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CHAIRMAN: Dr. A.A. El Gaddal (Sudan)

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TECHNICAL DISCUSSIONS: THE PROBLEMS OF MAIN ZOO NOTIC DISEASES IN THE EASTERN MEDITERRANEAN REGION: Item 12 of the Agenda (Document EM/RC20/Tech.Disc./2)

The CHAIRMAN thanked the members of the Sub-Committee for electing him Chairman of the Technical Discussions. He mentioned that hydatid disease was widespread particularly in the southern part of Sudan, where persons coming to a dispensary or health centre with swellings in any part of the anatomy were always thought to be suffering from that disease, and in 75 per cent of cases that suspicion was confirmed. The people were hunters, and their dogs often lived with them in their houses.

The best solution to the problem of zoonotic diseases was known to be eradication of the disease among domestic and wild animals. The replies of governments of countries in the Region to the questionnaire sent out in preparation for the Technical Discussions showed that almost all zoonotic diseases were present in many countries of the Region, and Sudan was no exception.

Dr. DEAN (Secretariat), introducing the document, said that it gave information on the prevalence, incidence, epidemiology and control of main zoonotic diseases in the Region, and had been prepared on the basis of countries' replies to a questionnaire prepared by the Regional Office, as well as information from WHO Headquarters, UNICEF and the results of the seminar held in Lahore, Pakistan.

While it was true that some other communicable diseases were individually more important than any single zoonotic disease, when taken as a whole the latter were of great importance, particularly in rural areas, as in urban areas the chain of infection was easier to interrupt and vaccinations were easier to carry out. He mentioned the economic impact of those diseases on the animal food industry and emphasized that co-operation between health and agricultural specialists was essential for control.

He had been impressed by the excellence of the country reports submitted in reply to the questionnaire, and particularly that of Afghanistan, which

reported inter alia on the results of a recent survey showing brucellosis to be very widely prevalent in that country. Most of the zoonotic diseases existed in almost all of the countries of the Region, and there were indications that bovine tuberculosis was a greater problem than had previously been realized, since a study indicated that in 12 per cent of human cases of tuberculosis bones and joints were affected, and all isolates had been found to have the characteristics of Mycobacterium bovis.

He went on to mention the particular problems of echinococcal diseases in Cyprus, Iraq, Sudan and other countries, anthrax in Iran, and rabies in many of the countries of the Region.

He commended the efforts of the Iranian Government in its campaign to eradicate tuberculosis and brucellosis, the incidence of which had been reduced from 30 per cent to only 5 or 10 per cent, in cattle in the area around the municipality of Teheran, and stressed the usefulness of such measures in preventing the spread of those diseases from European types of cattle, usually found in such areas, to the indigenous breeds. Many countries were attacking zoonotic diseases indirectly, for example, by improvements in food and milk hygiene, and in the case of rabies the use of more and better rabies vaccination and more thorough treatment were to be recommended.

Despite progress made and the remarkable difference since his first visit to the Region in 1957, the magnitude of the problem should not be under-estimated in view of the large livestock animal population reflected in the figures in Table I on page 3 of the document, adapted from the FAO Animal Health Yearbook of 1968. Table II gave population data for countries in the Region, and included numbers of physicians and veterinarians, making it clear that there was much the same problem in terms of shortage of veterinarians as had been stressed in other discussions during the session with regard to doctors. Another difficulty was the shortage of laboratory staff in the Region.

Since the eradication of zoonotic diseases was not feasible, except in certain conditions in isolated areas, the solution which recommended itself to most countries in the Region was the identification of restricted targets compatible with national priorities and with the availability of staff. Perhaps the most important measure was the specialized training of public health personnel to be engaged in campaigns, and particularly laboratory technicians. Diagnostic facilities should be improved by short-term and long-term measures. It was of little importance whether laboratories used for research and the production of biological preparations were those of the departments of health or agriculture, but it was important to avoid competition between the two fields. Vaccines could be produced at low cost which were only a little less potent or effective than much more expensive imported products. A measure of effective control could often be achieved by vaccination of selected groups of the rural population.

In rabies control, substantial progress could be made by specific local treatment and by vaccination of dogs, which were known to be responsible for a high percentage of human cases.

On the question of the responsibilities of agricultural and health departments for campaigns against zoonotic diseases, he said that in his experience agricultural experts very rarely had as much influence in the political field as those in the field of health; it was probable that the situation was the same in countries in the Eastern Mediterranean Region as in the United States of America.

Dr. VASSILOPOULOS (Cyprus) said that the main zoonotic diseases that occurred in man in his country were the salmonellosis, taeniasis and echinococcosis. Rabies, brucellosis, leptospirosis, animal tuberculosis, Q fever and toxoplasmosis were not known to exist there. Anthrax had formerly occurred occasionally in man and more frequently in animals, but thanks to mass vaccination of all livestock and strict inspection of imported articles likely to harbour the spores it appeared to have been eliminated.

Salmonellosis (other than typhoid) had been widely prevalent until a few years ago and had been one of the main causes of food poisoning, but now, owing to improved environmental sanitation, higher standards of personal hygiene, and better conditions in cowsheds and dairies, were becoming much rarer. Cases were sometimes misdiagnosed as bacillary dysentery or diarrhoea. It was not a notifiable disease, and food poisoning was simply reported as such without specification of the responsible agent. Preventive and control measures were integrated into the general public health and preventive services of the country, and no special campaign had been or was planned to be undertaken for the elimination or control of salmonellosis.

Taeniasis, due to the tape-worms T. solium and T. saginata, the only species existing in Cyprus, had been common until a decade or two ago but was also becoming rarer thanks to improved environmental sanitation, higher standards of living and health education. Owing to unsatisfactory sewage disposal, swine and cattle had formerly often become infected through human excreta, and human infection had been acquired through consumption of imperfectly cooked pork or beef. Taeniasis was not a notifiable disease and, since it was now a very minor public health problem, no special campaign for its elimination was planned.

Echinococcosis, on the other hand, was a serious public health and economic problem. It had been made a notifiable disease as from 1969, so no accurate figures were available for its prevalence in man, but judging from the high infection rate in livestock and the high infestation of stray dogs it was believed to be frequent. The two main links in the chain of transmission were the abundance of stray dogs and the lack of proper slaughterhouses in the rural areas. Occupational risk was of no importance, every class of the community running the same risk of infection, chiefly through consumption of green vegetables contaminated with echinococcus eggs. Because of the chronic nature of the disease and the need to destroy carcasses the economic implications of the disease were also considerable.

A long-term project for the control of the disease had recently been put into operation, its specific objectives being: prevention of canine infestation through improved slaughtering practices, destruction of stray dogs, treatment of registered dogs, training of key veterinary personnel, health education of the public in general and slaughterhouse staff in particular, and enactment of legislation for the enforcement of the foregoing measures.

In conclusion, he asked whether, in Dr. Dean's opinion, treatment of dogs for echinococcosis was effective, and if so what drugs were recommended.

Dr. MORSHED (Iran), referring to Table II in the document before the meeting, asked whether there was not some more recent source of information on the number of physicians in the countries of the Region than the World Health Statistics Annual for 1966.

He asked for information on human anti-brucellosis vaccines and on sources of human infection other than through dairy products.

Dr. KADIKI (Libya) said that a joint zoonoses committee of the Ministries of Agriculture and Health had recently met to consider his country's main zoonoses problems, which were hydatid disease, rabies, anthrax, bovine tuberculosis and probably brucellosis, which had not yet been investigated.

As an indication of the magnitude of the hydatidosis problem, he gave the following figures for rates of infection among animals slaughtered at the Benghazi abattoir during one month: cattle, 243, of which three infected; sheep, 32 890, of which 1 236 infected; camels, 251, of which seventy-four infected. The rate of infection among camels, in particular, had exceeded expectations.

Legislation was under study for the eradication of hydatidosis and also of rabies, which was a special problem in Cyrenaica, but was now on the decline. It was hoped soon to undertake measures for the control of bovine tuberculosis.

Dr. TAJELDEEN (Qatar), after giving information on the geography and on the human and livestock population of his country, said that rabies, anthrax, leptospirosis, Q fever and toxoplasmosis had not been reported there for the past five years. During that period, however, 185 cases of infection with Taenia saginata in human beings had occurred, only 12 per cent of them among Qataris and the rest among foreigners, since the main source of infection was cattle and Qataris were not fond of beef, preferring mutton, goat and camel meat. The control measures being applied were: sanitary disposal of human excreta, radical treatment of infected persons, proper meat inspection, and health education about proper cooking of beef.

During the past seven years only two cases of hydatid cysts of the liver had been recorded in the general hospital at Doha, among two foreigners. The rate of liver, lung and heart infestation of animals slaughtered was approximately 2 - 5 per cent, all among imported animals. The Islamic tradition which forbade breeding of dogs as domestic animals might be the reason for the non-existence of echinococcosis among Qataris. The control measures applied were: proper meat inspection and destruction of cysts; careful examination of offal given uncooked to dogs, and measures to keep dogs away from slaughterhouses and destroy strays.

Outbreaks of salmonellosis due to infected meat occurred sporadically, and only two cases of brucellosis had been serologically identified during the last five years. Anthrax and rabies had not been recorded for ten years past, but prophylactic vaccination of dogs against rabies was carried out at the request of the owner.

Mange was frequent in camels, sheep and goats. Two veterinary labourers had been infected with scabies by contact with animals, and sporadic cases occurred among bedouin stock-raisers.

The onus of reporting disease was upon the livestock owner or his agent, and on the veterinary staff during the periodic mass vaccinations against communicable diseases. After confirmation of the disease, prevention and control was carried out by vaccination, segregation and good management, destruction of carcasses and health education of livestock owners.

The Veterinary Section, which was responsible for preventive and control measures in the veterinary field, was a section of the Ministry of Public Health and was under the administrative supervision of the Medical Officer of Health, who was also in charge of the Public Health Section responsible for preventive and control measures against human diseases. Thus good liaison was maintained between the two services.

There was no legislation on the organization of preventive and control services in the veterinary field, but the law on protection against infectious diseases empowered the Minister of Public Health to take measures to prevent the spread of disease from animals to man.

In conclusion, he gave information on the sources from which vaccines for the control of zoonoses were imported.

Dr. GALAL (United Arab Republic) agreed with Dr. Dean that the concept of eradication of zoonoses from the Region was unrealistic, for several reasons common to all the Member States. Firstly, the conditions of animal husbandry in the area, whether one considered highly populated agricultural regions with fragmented ownership or the nomadic type of stock-raising, and also the almost symbiotic relationship between man and animal imposed by economic conditions, made surveillance and control extremely difficult and expensive. In his own country, it had been found that two entirely different approaches had to be adopted: one towards herds raised collectively by the Government or by a co-operative, where all the necessary measures for inspection, laboratory tests and slaughter could be taken where necessary; and another approach in the case of the small private owner entirely dependent economically on his stock. Secondly, even in countries that had adequately equipped and staffed laboratories, the problem of getting material to them for examination was almost insuperable, since they were naturally located only in the main population centres. Thirdly, there was the problem referred to by Dr. Dean, namely that in the developing countries animal disease was considered not so much from the point of view of its threat to human health as from that of its effect on the animal wealth of the community, which was

perhaps why some of the reports received had not been as complete as they might have been.

Against that background, he would refer briefly to some of the zoonoses problems in his own country. With regard to brucellosis, there was a central research unit in Cairo which exercised proper control over government-supervised herds, eliminating infected animals. In the case of privately-owned animals, routine investigation was a practical impossibility, and where inspection was undertaken in particular circumstances the problem arose of how far it was legally permissible to slaughter infected animals.

The United Arab Republic had been one of the first countries in the Region to introduce anti-rabies measures. In the urban areas control was generally effective, dogs being licensed by law, though there were also strays which were supposed to be killed by groups of soldiers organized for the purpose but which had hitherto survived all the soldiers' attentions. In the rural areas the problem was more difficult since although, as the Representative of Qatar had said, Islamic law forbade breeding of dogs as domestic animals, there were always dogs existing on the periphery of villages, with a theoretical owner who nevertheless exercised no proper responsibility over them. As far as treatment was concerned, he believed the situation was satisfactory, since most persons exposed to infection were examined and given proper attention.

Salmonellosis were on the decline, presumably owing mainly to urbanization and hygienic improvements, since there were no data to show any decrease in sources of infection. One problem was the large number of serotypes and he felt it was high time a study was conducted on the validity of the different diagnostic procedures.

Tuberculosis from animal sources was also declining, again owing to social changes, in particular control of milk distribution, mechanization of dairy plants, etc.

Echinococcosis was not a very important problem in his country, owing to the fact that all slaughtering of animals was done under supervised

conditions and also probably to increased hygienic awareness among the population.

To sum up, he shared Dr. Dean's view that what should be aimed at was a concentrated degree of control of the zoonoses problem in each country. There was also a need for diagnostic procedures to be simplified so that they could be carried out by individual veterinarians with some sort of test kit.

Dr. ROASHAN (Afghanistan) said that in view of the comprehensive paper put before the meeting he would not go into details on the position in his country, but merely state that studies and surveys, in which the Public Health Research Institute was closely interested, were being conducted on rabies, brucellosis, salmonellosis, anthrax, leptospirosis, animal tuberculosis, Q fever, toxoplasmosis, echinococcosis and taeniasis.

Dr. DEAN (Secretariat) said he had been impressed by the progress reports from countries and would try to answer the questions put.

In answer to the Representative from Cyprus, he said that dogs could be treated for infestation with echinococcus either with arecoline hydrobromide or with a recently introduced German preparation, Endoxin, which was particularly effective. However, while such measures were practicable for the individual pet, their application on a mass scale was a far more difficult problem.

The Representative of Iran has asked about vaccines for human brucellosis. They had been a controversial matter for some years. There existed two types, killed and live. The killed vaccine was not very effective, giving a low duration and level of immunity, and also entailing problems of hypersensitivity. There also existed a form, modified for human use, of the Strain 19 vaccine which gave very good results in cattle. It was employed a good deal in the USSR, but under very carefully controlled conditions with skin sensitivity tests, etc., and even so adverse reactions were frequent and most countries felt the risk was too high for its general use to be envisaged.

The Representative of Iran had also asked about sources of human brucellosis infection other than dairy products. There were numerous sources, due, as the Representative of the United Arab Republic had pointed out, to the intimate, day-to-day contacts between human beings and animals. For example, when a herd of cattle was first infected with the disease, there was a high rate of abortion, but later some degree of immunity developed and pregnant cows came to term, producing infected calves and also infected placentae. Hides also carried the infection, which could be air-borne to any sensitive mucous membrane. Probably 70 per cent of all infections were occupationally rather than non-occupationally acquired.

In reply to a further question from the Representative of Iran, he said that dust from passing herds could also be an important source of infection.

The CHAIRMAN, noting that there were no further comments, drew attention to the following draft resolution:

"The Sub-Committee,

Having examined with interest the Document on "The Problems of Main Zoonotic Diseases in the Eastern Mediterranean Region", presented by the Regional Director, particularly in respect of:

- (a) Epidemiological features of zoonoses prevailing in the Eastern Mediterranean Region, their prevalence in man and animals, their economic implications and the methods of prevention and control exercised by individual countries;
- (b) Recent advances in diagnostic methods, production of vaccines, and immunization related to some important zoonoses;

Considering that some zoonoses such as bovine tuberculosis, brucellosis, rabies and echinococcosis, still constitute a constant threat to man's health and well-being, as well as a limiting factor to the economic development of the countries of the Region,

1. URGES the Governments of the Region to give due consideration to improving the collection of reliable statistical data necessary for determining the magnitude and socio-economic consequences of the problem;
2. STRESSES the importance of improving veterinary public health, making available facilities for the training of veterinarians in public health activities and of furthering co-operation between veterinary and health authorities in epidemiology, laboratory investigation, research and in planning for control of zoonoses;
3. RECOMMENDS that Governments draw up a long-term programme for the prevention and eventual elimination of zoonoses in man and animals based on sound epidemiological surveillance;
4. REQUESTS the Regional Director to assist in providing technical advice to Governments of the Region upon request."

Decision: The draft resolution was adopted unanimously.

The meeting rose at 1.15 p.m.