results of the epidemiological assessment have confirmed that malaria transmission was interrupted in the project area late in 1962.

The pilot project was terminated at the end of June 1964. Because of its success, the Government embarked on a pre-eradication programme, which started in July 1964, with the aim of developing throughout the country the operational, technical and administrative facilities of the malaria and public health services, so that a malaria eradication programme can be implemented later.

Malaysia 21 Training Institutions (Clinical Pathology), Malaya
(Nov. 1960 - 1966) R

To raise the standard of training in clinical pathology at the Institute for Medical Research, Kuala Lumpur, and to train at the Institute sufficient laboratory technicians for the research institutes and the clinical and diagnostic laboratories of the larger hospitals.

Malaysia 24 Public Health Administration, Malaya
(Feb. 1960 - Dec. 1963) R

The aim was to increase and improve facilities for the promotion of health and prevention of disease, particularly in the rural areas. WHO provided a public health administrator for the duration of the project, mainly to assist in implementing the rural health programme under the 1956-1960 and 1961-1965 Five-Year Development Plans.

When the project started, building was slow because of difficulties of siting and other demands made on the Public Works Department, and there was a shortage of health staff. Since decisions at the national level were needed for solving many of the problems the public health administrator was attached in an
Malaysia 30 Health Education Advisory Services, Malaya (Jan. 1962 - 1967) R

To survey the health education work at the national and state levels, in order to evaluate the effectiveness of present methods of health education and recommend improvements. (See page 122.)


WHO provided a consultant to review public health legislation; to advise on and assist in the codification and annotation of health legislation under the responsibility of the Ministry of Health; to formulate procedures for collaboration with other agencies responsible for administering regulations which have health implications; and to make recommendations on a uniform system of national health legislation.

Malaysia 32 Nursing Education, Malaya (Aug. 1962 - 1966) EPTA

To assess the education programmes for nurses and nursing needs and resources; to develop the programme and the associated clinical practice fields so as to meet the country's requirements in nursing personnel; and to improve the quality of nursing education by in-service training, refresher courses, special courses for local registered nurses and courses to prepare nursing personnel for administrative and teaching posts.


To strengthen the organization and administration of the rural health services and to expand facilities for training staff for them; and to plan a comprehensive environmental health programme.

Malaysia 42 Malaria Eradication Programme, Sabah (July 1961 - 1968) MESA EPTA UNICEF

To eradicate malaria from Sabah. The eradication programme follows antimalaria operations for which WHO has provided assistance since July 1955.

Malaysia 43 Malaria Eradication Programme, Sarawak (Oct. 1961 - 1968) MESA EPTA UNICEF

To eradicate malaria from Sarawak. This follows the malaria pilot project started in 1952.

Malaysia 47 Nursing Education, Singapore (June 1952 - 1966) EPTA

To improve the standards of nursing education and nursing service.


To study and improve the basic midwifery curriculum, particularly as regards the clinical, public health and health education aspects; to organize supplementary and refresher courses for practising midwives; to co-ordinate training programmes for midwifery students in district hospitals and to arrange facilities for their practical training; to revise the Midwives' Ordinance and the Rules of the Midwives Board; and to plan and organize nursing midwifery services.

Malaysia 50 Health Education Advisory Services, Singapore (Nov. 1964 - 1969) R

To evaluate the health education programme, and to plan and carry out an expanded programme, particularly in schools, maternal and child health centres, teacher training centres and institutions, and centres for the training of health and medical workers.

Malaysia 56 Community Water Supply Programme, Sabah (Sept. - Dec. 1964) Special Account for Community Water Supply

WHO provided a consultant to advise on water purification, to organize and conduct training courses in the operation and control of water treatment works, and to assist in the design of specific treatment plants.

Malaysia 59 School of Radiography, Singapore (April 1962 - 1965) R

To set up a school of radiography in order to meet the demand for well-trained and qualified radiographers.

Malaysia 60 University of Singapore (Cardiovascular Laboratory) (Feb. - Aug. 1964) R

A consultant was provided for six months to assist in setting up a cardiovascular laboratory, to train counterparts and to make recommendations for future work.

Malaysia 200 Fellowships R: Malaya—food and drug control (twelve months), nursing service administration (twelve months); Sabah—environmental health (three months), rural medical and health services administration (four months); Sarawak—public health administration (twelve months); Singapore—electroencephalography and electromyography (two for twelve months).
New Hebrides 4 Tuberculosis Control
(June 1964 - 1966) EPTA UNICEF

To expand and improve the tuberculosis control service; to carry out a systematic tuberculin testing and BCG vaccination campaign throughout the Condominium; to treat all cases, mainly at home under supervision; to take measures to protect the healthy; and to provide chemoprophylaxis for tuberculin reactors among family contacts under five years of age.

New Zealand 200 Fellowships R: Food and drug administration (four months), hospital administration (four months), nutrition (twelve months).

Papua and New Guinea 200 Fellowships R: Reconstructive surgery in leprosy (twelve months).

Philippines 4 Mental Health

To develop a mental health programme for the whole country.

Philippines 12 Institute of Hygiene, University of the Philippines, Manila EPTA

A six-month fellowship was awarded under this project, for which staff and other assistance were provided between 1953 and 1962.

Philippines 43 Environmental Sanitation Advisory Services

To reorganize the central and regional environmental sanitation services.

Philippines 51 Environmental Sanitation Training Courses
(June 1958 - 1967) R UNICEF (AID)

To organize an advanced training programme for sanitary inspectors and to demonstrate environmental sanitation work in a selected area.

Philippines 53 Malaria Eradication Programme
(Aug. 1956 - 1969) MESA (AID)

To implement the plan for eradicating malaria from the country.

Philippines 59 Paediatric Nursing
(March 1962 - 1966) EPTA UNICEF

To extend and improve the health services, particularly as regards the promotion of health and prevention of disease and the provision of adequate nursing care for children; to establish closer co-ordination and integration of the promotional, preventive and curative services at all levels.

Philippines 62 Health Statistics (July 1961 - end of 1964) R

The aim was to review and reorganize the health statistical services of the Department of Health and at provincial and local levels, and to train personnel; and to develop and improve vital statistics. WHO provided a statistician and a fellowship. The systems of collecting vital and health statistical data at national, regional and provincial levels were reviewed and a new system of hospital statistics was introduced on trial in three hospitals. An integrated monthly report for health centres was approved for gradual adoption throughout the country. An inter-agency committee on vital and health statistics was set up. The WHO statistician lectured on the International Classification of Diseases and on statistical methodology to medical students and other health personnel and advised on statistical problems.

Philippines 63 Hospital Records (Dec. 1962 - May 1964) R

The aim was to improve the medical records system of government hospitals in different parts of the country and to train hospital records personnel in order to provide adequate data on hospital morbidity and hospital utilization for the planning and assessment of the national medical and health services. WHO provided a medical records officer until April 1963, and two fellowships.

The medical records systems of a number of government hospitals were studied and recommendations for improving them were made. A hospital statistics system was devised and forms were prepared for trials in a number of hospitals. The trials, however, could not be carried out, owing to administrative difficulties.

Philippines 69 Tuberculosis Control

To establish a pilot area in Cebu where nationally applicable control measures will be tested; to carry out epidemiological studies in the Cebu area; to assess the control services throughout the country; and to train staff in the techniques of BCG vaccination, case-finding and domiciliary treatment.

Philippines 71 Physical and Occupational Therapy
(July 1961 - March 1966) EPTA UNICEF

To organize, at the University of the Philippines, collegiate courses for training physical therapists and occupational therapists, and to develop professional standards; to provide in-service training for sub-professional workers.

Philippines 73 School Health Education
(Oct. 1963 - 1966) EPTA UNICEF

To carry out a co-ordinated school health education programme; to train staff for the programme, and to promote closer co-operation among the various official and voluntary agencies concerned.


To strengthen the organization of maternal and child health services at national and regional levels.

Philippines 76 Laboratory Management and Administration
(May - Aug. 1964) EPTA UNICEF

A consultant was provided to review the progress made in the organization and administration of the Bureau of Research and Laboratories since an earlier visit in 1962; to assess and submit recommendations on the technical and administrative requirements of the central and regional health laboratories and on a system for providing consultative and reference services to the laboratories of the local health and medical services. Further assistance to the project is planned for 1966.
Philippines 80  Pilot Project in Applied Nutrition
(March 1964 - 1966) EPTA UNICEF (FAO)

To train personnel for an applied nutrition project; and to carry out nutrition education programmes in schools and communities.

Philippines 200  Fellowships R: Immunopathology (twelve months—extension of previous award), public health administration (twelve months), public health administration—epidemiology (twelve months), tuberculosis control (twelve months).

Philippines 201  Fellowships EPTA: Maternal and child health nursing (twelve months), parasitology and protozoology (twelve months).

Ryukyu Islands 1  Malaria Eradication Programme
(July 1962 - 1965) MESA

To complete the eradication of malaria from the country by improving field operations and laboratory techniques, coordinating the activities of the programme with those of the rural health services, and training staff in malaria eradication techniques.

Ryukyu Islands 200  Fellowships R: Public health administration—epidemiology (twelve months), public health nursing (twelve months).

Tonga 1  Environmental Sanitation
(March 1958 - 1966) EPTA UNICEF

To strengthen environmental sanitation services; particularly to study the problems of rural and urban environmental sanitation and the social, economic and cultural factors affecting them; to plan, execute and evaluate a pilot environmental sanitation project and to train personnel.

Tonga 6  Hospital Architecture (Feb. - April 1964) R

A consultant was provided for six weeks to make a survey of hospital requirements; and to prepare specifications and estimated costs for the construction of three hospitals and a standard design for rural dispensaries or health centres. At the request of the Government he also paid a short visit to Fiji.

Tonga 200  Fellowships R: Anaesthesiology (six months), diagnostic radiology (six months), nursing administration (twelve months).

Viet-Nam 3  Maternal and Child Health
(Dec. 1954 - 1966) EPTA UNICEF (AID)

To strengthen the maternal and child health service by improving and extending existing facilities; to train personnel for the service; and to train staff from neighbouring countries with maternal and child health problems similar to those of the Republic of Viet-Nam.

Viet-Nam 7  Tuberculosis Control
(Jan. 1958 - 1966) EPTA UNICEF (AID) (French Economic Aid)

To set up the nucleus of a national tuberculosis control service, with emphasis on preventive and public health work; to complete a national tuberculosis centre in Saigon and to integrate it in the existing facilities; to continue the UNICEF/WHO-assisted BCG vaccination project and integrate it in the national tuberculosis control service.

Viet-Nam 11  Vital and Health Statistics

The aims were to develop and improve health and vital statistics at all levels and to train national personnel. WHO provided a statistician for the duration of the project, and a fellowship.

During the three years of assistance, the personnel of the Bureau of Statistics increased from six to fifteen. The chief of the Bureau was counterpart to the WHO statistician. As there were no national morbidity and mortality statistics, attempts were made to collect infant mortality and cause-of-death statistics in Saigon-Cholon, and hospital morbidity and utilization statistics at national and provincial hospitals. Central coding and tabulation were introduced. In addition a vital statistics project, which was started in twenty-three villages, was extended to 184 villages. A successful four-week training course on vital and health statistics, with 55 participants, was held in May 1963. In July 1963 the decision was taken that the Ministry of Health and Ministry of Internal Affairs should be represented on the National Committee on Statistics. A sub-committee on vital and health statistics will be set up, and will provide a much-needed link with national vital statistics.

Despite a slow start, mainly because of shortage of personnel, the project was able to achieve its objectives a year ahead of schedule.


To set up a communicable-disease control service, study the local pattern of communicable diseases, organize a system of notification and routing of reports, and draw up a long-term plan for the control of the major communicable diseases.

Viet-Nam 15  Hospital Administration

To develop a hospital system throughout the country; to prepare hospital legislation and regulations to standardize hospital records; and to implement a case registration system.

Viet-Nam 16  Malaria Pre-eradication Programme
(March 1959 - 1966) MESA (AID)

To train national staff and to make preparations for the implementation of a malaria eradication programme.

Viet-Nam 17  Distribution of Pharmaceutical Preparations
(July 1961 - July 1964) R

The aims were to improve the distribution of medical supplies and pharmaceuticals to hospitals, health centres and similar establishments, and the arrangements for the maintenance of medical equipment; and to organize a central purchase system for medical supplies and prepare standard lists of medical supplies, equipment and pharmaceuticals. WHO provided a medical supply officer and a four-month fellowship to enable a pharmacist attached to the project to visit institutions in France.
When the WHO medical supply officer arrived in July 1961, the Government had already organized the procurement and distribution of medical supplies and equipment and the manufacture of a number of medical preparations. The WHO officer completed a formulary for use in hospitals, clinics and health centres, which has been translated into Vietnamese and French and given wide distribution. He also made recommendations on revision of the standard procurement lists for drugs and supplies and on the manufacture of medical items and control of their quality. Work was started on draft legislation covering pharmacies and factories producing pharmaceutical preparations.

During the three years of WHO assistance, the system of procurement, storage and distribution was substantially improved. The distribution of all medical supplies was centralized at the Central Pharmacy of the Ministry of Health; an accounting system was introduced; a medical maintenance bureau for assembly, maintenance and repair of equipment was set up, maintenance personnel were trained; and regulations for improving the operation of hospital pharmacies were prepared.

Viet-Nam 19 Mental Health Advisory Services
(Jan. - Aug. 1962; 1964 - ) R

To improve the professional care provided at the psychiatric centres, to introduce rehabilitation measures, to establish outpatient mental health services, and to develop an in-service training programme; later, to plan a country-wide survey of resources and needs, a long-term education and training programme and a network of mental health services throughout the country. This project follows up the recommendations of two WHO consultants who worked in the country from January to August 1962.

Viet-Nam 200 Fellowships R: Biostatistics (twelve months).

Western Samoa 3 Tuberculosis Control
(June 1960 - Dec. 1963) R UNICEF

The aim was to reduce tuberculosis to a minor public health problem through systematic case-finding, domiciliary chemotherapy of tuberculous patients and chemoprophylaxis of infected children and adolescents. WHO provided a medical officer for the duration of the project and a mobile radiographic unit, with an electric generator and accessories. In 1962, UNICEF contributed the other equipment and supplies required.

Children between the ages of six months and fourteen years were tuberculin tested. The coverage was 93.9 per cent. All tuberculin reactors under the age of fifteen were given isoniazid for six months. Persons aged fifteen years and over were X-rayed (a coverage of 92.9 per cent.). Of these, 0.6 per cent. had sputum positive for acid-fast bacilli, while 2.8 per cent. were suspected of having clinically significant pulmonary tuberculosis. All suspects were given isoniazid free of charge for twelve months. For those with positive bacteriological findings, a companion drug was added.

In view of the satisfactory implementation of this first phase, the Government intends to begin the second phase of the project at the end of 1965, but with slightly different objectives. BCG vaccination will be given to all tuberculin non-reactors regardless of age, only tuberculin reactors will be X-rayed, and chemoprophylaxis will be limited to children under five years of age.

Western Samoa 6 Public Health Administration Advisory Services

To survey health conditions and prepare long-term national health plans, in accordance with available resources and taking into account the country's overall economic and social programme; and to strengthen the organization and administration of health services at all levels.

Western Samoa 200 Fellowships R: Assistant dental officers' course (twelve months—extension of previous award), assistant health inspectors' course (twelve months), assistant medical officers' course (two for twelve months—extensions of previous awards), dentistry (twelve months), nursing (two for twelve months—extensions of previous awards), pharmacy (twelve months), physical therapy (twelve months), surgery (twelve months—extension of previous award), tuberculosis control (fourteen weeks).
The page contains information about various advisory teams and training programmes related to public health and disease control. Here are the key points:

**Inter-regional 51: Treponematoses Advisory Team (1959 - )**

To evaluate the achievements in the endemic treponematoses programme, particularly mass campaigns against yaws, and to study the nature, extent and significance of these infections as a basis for surveillance activities.

**Inter-regional 52: Bilharziasis Advisory Team (1959 - )**

To find out how serious the bilharziasis problem is in various countries and to survey the epidemiological aspects; to investigate the relationship between water resources development and the transmission of bilharziasis; and to make recommendations on control measures and their co-ordination, especially as regards the engineering aspects of control.

**Inter-regional 54: Leprosy Advisory Team (Feb. 1960 - )**

To help governments to investigate the prevalence of leprosy and disease patterns; and to assess the results of leprosy control campaigns in progress, with regard to case-finding methods, results of mass treatment, and the extent of the problem of disabilities due to leprosy.

**Inter-regional 58: Diarrhoeal Diseases Advisory Team (1959 - 1965)**

To assess national programmes for the epidemiological study of diarrhoeal diseases and for their control; to assess the public health importance of these diseases, their effect on the people's health and the efficacy of treatment and preventive measures; to recommend appropriate control measures; to advise governments on the planning of comprehensive diarrhoeal disease programmes in relation to their medical and public health laboratory facilities; and to stimulate studies on specific problems connected with diarrhoeal diseases.

**Inter-regional 70: Malaria Eradication: Pool of Advisers (1961 - )**

To have available malarologists who can be assigned at short notice to assist governments in planning and implementing eradication programmes, to advise on particular problems or to replace WHO advisers who are away ill or on leave.

**Inter-regional 71: Meeting of Regional Malaria Advisers (1956 - )**

To hold an annual meeting of the regional malaria advisers, so as to ensure a co-ordinated technical approach to malaria eradication planning and methods.

**Inter-regional 78: Malaria Eradication: Technical Consultants (1959 - )**

To provide expert advice on the preparation of malaria eradication programmes, to assist governments to assess such programmes and to advise on special technical problems.

**Inter-regional 79: Malaria Eradication Training Programme for International Recruits (1958 - )**

To train in malaria eradication techniques malarologists, entomologists, sanitary engineers, sanitarians and other categories of staff, in internationally assisted malaria eradication training centres and subsequently in malaria eradication projects.

**Inter-regional 81: Study Tours of Malaria Eradication Projects for Advisers (1960 - )**

To enable up to ten malaria advisers to undertake visits to malaria eradication programmes in operation in order to study their organization and functioning; and to assist in training team leaders and advisers in eradication.

**Inter-regional 91.2: Travelling Seminar in Obstetrics and Gynaecology, Union of Soviet Socialist Republics (29 June - 18 July 1964)**

A travelling seminar to enable senior specialists in obstetrics and gynaecology to observe maternity and gynaecological services in Moscow, Leningrad and Tashkent and to study the training of medical students and specialists in these disciplines.

WHO provided a consultant and the cost of attendance of the eighteen participants, who came from Ceylon, Chile, Ecuador, Ghana, Greece, India, Indonesia, Iran, Japan, Nigeria, Pakistan, Papua and New Guinea, Peru, Spain, Venezuela and Yugoslavia.

**Inter-regional 107.2: Training Course on Enteric Diseases (in English), Teheran (10 Oct. - 9 Nov. 1963)**

A course for epidemiologists, bacteriologists and clinicians engaged in communicable disease control who have special interest in and responsibility for the control of diarrhoeal diseases. It was held at the Institute of Parasitology, Tropical Medicine and Hygiene, Teheran, and there were twenty participants from Ceylon, China (Taiwan), Greece, Indonesia, Iran, Iraq, Japan, Jordan, Pakistan, Papua and New Guinea, Philippines, Romania, Sudan, Tanganyika, Uganda and United Arab Republic.

WHO provided consultants, fellowships for the participants, and supplies and equipment.

**Inter-regional 107.3: Training Course on Enteric Diseases (in English), Alexandria (1-21 April 1964)**

A course for epidemiologists, bacteriologists and clinicians engaged in communicable disease control who have special interest in and responsibility for the control of diarrhoeal diseases. It was held at the High Institute of Public Health, University of Alexandria, and there were seventeen participants.
from Afghanistan, Burma, China (Taiwan), Ethiopa, Ghana, Kenya, Malaysia, Southern Rhodesia, Thailand, Turkey, Uganda and United Arab Republic. The lectures given at the course and the proceedings have been reproduced.

WHO provided three lecturers, fellowships for the participants, and laboratory reagents and equipment.

**Inter-regional 107.4 Training Course on Enteric Diseases (in French), Bucharest (5 - 31 Oct. 1964) EPTA**

A course for epidemiologists, bacteriologists and clinicians engaged in communicable disease control who have special interest in and responsibility for the control of diarrheal diseases. It was held at the Cantacuzino Institute of Microbiology, Parasitology and Epidemiology, Bucharest, and there were fourteen participants from Algeria, Burundi, Cambodia, Chad, Madagascar, Mali, Morocco, Poland, Portugal, Réunion, Spain, Togo and Turkey. The lectures given at the course and the proceedings have been reproduced.

WHO provided five lecturers, and fellowships for the participants.

**Inter-regional 110 Nursing Training Programme (1962 - ) R**

To prepare French-speaking nurses and midwives for teaching and administrative positions in post-basic and other nursing education programmes in various countries.

**Inter-regional 112 Malaria Eradication: Team for Special Epidemiological Studies (1961 - 1965) MESA**

To form a team to conduct special epidemiological studies and investigations and to help governments to solve problems related to residual malaria.

**Inter-regional 113.1 International Training Course in the Epidemiology and Control of Tuberculosis, Prague (1 April - 31 July 1964) R EPTA**

One of a series of courses organized in co-operation with the Post-graduate Medical School in Prague, to teach modern methods of controlling tuberculosis as a public health problem to persons who will be engaged on tuberculosis control programmes. There were thirteen trainees from thirteen countries. The course included lectures, discussions and practical demonstrations in Prague, followed by a month of additional theoretical training at the Danish Tuberculosis Index, Copenhagen.

WHO provided fellowships for the trainees, seven lecturers (including four WHO staff members) and equipment and technical literature. The Italian Government provided two fellowships for trainees from Africa.

**Inter-regional 117 Training Course on Medical Rehabilitation, Copenhagen (Sept. 1963 - June 1964) EPTA**

A training course for physicians wishing to study medical rehabilitation in general or to specialize in rehabilitation as applied to geriatrics, orthopaedics, neuro-surgery, rheumatology, etc. The course provided theoretical and practical instruction in basic and specialized aspects of medical rehabilitation; the social, vocational and industrial aspects were also dealt with, in collaboration with the United Nations and ILO.

WHO provided fellowships for twenty-two physicians from Chile, China (Taiwan), Finland, Greece, Iran, Iraq, Japan, Malta, Philippines, Poland, Republic of Korea, Spain, Thailand, Turkey, United Arab Republic and Yugoslavia.

**Inter-regional 120.1 Anaesthesiology Training Course, Copenhagen (13 Jan. - 18 Dec. 1964) EPTA**

A course, similar to those that have been held yearly since 1956 at the Anaesthesiology Training Centre, Copenhagen, for training medical personnel.

WHO provided fellowships for twenty-five trainees from Argentina, Bulgaria, China (Taiwan), Cyprus, Finland, Greece, Hungary, Iran, Iraq, Japan, Malta, Pakistan, Philippines, Poland, Republic of Korea, Syria, Thailand, Turkey, United Arab Republic and Yugoslavia. In addition, fellowships previously awarded to trainees from China (Taiwan), Iraq and Portugal were extended for two and a half months.

**Inter-regional 130 Seminar on the Health Aspects of Industrialization, Dacca (6 - 16 Nov. 1963) R**

A seminar to discuss the health problems of workers exposed directly to the process of industrialization and the repercussions of industrialization on the health of the community.

WHO provided a temporary adviser for a month and the cost of attendance of the twenty-four participants—health workers from Austria, Ceylon, Czechoslovakia, Ghana, Greece, India, Indonesia, Iran, Iraq, Japan, Kuwait, Malaysia (Malaya and Singapore), Pakistan, Peru, Philippines, Sudan, Thailand, Turkey, United Kingdom, United States of America, and Venezuela.


A seminar to consider basic principles and practical methods of radiation protection, and particularly to discuss the role of public health and hospital laboratories in radiation protection and radiation measurements, with the aim of assisting the development of radiation protection services. It consisted of lectures and demonstrations. There were twenty-one participants, mostly directors of public health laboratories and public health administrators, from Bulgaria, Greece, Iran, Iraq, Lebanon, Pakistan, Romania, Sudan, Thailand, Tunisia and Turkey.

WHO provided seven lecturers and the cost of attendance of the participants. A lecturer was provided by IAEA and two lecturers and facilities for the meeting were provided by the Government of Greece.
Inter-regional 133 International Training Course on Laboratory and Field Techniques in Human Population Genetics, Bombay (18 Nov. - 14 Dec. 1963) R (CIOMS)

A course to provide training in simple laboratory and field techniques of practical importance in routine diagnostic work and research in human population genetics, and theoretical instruction in mechanisms of heredity and of population genetics. Emphasis was given to the laboratory diagnosis of genetically significant blood diseases and abnormalities such as thalassaemia and haemoglobinopathies, and to practical experience in the collection of field data.

WHO provided the director and assistant director of the course, five lecturers, fellowships for thirteen trainees from India, Indonesia, Iran, Pakistan and Thailand, and supplies and equipment. Fellowships for three trainees from India and Pakistan were provided by CIOMS.

Inter-regional 137.2 Training Course in Human Genetics for Teachers in Medical Schools, Copenhagen (1 Sept. - 30 Nov. 1964) EPTA

Twelve teachers from medical schools in Ceylon, China (Taiwan), Hungary, Iraq, Malaysia, Malta, Thailand, Turkey, United Arab Republic and Yugoslavia attended the course, whose object was to assist them in the design, content and method of teaching in human genetics and to show them how the subject can be integrated into the medical curriculum. The course, which included lectures and practical work, was held under the auspices of the Danish National Committee on Technical Assistance.

WHO provided fellowships for the participants.

Inter-regional 140 FAO/WHO International Danish Training Centre on Abattoir Management and Operation, Copenhagen (5 July - 22 Aug. 1964) EPTA

The training centre, which was organized jointly with FAO, provided a course on the planning, siting, construction, equipping and management of abattoirs and on modern techniques in hygienic handling, packing, storage and transport of meat and meat products. There were twenty-seven participants, qualified veterinarians working in one or more of these fields, from Ceylon, Chile, China (Taiwan), Ghana, Guatemala, India, Indonesia, Libya, Malaysia, Nigeria, Panama, Peru, Philippines, Republic of Korea, Sudan, Thailand, Turkey, United Arab Republic and Venezuela. In addition to lectures and demonstrations, the course included visits to a slaughterhouse, a cattle market, and meat packing establishments.


A meeting to review the information accumulated since the publication of the FAO Report on Protein Requirements in 1957, and to make quantitative recommendations. Of the ten participants invited, eight, from Czechoslovakia, Guatemala, India, South Africa, Sweden, United Kingdom, and United States of America, attended, together with two temporary advisers from the United Kingdom and the United States of America.

WHO contributed to the costs of the meeting.


A meeting to discuss the programmes of nutrition education in schools, particularly those that are being carried out as part of applied nutrition programmes assisted by FAO, UNICEF and WHO; and to consider ways of co-ordinating assistance from these agencies, and from UNESCO. FAO, UNESCO and WHO each invited two of the six participants, who came from Argentina, India, Nigeria, Spain, Tunisia and the United Kingdom, and UNICEF sent two observers.

WHO contributed to the costs of the meeting.


A seminar to give practical guidance on the problems likely to face public health and agricultural officers in emergency situations involving ionizing radiation. An outline was given of the steps that must be taken in any instance to determine whether a serious radiation risk exists and to evaluate the extent of the emergency; the various problems associated with contamination of persons, food, agricultural resources, etc. were reviewed and consideration given to the scientific basis for assessing risks involved in exposure to radiation and weighing these against the risks of preventive and protective measures that might be employed. One hundred and fifty participants attended from Algeria, Austria, Belgium, Canada, Chile, Colombia, Denmark, Dominican Republic, Federal Republic of Germany, Finland, France, Guatemala, Hungary, Indonesia, Ireland, Italy, Japan, Madagascar, Mexico, Monaco, Netherlands, New Zealand, Norway, Pakistan, Poland, Romania, South Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, United Arab Republic, United Kingdom, United States of America and Yugoslavia as well as representatives of seven international organizations.

FAO, IAEA and WHO jointly provided the costs of attendance of the twenty-five speakers invited to the meeting, who came from Belgium, Canada, Czechoslovakia, Denmark, Federal Republic of Germany, France, Norway, Sweden, Union of Soviet Socialist Republics, United Kingdom, and United States of America.

Inter-regional 169 Seminar on Tuberculosis Control in Developing Countries, Kuala Lumpur (5 - 11 Nov. 1964) R

A seminar at which government officials and WHO tuberculosis advisers and project staff reviewed WHO-assisted tuberculosis projects in the light of WHO's current technical policy and considered in particular whether priorities are given according to local resources and whether they lead to the setting-up of, national control programmes within a reasonable time. There were fifty-seven participants and twenty-eight observers, including one each from the International Union against Tuberculosis and, UNICEF.

WHO provided the cost of attendance of the participants and three consultants.

Inter-regional 172 Field Trial of New Insecticides (1962 - ) MESA

To carry out field trials of new insecticides and specifically to evaluate their capacity to interrupt malaria transmission.

Inter-regional 178 Training Course on Nursing Services Administration, Copenhagen (12 Sept. - 24 Oct. 1964) EPTA

The purpose of the course was to assist countries in improving patient care in hospitals by preparing nurses in efficient ward administration. The training covered the planning, organiza-
tion and evaluation of patient care, the utilization of nursing personnel, in-service education, and the responsibilities of the nurse in charge of the ward for clinical instruction of students. The course was attended by eighteen nurses from Barbados, Greece, Hungary, India, Iran, Malta, Malaysia, Nigeria, Poland, Portugal, Spain, Turkey, Uganda, United Arab Republic, and Yugoslavia.

WHO provided fellowships for the trainees.

Inter-regional 180 Training Course for Industrial Hygienists, Zagreb (Feb. - Sept. 1964) EPTA

A course at which thirteen participants from India, Iran, Iraq, Japan, Kenya, Pakistan, Portugal, Sudan and Yugoslavia were given training in the principles and practice of industrial hygiene.

WHO provided two consultants who lectured on industrial safety and ventilation, and the cost of attendance of the trainees.

Inter-regional 181 Training Course for Teachers of Physical Therapy, United Kingdom (6 July 1964 - 30 June 1965) EPTA (World Confederation for Physical Therapy)

A course, organized in collaboration with the World Confederation for Physical Therapy, to train teachers of physical therapy. The training is being given mostly in London, although the course will include some study at provincial centres. WHO awarded fellowships for the course to nine trainees from Ceylon, India, Israel, Malaysia, Pakistan, Philippines and Thailand and is providing a tutor for two periods totalling eight months.

Inter-regional 183 Multiple Seminar on Radiological Health (16 Oct. - 4 Nov. 1964) R

The aim of the seminar was to stimulate interest in radiation health matters and to provide practical solutions to problems which arise in different services and installations. The participants, who came from Burma, Ceylon, Hong Kong, India, Malaysia, Philippines, Republic of Viet-Nam and Thailand, visited centres in Madras, Colombo, Singapore, Bangkok and Rangoon. The programme of the seminar included lectures, practical demonstrations in radiology departments, and discussions with leading local radiologists and hospital and public health administrators in problems of radiation health, particularly those relating to medical radiological practice.

WHO provided lecturers and the cost of attendance of the participants.

Inter-regional 186 Seminar on Advances in the Prevention and Treatment of Protein-Calorie Malnutrition, Kampala (7 - 18 Sept. 1964) EPTA

A seminar at which public health workers, including a number of paediatricians, from African countries discussed the recent developments in the treatment and prevention of protein-calorie malnutrition, which is the most serious nutrition problem in Africa.

WHO provided the cost of attendance of the twenty-one participants, who came from Basutoland, Ethiopia, Gambia, Ghana, Kenya, Liberia, Mauritius, Nigeria, Sierra Leone, Somalia, Southern Rhodesia, Sudan, Swaziland, Uganda, United Arab Republic, United Republic of Tanzania, and Zambia.

Inter-regional 189 Conference on Establishment of Basic Principles for Medical Education in Developing Countries, Geneva (7 - 11 Sept. 1964) R

A conference at which specialists in medical education exchanged views and made recommendations on basic principles for the teaching of medicine in developing countries, the establishment of medical schools and the recruitment of teachers. Twenty-one countries were invited to send representatives, and six countries sent a second at their own expense. Representatives and observers attended from FAO, UNESCO, the Technical Assistance Board, the World Medical Association, the Association of American Medical Colleges, the Milbank Memorial Fund and the Rockefeller Foundation.

WHO provided a consultant, conference staff and facilities, and the cost of attendance of twenty-one participants from Australia, Belgium, Canada, Federal Republic of Germany, France, India, Israel, Italy, Netherlands, Nigeria, Pakistan, Philippines, Senegal, Sweden, Thailand, Union of Soviet Socialist Republics, United Arab Republic, United Kingdom, United States of America, Venezuela and Yugoslavia.

Inter-regional 190 Leprosy/BCG Trial, Burma (April 1964 - end of 1969) R

To carry out a trial of BCG vaccination in the prevention of leprosy.

Inter-regional 196 Joint FAO/WHO Training Course in the Fundamentals and Application of Nutrition, Bangkok (1 Nov. - 15 Dec. 1964) EPTA (FAO)

A training course for high level workers in ministries of health, agriculture and education, for teachers in colleges of medicine, agriculture and education, and for others responsible for the organization and implementation of nutrition programmes as related to public health, food production and education. There were twenty-seven participants, from Afghanistan, Burma, Ceylon, China (Taiwan), Japan, Malaysia, Nepal, Philippines, Republic of Korea, Thailand and Trust Territory of the Pacific Islands. WHO provided the cost of attendance of fifteen of them.

Inter-regional 197 Scientific Meeting on Methods of Radiochemical Analysis, Geneva (15 - 19 Sept. 1964) R (FAO) (IAEA)

A meeting, organized in collaboration with FAO and IAEA, to consider the available methods of radiochemical analysis and to prepare an up-to-date compendium of selected methods thought to be particularly useful for various radionuclides, and of types of sample of special interest from the health point of view. This compendium constitutes a revision and expansion of the material which appeared in the earlier compendium prepared in 1958 by the Joint FAO/WHO Expert Committee on Methods of Radiochemical Analysis.1

WHO contributed to the cost of attendance of the thirteen participants, who came from Canada, Denmark, Federal Republic of Germany, France, Japan, Norway, Union of Soviet Socialist Republics, United Kingdom and United States of America.

Inter-regional 198 Travelling Seminar on the Organization of Epidemiological Services and their Role in the Control of Communicable Diseases, Union of Soviet Socialist Republics (13 Oct. - 2 Nov. 1964) EPTA

The seminar was attended by twenty participants from Afghanistan, Argentina, Burma, Ceylon, Colombia, Ghana, Greece, India, Indonesia, Japan, Jordan, Kenya, Mexico, Nepal, Nigeria, Sierra Leone, Turkey, United Republic of Tanzania (Tanga- nyika), and Yugoslavia, who were accompanied by three officials from the Ministry of Health of the USSR, two WHO consultants and two WHO staff members. After meeting in Moscow, the group spent ten days in Baku and returned to Moscow for the final discussions and the closing session. The programme of the seminar consisted of lectures and visits to health and research institutions at different administrative levels, which enabled the participants to acquaint themselves with the basic features of the health services in the USSR, and particularly those dealing with the control of communicable diseases.

WHO provided the two consultants and the cost of attendance of the participants.


A seminar to enable medical educators to study the experience gained in the USSR in integrating preventive and curative medicine in the medical curriculum. The nineteen participants, who visited medical schools in Moscow, Leningrad and Tbilisi, came from Afghanistan, Algeria, Argentina, Ceylon, Chile, Colombia, Congo (Brazzaville), Costa Rica, India, Indonesia, Iran, Israel, Japan, Morocco, Nigeria, Pakistan, Papua and New Guinea, United Arab Republic and Venezuela. WHO provided the cost of their attendance, two consultants, and conference staff.

Inter-regional 209 Travelling Seminar on the Scientific Work of Undergraduate Medical Students, Union of Soviet Socialist Republics (6 - 25 April 1964) EPTA

Twenty professors and deans of medical schools visited teaching institutions in Moscow, Leningrad, Kiev and Erevan to study the part played in general undergraduate training by the research work carried out, under the supervision of their teachers, by students who belong to student scientific societies. WHO provided two consultants, conference staff, and the cost of attendance of the participants, who came from Argentina, Ceylon, Colombia, Cuba, Finland, Greece, Hungary, India, Iran, Israel, Jamaica, Japan, Nigeria, Pakistan, Sudan, Uganda, United Arab Republic, Venezuela and Yugoslavia.

Inter-regional 212 Field Trial of Malathion (1962 - ) MESA

To carry out a field trial of malathion and specifically to evaluate the capacity of this insecticide to interrupt malaria transmission.

Inter-regional 218 Cancer Advisory Team, India (1963 - ) R Special Account for Medical Research

To study the relationship between oral and pharyngeal tumours and some environmental factors, particularly betel and tobacco chewing and smoking habits.

Investigators from India, South Africa and the Union of Soviet Socialist Republics who will be concerned in the study met in New Delhi from 8 to 15 October 1963 to define the field to be covered by the study, determine the classifications and the methods to be used, review the environmental factors to be included, and plan the work to be carried out.

Inter-regional 219 Seminar on Haemorrhagic Fevers, Bangkok (19 - 26 Oct. 1964) R

A seminar for the exchange of information on present knowledge on the epidemiology, treatment and control of haemorrhagic fevers which have caused important epidemics in several countries of the South-East Asia and Western Pacific Regions. There were twenty-three participants from Australia, Burma, Cambodia, Ceylon, China (Taiwan), Hong Kong, India, Indonesia, Malaysia, New Zealand, Philippines, Republic of Korea, Republic of Viet-Nam, and Thailand, and twenty observers.

WHO provided five consultants and the cost of attendance of the participants.

Inter-regional 220 United Nations Water Resources Development Centre (1963 - Aug. 1964) R (UN)

WHO provided a sanitary engineer to help with the work of the Centre.

Inter-regional 221 Seminar on Respiratory Virus Diseases, Moscow (14 - 19 Oct. 1963) EPTA

The aim of the seminar was to give, through discussions between the participants and the discussion leaders, a broad picture of the most recent advances in respiratory virus diseases, including laboratory methods, virological and epidemiological studies, and control measures. There were eighteen participants from Brazil, Iran, Israel, Jamaica, Japan, Lebanon, Malaysia, Mauritius, Mongolia, Nigeria, Pakistan, Peru, Poland, Spain, Turkey, Uganda, United Arab Republic and Yugoslavia. At each meeting the opening papers were presented by workers from the USSR and the subsequent discussions were led by three consultants from Czechoslovakia, United Kingdom and United States of America.

WHO provided the cost of attendance of the participants, and consultants.

Inter-regional 222 Travelling Seminar on the Public Health Aspects of Housing, Union of Soviet Socialist Republics (14 - 30 Oct. 1963) EPTA

A seminar to study the environmental health aspects of housing in the USSR, including the public health and sanitation aspects of housing; the environmental health aspects of neighbourhood planning; and scientific research on hygienic housing. There were fifteen participants from Bulgaria, Ceylon, Chile, Ethiopia, India, Israel, Japan, Peru, Sudan, Uganda, United Arab Republic, Venezuela, and Yugoslavia. In Moscow and Erevan visits were made to large-scale housing projects, health centres and scientific institutes dealing with the construction of dwellings, the public health control of buildings and the inspection of new housing estates.

WHO provided the cost of attendance of the participants and of two temporary advisers from Brazil and Czechoslovakia.

Inter-regional 223 Development of Laboratory Diagnostic and Counselling Services in Haemoglobinopathies, Cameroon (Dec. 1963 - Jan. 1964) R

WHO provided assistance to the Government of Cameroon in investigating the problem of fatal hereditary anaemia in infancy. A preliminary survey in August 1963 by a headquarters
staff member had shown the problem to be of some magnitude, and this was confirmed by a further survey started by two WHO consultants and continued by local personnel. The consultants also advised on the development of diagnostic and counselling services for haemoglobinopathies and established a laboratory in Yaoundé for the detection of these conditions. A member of the Institut Pasteur in Cameroon has begun a year’s training in the Netherlands which will enable him further to develop this programme.

Inter-regional 227 Conference on Malaria Eradication for Countries in the Eastern Mediterranean and European Regions, Tripoli (28 Nov. - 6 Dec. 1964) MESA

The Conference was organized to discuss matters relating to the malaria eradication programme in the European and Eastern Mediterranean Regions. There were thirty-six participants from Algeria, Cyprus, Ethiopia, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Pakistan, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, Turkey and the United Arab Republic, as well as representatives of UNICEF and the United States Agency for International Development. WHO provided temporary advisers and fellowships for the participants.

WHO provided the cost of attendance of the participants, two consultants and other services.

Inter-regional 234 Economic Commission for Africa (1964 - ) R

WHO is providing a sanitary engineer having specialized knowledge of the public health aspects of housing, attached to the Housing, Building and Planning Section of the Economic Commission for Africa, to deal with the environmental health aspects of the housing and physical planning programmes being developed in Africa.

Inter-regional 239 Advanced Course in Clinical Chemistry, Copenhagen (15 April - 30 June 1964) EPTA

The course, which was held at the Bispebjerg Hospital, Copenhagen, was attended by fifteen physicians and biochemists from Ceylon (Taiwan), Greece, Hungary, India, Iraq, Malaysia, Nigeria, Pakistan, Poland, Republic of Korea, Spain, Turkey and Yugoslavia. The instruction covered different forms of chromatography and gel filtration, different forms of electrophoresis, including immunoelectrophoresis, and the organization of hospital laboratory work. The programme included lectures, experiments, demonstrations and visits to institutions. Two weeks of the course were devoted to practical work in a hospital laboratory.

WHO provided fellowships for the participants.

Inter-regional 243 Course on Recent Advances in the Application of Basic Medical Sciences to Surgery, Copenhagen (1 Sept. - 30 Nov. 1964) EPTA

The purpose of the course was to acquaint young surgeons having at least three years’ practice as qualified surgeons with the latest advances in the basic sciences such as physiology, pharmacology and pathophysiology, in order to enable them to practice better surgery. It included lectures, discussion groups and laboratory work covering cardiovascular physiology, failing circulation and shock, blood coagulation, prevention and treatment of thrombo-emboli, blood groups, blood transfusion techniques, respiratory physiology and insufficiency, problems of metabolism including kidney function, energy exchange, importance of pituitary and adrenal physiology, salt-water and acid-base metabolism, and problems of infection. Practical work included infusion techniques, hypothermia, artificial circulation, treatment with respirators, problems of reconstructive surgery and immunology. The course, which was held at the Institute for Experimental Research in Surgery of the University of Copenhagen, was attended by twenty surgeons from China (Taiwan), Ghana, Greece, Hungary, India, Iran, Jamaica, Japan, Malaysia, Malta, Pakistan, Philippines, Poland, Portugal, Republic of Korea, Venezuela and Yugoslavia.

WHO provided temporary advisers and fellowships for the participants.

Inter-regional 254 Seminar and Training Course on Rabies, Moscow (8 - 20 June 1964) EPTA

A seminar and training course for rabies workers concerned with the production and potency testing of antirabies vaccine and serum and with rabies diagnosis and control. They discussed advances in rabies epidemiology and control methods and were given theoretical and practical training in the latest laboratory techniques. There were twenty participants, from Burma, Ceylon, Chile, Ghana, Greece, India, Indonesia, Iran, Japan, Kenya, Mongolia, Nigeria, Pakistan, Peru, Poland, Sudan, Turkey, Venezuela and Yugoslavia, and an observer from the United Kingdom.

WHO provided the cost of attendance of the participants.

Inter-regional 260 Epidemiological Studies on Xerophthalmia and Keratomalacia, Jordan (Sept. 1963 - Aug. 1965) Special Account for Medical Research

To carry out surveys and clinical studies to determine the prevalence of signs and symptoms of vitamin A deficiency in Jordan.

Inter-regional 270 Insecticide Testing Unit, Lagos (1960 - ) Special Account for Medical Research

To evaluate new insecticides in the field and determine whether they are suitable as substitutes for DDT, HCH and dieldrin in malaria eradication programmes.

Inter-regional 271 Research Unit for the Control of Mosquito Vectors of Filariasis, Rangoon (Oct. 1962 - ) Special Account for Medical Research

To carry out research and field trials on the control of mosquitoes, particularly the vectors of filariasis, using organophosphorus and other new insecticides, biological control procedures, and other techniques.

Inter-regional 272 Travelling Seminar on the Control of Environmental Sanitation, Union of Soviet Socialist Republics (7 - 30 Sept. 1964) EPTA

A seminar to study the principles and practices in the USSR for the control of environmental sanitation, including the role of the central and state ministries of health and of related scientific institutes in the establishment of standards for environmental sanitation; the role of the sanitary and epidemiological services in the control and supervision of environmental sanitation work carried out by various government agencies; and the work in air pollution control, water supply, sewage and excreta disposal, refuse collection and disposal, food hygiene, soil sanitation, etc. There were nineteen participants from Afghanistan, Brazil, Colombia, Greece, India, Indonesia, Iran, Israel, Japan, Kenya, Lebanon, Liberia, Mongolia, Peru, Romania, Sierra Leone, United Arab Republic, United Republic
of Tanzania (Tanganyika), and Venezuela. Two consultants from the United States of America and Yugoslavia assisted with the technical operation of the seminar. Lectures were given by Soviet sanitary physicians and engineering experts, and field visits were made to observe sanitation practices at markets, restaurants, dairy plants, refuse disposal sites, housing and city planning schemes, and water and sewage treatment plants.

WHO provided the costs of attendance of the participants and the consultants.

Inter-regional 273 Advanced Maternal and Child Health Course, Warsaw (4 May - 13 June 1964)

A course, in English, for senior maternal and child health doctors working at national and provincial levels. It dealt particularly with maternal and child health problems in developing countries and with the social aspects of paediatrics and obstetrics, and the subjects covered included antenatal care, growth and development, and the organization of maternal and child health services. Fifteen doctors from Afghanistan, Greece, Iran, Iraq, Jordan, Lebanon, Pakistan, Sudan, Turkey and United Arab Republic attended. Lectures were given by Polish lecturers and by three temporary advisers and a consultant provided by WHO. UNICEF paid the cost of attendance of the participants.

Inter-regional 276 Cholera Control Team (1964 - ) EPTA

A team, consisting of an epidemiologist, a bacteriologist and a clinician, to assist countries in developing and improving their programmes for the control of cholera; to assist, when required, in dealing with cholera epidemics; and to advise on epidemiological, laboratory and clinical aspects of control and treatment.

Inter-regional 276 (a) Seminar on Cholera Control, Manila (12-18 Nov. 1964) EPTA

The seminar was attended by representatives from fifteen countries in the South-East Asia, Eastern Mediterranean and Western Pacific Regions where cholera is endemic or epidemic. The present situation in the countries concerned was reviewed and the progress made in the control of cholera was reported, with special reference to newer methods of diagnosis, epidemiological studies, treatment and prevention. National programmes for cholera control were presented and discussed, as well as international co-operation in the control of cholera. A report on the seminar was prepared, together with extensive supporting material which could be useful to public health administrators and field workers engaged in cholera control.

Inter-regional 281 Symposium on the Assessment of Radioactive Body Burdens in Man, Heidelberg (11 - 16 May 1964)

The symposium was concerned with the estimation of internal radioactive contamination in man, either by direct methods such as in vivo counting or by indirect means such as excretion analysis, and of the associated radiation dose. There were approximately two hundred participants from twenty-eight countries (Australia, Austria, Belgium, Canada, Congo (Brazzaville), Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Ghana, Hungary, India, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Pakistan, Spain, Sweden, Switzerland, Turkey, Union of Soviet Socialist Republics, United Kingdom, United States of America, and Yugoslavia) and from three international organizations. WHO, together with IAEA and ILO, provided the travel and subsistence costs of the scientific and executive secretariat, interpretation, and other conference facilities.
ANNEXES
Annex 1

MEMBERS AND ASSOCIATE MEMBERS OF THE WORLD HEALTH ORGANIZATION at 31 December 1964

At 31 December 1964 the World Health Organization had 118 Member States and three Associate Members. They are listed below, with the date on which each became a party to the Constitution or the date of admission to associate membership.

<table>
<thead>
<tr>
<th>Country</th>
<th>Date of Admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>19 April 1948</td>
</tr>
<tr>
<td>Albania</td>
<td>26 May 1947</td>
</tr>
<tr>
<td>Algeria *</td>
<td>8 November 1962</td>
</tr>
<tr>
<td>Argentina *</td>
<td>22 October 1948</td>
</tr>
<tr>
<td>Australia *</td>
<td>2 February 1948</td>
</tr>
<tr>
<td>Austria *</td>
<td>30 June 1947</td>
</tr>
<tr>
<td>Belgium *</td>
<td>23 June 1948</td>
</tr>
<tr>
<td>Bolivia</td>
<td>23 December 1949</td>
</tr>
<tr>
<td>Brazil *</td>
<td>2 June 1948</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>9 June 1948</td>
</tr>
<tr>
<td>Burma</td>
<td>1 July 1948</td>
</tr>
<tr>
<td>Burundi</td>
<td>22 October 1962</td>
</tr>
<tr>
<td>Byelorussian SSR</td>
<td>7 April 1948</td>
</tr>
<tr>
<td>Cambodia *</td>
<td>17 May 1950</td>
</tr>
<tr>
<td>Cameroon</td>
<td>6 May 1960</td>
</tr>
<tr>
<td>Canada</td>
<td>29 August 1946</td>
</tr>
<tr>
<td>Central African Republic *</td>
<td>20 September 1960</td>
</tr>
<tr>
<td>Ceylon</td>
<td>7 July 1948</td>
</tr>
<tr>
<td>Chad</td>
<td>1 January 1961</td>
</tr>
<tr>
<td>Chile *</td>
<td>15 October 1948</td>
</tr>
<tr>
<td>China</td>
<td>22 July 1946</td>
</tr>
<tr>
<td>Colombia</td>
<td>14 May 1959</td>
</tr>
<tr>
<td>Congo (Brazzaville)</td>
<td>26 October 1960</td>
</tr>
<tr>
<td>Congo, Democratic Republic *</td>
<td>24 February 1961</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>17 March 1949</td>
</tr>
<tr>
<td>Cuba</td>
<td>9 May 1950</td>
</tr>
<tr>
<td>Cyprus *</td>
<td>16 January 1961</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>1 March 1948</td>
</tr>
<tr>
<td>Dahomey</td>
<td>20 September 1960</td>
</tr>
<tr>
<td>Denmark *</td>
<td>19 April 1948</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>21 June 1948</td>
</tr>
<tr>
<td>Ecuador *</td>
<td>1 March 1949</td>
</tr>
<tr>
<td>El Salvador</td>
<td>22 June 1945</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>11 April 1947</td>
</tr>
<tr>
<td>Finland *</td>
<td>7 October 1947</td>
</tr>
<tr>
<td>France</td>
<td>16 June 1948</td>
</tr>
<tr>
<td>Gabon</td>
<td>21 November 1960</td>
</tr>
<tr>
<td>Germany, Federal Republic of</td>
<td>29 May 1951</td>
</tr>
<tr>
<td>Ghana *</td>
<td>8 April 1957</td>
</tr>
<tr>
<td>Greece</td>
<td>12 March 1948</td>
</tr>
<tr>
<td>Guatemala *</td>
<td>26 August 1949</td>
</tr>
<tr>
<td>Guinea</td>
<td>19 May 1959</td>
</tr>
<tr>
<td>Haiti *</td>
<td>12 August 1947</td>
</tr>
<tr>
<td>Honduras *</td>
<td>8 August 1949</td>
</tr>
<tr>
<td>Hungary</td>
<td>17 June 1948</td>
</tr>
<tr>
<td>Iceland</td>
<td>17 June 1948</td>
</tr>
<tr>
<td>India *</td>
<td>12 January 1948</td>
</tr>
<tr>
<td>Indonesia</td>
<td>23 May 1950</td>
</tr>
<tr>
<td>Iran</td>
<td>23 November 1946</td>
</tr>
<tr>
<td>Iraq *</td>
<td>23 September 1947</td>
</tr>
<tr>
<td>Ireland</td>
<td>20 October 1947</td>
</tr>
<tr>
<td>Israel</td>
<td>21 June 1949</td>
</tr>
<tr>
<td>Italy *</td>
<td>11 April 1947</td>
</tr>
<tr>
<td>Ivory Coast *</td>
<td>28 October 1960</td>
</tr>
<tr>
<td>Jamaica *</td>
<td>21 March 1963</td>
</tr>
<tr>
<td>Japan *</td>
<td>16 May 1951</td>
</tr>
<tr>
<td>Jordan *</td>
<td>7 April 1947</td>
</tr>
<tr>
<td>Kenya</td>
<td>27 January 1964</td>
</tr>
<tr>
<td>Korea, Republic of *</td>
<td>17 August 1949</td>
</tr>
<tr>
<td>Kuwait *</td>
<td>9 May 1960</td>
</tr>
<tr>
<td>Laos *</td>
<td>17 May 1950</td>
</tr>
<tr>
<td>Lebanon</td>
<td>19 January 1949</td>
</tr>
<tr>
<td>Liberia</td>
<td>14 March 1947</td>
</tr>
<tr>
<td>Libya *</td>
<td>16 May 1952</td>
</tr>
<tr>
<td>Luxembourg *</td>
<td>3 June 1949</td>
</tr>
<tr>
<td>Madagascar *</td>
<td>16 January 1961</td>
</tr>
<tr>
<td>Malaysia *</td>
<td>24 April 1958</td>
</tr>
<tr>
<td>Mali</td>
<td>17 October 1960</td>
</tr>
<tr>
<td>Mauritania</td>
<td>7 March 1961</td>
</tr>
<tr>
<td>Mexico</td>
<td>7 April 1948</td>
</tr>
<tr>
<td>Monaco</td>
<td>8 July 1948</td>
</tr>
<tr>
<td>Mongolia</td>
<td>18 April 1962</td>
</tr>
<tr>
<td>Morocco *</td>
<td>14 May 1956</td>
</tr>
<tr>
<td>Nepal *</td>
<td>2 September 1953</td>
</tr>
<tr>
<td>Netherlands *</td>
<td>25 April 1947</td>
</tr>
<tr>
<td>New Zealand *</td>
<td>10 December 1946</td>
</tr>
<tr>
<td>Nicaragua *</td>
<td>24 April 1950</td>
</tr>
<tr>
<td>Nigeria *</td>
<td>25 November 1960</td>
</tr>
<tr>
<td>Norway *</td>
<td>18 August 1947</td>
</tr>
<tr>
<td>Pakistan *</td>
<td>23 June 1948</td>
</tr>
<tr>
<td>Panama</td>
<td>20 February 1951</td>
</tr>
<tr>
<td>Peru *</td>
<td>11 November 1949</td>
</tr>
<tr>
<td>Philippines *</td>
<td>9 July 1948</td>
</tr>
<tr>
<td>Poland</td>
<td>6 May 1948</td>
</tr>
<tr>
<td>Portugal</td>
<td>13 February 1948</td>
</tr>
<tr>
<td>Romania</td>
<td>8 June 1948</td>
</tr>
<tr>
<td>Rwanda *</td>
<td>7 November 1962</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>26 May 1947</td>
</tr>
<tr>
<td>Senegal</td>
<td>31 October 1960</td>
</tr>
<tr>
<td>Sierra Leone *</td>
<td>20 October 1961</td>
</tr>
<tr>
<td>Somalia</td>
<td>26 January 1961</td>
</tr>
<tr>
<td>South Africa</td>
<td>7 August 1947</td>
</tr>
<tr>
<td>Spain</td>
<td>28 May 1951</td>
</tr>
<tr>
<td>Sudan</td>
<td>14 May 1956</td>
</tr>
<tr>
<td>Sweden *</td>
<td>28 August 1917</td>
</tr>
<tr>
<td>Switzerland</td>
<td>26 March 1947</td>
</tr>
<tr>
<td>Syria</td>
<td>18 December 1946</td>
</tr>
<tr>
<td>Tanzania, United Republic of *</td>
<td>15 March 1962</td>
</tr>
<tr>
<td>Thailand</td>
<td>26 September 1947</td>
</tr>
<tr>
<td>Togo *</td>
<td>13 May 1960</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>3 January 1963</td>
</tr>
<tr>
<td>Tunisia *</td>
<td>14 May 1956</td>
</tr>
<tr>
<td>Turkey</td>
<td>2 January 1948</td>
</tr>
<tr>
<td>Uganda</td>
<td>7 March 1963</td>
</tr>
<tr>
<td>Ukrainian SSR</td>
<td>3 April 1948</td>
</tr>
<tr>
<td>Union of Soviet Socialist Republics</td>
<td>24 March 1948</td>
</tr>
<tr>
<td>United Arab Republic *</td>
<td>16 December 1947</td>
</tr>
<tr>
<td>United Kingdom of Great Britain and Northern Ireland *</td>
<td>22 July 1946</td>
</tr>
<tr>
<td>United States of America</td>
<td>21 June 1948</td>
</tr>
<tr>
<td>Upper Volta *</td>
<td>4 October 1960</td>
</tr>
<tr>
<td>Uruguay</td>
<td>22 April 1949</td>
</tr>
<tr>
<td>Venezuela</td>
<td>7 July 1948</td>
</tr>
<tr>
<td>Viet-Nam</td>
<td>17 May 1950</td>
</tr>
<tr>
<td>Western Samoa</td>
<td>16 May 1962</td>
</tr>
<tr>
<td>Yemen</td>
<td>20 November 1953</td>
</tr>
<tr>
<td>Yugoslavia *</td>
<td>19 November 1947</td>
</tr>
</tbody>
</table>

* Member States that have acceded to the Convention on the Privileges and Immunities of the Specialized Agencies and its Annex VII.
Annex 2
MEMBERSHIP OF THE EXECUTIVE BOARD

1. Thirty-third Session (Geneva, 14-24 January 1964)

<table>
<thead>
<tr>
<th>Designated by</th>
<th>Designated by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr A. C. ANDRIAMASY, Vice-Chairman</td>
<td>Madagascar</td>
</tr>
<tr>
<td>Professor E. J. AUJALEU</td>
<td>France</td>
</tr>
<tr>
<td>Professor G. A. CANAPERIA</td>
<td>Italy</td>
</tr>
<tr>
<td>Professor J. DE CASTRO</td>
<td>Brazil</td>
</tr>
<tr>
<td>Dr S. DOLO</td>
<td>Mali</td>
</tr>
<tr>
<td>Dr A. ESCOBAR-BALLESTAS</td>
<td>Colombia</td>
</tr>
<tr>
<td>Dr K. EVANG</td>
<td>Norway</td>
</tr>
<tr>
<td>Dr A. R. FARAH</td>
<td>Tunisia</td>
</tr>
<tr>
<td>Dr L. FAUCHER</td>
<td>Haiti</td>
</tr>
<tr>
<td>Professor J. GARCÍA ORCOYEN</td>
<td>Spain</td>
</tr>
<tr>
<td>Dr P. GAYE, Rapporteur</td>
<td>Senegal</td>
</tr>
<tr>
<td>Dr R. GUEBIN</td>
<td>Israel</td>
</tr>
<tr>
<td>Dr V. T. HERAT GUNARATNE, Rapporteur</td>
<td>Ceylon</td>
</tr>
<tr>
<td>Dr J. KAREFA-SMART</td>
<td>Sierra Leone</td>
</tr>
<tr>
<td>Dr B. D. B. LAYTON, Chairman</td>
<td>Canada</td>
</tr>
<tr>
<td>Professor P. MUNTENDAM</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Dr T. OMURA</td>
<td>Japan</td>
</tr>
<tr>
<td>Dr E. RIANY</td>
<td>Iran</td>
</tr>
<tr>
<td>Dr Hurustiat SUBANDRIO</td>
<td>Indonesia</td>
</tr>
<tr>
<td>Dr H. B. TURBOTT</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Dr S. AL-WAHBI</td>
<td>Iraq</td>
</tr>
<tr>
<td>Dr J. WATT</td>
<td>United States of America</td>
</tr>
<tr>
<td>Professor F. WIDY-WIRSKI</td>
<td>Poland</td>
</tr>
<tr>
<td>Professor V. M. ŽDANOV</td>
<td>Union of Soviet Socialist Republics</td>
</tr>
</tbody>
</table>

2. As from the Thirty-fourth Session (Geneva, 26-29 May 1964)

The Seventeenth World Health Assembly in resolution WHA17.16 elected Cameroon, Kuwait, Libya, Malaysia, Paraguay, Turkey, the United Kingdom of Great Britain and Northern Ireland, and Yugoslavia to designate persons to serve on the Board in place of the retiring members—designated by Iraq, Israel, Italy, Japan, Poland, Senegal, Spain and the United States of America. This resulted in the following composition of the Board:

<table>
<thead>
<tr>
<th>Designated by</th>
<th>Designated by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr T. ALAN, Vice-Chairman</td>
<td>Turkey</td>
</tr>
<tr>
<td>Dr J. AMOUEGAR</td>
<td>Iran</td>
</tr>
<tr>
<td>Dr A. C. ANDRIAMASY</td>
<td>Madagascar</td>
</tr>
<tr>
<td>Professor E. J. AUJALEU</td>
<td>France</td>
</tr>
<tr>
<td>Dr A. K. EL-BORAI</td>
<td>Kuwait</td>
</tr>
<tr>
<td>Dr A. DALY, Rapporteur</td>
<td>Tunisia</td>
</tr>
<tr>
<td>Dr M. DIN BIN AHMAD</td>
<td>Malaysia</td>
</tr>
<tr>
<td>Dr S. DOLO</td>
<td>Mali</td>
</tr>
<tr>
<td>Dr A. ESCOBAR-BALLESTAS</td>
<td>Colombia</td>
</tr>
<tr>
<td>Dr K. EVANG</td>
<td>Norway</td>
</tr>
<tr>
<td>Dr L. FAUCHER</td>
<td>Haiti</td>
</tr>
<tr>
<td>Professor R. GERIC</td>
<td>Yugoslavia</td>
</tr>
<tr>
<td>Sir George GODBER</td>
<td>United Kingdom of Great Britain and Northern Ireland</td>
</tr>
<tr>
<td>Dr V. T. HERAT GUNARATNE</td>
<td>Ceylon</td>
</tr>
<tr>
<td>Dr J. KAREFA-SMART, Vice-Chairman</td>
<td>Sierra Leone</td>
</tr>
<tr>
<td>Dr B. D. B. LAYTON</td>
<td>Canada</td>
</tr>
<tr>
<td>Dr M. Abdul MAJID</td>
<td>Libya</td>
</tr>
<tr>
<td>Professor P. MUNTENDAM</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Dr C. L. PRIETO</td>
<td>Paraguay</td>
</tr>
<tr>
<td>Dr Hurustiat SUBANDRIO, Rapporteur</td>
<td>Indonesia</td>
</tr>
<tr>
<td>Dr S. P. TCHOUNGUI</td>
<td>Cameroon</td>
</tr>
<tr>
<td>Dr H. B. TURBOTT, Chairman</td>
<td>New Zealand</td>
</tr>
<tr>
<td>Dr T. VIANNA</td>
<td>Brazil</td>
</tr>
<tr>
<td>Professor V. M. ŽDANOV</td>
<td>Union of Soviet Socialist Republics</td>
</tr>
</tbody>
</table>

1 Designated by the Government of Colombia in place of Dr F. Serpa-Flórez.
2 Absent from the third session.
3 Designated by the Government of Senegal in place of Dr L. Diallo.
4 Alternate to Dr N. H. Fijek.
5 Designated by the Government of Tunisia in place of Dr A. R. Farah.
6 Designated by the Government of Poland in place of Professor M. Kacprzak.

---

1 Alternate to Dr N. H. Fijek.
2 Absent from the thirty-third session.
3 Designated by the Government of Senegal in place of Dr L. Diallo.
4 Alternate to Dr N. H. Fijek.
5 Designated by the Government of Poland in place of Professor M. Kacprzak.
Annex 3

EXPERT ADVISORY PANELS AND COMMITTEES

1. EXPERT ADVISORY PANELS

The expert advisory panels in existence at 31 December 1964 were on the following subjects:

- Air pollution
- Antibiotics
- Biological standardization
- Biology of human reproduction
- Brucellosis
- Cancer
- Cardiovascular diseases
- Cholera
- Chronic degenerative diseases
- Dental health
- Drug dependence
- Enteric diseases
- Environmental health
- Food additives
- Health education
- Health laboratory services
- Health of seafarers
- Health statistics
- Human genetics
- Immunology
- Insecticides
- International pharmacopoeia and pharmaceutical preparations
- International quarantine
- Leprosy
- Malaria
- Maternal and child health
- Medical research
- Mental health
- Nursing
- Nutrition
- Occupational health
- Organization of medical care
- Parasitic diseases
- Plague
- Professional and technical education of medical and auxiliary personnel
- Public health administration
- Rabies
- Radiation
- Rehabilitation
- Trachoma
- Tuberculosis
- Venereal infections and treponematoses
- Virus diseases
- Zoonoses

2. EXPERT COMMITTEES

The membership of the expert committees that met between 1 October 1963 and 31 December 1964 was as follows:

**Expert Committee on Addiction-Producing Drugs**

*Geneva, 25-30 November 1963*

Dr N. B. Eddy, Consultant on Narcotics, National Institutes of Health, Bethesda, Md., United States of America

Dr L. Goldberg, Professor of Research on Alcohol and Analgesics, Karolinska Institute, Stockholm, Sweden

Dr M. Granier-Doyeux, Professor of Pharmacology and Toxicology, Faculty of Medicine, Central University of Venezuela, Caracas, Venezuela

Dr G. Joachimoglu, Professor Emeritus of Pharmacology; formerly Chairman, Superior Health Council, Ministry of Social Welfare, Athens, Greece

Dr P. Kielholz, Professor of Psychiatry, University of Basel, Switzerland

Dr A. D. Macdonald, Professor of Pharmacology, University of Manchester, England

Dr B. Mukerji, Director, Chittaranjan National Cancer Research Centre; Professor of Pharmacology, Calcutta, India

Dr V. V. Vasil'eva, Professor of Pharmacology, Second Moscow Institute of Medicine, Moscow, Union of Soviet Socialist Republics

---

1. See resolution WHA12.17.


3. Unable to attend.

**Expert Committee on Atmospheric Pollutants**

*Geneva, 15-21 October 1963*

Mr W. Dümmer, Chief, Occupational Health Section, National Health Service, Santiago, Chile

Dr K. Horiuchi, Professor of Preventive Medicine and Public Health, Osaka City University Medical School, Osaka, Japan

Dr P. J. Lawther, Director, Medical Research Council Air Pollution Research Unit; Consultant Physician in Environmental Medicine, St Bartholomew's Hospital, London, England

Mr V. G. MacKenzie, Chief, Division of Air Pollution, United States Public Health Service, Washington, D.C., United States of America

Professor V. A. Rjazanov, Director, Institute of General and Municipal Hygiene, Moscow, Union of Soviet Socialist Republics

Professor R. Truhaut, Director, Toxicology and Industrial Hygiene Laboratory, Faculty of Pharmacy, University of Paris, France

**Expert Committee on Bilharziasis**

*Geneva, 28 September - 3 October 1964*

Dr D. M. Blair, Former Secretary for Health, Ministry of Health, Salisbury, Southern Rhodesia

---

Expert Committee on Biological Standardization

**Geneva, 28 September - 3 October 1964**

Dr P. A. Christensen, Head of Department, South African Institute for Medical Research, Johannesburg, South Africa

Dr H. H. Cohen, Director, National Institute of Public Health, Utrecht, Netherlands

Dr D. Ikić, Director, Institute of Immunology, Zagreb, Yugoslavia

Dr M. Kurokawa, Department of General Biologics Control, National Institute of Health, Tokyo, Japan

Dr A. Lafontaine, Director, Institute of Hygiene and Epidemiology, Brussels, Belgium

Dr R. Murray, Director, Division of Biologics Standards, National Institutes of Health, Bethesda, Md., United States of America

Dr C. Puranandana, Director, Queen Saovabha Memorial Institute, Bangkok, Thailand

Dr J. Spaun, Deputy Director, Department of Biological Standards, Statens Seruminstitut, Copenhagen, Denmark

Dr W. W. Wright, Deputy Director, Division of Antibiotics and Insulin Certification, Bureau of Scientific Standards and Evaluation, Food and Drug Administration, Washington, D.C., United States of America

**Expert Committee on Diabetes Mellitus**

**Geneva, 24-30 November 1964**

Professor W. J. H. Butterfield, Department of Medicine, Guy's Hospital Medical School, London, England

Professor J. P. Hoet, Department of Internal Medicine, Faculty of Medicine, Catholic University of Louvain, Belgium

Professor I. Magyar, Director, Post-graduate Medical School, Budapest, Hungary

Professor E. Martin, University Medical Policlinic, Geneva, Switzerland

Dr G. W. McDonald, Chief, Diabetes and Arthritis Program, Division of Chronic Diseases, United States Public Health Service, Department of Health, Education and Welfare, Washington, D.C., United States of America

Dr H. Mehnert, Privatdozent in Internal Medicine; Chief, Diabetic Clinic, University Medical Policlinic, Munich, Federal Republic of Germany

Dr J. C. Patel, Physician-in-charge of Diabetic Clinic, King Edward VII Memorial Hospital, Bombay, India

Professor J. A. Tulloch, Department of Medicine, University College of East Africa, Kampala, Uganda

Professor S. Zubiran, Director, National Institute of Nutrition, Mexico, D.F., Mexico

**Expert Committee on Enteric Infections**

**Geneva, 12-16 November 1963**

Dr P. Arumanayagam, Epidemiologist, Epidemiological Unit, Department of Health, Colombo, Ceylon

Dr G. J. Dammin, Department of Pathology, Harvard University Medical School, Boston, Mass., United States of America

Dr M. R. Farid, Under-Secretary, Ministry of Health, Khartoum, Sudan

Professor S. D. Nosov, Chief, Department of Children's Infections, Institute of Paediatrics, Academy of Medical Sciences of the USSR, Moscow, Union of Soviet Socialist Republics

Dr J. Olarte, Laboratory for Enteric Bacteriology, Children's Hospital, Mexico, D.F., Mexico

Dr M. Sankale, Professeur agrégé, Faculty of Medicine, Dakar, Senegal

Mr D. J. Schliesmann, Sanitary Engineer Director, Communicable Disease Center, United States Public Health Service, Atlanta, Ga., United States of America

**Expert Committee on Environmental Change and Resulting Impacts on Health**

**Geneva, 11-17 August 1964**

Mr H. P. Clifton, Civil Engineering Inspector, Department of Health, Dublin, Ireland

Dr P. J. Lawther, Director, Medical Research Council Air Pollution Research Unit; Consultant Physician in Environmental Medicine, St Bartholomew's Hospital, London, England

Professor J. Matsumoto, Department of Civil Engineering, Tohoku University, Sendai, Japan

Mr R. S. Mehta, Director, Central Public Health Engineering Research Institute, Nagpur, India

Professor P. Pellerin, Chief, Ministry of Public Health and Population Central Service for Radiation Protection, Le Vésinet, Seine-et-Oise, France

Professor F. W. Pöpel, Stuttgart Technical College, Federal Republic of Germany

Dr A. Wolman, Emeritus Professor of Sanitary Engineering and Water Resources, Johns Hopkins University, Baltimore, Md., United States of America

---

1 Report published as *Wld Hlth Org. techn. Rep. Ser.*, 1964, **293**.


ANNEX 3

Expert Committee on Environmental Health Aspects of Metropolitan Planning and Development

Geneva, 23-29 June 1964

Dr V. K. Ovčarov, Chief, Health Statistics Department, Semaško Institute of Public Health Organization and History of Medicine, Moscow, Union of Soviet Socialist Republics

Mr V. E. Pickering, Supervisor, Vital Statistics Branch, Commonwealth Bureau of Census and Statistics, Canberra, Australia

Dr A. Smith, Medical Statistician, Scottish Home and Health Department, Edinburgh, Scotland

Expert Committee on Health Statistics: Sub-Committee on Classification of Diseases

Geneva, 30 October - 6 November 1963

Dr M. J. Aubenque, Chief, Division of Health and Medical Statistics, National Institute of Statistics and Economic Studies, Paris, France

Dr Z. Branowitz, Director, Department of Medical Statistics, Ministry of Health and Social Affairs, Warsaw, Poland

Dr G. F. Čerkovný, Chief, Department of Medical Statistics, Ministry of Health, Moscow, Union of Soviet Socialist Republics

Dr H. C. Ebbing, Chief, Health Statistics Section, Federal Bureau of Statistics, Wiesbaden, Federal Republic of Germany

Mr F. Fraser Harris, Director, Health and Welfare Division, Dominion Bureau of Statistics, Ottawa, Ont., Canada

Dr I. M. Moriyama, Chief, Office of Health Statistics Analysis, National Center for Health Statistics, United States Public Health Service, Department of Health, Education and Welfare, Washington, D.C., United States of America

Mr V. E. Pickering, Supervisor, Vital Statistics Branch, Commonwealth Bureau of Census and Statistics, Canberra, Australia

Dr A. Smith, Medical Statistician, Scottish Home and Health Department, Edinburgh, Scotland

Expert Committee on the Health Problems of Adolescence

Geneva, 3-9 November 1964

Professor L. Christiaens, Department of Paediatrics and Child Welfare, Cité Hospitalleré, Lille, France

Professor J. Čižková, Director, Paediatric and Adolescents Clinic, Faculty of Medicine, Charles University, Prague, Czechoslovakia

Professor J. H. de Haas, Department of Health, Netherlands Institute of Preventive Medicine, Leiden, Netherlands

Professor D. Hubble, Institute of Child Health, University of Birmingham, England

Professor T. A. Lambo, Department of Psychiatry, Neurology and Neurosurgery, University College Hospital, Ibadan, Nigeria

Professor J. B. Richmond, Chairman, Department of Pediatrics, Upstate Medical Center, State University of New York, Syracuse, N.Y., United States of America

Dr M. G. Williams, Director, Student Health Service, University of Queensland, Brisbane, Australia

Expert Committee on Health Statistics

Geneva, 27 October - 2 November 1964

Dr M. J. Aubenque, Chief, Division of Health and Medical Statistics, National Institute of Statistics and Economic Studies, Paris, France

Dr H. Behm, Professor of Biostatistics, School of Public Health, University of Chile, Santiago, Chile

Dr M. de Groot, Head, Division of Health Statistics, Central Bureau of Statistics, The Hague, Netherlands

Mr F. Fraser Harris, Director, Health and Welfare Division, Dominion Bureau of Statistics, Ottawa, Ont., Canada

Dr F. E. Linder, Director, National Center for Health Statistics, United States Public Health Service, Department of Health, Education and Welfare, Washington, D.C., United States of America

Dr Z. Branowitz, Director, Department of Medical Statistics, Ministry of Health and Social Affairs, Warsaw, Poland

Dr I. M. Moriyama, Chief, Office of Health Statistics Analysis, National Center for Health Statistics, United States Public Health Service, Department of Health, Education and Welfare, Washington, D.C., United States of America

Dr J. W. Mosley, Chief, Hepatitis Surveillance Unit, Communicable Disease Center, United States Public Health Service, Atlanta, Ga., United States of America

Professor F. de Ritis, Director, Infectious Diseases Clinic, University of Naples, Italy

Professor Sheila Sherlock, Department of Medicine, Royal Free Hospital, London, England

Expert Committee on Human Genetics (Human Genetics and Public Health) 1
Geneva, 10-16 December 1963
Dr J. A. Böök,2 Professor of Medical Genetics, University of Uppsala Institute of Medical Genetics, Sweden
Dr O. Frota-Pessoa, Human Genetics Laboratory, Department of General Biology, University of São Paulo, Brazil
Professor E. Matsunaga, Chairman, Department of Human Genetics, National Institute of Genetics, Mishima, Japan
Dr H. B. Newcombe, Head, Biology Branch, Atomic Energy of Canada Limited, Chalk River, Ont., Canada
Dr J. A. Fraser Roberts, Director, Medical Research Council Clinical Genetics Research Unit, Institute of Child Health, Hospital for Sick Children, London, England
Professor Z. Štich, Deputy Minister of Health, Prague, Czechoslovakia
Dr F. Vogel, Professor of Human Genetics; Director, Institute of Anthropology and Human Genetics, University of Heidelberg, Federal Republic of Germany

Expert Committee on Immunology of Parasitic Diseases
Ibadan, Nigeria, 8-15 December 1964
Dr D. A. L. Davies, McIndoe Memorial Research Unit, Blond Laboratories, Queen Victoria Hospital, East Grinstead, Sussex, England
Professor F. J. Dixon, Head, Division of Experimental Pathology, Scripps Clinic and Research Foundation, La Jolla, Calif., United States of America
Professor J. C. Edozien, Head, Department of Chemical Pathology, University of Ibadan, Nigeria
Dr J. H. Humphrey, Head, Division of Immunology, National Institute for Medical Research, London, England
Professor W. I. M. McIntyre, Dean, Faculty of Veterinary Medicine, University College of Eastern Cape, East Grinstead, Sussex, England
Dr J. Riha, Department of Immunology, Institute of Microbiology, Czechoslovak Academy of Science, Prague, Czechoslovakia
Professor W. P. Rogers, Department of Zoology, University of Adelaide, Australia
Dr E. J. L. Soulsby, Professor of Parasitology, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Penn., United States of America

Expert Committee on Insecticides (Application and Dispersal of Pesticides) 3
Geneva, 19-25 November 1963
Mr A. H. Alemi, Malaria Eradication Organization, Ministry of Health, Teheran, Iran
Mr L. B. Hall, Sanitary Engineer Director, United States Public Health Service, Washington, D.C., United States of America
Mr A. E. H. Higgins, Imperial College of Science and Technology, Field Station, Silwood Park, Sunninghill, Berks., England
Mr S. Kolta, Insect Control Section, Ministry of Health, Cairo, United Arab Republic
Dr C. W. Lee, Tropical Pesticides Research Institute, Arusha, United Republic of Tanzania
Mr M. R. Parthasarathy, National Malaria Eradication Programme, Delhi, India
Dr M. Privora, Institute of Epidemiology and Microbiology, Prague, Czechoslovakia

Expert Committee on Malaria 4
Geneva, 16-22 June 1964
Dr G. D. Bellos, Professor of Malariology and Tropical Medicine, Athens School of Hygiene, Adviser to the Ministry of Social Welfare, Athens, Greece
Dr A. Gilroy, Principal, Ross Institute, India Branch, Cinnamara, Assam, India
Mr J. Hamon, Director of Research, Overseas Scientific and Technical Research Office, Paris, France; Head of Entomological Laboratory, Centre Muraz, Organization for Co-ordination and Co-operation in the Control of Major Endemic Diseases, Bobo-Dioulasso, Upper Volta
Dr F. Kuhlow, Bernhard Nocht Institute of Tropical Medicine, Hamburg, Federal Republic of Germany
Professor A. Martinez-Palacios, Head, Department of Entomology, National Malaria Eradication Commission, Mexico, D.F., Mexico
Dr C. M. H. Mofidi, Director, Institute of Parasitology, Tropical Medicine and Hygiene, Teheran University, Iran
Dr A. A. Shawarby, Director-General, Insect Control Section, Ministry of Health, Cairo, United Arab Republic
Dr B. I. Wattal, Entomologist, National Institute of Communicable Diseases, Delhi, India

Expert Committee on Mental Health (Psychosomatic Disorders) 5
Geneva, 22-28 October 1963
Dr H. Collomb, Professeur agrégé de Neuropsychiatrie, University of Dakar, Senegal
Dr A. H. Leighton, Professor of Psychiatry (Social Psychiatry), Cornell University Medical College, New York; Professor of Anthropology, Cornell University, Ithaca, N.Y., United States of America
Sir Aubrey Lewis, Professor of Psychiatry, University of London Institute of Psychiatry, London, England
Dr A. Mitscherlich, Professor of Psychosomatic Medicine, University of Heidelberg, Federal Republic of Germany
Dr J. Rof Carballo, Director, Institute of Psychosomatic Studies, Madrid, Spain
Professor C. A. Seguin, Chairman, Department of Psychological Sciences, Universidad Nacional Mayor de San Marcos, Lima, Peru
Dr P. M. Yap, Head, Division of Psychiatry, Department of Medicine, Hong Kong University Medical School, Hong Kong

2 Unable to attend.
Expert Committee on Nutrition in Pregnancy and Lactation

*Geneva, 6-12 October 1964*

Professor G. H. Beaton, Head, Department of Nutrition, Toronto University School of Hygiene, Ont., Canada

Professor W. J. Darby, jr., Director, Division of Nutrition, Department of Medicine and Biochemistry, Vanderbilt University School of Medicine, Nashville, Tenn., United States of America

Professor J. C. Edozien, Head, Department of Chemical Pathology, University of Ibadan, Nigeria

Professor F. Gómez, Director, Paediatrics Hospital, Mexico, D.F., Mexico

Professor M. K. Krishna Menon, Director, Institute of Obstetrics and Gynaecology, Government Hospital for Women and Children, Madras, India

Professor J. Lesinski, Deputy Director, Obstetrics and Gynaecology Clinic, Mother and Child Institute, Academy of Medicine, Warsaw, Poland

Professor J. Sénecal, Director-General, National School of Public Health, Rennes, France

Professor J. Snoeck, Gynaecology and Obstetrics Clinic, Université libre de Bruxelles, Belgium

Expert Committee on Organization of Dental Public Health Services

*Geneva, 13-19 October 1964*

Dr E. Fernex, Professor of Odonto-stomatolgy; Director, Children's Dental Clinic, Faculty of Medicine, Geneva, Switzerland

Dr D. J. Galagan, Assistant Surgeon General; Chief of the Division of Dental Public Health and Resources, United States Public Health Service, Department of Health, Education and Welfare, Washington, D.C., United States of America

Dr J. W. Galloway, Chief Dental Officer, Scottish Home and Health Department, Edinburgh, Scotland

Dr Abdul Karim bin Nawab Din, Deputy Director of Medical Services (Dental), Ministry of Health, Kuala Lumpur, Malaysia

Dr O. K. Osvald, Head, Division of Dental Health, National Board of Health, Stockholm, Sweden

Dr Vera Poncova, Chief, Division of Stomatology, Ministry of Health, Prague, Czechoslovakia

Dr V. F. Rud'ko, Senior Stomatologist, Ministry of Health of the USSR, Moscow, Union of Soviet Socialist Republics

Dr A. Reis Viegas, Assistant Professor of Public Health Dentistry, Faculty of Hygiene, University of São Paulo, Brazil

Dr W. R. S. Doll, Deputy Director, Statistical Research Unit, Medical Research Council, London, England

Dr W. Hueper, Head, Environmental Cancer Section, National Cancer Institute, National Institutes of Health, Bethesda, Md., United States of America

Professor A. N. Novikov, Director, Hertzen Institute of Oncology, Moscow, Union of Soviet Socialist Republics

Professor H. Rahmatian, Director, Cancer Institute, Pahlavi Hospital (Taj Pahlavi Foundation), Teheran, Iran

Professor R. Truhaut, Director, Toxicology and Industrial Hygiene Laboratory, Faculty of Pharmacy, University of Paris; Head of Chemical Research, Gustave-Roussy Institute of Cancer Research, Villejuif (Seine), France

Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel (Teaching of Sciences in Pre-medical Courses of Study)

*Geneva, 10-16 November 1964*

Dr A. L. Aboul-Nasr, Director, Cancer Institute; Professor of Surgery, Faculty of Medicine, University of Cairo, United Arab Republic

Professor P. de Góes, Director, Institute of Microbiology, University of Brazil, Rio de Janeiro, Brazil

Professor A. L. Mjasnikov, Director, Institute of Therapy, Pre-medical Courses of Study, National Medical Board, Moscow, Union of Soviet Socialist Republics

Professor N. N. Pesonen, Director-General, National Medical Board, Helsinki, Finland

Dr A. Quenum, Professeur agrégé of Histology and Embryology, Faculty of Medicine and Pharmacy, University of Dakar, Senegal

Dr V. Ramalingawam, Professor of Pathology, All-India Institute of Medical Sciences, New Delhi, India

Professor R. W. Scarff, Director, Bland-Sutton Institute of Pathology, Middlesex Hospital, London, England

Dr F. Verzar, Professor of Physiology, University of Basel, Switzerland

Expert Committee on Radiation (Public Health and Medical Use of Ionizing Radiation)

*Geneva, 8-14 December 1964*

Professor T. Antoine, Director, I. University Gynaecology Clinic, Vienna, Austria

Dr M. Faber, Professor of Radiobiology, University of Copenhagen; Director, Finseninstituttet og Radiumstationen, Copenhagen, Denmark

Professor I. G. Lagunova, Director, Institute of Roentgenology and Radiology, Moscow, Union of Soviet Socialist Republics

Dr A. A. Sami, Professor of Chest Diseases; Dean, Faculty of Medicine, University of Cairo, United Arab Republic

Dr F. W. Spiers, Professor of Medical Physics, University of Leeds, England

Dr S. Takahashi, Professor of Radiology, Nagoya University School of Medicine, Japan

Dr M. Tubiana, Head, Radiation Department, Gustave-Roussy Institute of Cancer Research, Villejuif (Seine), France

---

Expert Committee on Smallpox

Geneva, 14-20 January 1964

Dr C. W. Dixon, Professor of Preventive and Social Medicine, University of Otago, Dunedin, New Zealand
Dr F. C. Grant, Specialist Epidemiologist, Ministry of Health, Accra, Ghana
Dr M. S. Haque, Director-General of Health; Joint Secretary, Ministry of Health, Labour and Social Welfare, Karachi, Pakistan
Professor C. H. Kempe, Chairman, Department of Pediatrics, University of Colorado Medical Center, Denver, Colo., United States of America
Dr K. M. Lal, Deputy Director-General for Smallpox Eradication, Ministry of Health, New Delhi, India
Dr S. S. Marennikova, Chief, Laboratory of Smallpox Prophylaxis, Research Institute of Virus Preparations, Moscow, Union of Soviet Socialist Republics
Dr M. F. Polak, Chief, Epidemiological Service, National Institute of Public Health, Utrecht, Netherlands

Expert Committee on Specifications for Pharmaceutical Preparations

Geneva, 3-9 November 1964

Dr R. Botrous, Deputy Government Analyst, Chemical Laboratories, Ministry of Health, Khartoum, Sudan
Dr T. Canbäck, Director of Chemical Research, Pharmaceutical Control Laboratory, Stockholm, Sweden; Member of the Scandinavian Pharmacopoeia Council
Mr T. C. Denston, Secretary, British Pharmacopoeia Commission, London, England
Dr D. Ghosh, Director, Central Drugs Laboratory, Calcutta, India
Dr T. Itai, Chief, Department of Drug Research, National Institute of Hygiene, Tokyo, Japan
Dr K. G. Krebs, Director, E. Merck A.G., Darmstadt, Federal Republic of Germany
Professor M. D. Maškovskij, Chairman of the Pharmacopoeia Commission of the USSR, Ministry of Health of the USSR, Moscow, Union of Soviet Socialist Republics
Dr L. C. Miller, Director of Revision, United States Pharmacopoeia, New York, United States of America

Expert Committee on Specifications for Pharmaceutical Preparations: Sub-Committee on Non-Proprietary Names

Geneva, 18-24 August 1964

Dr G. Canetti, Head of Laboratory, Institut Pasteur, Paris, France
Dr P. D'Arcy Hart, Director, Tuberculosis Research Unit, Medical Research Council Laboratories, London, England
Dr A. I. Lapina, Director, Department of Tuberculosis Control, Ministry of Health of the USSR, Moscow, Union of Soviet Socialist Republics
Professor R. Neubauer, Faculty of Medicine, Ljubljana, Yugoslavia
Dr E. Pereda, formerly Tuberculosis Adviser, Government of Chile, and Chief, Department of Biostatistics, National Health Service, Santiago, Chile
Dr J. E. Perkins, Managing Director, National Tuberculosis Association, New York, N.Y., United States of America
Dr K. N. Rao, Additional Director-General of Health Services, Government of India, New Delhi, India

Joint Committees

Joint FAO/IAEA/WHO Expert Committee on the Technical Basis for Legislation on Irradiated Foods

Rome, 21-28 April 1964

Dr M. Ingram, Meat Research Institute, Low Temperature Research Station, Cambridge, England
Dr J. Kuprianoff, Director, Federal Research Institute for Food Preservation, Karlsruhe, Federal Republic of Germany
Dr A. Lafontaine, Director, Institute of Hygiene and Epidemiology, Brussels, Belgium
Professor K. Lang, Director, Institute of Physiological Chemistry, University of Mainz, Federal Republic of Germany
Dr A. J. Lehman, Director, Division of Pharmacology, Bureau of Biological and Physical Sciences, Food and Drug Administration, Department of Health, Education and Welfare, Washington, D.C., United States of America


Unable to attend.
3. COMMITTEE ON INTERNATIONAL QUARANTINE

Geneva, 10-14 February 1964

Dr M. S. Chadha, Director-General of Health Services, New Delhi, India

Dr W. H. Frost, Chief of Quarantine, Department of National Health and Welfare, Ottawa, Ont., Canada

Dr H. Kasuga, Chief of Quarantine Section, Ministry of Health and Welfare, Tokyo, Japan


2 Unable to attend.

Dr J. Lembrez, Director of Sanitary Control at Frontiers, Marseilles, France

Dr L. H. Murray, Principal Medical Officer, Ministry of Health, London, England

Dr G. D. Ostrovskij, Section Chief, Central Directorate of Sanitation and Epidemiology, Ministry of Health of the USSR, Moscow, Union of Soviet Socialist Republics

Dr J. N. Robertson, Principal Medical Officer, Ministry of Health, Accra, Ghana

4. ADVISORY COMMITTEE ON MEDICAL RESEARCH

The Advisory Committee on Medical Research was established pursuant to resolution WHA12.17.

Sixth Session, Geneva, 8-12 June 1964

Dr S. Adler, Professor of Parasitology, Hadassah Medical School, Hebrew University, Jerusalem, Israel

Dr W. Barry Wood, jr., Director, Department of Microbiology, Johns Hopkins University School of Medicine, Baltimore, Md., United States of America

Professor C. H. Best,1 Charles H. Best Institute, University of Toronto, Ont., Canada

Dr O. Bier, Professor of Microbiology, School of Medicine, Sao Paulo, Brazil

Professor N. N. Blohin, President, Academy of Medical Sciences of the USSR; Director, Institute of Experimental and Clinical Oncology, Moscow, Union of Soviet Socialist Republics

Dr R. Courrier, Professor at the Collège de France; Permanent Secretary, Academy of Sciences; Member of the Academy of Medicine, Paris, France

Dr W. R. S. Doll, Deputy Director, Statistical Research Unit, Medical Research Council, London, England

Dr B. N. Halpern, Professor at the Collège de France; Member of the Academy of Sciences, Paris, France

Professor H. Hamperl, Director, Institute of Pathology, University of Bonn, Federal Republic of Germany

Professor B. A. Houssay, Director, Institute of Biology and Experimental Medicine, Buenos Aires, Argentina

Professor N. K. Jerne, Chairman of the Department of Microbiology, University of Pittsburgh School of Medicine, Pittsburgh, Pa., United States of America

Sir Aubrey Lewis, Professor of Psychiatry, University of London Institute of Psychiatry, London, England

Sir Samuel Manuwa, Federal Public Service Commission, Lagos, Nigeria

Professor S. R. Mardaev, Member of the Academy of Medical Sciences of the USSR; Department of Biological and Organic Chemistry, First Medical Institute, Moscow, Union of Soviet Socialist Republics

Dr W. McDermott, Professor of Public Health and Preventive Medicine, Cornell University Medical College, New York, United States of America

Dr C. Puranananda, Director, Queen Saovabha Memorial Institute, Bangkok, Thailand

Professor B. Rexed, Science Advisory Council, Stockholm, Sweden

Professor I. Rusznyak, President of the Academy of Sciences; Director of the Academy's Central Institute of Medical Research, Budapest, Hungary

Professor A. Vartiainen, Department of Pharmacology, University of Helsinki, Finland

1 Unable to attend.
Annex 4

ORGANIZATIONAL MEETINGS AND MEETINGS OF EXPERT COMMITTEES AND ADVISORY GROUPS

1 October 1963 - 31 December 1964

Meeting of Rabies Research Workers
Meeting of Investigators on the Epidemiology and Pathology of Oropharyngeal Tumours
FAO/WHO : Joint Expert Group on Protein Requirements
Expert Committee on Atmospheric Pollutants
Expert Committee on Mental Health (Psychosomatic Disorders)
Symposium on Post-graduate Medical Education in Europe (European Region)
Standing Committee on Headquarters Accommodation
Fourth Meeting of Regional Statistical Advisers
Scientific Group on Yellow Fever in East Africa
Expert Committee on Health Statistics : Sub-Committee on Classification of Diseases
Scientific Group on Nursing Research
Expert Committee on Specifications for Pharmaceutical Preparations : Sub-Committee on Non-Proprietary Names
Malaria Eradication Border Meeting, Brazil-Bolivia (Region of the Americas)
Expert Committee on Enteric Infections
Technical Conference on the Public Health Aspects of Chronic Rheumatoid Arthritis and Related Diseases (European Region)
Conference of Deans of Medical Schools (Western Pacific Region)
Expert Committee on Insecticides (Application and Dispersal of Pesticides)
Expert Committee on Prevention of Cancer
Seventh Burma-India-Pakistan Malaria Eradication Co-ordination Conference (South-East Asia and Eastern Mediterranean Regions)
Expert Committee on Addiction-Producing Drugs
Meeting of National Fellowships Officers (Eastern Mediterranean Region)
Scientific Group on Research Programme in Immunology
Consultant Group on Research Programme on the Toxicity of Intentional and Unintentional Food Additives
Informal Meeting of Scientific Advisers on Special Research Development
Informal Meeting of the Co-Workers of the WHO Pilot Study on Swine Arteriosclerosis
Scientific Group on Physiology of Lactation
FAO/WHO : Joint Expert Committee on Brucellosis
Study Group on Methods of Appraising the Efficiency of Medical Care (European Region)
Working Group on the Training of Doctors in Health Education (European Region)
Scientific Group on the Evaluation of Dependence-Producing Drugs
Malaria Eradication Border Meeting, French Guiana - Brazil (Region of the Americas)
Sixth Antimalaria Co-ordination Board Meeting (South-East Asia and Western Pacific Regions)
Expert Committee on Hepatitis
Expert Committee on Human Genetics (Human Genetics and Public Health)

Geneva, 7-11 October 1963
New Delhi, 8-15 October 1963
Geneva, 8-17 October 1963
Geneva, 15-21 October 1963
Geneva, 22-28 October 1963
Prague, 22-29 October 1963
Geneva, 26 October 1963
Geneva, 29 October 1963
Geneva, 29-31 October 1963
Geneva, 30 October - 6 November 1963
Geneva, 4-8 November 1963
Geneva, 5-8 November 1963
Rio de Janeiro, 12-13 November 1963
Geneva, 12-16 November 1963
Rome, 12-20 November 1963
Manila, 18-27 November 1963
Geneva, 19-25 November 1963
Geneva, 19-25 November 1963
Taunggyi (Burma), 25-27 November 1963
Geneva, 25-30 November 1963
Alexandria, 26-28 November 1963
Geneva, 26-30 November 1963
Geneva, 27 November - 11 December 1963
Geneva, 29-30 November 1963
Geneva, 2-3 December 1963
Geneva, 2-7 December 1963
Geneva, 3-9 December 1963
Copenhagen, 4-6 December 1963
Copenhagen, 9-13 December 1963
Geneva, 9-14 December 1963
St Georges (French Guiana)
10 December 1963
Saigon, 10-13 December 1963
Geneva, 10-16 December 1963
Geneva, 10-16 December 1963

1 Details of seminars and training courses organized by WHO in co-operation with governments or with other organizations are given in the Project List in Part III.
Special Group Meeting on Medical Education (Eastern Mediterranean Region)
Scientific Group on Trachoma Research
Executive Board, thirty-third session: Standing Committee on Administration and Finance
Informal Meeting on Comparative Aspects of Atherosclerosis
Expert Committee on Smallpox
Executive Board, thirty-third session
Informal Meeting of Directors of Laboratories collaborating in Evaluation and Testing of New Insecticides
Informal Meeting of Experts on Field Trials of Insecticides
Committee on International Quarantine, twelfth session
Malaria Eradication Border Meeting, Mexico-Guatemala (Region of the Americas)
Second Inter-country Malaria Eradication Co-ordination Meeting, Syria-Lebanon (Eastern Mediterranean Region)
Informal Meeting of the Eastern Hemisphere Committee on Animal Virus Characterization
Symposium on the Toxicology of Drugs (European Region)
Fifth Inter-country Malaria Eradication Meeting, Iran-Iraq (Eastern Mediterranean Region)
Malaria Eradication Border Meeting, Mexico-British Honduras (Region of the Americas)
Seventeenth World Health Assembly
Meeting on the Epidemiology of Home Accidents (European Region)
Meeting on Combined Epidemiological and Pathological Studies of Atherosclerosis
Symposium on Industrial Hygiene (Region of the Americas)
Working Group on Histopathological Nomenclature and Classification of Lung Tumours
Meeting of Regional Malaria Advisers
Scientific Group on Mental Health Research
First Inter-country Malaria Meeting, Saudi Arabia-Jordan (Eastern Mediterranean Region)
Meeting of Advisers on Immunogenic Agents in Tuberculosis
Informal Meeting on Toxicology of Insecticides
Symposium on Sanitary Inspection Services (European Region)
FAO/IAEA/WHO: Joint Expert Committee on the Technical Basis for Legislation on Irradiated Foods
Study Group on the Integration of Mass Campaigns against Specific Diseases into General Health Services
Meeting of Experts to discuss Draft of Proposed Co-ordinated Scheme for Medical Advice by Radio to Ships at Sea
Third Malaria Eradication Inter-country Border Meeting, Pakistan-India (South-East Asia and Eastern Mediterranean Regions)
Informal Meeting on Research in Fundamental Biology
IAEA/ILO/WHO: Symposium on the Assessment of Radioactive Body Burdens in Man
Scientific Group on the Effects of Labour on the Human Foetus and the New-born
Twelfth Meeting of Directors of National Malaria Eradication Services of Central America, the Caribbean, Mexico and Panama (Region of the Americas)
Executive Board, thirty-fourth session
Meeting on Nomenclature of Human Immunoglobulins
Scientific Group on the Biological Estimation of Water Pollution Levels
Conference on Public Health Administration (European Region)
Third India-Nepal Border Malaria Co-ordination Meeting (South-East Asia Region)
Advisory Committee on Health Statistics (Region of the Americas)
Advisory Committee on Medical Research, sixth session

Alexandria, 16-18 December 1963
Geneva, 17-21 December 1963
Geneva, 6-13 January 1964
Brussels, 13-23 January 1964
Geneva, 14-20 January 1964
Geneva, 14-24 January 1964
Geneva, 3-7 February 1964
Geneva, 10-13 February 1964
Geneva, 10-14 February 1964
Tapachula (Mexico), 14-16 February 1964
Damascus, 19 February 1964
Geneva, 20-21 February 1964
Moscow, 24-28 February 1964
Teheran, 25-27 February 1964
Mérida (Mexico), 28 February - 1 March 1964
Geneva, 3-20 March 1964
Copenhagen, 17-20 March 1964
Malmö (Sweden), 18-28 March 1964
São Paulo, 21-26 March 1964
Oslo, 6-9 April 1964
Geneva, 6-10 April 1964
Geneva, 6-10 April 1964
Jeddah (Saudi Arabia), 11-13 April 1964
Geneva, 13-18 April 1964
Geneva, 20-24 April 1964
Copenhagen, 20-24 April 1964
Rome, 21-28 April 1964
Geneva, 27 April - 2 May 1964
Geneva, 27 April - 8 May 1964
Wagah (Pakistan), 28 April 1964
Geneva, 1-2 May 1964
Heidelberg (Germany), 11-16 May 1964
Geneva, 12-18 May 1964
Managua, 18-23 May 1964
Geneva, 26-29 May 1964
Prague, 29-30 May 1964
Geneva, 1-5 June 1964
Zagreb (Yugoslavia), 4-12 June 1964
Darjeeling (India), 5-6 June 1964
Washington, 8-12 June 1964
Geneva, 8-12 June 1964
<table>
<thead>
<tr>
<th>Meeting Description</th>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Group on Biological Aspects of Microchemical Pollution of Water Systems</td>
<td>Geneva, 8-12 June 1964</td>
<td></td>
</tr>
<tr>
<td>FAO/WHO: Joint Meeting on the Control of Brucellosis in the Mediterranean Region</td>
<td>Valletta, 8-13 June 1964</td>
<td></td>
</tr>
<tr>
<td>Second Syria-Turkey-Lebanon Malaria Eradication Border Meeting (European and</td>
<td>Aleppo (Syria), 10-15 June 1964</td>
<td></td>
</tr>
<tr>
<td>Expert Committee on Malaria</td>
<td>Geneva, 23-29 June 1964</td>
<td></td>
</tr>
<tr>
<td>Expert Committee on Environmental Health Aspects of Metropolitan Planning and</td>
<td>Bogotá, 29 June - 4 July 1964</td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td>Geneva, 30 June - 4 July 1964</td>
<td></td>
</tr>
<tr>
<td>Conference on Rural Water Supplies (Region of the Americas)</td>
<td>Geneva, 1-3 July 1964</td>
<td></td>
</tr>
<tr>
<td>Scientific Group on Insecticide Resistance and Vector Control</td>
<td>Geneva, 1-12 July 1964</td>
<td></td>
</tr>
<tr>
<td>Informal Meeting on Work in Communications Science in the Proposed World</td>
<td>Geneva, 2-3 July 1964</td>
<td></td>
</tr>
<tr>
<td>Health Research Centre</td>
<td>Poços de Caldas (Brazil), 6-9 July 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting on Combined Epidemiological and Pathological Studies of Atherosclerosis</td>
<td>Geneva, 6-17 July 1964</td>
<td></td>
</tr>
<tr>
<td>Informal Inter-agency Consultation on ECOSOC Resolution 910 (XXXIV)</td>
<td>Geneva, 7-15 July 1964</td>
<td></td>
</tr>
<tr>
<td>Fourth Meeting of Directors of National Malaria Eradication Services of South</td>
<td>Dera’a (Syria), 14 July 1964</td>
<td></td>
</tr>
<tr>
<td>America (Region of the Americas)</td>
<td>Geneva, 15-17 July 1964</td>
<td></td>
</tr>
<tr>
<td>Consultation on the Role of WHO in the Exploration and Peaceful Uses of Outer Space</td>
<td>New York, 20-22 July 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting of Regional Nursing Advisers</td>
<td>Geneva, 20-25 July 1964</td>
<td></td>
</tr>
<tr>
<td>Second Inter-country Malaria Eradication Border Meeting, Jordan-Syria (Eastern</td>
<td>Geneva, 20-27 July 1964</td>
<td></td>
</tr>
<tr>
<td>Mediterranean Region)</td>
<td>Geneva, 22-24 July 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting of Directors of the WHO Serum Reference Banks</td>
<td>Nancy (France), 22-30 July 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting on Arthropod-borne Virus Studies in Ethiopia</td>
<td>Geneva, 28-29 July 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting on Research into Environmental Pollution</td>
<td>Washington, D.C., 3-6 August 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting of Directors of the WHO Virus Reference Centres</td>
<td>Geneva, 10-14 August 1964</td>
<td></td>
</tr>
<tr>
<td>Informal Meeting of Advisers on Entomological Needs in Onchocerciasis Control</td>
<td>Geneva, 11-17 August 1964</td>
<td></td>
</tr>
<tr>
<td>Symposium on the Teaching of the Preventive Aspects of Medicine in Medical Schools</td>
<td>Geneva, 12-17 August 1964</td>
<td></td>
</tr>
<tr>
<td>(European Region)</td>
<td>Geneva, 18-24 August 1964</td>
<td></td>
</tr>
<tr>
<td>Informal Meeting on the Co-ordinated Study of Animal Influenza</td>
<td>London, 22 August 1964</td>
<td></td>
</tr>
<tr>
<td>Informal Meeting on Biomedical Research in the Proposed World Health Research</td>
<td>Mexico City, 31 August - 11 September 1964</td>
<td></td>
</tr>
<tr>
<td>Centre</td>
<td>Geneva, 7-11 September 1964</td>
<td></td>
</tr>
<tr>
<td>Working Group on a Latin American Common Market for Biological Products</td>
<td>Paris, 7-11 September 1964</td>
<td></td>
</tr>
<tr>
<td>(Region of the Americas)</td>
<td>Geneva, 8-14 September 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting of Investigators on Breast Cancer</td>
<td>Geneva, 14-18 September 1964</td>
<td></td>
</tr>
<tr>
<td>Expert Committee on Environmental Change and Resulting Impacts on Health</td>
<td>Geneva, 14-21 September 1964</td>
<td></td>
</tr>
<tr>
<td>Informal Meeting on Research in Epidemiology within the Proposed World Health</td>
<td>Bhairahawa (Nepal), 15-16 September 1964</td>
<td></td>
</tr>
<tr>
<td>Research Centre</td>
<td>Geneva, 15-19 September 1964</td>
<td></td>
</tr>
<tr>
<td>Expert Committee on Tuberculosis</td>
<td>Manila, 17-22 September 1964</td>
<td></td>
</tr>
<tr>
<td>Meeting of Advisers : Human Pituitary Collection</td>
<td>Geneva, 21-26 September 1964</td>
<td></td>
</tr>
<tr>
<td>Regional Committee for the Americas, sixteenth session, and XV Meeting of the</td>
<td>Geneva, 21-26 September 1964</td>
<td></td>
</tr>
<tr>
<td>Directing Council of PAHO</td>
<td>Geneva, 22-23 September 1964</td>
<td></td>
</tr>
<tr>
<td>Conference on Establishment of Basic Principles for Medical Education in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developing Countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAO/UNESCO/WHO : Meeting on the Teacher's Role in Nutrition Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Group on Neuro-endocrinology and Reproduction in the Human</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scientific Group on Bilharziasis (Chemotherapy)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Committee for Africa, fourteenth session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth India-Nepal Border Malaria Co-ordination Meeting (South-East Asia Region)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAO/IAEA/WHO: Scientific Meeting on Methods of Radiochemical Analysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Committee for the Western Pacific, fifteenth session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting on Neisseria gonorrhoeae Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meeting on Neisseria meningitidis Research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Committee for the Eastern Mediterranean, fourteenth session: Sub-Committee</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Regional Committee for Europe, fourteenth session
Regional Committee for South-East Asia, seventeenth session
FAO/WHO: Executive Committee of the Codex Alimentarius Commission
FAO/UNICEF/WHO: Inter-Agency Working Group on Milk and Milk Products
Expert Committee on Bilharziasis
Expert Committee on Biological Standardization
FAO/WHO: Codex Alimentarius Commission, second session
Symposium on Viral Hepatitis (European Region)
Regional Committee for the Eastern Mediterranean, fourteenth session:
- Sub-Committee A
Meeting of Regional Advisers: Communicable Diseases
Expert Committee on Nutrition in Pregnancy and Lactation
Planning Conference on the Endemic Nephropathy of South-Eastern Europe (European Region)
Scientific Group on Viruses and Cancer
Meeting of Advisers: Cardiomyopathies
FAO/WHO/International Office of Epizootics: Joint Meeting on Basic Principles for the Control of International Traffic in Animals and Animal Products
Malaria Eradication Border Meeting, Colombia-Venezuela (Region of the Americas)
Expert Committee on Organization of Dental Public Health Services
Scientific Group on Drug Resistance of Malaria Parasites
Meeting of Consultants on WHO Radiation Health Programme
Malaria Eradication Border Meeting, Ecuador-Peru (Region of the Americas)
Symposium on the Role of Obstetricians in Maternal and Child Health Programmes (European Region)
Fourth Malaria Eradication Inter-country Border Meeting, Pakistan-India (South-East Asia and Eastern Mediterranean Regions)
Meeting on Combined Epidemiological and Pathological Studies of Atherosclerosis
Expert Committee on Health Statistics
Scientific Group on Cholera Research
Meeting of Regional Statistical Advisers
Expert Committee on the Health Problems of Adolescence
Expert Committee on Specifications for Pharmaceutical Preparations
Third Inter-country Malaria Eradication Border Meeting, Jordan-Syria (Eastern Mediterranean Region)
Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel (Teaching of Sciences in Pre-medical Courses of Study)
Scientific Group on Long-Term Effects on Health of New Pollutants
Conference on the Application of Automatic Data Processing Systems in Health Administration (European Region)
Informal Meeting of Investigators on Molluscicide Screening and Evaluation
Conference on Midwifery Services and Education (European Region)
Scientific Group on Monitoring Adverse Drug Reactions
Technical Discussions on Epidemiological and Pathological Studies in Africa
Expert Committee on Diabetes Mellitus
Conference on Malaria Eradication (European and Eastern Mediterranean Regions)
Expert Committee on Specifications for Pharmaceutical Preparations: Sub-Committee on Non-proprietary Names
Study Group on Special Courses for National Staff with Higher Administrative Responsibilities in the Health Services

Prague, 22-26 September 1964
New Delhi, 22-28 September 1964
Geneva, 25-26 September 1964
Rome, 28 September 1964
Geneva, 28 September - 3 October 1964
Geneva, 28 September - 3 October 1964
Geneva, 28 September - 7 October 1964
Prague, 29 September - 3 October 1964
Kuwait, 3-7 October 1964
Geneva, 6-9 October 1964
Geneva, 6-12 October 1964
Dubrovnik (Yugoslavia), 12-16 October 1964
Geneva, 12-16 October 1964
Geneva, 12-16 October 1964
Berne, 12-17 October 1964
Cúcuta (Colombia), 13-15 October 1964
Geneva, 13-19 October 1964
Geneva, 13-20 October 1964
Geneva, 16-20 October 1964
Huaguillas (Ecuador), 19 October 1964
Copenhagen, 22-29 October 1964
Firozpur (India), 24 October 1964
Kishiniev (USSR), 26 October - 5 November 1964
Geneva, 27 October - 2 November 1964
Manila, 2-6 November 1964
Geneva, 3-4 November 1964
Geneva, 3-9 November 1964
Geneva, 3-9 November 1964
Amman, 9 November 1964
Geneva, 10-16 November 1964
Geneva, 10-16 November 1964
Copenhagen, 17-21 November 1964
Geneva, 17-21 November 1964
Moscow, 18-27 November 1964
Geneva, 23-28 November 1964
Geneva, 23-30 November 1964
Geneva, 24-30 November 1964
Tripoli, 28 November - 6 December 1964
Geneva, 1-4 December 1964
Geneva, 1-7 December 1964
Planning Conference on the Epidemiological Study of Oropharyngeal Tumours in the Central Asian Republics of the USSR
Symposium on Occupational Hazards in Agriculture (European Region)
Study of Assessment of Signs in the Fundus Oculi
Expert Committee on Radiation (Public Health and Medical Use of Ionizing Radiation)
Scientific Group on the Mechanism of Action of Sex Hormones and Analogous Substances, especially the Orally Active Progestogens
Expert Committee on Immunology of Parasitic Diseases
FAO/WHO: Joint Expert Committee on Food Additives (Specifications for Identity and Purity, and Toxicological Evaluation of Food Colours and some Antimicrobials and Antioxidants)
Symposium on Schools of Public Health in Europe (European Region)
IAEA/WHO: Joint Study Group on Planning of Radiotherapy Facilities
Eighth Burma-India-Pakistan Malaria Eradication Co-ordination Conference (South-East Asia and Eastern Mediterranean Regions)
Meeting to Review the Present Situation in Aviation Medicine

Annex 5

TENTATIVE SCHEDULE OF WHO ORGANIZATIONAL MEETINGS IN 1965

Executive Board, thirty-fifth session: Standing Committee on Administration and Finance
Executive Board, thirty-fifth session
Eighteenth World Health Assembly
Executive Board, thirty-sixth session
Regional Committee for Africa, fifteenth session
Regional Committee for the Americas, seventeenth session and XVI Meeting of the Directing Council of the PAHO
Regional Committee for South-East Asia, eighteenth session
Regional Committee for Europe, fifteenth session
Regional Committee for the Eastern Mediterranean, fifteenth session:
  Sub-Committee A
  Sub-Committee B
Regional Committee for the Western Pacific, sixteenth session

Alma-Ata (USSR), 7-12 December 1964
Milan (Italy), 7-12 December 1964
Göteborg (Sweden), 7-14 December 1964
Geneva, 8-14 December 1964
Geneva, 8-14 December 1964
Ibadan (Nigeria), 8-15 December 1964
Geneva, 8-17 December 1964
Rennes (France), 14-18 December 1964
Geneva, 15-19 December 1964
Chandigarh (India), 21-23 December 1964
Geneva, 28 December 1964 - 8 January 1965

Geneva, 11-18 January
Geneva, 19-28 January
Geneva, 4-21 May
Geneva, 24 May
Lusaka, September

Not yet fixed
Kabul, September
Istanbul, 7-10 September
Addis Ababa, September
Not yet fixed
Seoul, September
Annex 6

NON-GOVERNMENTAL ORGANIZATIONS IN OFFICIAL RELATIONS WITH WHO

at 31 December 1964

Biometric Society
Central Council for Health Education
Council for International Organizations of Medical Sciences
Inter-American Association of Sanitary Engineering
International Academy of Legal Medicine and of Social Medicine
International Air Transport Association
International Association for Child Psychiatry and Allied Professions
International Association of Logopedics and Phoniatrics
International Association of Microbiological Societies
International Association for Prevention of Blindness
International Astronautical Federation
International Brain Research Organization
International Commission on Radiological Protection
International Commission on Radiological Units and Measurements
International Committee of Catholic Nurses
International Committee of the Red Cross
International Confederation of Midwives
International Conference of Social Work
International Council on Jewish Social and Welfare Services
International Council of Nurses
International Council of Scientific Unions
International Council of Societies of Pathology
International Dental Federation
International Diabetes Federation
International Federation of Gynecology and Obstetrics
International Federation for Housing and Planning
International Federation for Medical Electronics and Biological Engineering
International Federation of Sports Medicine
International Federation of Surgical Colleges
International Fertility Association
International Hospital Federation
International Hydatidological Association
International League of Dermatological Societies
International League against Rheumatism
International Leprosy Association
International Organization against Trachoma
International Paediatric Association
International Pharmaceutical Federation
International Society of Blood Transfusion
International Society of Cardiology
International Society for Criminology
International Society for Rehabilitation of the Disabled
International Union of Architects
International Union against Cancer
International Union for Child Welfare
International Union for Health Education
International Union of Local Authorities
International Union of Pure and Applied Chemistry
International Union against Tuberculosis
International Union against the Venereal Diseases and the Treponematoses
International Water Supply Association
League of Red Cross Societies
Medical Women's International Association
Permanent Commission and International Association on Occupational Health
World Confederation for Physical Therapy
World Federation of the Deaf
World Federation for Mental Health
World Federation of Neurology
World Federation of Occupational Therapists
World Federation of Societies of Anaesthesiologists
World Federation of United Nations Associations
World Medical Association
World Union OSE
World Veterans Federation
World Veterinary Association
# Annex 7

## REGULAR BUDGET FOR 1964

<table>
<thead>
<tr>
<th>Appropriation section</th>
<th>Purpose of appropriation</th>
<th>Original amount voted¹</th>
<th>Transfers concurred in by the Executive Board²</th>
<th>Supplementary estimates³</th>
<th>Further transfers concurred in by the Executive Board⁴</th>
<th>Revised appropriations</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART I: ORGANIZATIONAL MEETINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. World Health Assembly</td>
<td></td>
<td>317 210</td>
<td>—</td>
<td>25 830</td>
<td>13 000</td>
<td>356 040</td>
</tr>
<tr>
<td>2. Executive Board and its Committees</td>
<td></td>
<td>189 090</td>
<td>—</td>
<td>11 970</td>
<td>—</td>
<td>201 060</td>
</tr>
<tr>
<td>3. Regional Committees</td>
<td></td>
<td>100 530</td>
<td>700</td>
<td>—</td>
<td>—</td>
<td>101 230</td>
</tr>
<tr>
<td>Total — Part I</td>
<td></td>
<td>606 830</td>
<td>700</td>
<td>37 800</td>
<td>13 000</td>
<td>658 330</td>
</tr>
<tr>
<td>PART II: OPERATING PROGRAMME</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Programme Activities</td>
<td></td>
<td>16 439 819</td>
<td>94 660</td>
<td>103 750</td>
<td>200 000</td>
<td>16 838 229</td>
</tr>
<tr>
<td>5. Regional Offices</td>
<td></td>
<td>2 663 706</td>
<td>94 294</td>
<td>—</td>
<td>26 500</td>
<td>2 784 500</td>
</tr>
<tr>
<td>6. Expert Committees</td>
<td></td>
<td>226 600</td>
<td>6 600</td>
<td>—</td>
<td>—</td>
<td>233 200</td>
</tr>
<tr>
<td>7. Other Statutory Staff Costs</td>
<td></td>
<td>5 521 280 (280 006)</td>
<td>39 100</td>
<td>(239 500)</td>
<td>5 040 874</td>
<td></td>
</tr>
<tr>
<td>Total — Part II</td>
<td></td>
<td>24 851 405</td>
<td>(84 452)</td>
<td>142 850</td>
<td>(15 000)</td>
<td>24 896 803</td>
</tr>
<tr>
<td>PART III: ADMINISTRATIVE SERVICES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Administrative Services</td>
<td></td>
<td>1 925 182</td>
<td>104 435</td>
<td>—</td>
<td>—</td>
<td>2 029 617</td>
</tr>
<tr>
<td>9. Other Statutory Staff Costs</td>
<td></td>
<td>618 683</td>
<td>(20 683)</td>
<td>—</td>
<td>—</td>
<td>598 000</td>
</tr>
<tr>
<td>Total — Part III</td>
<td></td>
<td>2 543 865</td>
<td>83 752</td>
<td>—</td>
<td>—</td>
<td>2 627 617</td>
</tr>
<tr>
<td>PART IV: OTHER PURPOSES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Headquarters Building Fund</td>
<td></td>
<td>500 000</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>500 000</td>
</tr>
<tr>
<td>11. Transfer to the Malaria Eradication Special Account</td>
<td></td>
<td>5 363 000</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5 363 000</td>
</tr>
<tr>
<td>12. Reimbursement of the Working Capital Fund</td>
<td></td>
<td>200 000</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>200 000</td>
</tr>
<tr>
<td>13. African Regional Office Building Fund</td>
<td></td>
<td>—</td>
<td>—</td>
<td>23 000</td>
<td>—</td>
<td>23 000</td>
</tr>
<tr>
<td>14. African Regional Office : Staff Housing</td>
<td></td>
<td>—</td>
<td>274 000</td>
<td>—</td>
<td>—</td>
<td>274 000</td>
</tr>
<tr>
<td>Total — Part IV</td>
<td></td>
<td>6 063 000</td>
<td>—</td>
<td>297 000</td>
<td>—</td>
<td>6 360 000</td>
</tr>
<tr>
<td>Sub-total — Parts I, II, III and IV</td>
<td></td>
<td>34 065 100</td>
<td>—</td>
<td>477 650</td>
<td>—</td>
<td>34 542 750</td>
</tr>
<tr>
<td>PART V: RESERVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Undistributed Reserve</td>
<td></td>
<td>2 223 130</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2 223 130</td>
</tr>
<tr>
<td>Total — Part V</td>
<td></td>
<td>2 223 130</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>2 223 130</td>
</tr>
<tr>
<td>TOTAL — ALL PARTS</td>
<td></td>
<td>36 288 230</td>
<td>—</td>
<td>477 650</td>
<td>—</td>
<td>36 765 880</td>
</tr>
</tbody>
</table>

¹ Resolution WHA16.28.
² Resolution EB33.R2.
³ Resolution WHA17.9.
⁴ Written concurrence of the majority of the members of the Executive Board, in accordance with Financial Regulation 4.5.
Annex 9

NUMBERS AND DISTRIBUTION OF THE STAFF
at 30 September 1963 and 30 November 1964

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Staff as at 30 September 1963</th>
<th>Staff as at 30 November 1964</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Regular Budget</td>
</tr>
<tr>
<td>Headquarters ¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>342</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>387</td>
<td></td>
</tr>
<tr>
<td></td>
<td>729</td>
<td>729</td>
</tr>
<tr>
<td>Regional Offices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td></td>
<td>149</td>
<td>141</td>
</tr>
<tr>
<td>The Americas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>74</td>
<td>74</td>
</tr>
<tr>
<td>South-East Asia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td></td>
<td>171</td>
<td>161</td>
</tr>
<tr>
<td>Europe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>121</td>
<td>119</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>121</td>
<td>116</td>
</tr>
<tr>
<td>Western Pacific</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>103</td>
<td>97</td>
</tr>
<tr>
<td>WHO Representatives ¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and Zone Offices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>78</td>
<td>78</td>
</tr>
</tbody>
</table>

¹ Including Liaison Office with the United Nations, New York.
<table>
<thead>
<tr>
<th>Distribution</th>
<th>Staff as at 30 September 1963</th>
<th>Staff as at 30 November 1964</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Regular Budget</td>
</tr>
<tr>
<td>Field Staff in Countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>898</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td></td>
<td>927</td>
<td>445</td>
</tr>
<tr>
<td>Other Offices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNICEF Liaison</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Locally recruited</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>UNRWA: Internationally recruited</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>International Children’s Centre,</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Paris: Internationally recruited</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inter-regional and others</td>
<td>57</td>
<td>25</td>
</tr>
<tr>
<td>Internationally recruited</td>
<td>57</td>
<td>25</td>
</tr>
<tr>
<td>Locally recruited</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>59</td>
<td>25</td>
</tr>
<tr>
<td>Staff on loan to WHO, or on leave</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>without pay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term consultants</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHO GRAND TOTAL</td>
<td>2630</td>
<td></td>
</tr>
<tr>
<td>PAHO GRAND TOTAL</td>
<td>798</td>
<td></td>
</tr>
</tbody>
</table>
### Annex 10

**COMPOSITION OF THE STAFF BY NATIONALITY**

at 30 November 1964

<table>
<thead>
<tr>
<th>Country</th>
<th>WHO</th>
<th>PAHO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Argentina</td>
<td>13</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>Australia</td>
<td>17</td>
<td>—</td>
<td>17</td>
</tr>
<tr>
<td>Austria</td>
<td>11</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Belgium</td>
<td>37</td>
<td>2</td>
<td>39</td>
</tr>
<tr>
<td>Bolivia</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Brazil</td>
<td>18</td>
<td>46</td>
<td>64</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Burma</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Cameroon</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Canada</td>
<td>48</td>
<td>4</td>
<td>52</td>
</tr>
<tr>
<td>Ceylon</td>
<td>8</td>
<td>—</td>
<td>8</td>
</tr>
<tr>
<td>Chile</td>
<td>19</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td>China</td>
<td>26</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>Colombia</td>
<td>5</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Cuba</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Cyprus</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Czechoslovakia</td>
<td>13</td>
<td>—</td>
<td>13</td>
</tr>
<tr>
<td>Dahomey</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Denmark</td>
<td>30</td>
<td>—</td>
<td>30</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Ecuador</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>El Salvador</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Finland</td>
<td>6</td>
<td>—</td>
<td>6</td>
</tr>
<tr>
<td>France</td>
<td>89</td>
<td>3</td>
<td>92</td>
</tr>
<tr>
<td>Germany, Federal Republic of</td>
<td>35</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>Ghana</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Greece</td>
<td>17</td>
<td>—</td>
<td>17</td>
</tr>
<tr>
<td>Guatemala</td>
<td>1</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>Haiti</td>
<td>18</td>
<td>—</td>
<td>18</td>
</tr>
<tr>
<td>Honduras</td>
<td>—</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Hungary</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>India</td>
<td>45</td>
<td>3</td>
<td>48</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>Iran</td>
<td>12</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Iraq</td>
<td>4</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Ireland</td>
<td>13</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Israel</td>
<td>10</td>
<td>—</td>
<td>11</td>
</tr>
<tr>
<td>Italy</td>
<td>45</td>
<td>—</td>
<td>45</td>
</tr>
<tr>
<td>Jamaica</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Japan</td>
<td>13</td>
<td>—</td>
<td>13</td>
</tr>
<tr>
<td>Jordan</td>
<td>11</td>
<td>—</td>
<td>11</td>
</tr>
<tr>
<td>Korea, Republic of</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Lebanon</td>
<td>22</td>
<td>—</td>
<td>22</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>3</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Madagascar</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Mauritius *</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Mexico</td>
<td>19</td>
<td>13</td>
<td>32</td>
</tr>
<tr>
<td>Morocco</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Nepal</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td><strong>Stateless</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1336</td>
<td>304</td>
<td>1640</td>
</tr>
</tbody>
</table>

The above table does not include the following:

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language staff</td>
<td>90</td>
</tr>
<tr>
<td>Short-term consultants</td>
<td>114</td>
</tr>
<tr>
<td>Professional staff on loan and without pay</td>
<td>43</td>
</tr>
<tr>
<td>Agents in the Congo (Democratic Republic)</td>
<td>121</td>
</tr>
<tr>
<td>Staff locally recruited</td>
<td>1131</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>2835</td>
</tr>
</tbody>
</table>

* Associate Member.
### Annex 11

**STATUS OF MALARIA ERADICATION**

1. **COUNTRIES IN WHICH CERTIFICATION OF ERADICATION OF MALARIA HAS BEEN COMPLETED FOR THE WHOLE TERRITORY**

<table>
<thead>
<tr>
<th>Region of the Americas</th>
<th>European Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grenada and Carriacou</td>
<td>Hungary</td>
</tr>
<tr>
<td>St Lucia</td>
<td>Spain</td>
</tr>
</tbody>
</table>

2. **COUNTRIES IN WHICH MALARIA ERADICATION PROGRAMMES WERE IN OPERATION AT 31 DECEMBER 1964**

<table>
<thead>
<tr>
<th>African Region</th>
<th>Region of the Americas</th>
<th>Eastern Mediterranean Region</th>
<th>Western Pacific Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mauritius</td>
<td>Argentina</td>
<td>Iran</td>
<td>Nicaragua</td>
</tr>
<tr>
<td>South Africa</td>
<td>Bolivia</td>
<td>Lebanon</td>
<td>Panama</td>
</tr>
<tr>
<td>Swaziland</td>
<td>Brazil</td>
<td>Iraq</td>
<td>Trinidad and Tobago</td>
</tr>
<tr>
<td></td>
<td>British Guiana</td>
<td>Israel</td>
<td>Suriname</td>
</tr>
<tr>
<td></td>
<td>British</td>
<td>Jordan</td>
<td>Thailand</td>
</tr>
<tr>
<td></td>
<td>Honduras</td>
<td>Syria</td>
<td>Malaysia</td>
</tr>
</tbody>
</table>

3. **COUNTRIES ASSISTED BY THE ORGANIZATION DURING THE PERIOD 1 OCTOBER 1963 - 31 DECEMBER 1964 WITH ANTIMALARIA OPERATIONS OTHER THAN ERADICATION PROGRAMMES**

<table>
<thead>
<tr>
<th>African Region</th>
<th>South-East Asia Region</th>
<th>Eastern Mediterranean Region</th>
<th>Western Pacific Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cameroon</td>
<td>Indonesia</td>
<td>Ethiopia</td>
<td>British Solomon Islands</td>
</tr>
<tr>
<td>Dahomey</td>
<td>Réunion</td>
<td>Saudi Arabia</td>
<td>Malaysia (Malaya)</td>
</tr>
<tr>
<td>Ghana</td>
<td>Sierra Leone</td>
<td>Somalia</td>
<td>Brunei</td>
</tr>
<tr>
<td>Liberia</td>
<td>Southern Rhodesia</td>
<td>Sudan</td>
<td>Cambodia</td>
</tr>
<tr>
<td>Mauritania</td>
<td>Togo</td>
<td>Sudan</td>
<td>Republic of Korea</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Uganda</td>
<td>Sudan</td>
<td>Republic of Viet-Nam</td>
</tr>
</tbody>
</table>

1 Preparatory planning has been done for programmes in Congo (Brazzaville), Gabon, Guinea, Madagascar, Senegal, Spanish Guinea and Zambia.
### Annex 12

**FELLOWSHIPS AWARDED, BY SUBJECT OF STUDY AND BY REGION**

*1 October 1963 - 30 November 1964*

<table>
<thead>
<tr>
<th>Subject of Study</th>
<th>Region</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Africa</td>
<td>The Americas</td>
</tr>
<tr>
<td>Health Organization and Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Health Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public health administration</td>
<td>11</td>
<td>24</td>
</tr>
<tr>
<td>Hospital and medical care</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Construction of health institutions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical librarianship</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Sub-total — Public Health Administra</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>Environmental Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental sanitation</td>
<td>28</td>
<td>69</td>
</tr>
<tr>
<td>Housing and town planning</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Food control</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Sub-total — Environmental Health</td>
<td>30</td>
<td>75</td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>77</td>
<td>18</td>
</tr>
<tr>
<td>Public health nursing</td>
<td>15</td>
<td>42</td>
</tr>
<tr>
<td>Medical social work</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>Sub-total — Nursing</td>
<td>93</td>
<td>60</td>
</tr>
<tr>
<td>Maternal and Child Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maternal and child health</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Sub-total — Maternal and Child Health</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Other Health Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental health</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Health education</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Occupational health</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Nutrition</td>
<td>10</td>
<td>33</td>
</tr>
<tr>
<td>Health statistics</td>
<td>6</td>
<td>39</td>
</tr>
<tr>
<td>Dental health</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Control of pharmaceutical and biological preparations</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Sub-total — Other Health Services</td>
<td>26</td>
<td>94</td>
</tr>
<tr>
<td>Total — Health Organization and Services</td>
<td>178</td>
<td>299</td>
</tr>
</tbody>
</table>

**Percentage**

<table>
<thead>
<tr>
<th></th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>33</td>
</tr>
<tr>
<td>The Americas</td>
<td>70</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>39</td>
</tr>
<tr>
<td>Europe</td>
<td>50</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>41</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
</tr>
</tbody>
</table>
## Subject of Study

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>The Americas</th>
<th>South-East Asia</th>
<th>Europe</th>
<th>Eastern Mediterranean</th>
<th>Western Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communicable Diseases</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaria</td>
<td>65</td>
<td>2</td>
<td>34</td>
<td>9</td>
<td>31</td>
<td>58</td>
<td>199</td>
</tr>
<tr>
<td>Venereal diseases and treponematoses</td>
<td>2</td>
<td>—</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>14</td>
<td>8</td>
<td>7</td>
<td>23</td>
<td>10</td>
<td>10</td>
<td>72</td>
</tr>
<tr>
<td>Other communicable diseases</td>
<td>36</td>
<td>44</td>
<td>33</td>
<td>40</td>
<td>31</td>
<td>17</td>
<td>201</td>
</tr>
<tr>
<td>Laboratory services</td>
<td>10</td>
<td>19</td>
<td>13</td>
<td>26</td>
<td>28</td>
<td>9</td>
<td>105</td>
</tr>
<tr>
<td>Chemotherapy, antibiotics</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total — Communicable Diseases</strong></td>
<td>127</td>
<td>73</td>
<td>91</td>
<td>102</td>
<td>103</td>
<td>96</td>
<td>592</td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td>24</td>
<td>16</td>
<td>41</td>
<td>19</td>
<td>24</td>
<td>38</td>
<td>25</td>
</tr>
</tbody>
</table>

## Clinical Medicine, Basic Medical Sciences and Medical and Allied Education

**CLINICAL MEDICINE**

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>The Americas</th>
<th>South-East Asia</th>
<th>Europe</th>
<th>Eastern Mediterranean</th>
<th>Western Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery and medicine (including full medical course)</td>
<td>208</td>
<td>1</td>
<td>3</td>
<td>27</td>
<td>89</td>
<td>6</td>
<td>334</td>
</tr>
<tr>
<td>Anaesthesiology</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>22</td>
<td>16</td>
<td>14</td>
<td>65</td>
</tr>
<tr>
<td>Radiology</td>
<td>4</td>
<td>—</td>
<td>5</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Haematology</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>6</td>
<td>—</td>
<td>—</td>
<td>7</td>
</tr>
<tr>
<td>Other medical and surgical specialties</td>
<td>7</td>
<td>1</td>
<td>1</td>
<td>31</td>
<td>7</td>
<td>3</td>
<td>50</td>
</tr>
<tr>
<td><strong>Sub-total — Clinical Medicine</strong></td>
<td>223</td>
<td>8</td>
<td>13</td>
<td>96</td>
<td>117</td>
<td>27</td>
<td>484</td>
</tr>
</tbody>
</table>

**BASIC MEDICAL SCIENCES AND MEDICAL AND ALLIED EDUCATION**

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>The Americas</th>
<th>South-East Asia</th>
<th>Europe</th>
<th>Eastern Mediterranean</th>
<th>Western Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic medical sciences</td>
<td>2</td>
<td>5</td>
<td>24</td>
<td>53</td>
<td>20</td>
<td>16</td>
<td>120</td>
</tr>
<tr>
<td>Medical and allied education</td>
<td>5</td>
<td>48</td>
<td>7</td>
<td>20</td>
<td>12</td>
<td>5</td>
<td>97</td>
</tr>
<tr>
<td><strong>Sub-total — Basic Medical Sciences and Medical and Allied Education</strong></td>
<td>7</td>
<td>53</td>
<td>31</td>
<td>73</td>
<td>32</td>
<td>21</td>
<td>217</td>
</tr>
</tbody>
</table>

**Total — Clinical Medicine, Basic Medical Sciences and Medical and Allied Education**

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>The Americas</th>
<th>South-East Asia</th>
<th>Europe</th>
<th>Eastern Mediterranean</th>
<th>Western Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>230</td>
<td>61</td>
<td>44</td>
<td>169</td>
<td>149</td>
<td>48</td>
<td>48</td>
<td>701</td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td>43</td>
<td>14</td>
<td>20</td>
<td>31</td>
<td>35</td>
<td>19</td>
<td>29</td>
</tr>
</tbody>
</table>

**GRAND TOTAL**

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>The Americas</th>
<th>South-East Asia</th>
<th>Europe</th>
<th>Eastern Mediterranean</th>
<th>Western Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>535</td>
<td>433</td>
<td>220</td>
<td>543</td>
<td>425</td>
<td>251</td>
<td>2407</td>
<td></td>
</tr>
</tbody>
</table>
### Annex 13

**WHO COLLABORATIVE RESEARCH PROJECTS**

initiated between 1 October 1963 and 31 December 1964

<table>
<thead>
<tr>
<th>Subject of Research</th>
<th>Africa</th>
<th>The Americas</th>
<th>South-East Asia</th>
<th>Europe</th>
<th>Eastern Mediterranean</th>
<th>Western Pacific</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virus Diseases</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>19</td>
<td>3</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Bacterial Diseases</td>
<td>1</td>
<td></td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>4</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Leprosy</td>
<td>3</td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Treponematoses</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Malaria</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>Parasitic Diseases</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Veterinary Public Health</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Cancer</td>
<td></td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular Diseases</td>
<td>2</td>
<td></td>
<td>10</td>
<td></td>
<td>2</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Occupational Health</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Human Genetics</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Radiation Health</td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Human Reproduction</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Immunology</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Biological Standardization</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Evaluation of Drugs</td>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Health</td>
<td>3</td>
<td></td>
<td>3</td>
<td>6</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Care</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>31</td>
<td>32</td>
<td>12</td>
<td>88</td>
<td>7</td>
<td>21</td>
<td>191</td>
</tr>
</tbody>
</table>
## Annex 14

### RESEARCH GRANTS FOR TRAINING AND EXCHANGE

BY SUBJECT AND TYPE OF GRANT

1 October 1963 - 31 December 1964

<table>
<thead>
<tr>
<th>Subject</th>
<th>Training Grants</th>
<th>Exchange of research workers grants</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Junior</td>
<td>Senior</td>
<td></td>
</tr>
<tr>
<td>Virus Diseases</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Bacterial Diseases</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Treponematoses</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Parasitic Diseases</td>
<td>1</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Cancer</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Tumour Viruses</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cardiovascular Diseases</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Haematology</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nutrition</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Public Health Practice</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Maternal and Child Health</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Human Genetics</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mental Health</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Immunology</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Biological Standardization</td>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Pharmacology</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Rheumatic Diseases</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Endocrinology</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Nephropathy</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Radioisotopes</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Health Statistics</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Research Promotion</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td>27</td>
<td>59</td>
</tr>
</tbody>
</table>

* Grants supported by the Swedish National Association against Heart and Chest Diseases.

** Grants supported by the Government of Israel.
Annex 15

WHO INTERNATIONAL AND REGIONAL REFERENCE CENTRES
AND INSTITUTIONS WHERE THEY ARE LOCATED

at 31 December 1964

VIRUS DISEASES

INFLUENZA

World Influenza Centre
National Institute for Medical Research, London, England
(61 collaborating laboratories)

WHO International Influenza Centre for the Americas
Virology Section, Communicable Disease Center, Atlanta, Georgia, United States of America (16 collaborating laboratories)

RESPIRATORY VIRUS DISEASES OTHER THAN INFLUENZA

WHO International Reference Centres for Respiratory Virus Diseases other than Influenza
Common Cold Research Unit, National Institute for Medical Research, Harvard Hospital, Salisbury, England
Laboratory of Infectious Diseases, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, United States of America

WHO Regional Reference Centres for Respiratory Virus Diseases other than Influenza
Institute of Epidemiology and Microbiology, Prague, Czechoslovakia
Respiratory Virus Laboratory, National Institute of Health, Tokyo, Japan
South African Institute for Medical Research, Johannesburg, South Africa
Ivanovskij Institute of Virology, Moscow, Union of Soviet Socialist Republics
Respirovirus Unit, Virology Section, Communicable Disease Center, Atlanta, Georgia, United States of America

ENTEROVIRUS DISEASES

WHO International Reference Centre for Enteroviruses
Department of Virology and Epidemiology, Baylor University College of Medicine, Houston, Texas, United States of America

WHO Regional Reference Centres for Enteroviruses
Enterovirus Department, Statens Seruminstitut, Copenhagen, Denmark
Section de Virologie, Laboratoire national de la Santé publique, Lyons, France
Department of Enteroviruses, National Institute of Health, Tokyo, Japan

Department of Bacteriology, University of Singapore, Singapore, Malaysia
South African Institute for Medical Research, Johannesburg, South Africa
Institute of Poliomyelitis and Virus Encephalitis, Moscow, Union of Soviet Socialist Republics

ARTHROPOD-BORNE VIRUS DISEASES

WHO International Reference Centre for Arthropod-borne Viruses
Department of Epidemiology and Public Health, Yale University School of Medicine, New Haven, Connecticut, United States of America

WHO Regional Reference Centres for Arthropod-borne Viruses
Department of Microbiology, John Curtin School of Medical Research, Australian National University, Canberra, Australia
Institute of Virology, Czechoslovak Academy of Sciences, Bratislava, Czechoslovakia
National Institute for Medical Research, London, England
Department of Virology and Rickettsiology, National Institute of Health, Tokyo, Japan
Institut Pasteur, Dakar, Senegal
East Africa Virus Research Institute, East African Common Services Organization, Entebbe, Uganda
Virus Encephalitis Section, Institute of Poliomyelitis and Virus Encephalitis, Moscow, Union of Soviet Socialist Republics
Virology Section, Communicable Disease Center, Atlanta, Georgia, United States of America

TRACHOMA

WHO International Reference Centre for Trachoma
Francis I. Proctor Foundation for Research in Ophthalmology, University of California, San Francisco, California, United States of America

RICKETTSIOSIS

WHO Regional Reference Centre for Human Rickettsiosis
Rocky Mountain Laboratory, Institute of Allergy and Infectious Diseases, Hamilton, Montana, United States of America

SERUM REFERENCE BANKS

World Serum Reference Bank
Department of Epidemiology and Public Health, Yale University School of Medicine, New Haven, Connecticut, United States of America
### WHO Regional Serum Reference Banks

- **Institute of Epidemiology and Microbiology, Prague, Czechoslovakia**
- **South African Institute for Medical Research, Johannesburg, South Africa**

### BACTERIAL DISEASES

#### ENTERIC INFECTIONS

- **WHO International Salmonella Centre**
  - Statens Seruminstitut, Copenhagen, Denmark
- **WHO International Escherichia Centre**
  - Statens Seruminstitut, Copenhagen, Denmark
- **WHO International Shigella Centres**
  - Central Public Health Laboratory, London, England
  - Communicable Disease Center, Atlanta, Georgia, United States of America
- **WHO International Centre for Enteric Phage Typing**
  - Central Public Health Laboratory, London, England (67 collaborating laboratories)
- **WHO International Reference Centre for Vibrio Phage Typing**
  - Indian Institute for Biochemistry and Experimental Medicine, Calcutta, India

#### STAPHYLOCOCCAL INFECTIONS

- **WHO International Centre for Staphylococcal Phage Typing**
  - Central Public Health Laboratory, London, England (32 collaborating laboratories)

### TUBERCULOSIS

- **WHO Tuberculosis Diagnostic Reference Laboratory**
  - Tuberculosis Research Institute, Prague, Czechoslovakia

### TREPONEMATOSES

- **International Treponematoses Laboratory Centre**
  - Johns Hopkins University, Baltimore, Maryland, United States of America

- **WHO Serological Reference Centres for Treponematoses**
  - Treponematoses Research Laboratory, Statens Seruminstitut, Copenhagen, Denmark
  - Venerel Disease Research Laboratory, Communicable Disease Center, Chamblee, Georgia, United States of America

### ZOOONES

- **BRUCELLOSIS**
  - **FAO/WHO Brucellosis Centres**
    - Department of Zoonoses, Department of Agriculture and Animal Husbandry, Buenos Aires, Argentina
    - Commonwealth Serum Laboratories, Parkville, Victoria, Australia
  - **WHO Brucellosis Centre**
    - Gamaleja Institute of Epidemiology and Microbiology, Moscow, Union of Soviet Socialist Republics

### LEPTOSPIROSIS

- **FAO/WHO Leptospirosis Reference Laboratories**
  - Laboratory of the Department of Health and Home Affairs, Brisbane, Australia
  - London School of Hygiene and Tropical Medicine, London, England
  - Istituto Superiore di Sanità, Rome, Italy
  - National Institute of Health, Tokyo, Japan
  - Institute for Tropical Hygiene and Geographical Pathology (Royal Tropical Institute), Amsterdam, Netherlands
  - Division of Veterinary Medicine, Walter Reed Army Medical Center, Washington, United States of America

- **WHO Leptospirosis Reference Laboratory**
  - Gamaleja Institute of Epidemiology and Microbiology, Moscow, Union of Soviet Socialist Republics

### PARASITIC DISEASES

#### MALARIA

- **WHO International Malaria Reference Centre**
  - Laboratory of Parasitic Chemotherapy, National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, United States of America
WHO Regional Malaria Reference Centre
Central Institute of Communicable Diseases, New Delhi, India

BILHARZIASIS
WHO Snail Identification Centre
Danish Bilharziasis Laboratory, Copenhagen, Denmark

LEISHMANIASIS
WHO Reference Centre on Leishmaniasis
Department of Parasitology, Hadassah Medical School, Jerusalem, Israel

ENVIRONMENTAL BIOLOGY
DISEASES OF VECTORS
WHO International Reference Centre for the Diagnosis of Diseases of Vectors
Department of Zoology and Entomology, Ohio State University, Columbus, Ohio, United States of America

NON-COMMUNICABLE DISEASES
CANCER
WHO International Reference Centre for the Histopathology of Bone Tumours
Latin American Registry of Bone Pathology, Osteo-articular Pathology Centre, Italian Hospital, Buenos Aires, Argentina (seven collaborating laboratories)

WHO International Reference Centre for the Histopathology of Leukaemias and other Neoplastic Disorders of the Haematopoietic Cells
Centre de Recherches cancérologiques et radiopathologiques de l'Association Claude Bernard, Hôpital St Louis, Paris, France (nine collaborating laboratories)

WHO International Reference Centre for the Histopathology of Lung Tumours
Institute for General and Experimental Pathology, University of Oslo, Norway (five collaborating laboratories)

WHO International Reference Centre for the Histopathology of Mammary Tumours
Bland Sutton Institute of Pathology, Middlesex Hospital, London, England (five collaborating laboratories)

WHO International Reference Centre for the Histopathology of Oropharyngeal Tumours
Sarojini Naidu Medical College, Agra, Uttar Pradesh, India (six collaborating laboratories)

WHO International Reference Centre for the Histopathology of Ovarian Tumours
Institute of Oncology of the Academy of Medical Sciences of the USSR, Leningrad, Union of Soviet Socialist Republics (six collaborating laboratories)

WHO International Reference Centre for the Histopathology of Salivary Gland Tumours
Bland Sutton Institute of Pathology, Middlesex Hospital, London, England

WHO International Reference Centre for the Histopathology of Soft Tissue Tumours
Armed Forces Institute of Pathology, Washington, D.C., United States of America (five collaborating laboratories)

WHO International Reference Centre for the Histopathology of Thyroid Gland Tumours
University Institute of Pathology, Cantonal Hospital, Zurich, Switzerland

WHO International Reference Centre for the Provision of Frozen Transplantable Tumour Strains
Department of Tumour Pathology, Karolinska Institute, Stockholm, Sweden

WHO International Reference Centre for the Provision of Tumour-bearing Animals
Netherlands Cancer Institute, Amsterdam, Netherlands (three collaborating laboratories)

ANAEMIAS
WHO Reference Centres on Anaemias
Department of Haematology, Post-graduate Medical School, London, England
University of Witwatersrand, Johannesburg, South Africa

OTHER FIELDS
INFORMATION ON ANTIBIOTICS
International Centre of Information on Antibiotics
Laboratoire de Microbiologie générale et médicale de l'Université de Liège, Belgium

BLOOD GROUPS
International Blood Group Reference Laboratory
Medical Research Council Blood Group Reference Laboratory, Lister Institute of Preventive Medicine, London, England
BIOLOGICAL STANDARDIZATION

WHO International Laboratories for Biological Standards
Statens Seruminstitut, Copenhagen, Denmark
National Institute for Medical Research, London, England
Central Veterinary Laboratory, Weybridge, England

PHARMACEUTICALS

WHO International Reference Centre for Chemical Reference Substances
Centre for Authentic Chemical Substances, Apotekens Kontrol-laboratorium, Stockholm, Sweden

IMMUNOLOGY

WHO Reference Centre for Immunoglobulins
Institut de Biochimie, Lausanne University, Switzerland

WHO Reference Laboratory for the Serology of Autoimmune Disorders
Courtauld Institute of Biochemistry, Middlesex Hospital, London, England

WHO Immunology Training and Research Centre
Department of Chemical Pathology, University College Hospital, Ibadan, Nigeria
THE WORK OF WHO, 1964

ANNUAL REPORT OF THE DIRECTOR-GENERAL

TO THE

WORLD HEALTH ASSEMBLY AND TO THE UNITED NATIONS

INDEX

WORLD HEALTH ORGANIZATION

GENEVA

May 1965
OFFICIAL RECORDS No. 139

Annual Report of the Director-General for 1964

CORRIGENDA

Page 21, left-hand column, eleventh line from bottom:

*delete* British Research Council

*insert* British Medical Research Council

Page 65, left-hand column, penultimate line:

*delete* Czechoslovakia

*insert* Yugoslavia
INDEX

Main references by subject, and main references to the project list by country, are in heavy type.

Abattoir management and operation, FAO/WHO training course, 14, 203
Addiction-producing drugs, 59, 73
Burma, 159; Thailand, 167
Aden, 110
Administrative Committee on Co-ordination (ACC), 51, 71, 72, 75
Advisory Committee on Medical Research, 40, 55, 59 membership, 220
Advisory groups, meetings, October 1963-December 1964, 221-225
Aedes aegypti, 25-26, 34, 91, 138, 157
Argentina, 144; Caribbean area, 137; Colombia, 148; Cuba, 91, 148; Mexico, 91; Netherlands Antilles, 152; Surinam, 153; United States of America, 91; Venezuela, 91, 154; West Indies, 91
See also Yellow fever
Afghanistan, 3, 4, 18, 29, 35, 39, 98, 102, 113, 157-158
African Institute for Economic Development and Planning, 36, 71, 82
African Region, 79-85, 127-136
Air pollution, 29, 88, 146 research institute, Chile, 72, 89, 147
Aircraft disinsection, 33, 74, 75
Airports designated in application of the International Sanitary Regulations, booklet, 25
Albania, 171
Algeria, 39, 103, 104, 171-172
Americas, Region of the, 86-96, 137-155
Anaemias, 45, 46, 87
Cameroon, 205-206; Trinidad and Tobago, 154
Anaesthesiology, inter-regional training course, Copenhagen, 202
Andean region development programme, 72, 74, 145, 149, 153
Angola, 134
Annual Epidemiological and Vital Statistics, 1961, 57
Antibiotics, 37-38, 60
Argentina, 3, 25, 86, 87, 88, 89, 90, 91, 92, 143-144
Arthropod-borne virus infections, 18-20
Asian Institute for Economic Development and Planning, 36, 71, 98, 157
Associate Members, 67, 211
Atherosclerosis, 43, 44 comparative studies, 12-13
Australia, 16, 39, 61, 192
Austria, 172
Automatic data processing systems, conference, Copenhagen, 58, 104, 171
Auxiliary health personnel, 53, 93, 98, 110
British Solomon Islands Protectorate, 118; Cambodia, 118, 193; Iraq, 182; Libya, 184; Nepal, 166; Peru, 153; Philippines, 118; Republic of Korea, 118; Saudi Arabia, 186, 187; Somalia, 187; Syria, 189; Uruguay, 154; Yemen, 190
Bacterial diseases, 23-24
Basutoland, 128
BCG, assessment team, South-East Asia Retion, 156 trial team (leprosy), 25, 204 vaccination and vaccines, 6, 7, 25, 82, 122, 127
Bechuanaland, 80, 128
Belgium, 44, 168, 172
Bibliography on Yaws, 1905-1962, 9, 63
Bilharziasis, 20-21, 34, 91, 138, 157 trial team (leprosy), 25, 204 vaccination and vaccines, 6, 7, 25, 82, 122, 127
Cameroon, 80; Central African Republic, 80, 129; Ethiopia, 110; Ghana, 80, 130; Iran, 110, 182; Iraq, 110, 182; Lebanon, 109, 110, 184; Mauritania, 80; Somalia, 109-110; Southern Rhodesia, 80; Sudan, 110; Syria, 189; United Arab Republic, 110, 190; Upper Volta, 80; Zambia, 136 advisory team, 21, 110, 201
Biomedical research information service, 55, 69 working group on a Latin American common market, 143
Budget for 1964, 67-68, 227
See also Programme and budget estimates, regional
Bulgaria, 3, 13, 31, 168, 172
Bulletin of the World Health Organization, 63
Burma, 71, 18, 24, 25, 26, 73, 98, 101, 102, 109, 113, 157, 158-159, 204
Burundi, 72, 79, 80, 127, 128
Cambodia, 26, 29, 116, 117, 118, 119, 120, 193 contribution to the Special Account for Medical Research, 56
Cameroon, 45, 51, 79, 80, 81, 128, 205-206
Canada, 16, 40, 147
Cancer, 13, 17, 42-43, 89, 110, 168, 205
Albania, 171; Belgium, 168; Bulgaria, 168; Ethiopia, 110; France, 168; Hungary, 168; India, 205; Iran, 110; Iraq, 110; Italy, 168; Jordan, 110; Sudan, 188; Tunisia, 110, 189; United Arab Republic, 110
Cardiovascular diseases, 43-44, 58, 89, 169, 197 comparative studies, 12-13
CCTA, see Commission for Technical Co-operation in Africa Central African Republic, 29, 79, 80, 129
Centre for Classification of Diseases, London, 57
Ceylon, 3, 4, 22, 23, 33, 36, 42, 98, 102, 156, 159-160
Chad, 29, 79, 82, 129
Chagas' disease, 44, 141, 154
Children, dental health, 168  
French Polynesia, 195  
mental health, 46  
China (Taiwan), 194; Finland, 173; Israel, 183; Portugal, 175; Switzerland, 175; Yugoslavia, 177  
seminar, Frankfurt-am-Main, 170  
nutrition, 87  
Bolivia, 145; Ceylon, 159; Peru, 153; Republic of Vietnam, 117  
seminar on protein-calorie malnutrition, Kampala, 47  
rehabilitation, Spain, 175; Yugoslavia, 176  
See also Maternal and child health; Paediatrics; School health  
Chile, 72, 88, 89, 90, 92, 147  
China (Taiwan), 3, 7, 16, 22, 24, 35, 38, 39, 46, 116, 117, 118, 119, 120, 121, 193-194  
Cholera and cholera El Tor, 23, 26, 97, 109, 119, 120  
control team, 23, 207  
seminar, Manila, 23, 207  
Classification of diseases, 57, 89, 138  
See also Statistics  
Clinical chemistry, advanced inter-regional course, Copenhagen, 206  
Codex Alimentarius Commission, 13, 47-48, 74  
Colombia, 24, 87, 88, 90, 91, 147-148  
Colombo Plan, 74  
Commission for Technical Co-operation in Africa, 74, 81, 82, 128  
Committee on International Quarantine, 25, 30, 74  
membership, 219-220  
Communicable diseases, 6-26, 97, 118-119, 139, 140  
seminars, Manila, 119, 191, 192  
travelling seminar on the organization of epidemiological services and their role in the control of communicable diseases, USSR, 205  
Communicable eye diseases, 104, 109  
Algeria, 171; Ethiopia, 109, 114; Iran, 181; Iraq, 109, 182; Jordan, 109, 183; Kuwait, 109; Libya, 109; Morocco, 104, 174; Pakistan, 109; Spain, 175; Sudan, 109, 188; Tunisia, 109, 189; Turkey, 176; United Arab Republic, 109  
See also Trachoma  
Community development, 35, 72, 73  
training centres, 39-40, 72, 110, 138, 178  
Community water supply, see Water supplies  
Congenital malformations, 45, 142  
Congo (Brazzaville), 70, 79, 129  
Congo, Democratic Republic of, 44, 52, 53, 72, 75, 82, 129  
Constitution of WHO, proposals for amendment, 67  
Contributions, payment, 68  
Convention on the Privileges and Immunities of the Specialized Agencies, 67, 211  
Co-operation with other organizations, 71-75  
See also under names of individual organizations  
Costa Rica, 28, 88, 90, 92, 148  
Council of Europe, 75, 104  
Cuba, 15, 70, 75, 91, 148-149  
Cyprus, 36, 119-170  
Czechoslovakia, 12, 15, 16, 19, 43, 44, 61, 172  
Dahomey, 7, 79, 80, 127, 129  
Danish Save the Children Fund, 65, 160  
Data processing systems, automatic, conference, Copenhagen, 58, 104, 171  
Dengue, 19, 20, 97, 99  
Denmark, 32, 33, 173  
Dental health, 44-45, 87-88, 120, 137, 138, 141, 168, 178, 192  
Brazil, 146; Ceylon, 160; Colombia, 87-88, 148; Dominican Republic, 88; El Salvador, 88; French Polynesia, 117, 195; India, 164; Mexico, 88; Nicaragua, 88; Panama, 88; Papua and New Guinea, 120; Venezuela, 88  
Diabetes mellitus, 50  
Diarrhoeal diseases, 87, 138, 179  
Ceylon, 160; Iran, 109; Iraq, 179; Jordan, 179; Pakistan, 109; Peru, 153  
advisory team, 24, 109, 201  
See also Enteric diseases  
Diphtheria, 24, 85, 97, 100  
Disarmament, inter-agency committee on conversion to peaceful uses of resources released by, 71  
Domiciliary care, seminars, European Region, 171  
Dominican Republic, 88, 91, 92, 149  
Drinking-water, fluoridation, 137, 160  
standards, 28  
Drugs, addiction-producing, 59, 73  
Burma, 159; Thailand, 167  
quality control, 61-62, 112, 139  
Iran, 181; Thailand, 167; United Arab Republic, 190; Venezuela, 155  
symposium on toxicology of drugs, Moscow, 60, 106, 171  
Eastern Mediterranean Region, 108-115, 178-180  
Economic and Social Council, 30, 59, 71, 72, 75  
Economic Commission for Africa, 21, 30, 71, 73, 81, 82, 104, 111, 206  
Economic Commission for Asia and the Far East, 73, 98, 111, 157  
Economic Commission for Europe, 73, 104, 168  
Economic Commission for Latin America, 73, 143  
Economic development and planning, regional institutes, 36, 71, 73, 82, 86, 98, 157  
Ecuador, 86, 90, 91, 138, 149  
Education and training, 51-54, 81-82, 89-90, 118, 179  
See also Auxiliary health personnel; Fellowships; Medical education; Medical schools; Nursing; Public health training  
El Salvador, 4, 32, 86, 88, 91, 92, 149-150  
Emergency assistance, 70, 75, 177  
Encephalitis, 19, 160, 183  
Enteric diseases, 16-17, 23-24, 97, 105, 109  
training courses, Alexandria, Bucharest and Teheran, 23-24, 109, 201-202  
See also Diarrhoeal diseases  
Environmental biology, 30-31  
Environmental health, 27-34, 80, 88-89, 111, 119-120  
Chad, 129; Gabon, 129; Lebanon, 184; Liberia, 131; Mali, 132; Pakistan, 185; Senegal, 134; Tunisia, 189  
travelling seminar, USSR, 30, 206-207  
See also Sanitation  
Environmental pollution, 28-29  
See also Air pollution; Water pollution  
Epidemiological and Vital Statistics Report, 57  
Epidemiology, 6, 139, 140, 141, 171, 179  
Afghanistan, 158; Algeria, 172; Burma, 158; Ceylon, 159-160; Ethiopia, 180; India, 164; Indonesia, 165; Iraq, 182; Mongolia, 165; Morocco, 106, 174  
travelling seminar, USSR, 205  
Epilepsy, 93  
Equipment for Vector Control, 34, 64  
Ethiopia, 18-19, 28, 35, 36, 53, 72, 109, 110, 180-181  
supervisory team for health centres, 113-114, 180  
European Region, 103-107, 168-177  
European Society of Haematology, 37  
Evaluation of projects, 97, 99
Hospital statistics, 89, 97, 101-102, 139, 156
Afghanistan, 102; Burma, 102; Ceylon, 102, 160; Ethiopia, 180; Malaysia, 118, 196; Philippines, 118, 198; Republic of Viet-Nam, 199; Saudi Arabia, 186; Thailand, 101-102
Hospitals, planning and administration, 36-37, 99
Algeria, 172; Argentina, 86, 144; Brazil, 86; Ceylon, 160; Cyprus, 180; Ethiopia, 181; Fiji, 199; India, 97; Jamaica, 86; Malaysia, 196; Portugal, 175; Republic of Viet-Nam, 199; Saudi Arabia, 187; Tonga, 199; Venezuela, 86; West Indies, 86, 155
training courses, Brussels and Moscow, 168
Houselifts, 32, 33
Housing, 30, 71, 73, 111, 137, 155, 179, 206
Housing Programmes: The Role of Public Health Agencies, 30
Human genetics, 45, 120
inter-regional training courses, Bombay and Copenhagen, 45, 203
Human reproduction, research, 40
Hungary, 3, 12, 104, 168, 173
Hydatidosis, 11-12
ICU, see International Labour Organisation
Iceland, 173
ILO/WHO Committee on the Health of Seafarers, 49
Immunology, 17, 20, 22, 60-61
Incaparina, 87
India, 3, 4, 7, 8, 16, 18, 20, 23, 24, 25, 26, 28, 33, 35, 39, 42, 46, 49, 72, 97, 98, 99-100, 101, 109, 113, 156, 157, 160-164, 205
Indian Council of Medical Research, 163
Indonesia, 3, 7, 18, 24, 26, 101, 156, 165
Industrial hygiene, 140
India, 164; Iran, 181; Venezuela, 155
symposium, Sao Paulo, 89, 142
training course, Zagreb, 49, 204
Industrialization, 49, 72, 89
seminar, Dacca, 49, 72, 111, 202
Influenza, 12, 15, 16
Insecticides, 31-34
field trials and testing teams, 4, 32-33, 34, 140, 203, 205, 206
resistance, 31-34, 91, 93
Institute of Nutrition of Central America and Panama (INCAP), 74, 87, 92, 95, 137
Inter-Agency Working Group on Milk and Milk Products, FAO/UNICEF/WHO, 14
Inter-American Children's Institute, 87
Inter-American Development Bank, 88, 93, 95, 142
Inter-American Economic and Social Council, 86
Inter-Governmental Maritime Consultative Organization, 26, 49, 74
International Air Transport Association, 26, 75
International Association of Microbiological Societies, 13
International Astronautical Federation, 75
International Atomic Energy Agency, 29, 47, 48, 49, 71, 73, 74, 202, 203, 204, 207, 218
International Certificate of Vaccination or Revaccination against Smallpox, 25
International Children's Centre, training courses, 87, 141, 170, 171
International Civil Aviation Organization, 26, 74
International Commission on Radiological Protection, 49
International Commission on Radiological Units and Measurements, 49
International Committee of the Red Cross, 75
International Committee on Laboratory Animals, 37
International Confederation of Midwives, 39, 41
International Council of Scientific Unions, 75
International Council of Societies of Pathology, 43
International Council on Jewish Social and Welfare Services, 75
International Dental Federation, 45
International Diabetes Federation, 50
International Digest of Health Legislation, 63
International Federation for Medical Electronics and Biological Engineering, 75
International Federation of Gynecology and Obstetrics, 39, 41, 43
International Labour Organisation (ILO), 64, 74, 82, 202, 207
jointly assisted activities, 35, 48, 49, 50, 72, 111
International Office of Epizootics, 13
International Organization for Standardization, 75
International Pharmacopoeia, 62
International quarantine, 25-26, 33
Saudi Arabia, 186, 187; Trinidad and Tobago, 153
International Sanitary Regulations, 25, 26, 74, 139, 140, 187
International Social Security Association, 74, 87
International Society of Cardiology, 44
International Standards for Drinking-Water, 28, 63-64
International Statistical Classification of Diseases, Injuries and Causes of Death, 45, 57, 89, 138
International Union against Cancer, 43, 65
International Union against Tuberculosis, 63, 65, 75
International Union for Child Welfare, 75
International Union for Health Education, 40
International Union of Physiological Sciences, 59
Iran, 4, 10, 24, 30, 33, 46, 49, 108, 109, 110, 111, 113, 114, 179, 181-182
Iraq, 4, 44, 108, 109, 110, 179, 182-183
Ireland, 173
Israel, 3, 10, 13, 23, 24, 33, 42, 46, 108, 109, 183
contribution to the Special Account for Medical Research, 56
Italy, 29, 32, 33, 61, 168, 173-174
Ivy Coast, 58, 79, 80, 127, 131
collection to the Special Account for Medical Research, 56
Jamaica, 3, 16, 44, 86, 87, 92, 93-94, 137, 138, 151
Japan, 16, 19, 23, 24, 25, 26, 31, 39, 44, 118, 195
Joint FAO/IAEA/WHO Expert Committee on the Technical Basis for Legislation on Irradiated Foods, 47, 218-219
Joint FAO/WHO Expert Committee on Brucellosis, 10, 219
Joint FAO/WHO Expert Committee on Food Additives (Specifications for Identity and Purity, and Toxicological Evaluation of Food Colours and some Antimicrobials and Antioxidants), 47, 219
Joint FAO/WHO Expert Committee on Protein Requirements, 46, 203
Joint IAEA/WHO Study Group on Planning of Radiotherapy Facilities, 49
Joint ILO/WHO Committee on the Health of Seafarers, 49
Juvenile delinquency, inter-agency meeting, 46
Kellogg Foundation, 87
Kenya, 7, 13, 22, 30, 51, 80, 81, 128, 131
Korea, Republic of, 26, 39, 116, 118, 119, 120, 121-122, 195-196
Kuwait, 109, 110, 184
Laboratories, 37-38, 97, 110, 137, 168, 205-206
Brazil, 145, 146; Burma, 158; Cambodia, 193; Costa Rica, 148; Cyprus, 110, 180; Dominican Republic, 149; El Salvador, 130; Ethiopia, 110, 180; Guatemala, 150; Haiti, 150; Iran, 110, 181; Iraq, 110, 182; Jordan, 110; Laos, 196; Lebanon, 110; Libya, 110; Malaysia, 197;
Medical education, (continued) 
- travelling seminar on the scientific work of medical students, USSR, 52, 205
- See also Medical schools

Medical research, 55-56, 92, 141
- India, 163, 164; Malaysia, 196

Mycoses, 23

Mozambique, 19, 79, 134

Mortality, inter-American investigation, 89

Morocco, 58, 103, 104, 106, 174

Mongolia, 10, 15, 165

Molluscicides, 20

Milk hygiene, 13-14

Milbank Memorial Fund, 90, 148

Meningitis, 10, 15, 165

Milk education, (continued)
- travelling seminar on obstetrics and gynaecology, USSR, 40, 201

Milbank Memorial Fund, 90, 148

Milk hygiene, 13-14

Molluscicides, 20

Mongolia, 10, 15, 165

Mortality, inter-American investigation, 89

Mozambique, 19, 79, 134

Myocytes, 23

Narcotic drugs, 59, 73

Burma, 159; Thailand, 167


Algeria, 172; Burma, 158; Burundi, 79; China (Taiwan), 116; Colombia, 147, 148; Costa Rica, 148; El Salvador, 86, 150; Gabon, 79, 129; Guatemala 150; Guinea, 79; Jamaica, 151; Jordan, 108; Liberia, 79, 131; Mali, 79, 132; Nicaragua, 152; Niger, 79, 133; Nigeria, 79; Panama, 152; Paraguay, 152; Republic of Korea, 195; Republic of Viet-Nam, 116; Rwanda, 79; Saudi Arabia, 187; Sierra Leone, 79, 135; Somalia, 108, 188; Surinam, 153; Togo, 79; Western Samoa, 200

seminars, Western Pacific Region, 36, 116, 192

Nepathrapathy in South-Eastern Europe, conference, Dubrovnik, 170

Netherlands, 32, 174

Netherlands Antilles, 152

New Hebrides, 119, 191, 198

New Zealand, 16, 31, 44, 198

Nicaragua, 4, 31, 88, 91, 92, 152

Niger, 24, 36, 57, 79, 133

Nigeria, 4, 9, 16, 21, 24, 25, 32, 34, 35, 38, 44, 47, 61, 79, 80, 81, 82, 127, 128, 133-134

Noise, study of effects on health, European Region, 170

Non-governmental organizations in official relations with WHO, 75, 226

Nonproprietary names for pharmaceutical preparations, 62

Norway, 42, 44, 174

Nurse in Mental Health Practice, 39

Nursing, 38-39, 52, 81-82, 88, 90, 137, 141, 157, 168, 202

Afghanistan, 158; Algeria, 172; Argentina, 143, 144; Austria, 172; Bolivia, 90, 144-145; Brazil, 90, 146; British Honduras, 147; British Solomon Islands Protectorate, 117, 118, 193; Burma, 158; Cambodia, 116-117, 193; Cameroon, 128; Ceylon, 159, 160; Chad, 82, 129; Chile, 147; China (Taiwan), 117, 121, 194; Costa Rica, 148; Cyprus, 179; Dominican Republic, 149; Ecuador, 90, 149; Gabon, 129; Gambia, 130; Ghana, 81, 130; Gilbert and Ellice Islands, 117, 195; Guatemala, 90, 96, 150; India, 161, 162, 163; Indonesia, 165; Iran, 108, 182; Iraq, 108, 182; Italy, 174; Jamaica, 151; Jordan, 183; Laos, 196; Lebanon, 184; Libya, 184; Malaysia, 117, 197; Mauritania, 132; Mexico, 151; Nepal, 166; Nicaragua, 152; Niger, 133; Pakistan, 185; Peru, 90, 153; Philippines, 117; Portugal, 175; Saudi Arabia, 187; Senegal, 134; Sierra Leone, 134; Somalia, 188; Sudan, 188; Surinam, 153; Syria, 189; Thailand, 166; Togo, 135; Trinidad and Tobago, 154; Tunisia, 189; Turkey, 176; United Arab Republic, 113, 190; United Republic of Tanzania, 136; Upper Volta, 136; Uruguay, 154; Venezuela, 90, 154; West Indies, 90, 155; Yugoslavia, 177

Higher Institute, Alexandria, 38, 108, 113, 178

International schools, Edinburgh and Lyons, 38, 168

post-basic education centres, Dakar and Ibadan, 82, 127

seminar for territories in the South Pacific, 117, 191

seminars on home-care nursing services, European Region, 171

seminars, Region of the Americas, 38, 90, 137, 140

training course on nursing services administration, Copen-

hagen, 38, 203-204

training courses for psychiatric nurses, Beirut, 46, 179

Nutrition, 39, 40, 46-47, 81, 87, 98, 111, 128, 137, 139, 141, 157, 203

Algeria, 172; Bolivia, 145; Brazil, 145, 146; Caribbean area, 143; Central African Republic, 129; Ceylon, 159; Chile, 147; Colombia, 87, 148; Ethiopia, 180; French Polynesia, 117, 195; Guatemala, 87; Guinea, 130; Haiti, 150; India, 163; Iran, 111, 181; Jordan, 206; Kenya, 131; Malawi, 148; Malaysia, 123; Mexico, 151; Panama, 95-96; Peru, 153; Philippines, 117, 199; Republic of Viet-Nam, 117; Senegal, 134; Sierra Leone, 135; Spain, 175; Swaziland, 133; Pakistan, 185; Peru, 90, 153; Philippines, 117; Portugal, 175; Saudi Arabia, 187; Senegal, 134; Sierra Leone, 134; Somalia, 188; Sudan, 188; Surinam, 153; Syria, 189; Thailand, 166; Togo, 135; Trinidad and Tobago, 154; Tunisia, 189; Turkey, 176; United Arab Republic, 113, 190; United Republic of Tanzania, 136; Upper Volta, 136; Uruguay, 154; Venezuela, 90, 154; West Indies, 90, 155; Yugoslavia, 177

meeting on research in protein-calorie malnutrition, Bogotá, 143

meeting on teacher's role in nutrition education, Paris, 47, 203
Nutrition, (continued)
  seminar on methods to improve nutritional standards at village level, Manila, 117, 192
  seminar on protein-calorie malnutrition, Kampala, 47, 204
  training course, FAO/WHO, Bangkok, 204

Obstetrics, symposium on the role of obstetricians in maternal and child health programmes, Copenhagen, 41, 170
  travelling seminar, USSR, 40, 201

See also Midwifery

Occupational health, 49-50, 74, 89
  Greece, 173; India, 164; Iran, 181; Poland, 174
  institute, Chile, 72, 89, 147

See also Industrial hygiene

OIE, see International Office of Epizootics

Onchocerciasis, 22, 33, 80, 82

O1E, see International Office of Epizootics

Operation and Control of Water Treatment Processes, 28

Ophthalmias, see Communicable eye diseases

O'nyong nyong, 19

Operation and Control of Water Treatment Processes, 28

Ophthalmias, see Communicable eye diseases

Onchocerciasis, 22, 33, 80, 82

O1E, see International Office of Epizootics

Onchocerciasis, 22, 33, 80, 82

Organizational meetings, October 1963-December 1964, 221-225

Organization of African Unity, 74

Organization for Economic Co-operation and Development, 73, 75, 104

Organization of African Unity, 74

Organizational meetings, October 1963-December 1964, 221-225
  1965, tentative schedule, 225

Paediatrics, 81, 87, 117, 127, 128, 141, 171
  Brazil, 90, 146; Burma, 159; Chile, 90; India, 162-163; Jordan
  110, 183; Nigeria, 81, 128; Philippines, 117, 198; Thailand,
  100, 167; Uganda, 81, 84, 127

See also Maternal and child health

Pakistan, 18, 23, 24, 26, 44, 69, 109, 110, 111, 112-113, 114, 185
  Pan American Foot-and-Mouth Disease Centre, 92, 138
  Pan American Health Organization, 4, 27, 40, 57, 86, 87, 88,
  89, 91, 92, 93, 95
  Advisory Committee on Medical Research, 92, 93, 141
  Pan American Zoonoses Centre, 92, 138

Panama, 88, 95-96, 152

Papua and New Guinea, 4, 19, 24, 120, 198

Paraguay, 152

Parasitic diseases, 20-23
  zoonoses, 11-12

Pertussis, 15, 24, 85, 97

Peru, 16, 88, 89, 90, 91, 92, 94-95, 138, 152-153

Pesticides, 20, 33, 34
  residues in food, 47

See also Insecticides

Pharmaceuticals, 61-62, 110, 179
  Republic of Viet-Nam, 199-200; Somalia, 188

Pharmacology, 52, 59-62
  Burma, 159; Cambodia, 193; Somalia, 188; Thailand, 167
  Philippines, 9, 15, 16, 23, 25, 26, 35, 39, 46, 116, 117, 118, 119,
  198-199

Physical therapy, 50, 204

Indonesia, 165; Iran, 182; Japan, 118, 195; Jordan, 184;
  Lebanon, 184; Philippines, 118, 198

See also Rehabilitation

Plague, 24, 26
  Ecuador, 138; India, 164; Peru, 138, 153; Venezuela, 154

Poland, 24, 174-175

Poliomyelitis, 9, 15, 16-17, 104

Ceylon, 160; Nigeria, 134

Ports designated in Application of the International Sanitary Regulations, 25

Portugal, 16, 175
  overseas provinces, 19, 26, 79, 80, 134

Preventive and social medicine, 52-53, 138, 169, 205
  Brazil, 90, 146; Caribbean area, 151; Ethiopia, 180; India, 161;
  Iraq, 182; Israel, 108, 183; Malaysia, 118; Paraguay, 152;
  Republic of Viet-Nam, 199; Saudi Arabia, 186; Thailand,
  167; Venezuela, 154

symposium, Nancy, 52, 171

Programme and budget estimates, regional, 82, 92, 98, 105, 112, 120

Project evaluation, 97, 99

Protein Advisory Group, FAO/UNICEF/WHO, 46, 74, 143

Protein Requirements, Joint FAO/WHO Expert Group, 46, 143

Project evaluation, 97, 99

Public health administration, 35-36, 53, 72, 116, 140, 142
  Algeria, 103, 172; Burundi, 128; Caribbean area, 142; India,
  164; Laos, 196; Malaysia, 116, 196-197; Maldives Islands,
  165; Mali, 132; Niger, 133; Portugal, 175; Republic of
  Korea, 116, 195; Republic of Viet-Nam, 116; Thailand,
  167; Togo, 135; Upper Volta, 136; Western Samoa, 200;
  Yugoslavia, 176

conference, Zagreb, 106-107, 170

See also National health planning; Public health services

Public health engineering, research institute, Nagpur, 99-100

Public health laboratories, see Laboratories

Public Health Papers, 63

Public health services, 35-41, 86, 97-98, 103, 108, 116, 142, 168
  Algeria, 103; Argentina, 144; Bolivia, 145; Brazil, 145, 146;
  British Guiana, 146; British Honduras, 146; Burma, 98;
  Cambodia, 116, 193; Cameroon, 128; Canada, 147;
  Colombia, 147, 148; Costa Rica, 148; Cuba, 149; Dominic-
  nican Republic, 149; Ecuador, 86, 149; El Salvador, 86,
  150; Guatemala, 150; Guinea, 131; Haiti, 150; Honduras,
  150; India, 98, 163, 164; Indonesia, 165; Jamaica, 151;
  Kuwait, 184; Lebanon, 184; Mexico, 151; Morocco, 103,
  174; Nicaragua, 152; Pakistan, 185; Panama, 152;
  Paraguay, 152; Peru, 94, 153; Portugal, 175; Republic
  of Korea, 195; Rwanda, 134; Saudi Arabia, 186, 187;
  Somalia, 187-188; Surinam, 153; Thailand, 98, 166;
  Turkey, 103, 176; United States of America, 154;
  Uruguay, 154; Yemen, 190

See also National health planning; Public health administration;
  Rural health

Public health training, 52-53, 90, 137, 168
  Afghanistan, 157; Argentina, 89, 90, 144; Brazil, 90, 145;
  Burma, 159; Ceylon, 160; Chile, 89, 147; China (Taiwan),
  118, 194; Colombia, 89, 90, 148; Czechoslovakia, 172;
  Ethiopia, 114, 180; India, 161; Iran, 108, 182; Israel, 108;
  Malaysia, 118, 197; Mexico, 151; Morocco, 174; Pakistan,
  185; Peru, 89; Philippines, 118, 198; Republic of Korea,
  118, 195; Turkey, 103, 176; United Arab Republic, 190;
  United States of America, 154; Venezuela, 90, 155;
  Yugoslavia, 176

  travelling seminar, USSR, 52, 205

Public information, 65-66

Publications, 63-64, 90-91

Quarantine, see International quarantine

Rabies, 10-11
  Brazil, 145
  seminar and training course, Moscow, 11, 206
Radiation medicine, 48-49, 89, 110-111
Chile, 147; Ethiopia, 110, 180; India, 164; Malaysia, 118, 197; Sudan, 188
See also Radiation protection
Radiation protection, 29, 47, 48-49, 89, 110-111, 139, 143, 156
Brazil, 89; Ceylon, 156; India, 156; Tunisia, 110-111
multiple seminar on radiological health, 49, 204
scientific meeting on methods of radiochemical analysis, 48, 204
seminar, FAO/IAEA/WHO, Geneva, 48, 203
symposium on assessment of radioactive body burdens in man, Heidelberg, 48, 207
Red Cross, 70, 75
Reference laboratories and centres, 23, 31, 37, 55, 60, 61, 62, 237-240
bacterial diseases, 7, 23
non-communicable diseases, 42-43, 46
parasitic diseases, 20, 23
virus diseases, 14, 15, 16, 17, 19, 101
meeting of directors of virus reference centres, 12, 14, 15
zooneses, 10, 11
Reference services, 63-64
Region of the Americas, 86-96, 137-155
Regional Committee for Africa, 67, 82-83
Regional Committee for Europe, 105
Regional Committee for South-East Asia, 98-99
Regional Committee for the Americas, 92-93
Regional Committee for the Eastern Mediterranean, 111-112
Regional Committee for the Western Pacific, 120-121
Regional Office for Africa, 83
Regional Office for Europe, 105
Regional Office for South-East Asia, 99
Regional Office for the Americas, 93
Regional Office for the Eastern Mediterranean, 112
Regional Office for the Western Pacific, 121
Regional offices, areas served, 78
Rehabilitation, 59, 98, 111, 137, 143
Algeria, 172; Brazil, 145; Ceylon, 160; Chile, 147; Greece, 173;
India, 164; Iran, 111; Japan, 195; Jordan, 184; Lebanon,
111, 184; Morocco, 174; Pakistan, 111, 185; Spain, 175;
Syria, 111, 189; Tunisia, 111, 189; Venezuela, 155;
Yugoslavia, 176
training course, Copenhagen, 50, 202
See also Physical therapy
Research, 134
Respiratory viruses, 16, 104
seminar, Moscow, 16, 205
Réunion, 134
Rheumatic diseases, 43, 169
Rockefeller Foundation, 85
Romania, 3, 12, 175
Rural health, 35, 142, 156
Afghanistan, 157; Bolivia, 145; Cambodia, 116, 120, 193;
Dahomey, 129; Ecuador, 149; Ethiopia, 109, 113-114,
180; Ghana, 130; Greece, 173; Iraq, 182; Laos, 116, 120,
196; Liberia, 131; Madagascar, 132; Malaysia, 116, 120,
196, 197; Mauritania, 132; Morocco, 174; Nepal, 166;
Nigeria, 133; Republic of Korea, 116, 120; Saudi Arabia,
186; Sierra Leone, 134; Somalia, 109, 187; Southern
Rhodesia, 135; Sudan, 109, 188; Syria, 189; Thailand,
166; United Arab Republic, 190; Yemen, 190
seminar, Enugu, 127
Russian, publications in, 63, 64
Rwanda, 72, 79, 80, 134
Ryukyu Islands, 118, 119, 199
Sanitary engineering, 28, 29, 30, 72, 88, 98, 111, 137, 140, 168
Argentina, 88, 144; Brazil, 88, 145, 146; Chile, 147; Colombia,
88, 148; Costa Rica, 88; India, 99-100, 163; Iran, 111,
182; Lebanon, 111; Mexico, 88, 152; Morocco, 174;
Nigeria, 133; Panama, 88; Peru 88; Sierra Leone, 134;
Trinidad and Tobago, 88; United Arab Republic, 190;
Venezuela, 88, 155
See also Sanitation
Sanitation, 29-30, 98, 137
Afghanistan, 98, 157; Algeria, 172; Austria, 172; British
Honduras, 146; Burundi, 128; Cambodia, 120; Caribbean
area, 138; Central African Republic, 129; Ceylon, 98;
Chad, 129; Costa Rica, 148; Dahomey, 129; Ethiopia,
114, 181; Gabon, 129; Guinea, 130; Honduras, 151;
India, 98, 160-161, 163; Ivory Coast, 131; Jamaica, 88,
151; Kenya, 131; Laos, 120; Lebanon, 184; Liberia,
131; Malaysia, 119, 120; Mali, 132; Mauritius, 133;
Morocco, 174; Nepal, 98; Nigeria, 133; Philippines, 119,
198; Republic of Korea, 120; Saudi Arabia, 186, 187;
Senegal, 134; Sierra Leone, 134; Syria, 189; Togo, 135;
Tonga, 199; Uganda, 136; West Indies, 88
symposium on sanitary inspection services, Copenhagen, 169
travelling seminar, USSR, 30, 206-207
See also Sanitary engineering; Sewage disposal; Waste disposal
Saudi Arabia, 36, 37, 109, 111, 186-187
School health, 110, 117, 141
Cambodia, 117, 193; China (Taiwan), 117; Ghana, 81;
Philippines, 116, 117; Republic of Viet-Nam, 117;
Yugoslavia, 176
Scientific Group on Bilharziasis (Chemotherapy), 21
Scientific Group on Biological Aspects of Microchemical Pollu-
tion of Water Systems, 31
Scientific Group on Cholera Research, 23
Scientific Group on Drug Resistance of Malaria Parasites, 5
Scientific Group on Insecticide Resistance and Vector Control,
31
Scientific Group on Long-Term Effects on Health of New
Pollutants, 28-29
Scientific Group on Mental Health Research, 45
Scientific Group on Monitoring Adverse Drug Reactions, 59-60
Scientific Group on Neuro-endocrinology and Reproduction
in the Human, 40
Scientific Group on Nursing Research, 38
Scientific Group on Research into Environmental Pollution, 28
Scientific Group on Research Programme in Immunology, 61
Scientific Group on the Biological Estimation of Water Pollution
Levels, 30-31
Scientific Group on the Effects of Labour on the Human
Foetus and the New-born, 40
Scientific Group on the Evaluation of Dependence-Producing
Drugs, 59
Scientific Group on the Mechanism of Action of Sex Hormones
and Analogous Substances, especially the Orally Active
Progestogens, 40
Scientific Group on the Physiology of Lactation, 40
Scientific Group on Trachoma Research, 17
Scientific Group on Viruses and Cancer, 17
Scientific groups, 55
Seafarers’ health, 30, 49, 74
Second Report on the World Health Situation, supplement, 36, 53
Secretariat, structure, 69, 228
Senegal, 19, 21, 34, 44, 47, 61, 70, 79, 82, 127, 134
Sera production, 14
Indonesia, 165; United Arab Republic, 190
Serum banks, 9, 15-16
United Nations, (continued)
Second World Population Conference, 58, 73
seminar on social aspects of industrialization, 49, 72
Third International Conference on the Peaceful Uses of Atomic Energy, 48, 71
United Nations Children's Fund (UNICEF), 73-74, 98, 195
jointly assisted activities, 49, 82, 90, 104, 111, 116, 117, 120, 187
communicable diseases, 23, 24, 25, 79, 92, 97, 101, 119, 121, 180, 193, 199, 200
environmental health, 30, 95, 98, 120, 151
malaria, 3, 105, 106, 108, 112
maternal and child health, 40, 80, 84, 100, 110, 117, 163
nutrition, 14, 46, 47, 87, 95, 117, 141, 143, 175, 203
United Nations Commission on Narcotic Drugs, 73
United Nations Development Decade, 71-72
United Nations Educational, Scientific and Cultural Organization (UNESCO), 74, 82
jointly assisted activities, 35, 39, 47, 51, 64, 65, 72, 98, 111, 178, 203
United Nations/FAO World Food Programme, 27-28, 72
United Nations Relief and Works Agency for Palestine Refugees (UNRWA), 33, 73
United Nations Research Institute for Social Development, 40, 72
United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), 73
United Nations Special Fund, 21, 27, 28, 71, 72-73, 80, 83, 84, 88, 89, 99, 104, 136
United Nations Training and Research Institute, 72
United Nations Trusteeship Council, 73
United Nations Water Resources Development Centre, 28, 71, 205
United States of America, 12, 13, 16, 25, 26, 32, 33, 40, 53, 88, 91, 154
contribution to the Special Account for Medical Research, 56
National Institutes of Health, 55-56, 87, 88, 89
Upper Volta, 24, 72, 79, 80, 136
Urban Water Supply Conditions and Needs in Seventy-five Developing Countries, 27
Urbanization, 30, 71, 137
Uruguay, 86, 88, 154
Vaccination and vaccines, 70
brucellosis, 10
cholera, 23, 70, 97
diphtheria, 19
leptospirosis, 11-12
malaria, 3, 105, 106, 108, 112
meningitis, 24
poliomyelitis, 15, 16, 17, 70, 104, 105, 120
rabies, 10, 11
smallpox, 6, 7, 18, 25, 70, 80, 84, 91, 97, 100-101, 109
tetanus, 24
trachoma, 17
typhoid, 24, 98
yellow fever, 70
See also BCG; Vaccine production
Vaccination Certificate Requirements for International Travel, 25
Vaccine production, 138, 145, 155, 157, 159, 165, 191
combined diphtheria, tetanus and pertussis, 24
diphtheria, 183
pertussis, 97
poliomyelitis, 97
rabies, 145
smallpox, 18, 80, 82, 91, 100-101, 133, 137, 145, 156
tetanus, 183
yellow fever, 133, 148
Vector control, 31-34
Venereal diseases, 8, 9-10, 93, 97, 139
Caribbean area, 137; Ceylon, 159; China (Taiwan), 193-194;
Dominican Republic, 149; Ethiopia, 180; Republic of Viet-Nam, 191
Venezuela, 3, 24, 25, 28, 72, 86, 87, 88, 90, 91, 154-155
Veterinary medicine, 90, 138
Brazil, 146; Guatemala, 150
Veterinary public health, 10-14, 138, 139, 143
Brazil, 146; Ceylon, 159; Guatemala, 150
seminar, Lahore and Tehran, 109, 178
training course, Zagreb, 169
Viet-Nam, Republic of, 20, 24, 26, 36, 57, 116, 117, 118, 119, 191, 199-200
Virus diseases, 14-20, 104, 120, 175
comparative studies, 12
diagnostic and research laboratories, Brazil, 145, 146; Costa Rica, 148; Iraq, 182; Nigeri, 133; Tunisia, 189; United Arab Republic, 190
seminar on respiratory virus diseases, Moscow, 16, 205
Voluntary Fund for Health Promotion, 65-66, 68
Waste disposal, 28, 88, 111, 140
Water pollution, 29, 74, 140, 146, 168
Water supplies, 27-28, 71, 80, 88, 93, 98, 111, 120, 137, 139, 141, 179
Argentina, 88, 144; Brazil, 88, 146; British Honduras, 146;
Ceylon, 160; Chile, 88, 147; China (Taiwan), 120, 194;
Colombia, 148; Costa Rica, 148; Dahomey, 80, 129;
Dominican Republic, 149; Ecuador, 149; El Salvador, 88, 149; Ghana, 80, 83-84, 130; Greece, 173; Guinea, 130;
Haiti, 150; Honduras, 150; India, 163, 164; Iraq, 182;
Jamaica, 151; Jordan, 111, 114; Kenya, 80; Liberia, 80;
Madagascar, 80, 132; Malaysia, 120, 197; Mali, 80;
Mexico, 152; Morocco, 174; Nepal, 166; Nicaragua, 152;
Nigeria, 80; Pakistan, 111; Panama, 152; Paraguay, 152;
Peru, 94-95, 153; Republic of Korea, 120, 195; Saudi Arabia, 111, 187; Spain, 175; Surinam, 153; Tonga, 120;
Trinidad and Tobago, 154; Turkey, 176; Uruguay, 88;
Venezuela, 88, 155; West Indies, 155
conference on rural water supplies, Bogotá, 88, 142
See also Drinking-water
Weekly Epidemiological Record, 25, 26
West Indies, 3, 86, 88, 90, 91, 92, 155
Western Pacific Region, 116-123, 191-200
Western Samoa, 22, 33, 119, 191, 192, 200
Working Capital Fund, 68
World Confederation for Physical Therapy, 50, 204
World Directory of Medical Schools, 52, 63
World Directory of Post-basic and Post-graduate Schools of Nursing, 52
World Food Programme, United Nations/FAO, 27-28, 72
World Health, 65, 66
World Health Assembly, Seventeenth, 70
World Health Day, 8, 65, 75
World Health Research Centre, proposed, 55
World Medical Association, 51
World Meteorological Organization, 74
Yaws, 8, 9, 25, 80, 92, 97, 119, 139, 201
British Solomon Islands Protectorate, 191; Cambodia, 119, 193; Caribbean area, 137; Dominican Republic, 92, 149;
Haiti, 92, 150; Jamaica, 92; Liberia, 84, 131; New
INDEX

Yaws, (continued)
  Hebrides, 191; Nigeria, 133; Sierra Leone, 134; Thailand, 166; West Indies, 92; Western Samoa, 191

Yellow fever, 18-19, 26
  Brazil, 146; Colombia, 148
  See also Aedes aegypti

Yemen, 53, 70, 75, 109, 110, 190
  Yugoslavia, 13, 16, 23, 24, 32, 36, 104, 176-177

Zambia, 72, 80, 136
Zanzibar, see Tanzania, United Republic of
Zoonoses, 10-12, 138
  seminar, Lahore and Teheran, 109, 178