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REGIONAL OFFICE FOR THE  
EASTERN MEDITERRANEAN

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MEDICAL EDUCATION IN THE EASTERN MEDITERRANEAN REGION

THE NEED FOR TEACHER TRAINING

EMRO/70/978

## TABLE OF CONTENTS

	<u>Page</u>
I INTRODUCTION	1
II TEACHING STAFF, OVERALL ASPECTS	2
III TEACHING STAFF, PARTICULAR ASPECTS	4
IV THE NEED FOR NEWLY TRAINED TEACHING STAFF	6
V RESPONSIBILITY OF THE MEDICAL SCHOOLS	7
VI THE RESPONSIBILITY OF HEALTH AUTHORITIES	8
ANNEX RESOLUTION WHA23.35 - TRAINING OF NATIONAL HEALTH PERSONNEL	
APPENDIX DATA CONCERNING TWENTY-FOUR SCHOOLS OF MEDICINE ACTIVE IN UNDERGRADUATE MEDICAL EDUCATION	

## I INTRODUCTION

It became usual to define social phenomena of the last decade as "explosions". One of these is the sudden awareness of countries' problems, a feeling of pressing national challenges that must urgently be met. Basic to the solution of most problems is the need for an "educational explosion", and therefore the acquirement of a rapidly increasing number of educators. In this context, medical education occupies a key position in the vicious circle where health, education and development are linked together.

At the opening of this century, there were five faculties of medicine in this Region. There were twelve at the end of the Second World War, and now their number exceeds forty (graph 1). Five of the existing schools are less than five years old. Five other schools not shown in the graph are planned to be established, perhaps in the next two years.

What such a sharply ascending curve means in terms of urgently required additional trained medical teachers needs no comment. New teaching staff, however, are not required only by new schools. Long established faculties are living organisms in a continuous process of renewal. The following analysis of a sample of the regional network of medical schools aims at an evaluation of the present position as regards the adequacy of their teaching staff.

Information concerning twenty-four schools of medicine at present active in undergraduate medical education in the Region was available at the time of writing. They belong to the following countries (also indicated the total number of medical schools in the country): Afghanistan 2 (2), Ethiopia 1 (1), Iran 2 (7), Iraq 3 (3), Israel 1 (2), Lebanon 1 (2), Pakistan 8 (14), Sudan 1 (1), Syrian Arab Republic 2 (2), Tunisia 1 (1), United Arab Republic 2 (7). Three of these have been established for five years or less, seven for six to ten years, seven for eleven to thirty years, seven for over thirty years. Considering their geographical distribution and

length of existence, they can be taken on the whole as a fairly representative sample of the medical education system in the Region. However, it should be noted that some schools known to receive the largest annual intake of students are not included in the sample. This may cause a bias towards more favourable conclusions than those that might be drawn from a similar analysis based on all medical schools in the Region.

The data commented on in this paper are shown in the appended table. They were supplied by the schools themselves, in reply to a questionnaire sent from the Regional Office to all faculties of medicine in the Region.

## II TEACHING STAFF, OVERALL ASPECTS

The first Eastern Mediterranean Regional Conference on Medical Education (Teheran, 1962) recommended that "the minimum ratio of teachers to students should be 1:10 in each Department, provided that the staff are full-time".

Before trying to look at the present situation in this Region in the light of that recommendation, we must establish a working concept of "department" applicable to all the schools. As shown in the appended table, the number of departments varies considerably from one school to another. Parasitology, microbiology, pathology and clinical pathology may either constitute four independent departments or be all contained within a general department of pathology; as another example, dermatology, neuro-psychiatry, paediatrics and radiology are sometimes independent units, sometimes integral parts of the department of medicine. As a common denominator, the following "departments" will be considered for the purpose of the present discussion:

- a. "morphology", in which the teaching staff ascribed to anatomy, histology and embryology in each school are combined;
- b. "physiology", combining biochemistry, physiology and pharmacology;

- c. "pathology", to include microbiology, parasitology, pathology and clinical pathology;
- d. "preventive medicine";
- e. "medicine", embodying general medicine, dermatology, neuro-  
psychiatry, paediatrics and radiology;
- f. "surgery", combining general surgery, anesthesiology, obstetrics and gynaecology, orthopaedics, urology, ear-nose-throat and ophthalmology.

For such big "departments", the totals of staff available in twenty schools\* of this Region are, respectively, 222, 342, 284, 84, 486, and 581. These figures include all categories of teachers, from fully qualified professors to demonstrators. Average figures would give the following picture for Medical School at present, as far as departmental staff is concerned:

"morphology"	-	11.1 staff members
"physiology"	-	17.1 staff members
"pathology"	-	14.2 staff members
"preventive medicine"	-	4.2 staff members
"medicine"	-	24.3 staff members
"surgery"	-	29.1 staff members

An acceptable index of the teaching task confronting the school in coming years is the size of the lower classes of students. Taking the current enrolment in the first, second and third year of each school in the group under consideration, the average class has 153 students. On the other hand, each of the above "departments" covers a wide field of teaching, so that at least two classes, i.e. about 300 students, should pass through each one every year.

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\*Information on the Departmental breakdown of teaching staff was not obtained from four schools.

It is clear from the above figures that in the "average school" of the Region only "surgery" approaches the minimum standard recommended by the 1962 Conference on Medical Education. All other "departments" are definitely understaffed. The overall shortage of teaching staff in relation to that same minimum requirement is above 40 per cent. In absolute figures, for the group of twenty schools, it corresponds to a shortage of staff of about 1 400. If one assumes that the sample group is representative of the forty-two schools now in existence in the Region, it can be calculated that the total shortage of medical teaching staff is close to 3 000.

The calculation is short of a reasonable estimate for the next few years. Firstly, because the sample on which it is based is conducive to a rather optimistic picture, as pointed out in the introduction. Secondly, the schools to be established in the next two years, which will require full staff in coming years, were not taken into account in the calculation. In addition, the requirement of one teacher for ten students was set by the Conference of 1962 as a realistic goal, not as an optimum, and the medical schools should strive for more favourable conditions of medical education. If it is envisaged to meet the need for new medical educators within five to ten years, and all the previous considerations are taken into account, it would not be an overestimate to say that the task confronting the institutions of medical education in this Region in that period is to train about five thousand new teachers.

### III TEACHING STAFF, PARTICULAR ASPECTS

Graph 2 shows the distribution of the schools according to their "departmental" staff and the number of students each "department" is likely to have to deal with.

As could be expected from the figures previously discussed, most of the schools have a teacher:student ratio below the minimum recommended. What was perhaps less to be expected is that the deficit of teaching staff is not particularly striking in the basic sciences; it is equally severe in the clinical departments. The "department of medicine", for instance, is in general more poorly staffed than that of "physiology"; the average of its staff is larger only because a few schools show exceptionally high figures. In this connexion, however, it should be pointed out that instructors and demonstrators constitute a larger part of the staff in the basic sciences than in the clinical departments.

The picture corresponding to preventive medicine clearly shows that this department is far from being of the same standing as the others. A reduced staff of one, two or three members is the rule, which is only compatible with the concept that preventive medicine is a discipline to be taught in little more than a series of lectures. Much progress is needed in the majority of the schools for the teaching staff in preventive medicine to be as active a group in health work as the medical and surgical groups are supposed to be in hospital work.

Paediatrics are included in our "Department" of Medicine and so lost to sight. In fact, as shown in the appended table, it is not an individualized teaching unit in several schools. Where specific paediatric staff exists, there are usually only a few teachers, in some schools a single one. This is a rather surprising situation, in a region where infancy and childhood make the big bulge in the demographic profile and where problems of child health are particularly prominent. It aggravates the lack of a preventive approach to medical education, as paediatrics is the clinical discipline most apt to convey along with its curative aspects, and in the most vivid way, all the essentials of preventive and social medicine.

#### IV THE NEED FOR NEWLY TRAINED TEACHING STAFF

From the foregoing not only the urgent need for training additional medical teachers is clear but also the immensity of the task. About three thousand new teaching staff would be needed now to bring the existing schools of the Region up to the minimum recommended standards. A crop of new schools, and a natural demand for higher standards of medical education will add considerably to that figure in the next few years.

The problem will not only be one of training more staff, but of preparing them for more productive work. This means simplification of teaching programmes, aiming at a straightforward and rational understanding of the disciplines and not at the volume of imparted information. It means at the same time adequate methods of teaching, allowing for the development of the student's ability to learn - student-centred methods - in order to encourage the mental attitudes he will need for his continued education. It means, finally, that trained medical educators should not be wasted when their special qualification and experience is so badly required; they should take medical education as their specific profession, and be exclusively dedicated to it.

Most of the additional staff will yet receive in-service training, under the guidance of their seniors. There should be, therefore, in each Faculty a number of teachers specifically trained in planning of medical curricula, organization of programmes, and methods of teaching. The existence of such qualified medical educators can assure adequate and really professional in-service training for the newly-recruited teaching staff.

If only ten per cent of the teaching staff of each School in this Region were to be specifically trained as medical educators, it would mean training over a hundred per year for the next few years. The organization of special training centres for this purpose in the Region could



be justified by such a quantitative consideration alone. However, there are other reasons why the idea should receive due attention. Training of medical teaching staff on a large scale should not be divorced from the medical problems of their own region. Paediatrics, for instance, should receive very high priority in a programme of medical education in this Region because child health exhibits here important and peculiar problems, reflecting dramatically the surrounding economic, social and cultural conditions. It is important that the new teacher, while trained as such, keep these conditions continuously in sight and have his scientific interest aroused by them. A massive stream of fellows going to different parts of the world for their training would not substitute for it. This does not mean that the technical resources, the scientific knowledge, the specialized manpower should not be sought from all medical centres, nor that selected fellows should not be sent to them. A continuous communication with more advanced centres can only contribute to higher efficiency of regional training centres. The reasoning applying to paediatrics applies also to some extent to all disciplines, and justifies the efforts aiming at the regionalization of the training of medical educators.

#### V RESPONSIBILITY OF THE MEDICAL SCHOOLS

Medical faculties should be deeply conscious of the importance of their role in training the newly-recruited teaching staff. It is equally important to keep the existing staff of all ranks continuously concerned with the educational process. To both these purposes, special activities should be developed in each school for free discussion of educational matters and periodical evaluation and revision of curricula and teaching programmes. Technical committees should be established at supra-departmental level to advise on such matters, taking into consideration as a whole the objectives of medical education, the health needs of the country, and the resources of the school. Staff members

specially trained in medical education should be granted every means and opportunity to impart their experience and knowledge, so as to attain at school level a multiplication of the results produced at special teachers training centres.

Library facilities should be adequate. A regular provision of scientific periodicals is required to keep the staff abreast of developments in their subject. Taking into account both the variety of important fields in medical sciences and the need in each field for media of information from more than one part of the scientific world, it can be estimated that from 150 to 200 should be the minimum number of periodicals under active subscription by any fully established medical school. Information available (appendix) indicates that less than half of the schools in this Region are at present meeting this requirement.

The profession of medical educator should be an attractive full-time job for the best qualified medical men. A necessary component of this attractiveness is an adequate salary scale. The institution should also provide the equipment and the supporting personnel necessary for the medical and scientific achievements of its teaching staff. Only if they feel professional satisfaction will they pursue their own continued education.

## VI THE RESPONSIBILITY OF HEALTH AUTHORITIES

Teachers should be trained not only to communicate knowledge, but also to plan and organize suitable curricula and teaching programmes. They should be intent on evaluating and revising established systems, to keep them continuously aimed at a rather elusive objective. In fact, the objective of medical education, as determined by the needs and demands of the community, may be continuously changing. It will vary from country to country, as well as in the same country from time to time, depending on prevailing epidemiological trends, socio-economic conditions, availability

of health manpower. Changes of such a nature cannot be rapid, but they are becoming more rapid. What may have taken several generations to achieve in the past, in the near future may occur more than once in a life time.

In most countries of the Region there is a shortage of doctors, but it is known that in many of them the lack of other types of health personnel at different levels is greater than that of physicians. In these circumstances, the role of doctors is seriously handicapped, however adequate their education and training may be. They are expected to assume the role of leaders of health teams, composed of paramedical professionals and several kinds of auxiliary workers. Such a team, therefore, should exist.

It is the responsibility of the health authorities to build up health manpower according to the needs of the country, and this requires particular attention to different categories of auxiliary personnel. Education for health work, specially at the levels where training for limited routine jobs is envisaged, is really an integral part of the national health planning. It is also inseparable from the general educational pattern of the country, so that the minimum requirements for student admission, as well as the content of the basic curriculum for each kind of auxiliary personnel, should be specifically studied in each country. This is the essential meaning of the Resolution WHA23-35 approved this year by the World Health Assembly (annex), which urges the "Members of each Region to formulate a minimum standard of curriculum for training programmes of health personnel taking into consideration the needs of the Region". The curricula should gain national specificity by taking into account the peculiarities of each country. This is particularly important in the case of auxiliary personnel, because their training should be aimed at the present local needs and cannot be bound to any generally accepted programme.

EM/RC20/5  
page 10

To fit the doctor in an adequate health team would be a practical definition of the main objective of medical education, as regards the current national health problems. It would yield the largest profit from the high investment needed to provide medical education, and therefore trained medical educators should be prepared to accomplish this objective.

DIX

OUR SCHOOLS OF MEDICINE  
ATE MEDICAL EDUCATION

K	L	M	N	O	P	Q	R	S	T	U	V	W	X
11	7	14	15		4		6	7 4	4	14	12 20	8	19 9
12	9 12	11 11	2 12 9 1		10 1 5 8		7 6 5 6	6 8 2 2 3	4 3	11 9	7 14 13 13 14	5 7 7 6	10 19 12 13
11	8	14	9 1 3		7		4	8	6	16	12	8	13 14 8
6	11	4	17	No information	2	No information	8	2	2	3	13 13 22	5	46 9 12 12 6 19 20
1 3	2 5 6	1 1 4	4		5 14 9		16 11	1	1 2	1 3	6 9 7	7 8 9	19 20
4 1 2	14	6 2	18 2		20 6		23 5	1	3	5 2	11 2 8	47	45 24 11 7 8 10 11 24 12
2 2 1		4 2 4 2			6 8 5		9 9 6	1 2 1 2	1 2 1 2	3 2 3 2	3 3 8 1	8 7 6 3	10 11 24 12
56	90	84	93	40	128	148	170	50	34	81	210	165	393
156 200 190	111 63 62	143 220 93	174 167 172	105 121 43	62 71 56	241 351 255	53 40 47	189 122 58	110 124 51	146 209 92	85 93 80	76 98 93	554 732 653
102	385	13	0	0	700	486	263	207		43	140	10	300

DATA CONCERNING TWENTY-  
ACTIVE IN UNDERGRAD

SCHOOLS	A	B	C	D	E	F	G	H	I	J
<u>Teaching staff in:</u>										
Anatomy	5	3	11	9	3	2	9			11
Histology	2			6						
Embryology										
Biochemistry	2	3		7		2	3			
Physiology	3	2	10	9	8	2	5			9
Pharmacology	2	3	8	11		1	2			5
Microbiology	2	2		10	7					
Parasitology	1			11	5					
Pathology	3	2	12	9	5	4	3			8
Clinical Pathology	1		2	2						
Preventive Medicine	2	1	2	8	4	2	5			2
Genetics										
Medicine		5	7	8	13	5	9			5
Chest diseases										
Dermatology		2		1			2			
Endemic Diseases										
(Neuro) Psychiatry		2								
Paediatrics	1	3		3		4	3			2
Obstetrics and Gynaecology	2	3	2	8	5	4	5			3
Surgery		5	16	9	16	3	20			5
Anesthesiology		1		3						
Orthopaedics				2						
Neuro-Surgery										
Urology				3						
Ear, Nose and Throat		3		3			7			2
Ophthalmology		1		2						2
Radiology							4			
Forensic Medicine			2	3	5		2			
<b>Total staff</b>	26	41	72	127	71	29	79	98	8	54
Students (1st year enrolment (2nd year (1969/70) (3rd year	133 96	83 52 43	200 151 151	350 384 264	120 201 144	15 18 21	220 224 248	79 69 113	68 80 50	104 88 99
Periodicals subscribed to	60		20	169	276	320	70	100	126	52

## ANNEX

TWENTY-THIRD WORLD HEALTH ASSEMBLY

WHA23.35

19 May 1970

## TRAINING OF NATIONAL HEALTH PERSONNEL

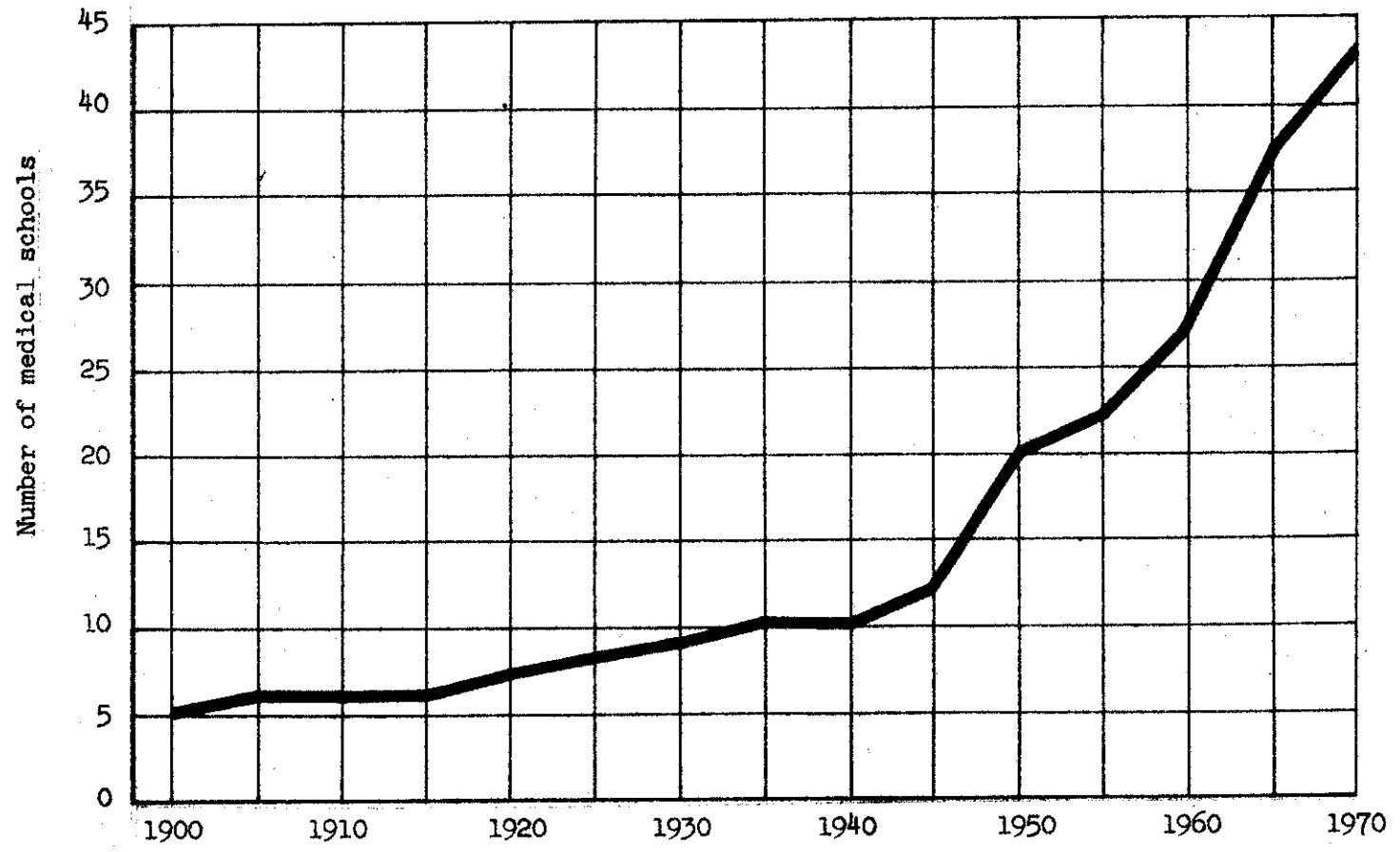
The Twenty-third World Health Assembly,

Having considered resolution EB45.R29 of the forty-fifth session of the Executive Board, pursuant to resolution WHA21.20 adopted by the Twenty-first World Health Assembly,

1. THANKS the Regional Committees which have carried out the analysis of the problem of training professional and auxiliary health personnel in their own regions and urges the remaining Regional Committees to undertake this study at their next sessions;
2. REQUESTS the Director-General to prepare a report based on these regional analyses for the consideration of the Executive Board;
3. REQUESTS the Executive Board to carry out a general evaluation of the experience accumulated by the World Health Organization, taking into account the conclusions reached by the Regional Committees on the training of professional and auxiliary health personnel; and
4. REQUESTS the Director-General
  - (a) to present to the World Health Assembly, in the light of the discussions of the Executive Board, a report on any concrete measures that the World Health Organization might appropriately take to assist further the training of national health personnel of all levels, including the methodology employed in such training;
  - (b) to urge Members of each region to formulate a minimum standard of curriculum for training programmes of health personnel taking into consideration the needs of the Region.

NUMBER OF MEDICAL SCHOOLS IN THE REGION

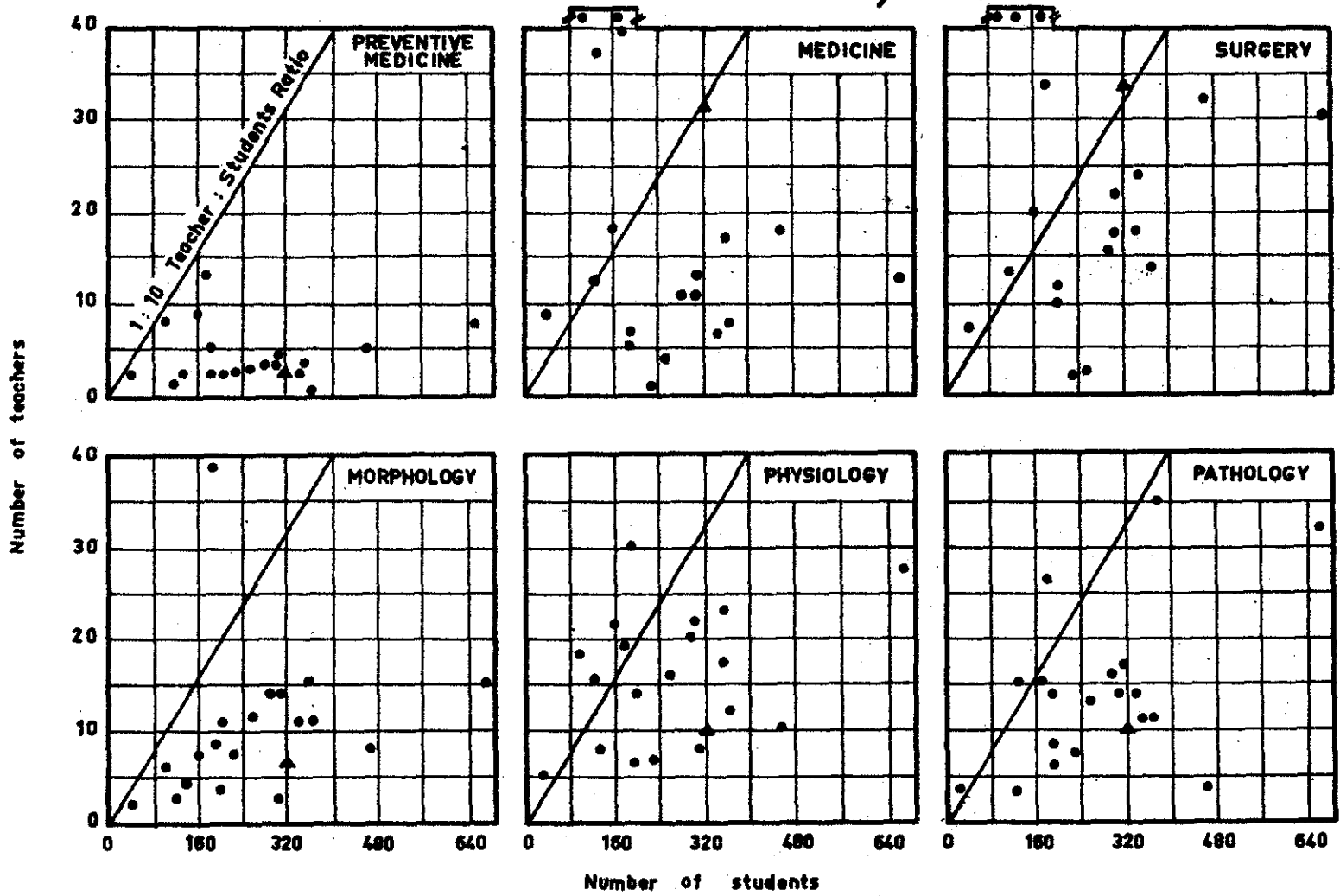
1900 - 1970



GRAPH 1



**DISTRIBUTION OF TWENTY MEDICAL SCHOOLS  
ACCORDING TO THEIR DEPARTMENTAL TEACHING STAFF AND TO  
THE NUMBER OF STUDENTS      1969 / 1970**



▲ Represents one fourth of the real values