THE
Chadwick Lectures

ON

THE PROBLEM OF HYGIENE IN EGYPT.

Being Three Lectures delivered at the Summer Session, 1919.

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LECTURE III.—THE SOLUTION OF THE PROBLEM:
PRESENT AND FUTURE.

IN our first lecture we considered the more obvious causes which produce the problem of hygiene in Egypt; in our second we discussed those which are more obscure and which, being intimately bound up with the form of central administration that is in vogue, led to a review of the latter. We will now turn our attention to the provincial organisation and see not only what problems it furnishes but how it meets the needs of health in the towns, in the villages, and in the rural parts of the Mudiriyas, as the provinces are termed in the Arabic of Egypt.

PROVINCIAL ORGANISATION IN THE PRESENT.

It is usually a relief to leave a city like Cairo or Alexandria and fare forth into the green of the Delta. The air is fresh, the sky is, as a rule, blue and cloudless, and though the scenery is monotonous the rural life is interesting and there are many spots which are eminently picturesque. In Upper Egypt one is not often far from the Nile and the Father of Waters rarely fails to please the eye and quicken the imagination.

If there is not very much to entrance the botanist and the zoologist, at least compared with some other Eastern lands, there is always something in Egypt to catch the sanitary eye and too often something also to titillate the sanitary nose. The sanitarian views a reedy water channel, and while he thinks of it turning the black alluvial soil into the richest of muds and benefiting the patient cultivator, he knows that as a source of drinking water it is, to say the least, doubtful; for may it not in parts be full of cercariæ or constitute a medium wherein typhoid or dysentery bacilli lurk, or, given the opportunity, may it not harbour the cholera vibrio? He notes the rich mud and the fellaheen ankle-deep at work in it and wonders whether or not the larvæ of ankylostomes are busy finding their way through the skin of the peasant farmers. A grove of stately date palms confronts him, and while he admires them for their beauty and their fruitfulness he cannot forget the filthy manner in which agwa is prepared. His eye roves over the picturesque, nondescript village huddling on its little mound hard by the birka with its green scum and countless frogs, and though he admits it has a beauty of its own, he cannot but recall its flies and their breeding places, its rats and their fleas, its inhabitants and their lice, and instinctively he thinks of dysentery, of plague, of typhus, and relapsing fever. And so on and so forth. You will doubtless say what a very unpleasant mind your sanitarian must have! It is one thing to find sermons in stones and books in the running brooks, but surely to conjure up parasites and disease in well-nigh every feature of the landscape is a dismal form of mental recreation, a morbid type of fancy. I grant you such is in some measure the case, but the pity is that there is good cause for these imaginings. And yet the sanitarian is, as a rule, no pessimist. He knows these evils exist, but he also knows that they are one and all preventable, and his ambition is to remedy them so far as it lies within his power to do so. Their presence arouses, or should arouse, the fighting spirit in him, and, believe me, there is something stimulating and satisfying, as well as disheartening, in waging war against the forces of disease and death in such a country as Egypt.

Divisional Inspectors.

That is one reason why we are always likely to find able young men eager to take up the work of divisional inspectors
No. 5012

who, as you will see from the graph (Graph 1, Lecture II.), head the list of those who fight the battle of health in the Egyptian provinces.

One reason why the contest has not been so victorious as might have been hoped is to be found in the paucity of the numbers of these divisional inspectors. There are 14 provinces in Egypt, many of them large, most of them exceedingly populous. The number of inspectors has in the past been woefully few, and during the war it diminished almost to vanishing point. Furthermore, the inspectors were not resident in their districts. As a rule, they were constantly on the move, and so were not in the best position for getting into close touch with the populace and the prevailing conditions. Their duties also were far from being merely sanitary, as they had to exercise a supervision over the provincial hospitals, the medico-legal work of the Markaz doctors, and all the hundred and one matters which are intimately bound up with health problems in the provinces.

Provincial Hospitals.

A glance at Graph 1 shows that the provincial work is divided into that concerned with hospitals and that which is directly under the charge of the Markaz and outpost doctors and which is a regular *olla-podrida* of widely differing duties. The question of provincial hospitals need not detain us. In discussing Section II. of the Central Administration we saw the problems they present. It is time to turn to the Mudiriya health inspectors, who are, for the most part, stout, worthy, and elderly Egyptians who form the link between the English divisional inspectors and the Markaz doctors, and are virtually the medical officers of health of the provinces. Being as a rule advanced in years, they are not generally energetic, they are not sufficiently well paid, and few of them do much in the way of private practice. Their chances of promotion are very small, and they tend to become inactive and to concern themselves chiefly with office work. Here and there you will find a keen and able man, but, for the most part, the Mudiriya health inspectors may be described as genial anachronisms.

The Markaz Doctor.

And now we come to one of the most important props of the health fabric in Egypt—the Markaz doctor—a Markaz being a section or district of a province. It may be a populous and prosperous district, so much so that one solitary medical officer may have as many as 100,000 people nominally under his charge. In such a case the majority die what the old Highlander called “natural deaths,” for the doctor cannot get anywhere near them when they are ill. All the same he probably enjoys a most lucrative private practice to which his government duties may or may not play second fiddle. On the other hand, the Markaz may be poor and sparsely peopled, no great catch for the young and pushing graduate from the Kasr-el-Aini School of Medicine who finds himself in such a district with very poor official pay, say £E.12 a month, and but little opportunity of supplementing it in any way.

Whether his Markaz is good or bad, however, he is expected to perform the manifold duties set forth on the list shown in Graph 1. One has only to read the long column to realise that in the great majority of cases the Markaz doctor is set an impossible task, at least while his numbers remain as limited as they are at present. He is supposed to deal with infectious diseases both from the clinical and the preventive aspects, much of his time is occupied with medico-legal work, of which there is a superabundance in Egypt, and which often proves remunerative in several directions, and he is expected to control general sanitation. Consider what this means in a large district studded with villages and seamed by canals and irrigation channels. On an ambling ass the Markaz doctor, surmounted by his red tarboosh, jogs hither and thither, often covering many miles a day. He may have to see that a birka is filled up, he may have to inspect a school. The water-supply of a mosque requires his attention, he has to furnish a report on the sanitary condition of a Government building. Questions of the regulation of water intakes fall to his share, as do those of street cleaning, slaughtering places, the enclosure of waste lands, and the selection of sites on which town refuse and fosse contents can be dumped.

His Multifarious Duties.

As if all this were not enough, he has still to keep an eye on offensive trades in his district, see to the registration of births and deaths, superintend the vaccination of the community, attend to the dispensary, examine prostitutes in places where there are no hospitals, carry out various duties connected with cemeteries, in one or other of which he must surely sometimes wish he were quietly at rest. Moreover, he attends the meetings of the local commission as public health delegate, he investigates contraventions against the law regarding the practice of medicine, he looks after pilgrims, and keeps an eye on such incomers to his district as are under the passenger control regulations. He is responsible for the sanitary state of fairs, he examines and reports on sick Government employees, he also examines the village police, and finally inspects the bodies of those who die uncertified. In addition, he usually earns his living by private practice, and presumably he eats, drinks, and sleeps!

But you will say, "The poor man must have a large staff under him to aid him in these multifarious duties." Not at all. Look at the graph. It is true that the Omdahs and Sarrafs, head-men of the villages, register the births and deaths, but I fear they often give the conscientious Markas doctor more trouble than assistance. It is true the barber, if he happens to be efficient, may render considerable aid; but, after all, who is the barber? He is merely an unqualified person who in all probability has inherited his office, and though he may be highly intelligent and carry out his own minor duties of vaccination, cupping, and so forth, in a satisfactory manner, he cannot, in the nature of things, take much of the load off the shoulders of the Markaz doctor. There is no one else, for the Daya, as we have seen, if not negligible, is usually dangerous. It is only when epidemics occur that our harassed friend gets special help and even that is only in one particular. In the strict sense of the term there is no sanitary staff whatever and rural Egypt lies largely at the mercy of the microbe, the helminth, and the fly.

Administration in the Governorates.

You will note that under the heading Provincial Organisation mention is made of the health administration in the Governorates—that is to say, in Cairo, Port Said, Suez, and Damietta. Cairo and Port Said have medical officers of health; Suez and Damietta so-called health inspectors.

We considered the conditions in Cairo in our first lecture and need not recapitulate. Of late years things have altered greatly for the better in certain localities, thanks to hard work on the part of a very capable medical officer of health and to the partial completion of the great drainage scheme, the sewers of which cast their contents upon the desert far from the city and cause it to blossom, if not like the rose, at least like a nosegay, for the trees and verdure of the sewage farm now form a feature of the landscape, and there was never yet a sewage farm without an aroma.

Recently, also, the Public Works Department has been erecting public conveniences in the streets, and these, well-designed and with the latest sanitary improvements, must be regarded as a very considerable hygienic advance. There still remains, however, a great necessity for public drinking-fountains supplying pure water. The latter is available, for there is a large installation of mechanical filters, but it is not to any extent at the service of the poorer parts of the populace.

Cairo, Port Said, and Alexandria.

The Qism medical officers whom you see mentioned on Graph 1 are really analogous to the Markaz doctors of the provinces so far as their work is concerned. Each looks after a division or district of the city, and though he has not to traverse great distances like his country confrère, he has more or less the same cheerful variety of duties and has very little leisure to devote himself to what we may call pure sanitation. At the same time he has assistance which the Markaz doctor lacks, for there are properly organised disinfecting gangs and the rudiments of a sanitary staff. Cairo, indeed, has really made a start in the right direction, though it is still a very long way from a hygienic millennium.

Port Said is also somewhat progressive, for under the British medical officer of health there is a senior medical man who devotes himself almost entirely to sanitary work, while his junior is entrusted with purely medical duties.

Very different is the state of matters in Alexandria, which, as we have stated, is a municipality and hitherto has been almost entirely a law unto itself. In other words, it has not been controlled by the Public Health Department. The latter has merely had the power to intervene when some epidemic raging in the city threatens danger to other places, a fine example of shutting the stable-door when the steed has been stolen. The Qism doctors who are supposed to safeguard the public health in Alexandria are not trained sanitarians and are permitted to engage in private practice. Though there is a medical officer of health, there is no expert control. There are no qualified sanitary inspectors. Indeed, the whole health administration of this wealthy port is radically wrong, and it is no wonder that the insanitary conditions we described in our first lecture have been the subject of adverse comment in the press, and that repeated outbreaks of typhus fever have evoked well-merited criticism and a clamour for reform.

FUTURE SANITARY ORGANISATION.

Our review of existing health problems in Egypt is now at an end, and we turn to the future. Shortly after the retirement of the last Director-General of the Public Health Department, the High Commissioner appointed a Commission to inquire into the future organisation and work of that department. Very nearly a year ago the Commission began its sittings, examined many witnesses, studied much documentary evidence, carried out numerous inspections, and in the fullness of time was delivered of a report, with the salient features of which we shall now deal. Whether or not the problem of hygiene in Egypt will be solved if the recommendations of the Commission are adopted and carried into effect no one can say. Egypt being Egypt, it is quite possible, nay probable indeed, that the proviso will never be forthcoming, at least in toto. Still, it may be said that the council of four¹ constituting the Commission found themselves in complete unanimity and that what public opinion exists in Egypt, generally speaking, approves their findings.

A MINISTRY OF HEALTH.

What are the findings? I direct your attention to a new graph (No. 2) and you will note at once the words "Ministry of Health." Despite some evidence to the contrary, the Commissioners were persuaded that the establishment of such a Ministry was essential. The reasons for this belief have already been recorded in the weighty words of Dr. Cyril Goodman, who further states:—

"The reorganisation of Egypt on constitutional lines, rendered necessary by the Protectorate, offers a peculiarly favourable opportunity of giving public health a place in the constitution commensurate with its importance to the country. Public order, finance, irrigation, agriculture, education and public health constitute the six principal interests of Egypt and the six principal duties of Great Britain towards its Protectorate. The present scheme of government includes in its governing body representatives of each of these interests, with the exception of public health. If the policy of Great Britain towards Egypt is to be placed on the broadest basis of material, mental, and physical advancement of the people then public health must be given without delay representation on the Council of Ministers, on the Council of Advisers, and it must be recognised as the direct adviser of the High Commissioner on matters of public health.

It must be frankly stated that those who, while expressing sympathy with the idea, urge delay in its execution must be considered as inimical to the movement itself, for a successful public health policy must grow with the fundamental institutions of the country. It must be built into, not be grafted on, the constitution. If, therefore, the importance of public health in Egypt is sufficiently great to justify its inclusion as a Ministry amongst those which direct the policy of the country, then it is clear that during and not after the remodelling of the institutions of the country is the proper time for that inclusion."

¹ The Commission was composed as follows:—President: Lieutenant-Colonel Andrew Balfour, C.B., C.M.G., R.A.M.C. Members: Lieutenant-Colonel G. E. F. Stammers, R.A.M.C.; Mr. E. S. Crispin, Director, Medical Department, Sudan Government; and Dr. Charles Todd, O.B.E., Director of Laboratories, Department of Public Health. Secretary: Mr. H. Sheridan.

MINISTRY OF HEALTH.

MINISTER OF HEALTH.

GRAPH No. 2.

AS RECOMMENDED BY

THE PUBLIC HEALTH COMMISSION, 1918.

UNDER-SECRETARY OF STATE.

DIRECTOR-GENERAL

TECHNICAL ADVISER and DIRECTOR OF MEDICAL INTELLIGENCE.

Bureau of Information and Library.
Museum of Medicine and Hygiene.

CENTRAL ORGANIZATION.

PROVINCIAL ORGANIZATION.

Corrigenda.—There are two inaccuracies in Graph No. 2: MINISTER OF HEALTH and [QUALIFIED SANITARY INSPECTORS] should have been printed in **ITALICS** (see key reference above).

The Head of the Ministry.

It remains to be seen how such a Ministry should be constituted. At its head there must, of course, be a Minister—an Egyptian—and he must be an official thoroughly versed in public affairs, interested in the welfare of the people, in social problems, and in scientific progress. It is not impossible to find such a man in Egypt, and, once found, his words would carry great weight in the Council Chamber. He need not of necessity be a medical man. Indeed, the appointment of a layman would possess certain advantages, as it would ensure that the Minister of Health was on the same footing as other Ministers, was appointed for the same political reasons, and would be interchangeable with them if a Ministerial rearrangement was required. In immediate command it is essential to have a British Under-Secretary of State, a medical man, who must needs possess a long and intimate knowledge of health matters in Egypt and be conversant with the intricacies of governmental machinery in that country. He will control the sanitary, epidemic, and medical work of the Ministry. As a glance at the graph shows, there will be a Department of Medical Education under him, a new departure and one necessitated by the present state of Egyptian affairs. His duty will be to frame future policy and indicate how health legislation should best be carried out, to see that the work is conducted upon a sound scientific basis and that scientific research, which alone can point the way to reform, receives due encouragement. He must also be capable of taking that broad view on which so much depends and possess those qualities of tact and firmness which count for so much in Eastern lands. Finally, as the Commission reported, "it is essential that he should have direct access to the High Commissioner, so that, armed with the weapons of an expert, he may be able to plead his cause to good effect."

The main driving force of the Ministry will, however, undoubtedly be the Director-General, who should not be too old a man. Public health work is a campaign against Field-Marshal Death and his redoubtable generals—to wit, Dirt, Destitution, Disease, Ignorance, Superstition, and, by no means the least doughty, the fighter with the double-barrelled name, General Vested-Interests! Hence, as in war, the commander must unite a certain degree of youthful energy and vigour with the experience and powers of judgment which are so necessary. Not only must he be a capable organiser, but he must combine strength and sympathy in his work, for, lacking sympathy, he will probably fail in a land like Egypt.

The Technical Adviser.

The next post is a new one, though it exists unofficially. It is that of Technical Adviser and Director of Medical Intelligence. I am not sure but that it is the most important of all, and though the duties of the post would be chiefly advisory, its holder would not be wholly divorced from administrative work, for, as you will observe, he would control the scientific side of the Health Ministry in so far as hygiene is concerned. Here is what the Commission say about this appointment:—

"We consider a post of this nature to be of the very greatest importance. The Technical Adviser would not only act in that capacity to both the Under-Secretary and the Director-General, but he would conduct a Bureau of Information. Controlling the main library, keeping himself closely in touch with what goes on in other countries, studying the vast literature, corresponding with similar departments of other Governments, he would be in a position to furnish invaluable information to the chiefs of the various Sections, and, by issuing instructive pamphlets and circulars both to Public Health officials and to the medical profession in Egypt, he might speedily make the Ministry of Health a real power in the land. Moreover, he would collect and collate information from local sources, so that at any time he would be in a position to advise on problems arising in Egypt itself. The lack of a bureau of this kind in the Medical Department of the British War Office has made itself severely felt in the various tropical and subtropical areas of hostilities. Such work, properly carried out, effects great saving in both time and money, and possibly does more than anything else towards making a Government Department really efficient and up-to-date."

A Museum of Medicine and Hygiene.

A further proposal of the Commission is the establishment of an Egyptian Museum of Medicine and Hygiene, which

would be of an educational nature, and, under the guidance of the Technical Adviser to the Health Ministry, should prove itself a stimulus towards sanitary reform. It is not suggested that this should be a Government undertaking. So truly national a project may well find support amongst the wealthy and influential of Egypt. As the Commissioners remark:—

"There is undoubtedly a need for some such institution in Egypt, where, in a graphic manner, information will be furnished, both to officials and to the populace generally, as regards the diseases of Egypt, the insanitary conditions prevailing in the country, methods of dealing with epidemics, and means of rendering towns and villages clean and healthy. The work of hospitals and dispensaries would be illustrated, the rôle of insects in disease explained, the danger from faulty and deficient dietaries set forth, together with measures of prevention and cure. In fact, a great centre of instruction would be established—a school where one might learn with little effort, where interest would be excited and sympathy aroused."

SECTIONS OF THE CENTRAL ADMINISTRATION.

At this point I may mention that the Commission recommended a Board of Health for Egypt, a body which undoubtedly would be of benefit in many directions. The results of its deliberations, as suggested by Dr. Goodman, should be published for the information of the public. We need not here enter into the question of its constitution, but will continue our consideration of the Central Administration under the new scheme. Three of the sections we previously discussed become departments and one disappears, the ophthalmic section being, for purposes of economy and facility in administration, attached to the Department of Medical Services, which is the old hospital section.

The new Department of Sanitary Services will require a director intimately acquainted with Egyptian conditions. His duties have been set out in rather more detail than were those of the director of Section I., and the only one of them to which reference need now be made is that indicated by the term sanitary training centres. As will in due course be seen, these are intended as schools of sanitation for training certain inspectors of nuisances whom it is proposed to create for the purpose of dealing with village sanitation. The latter, which, as you will see, heads the list, is perhaps best considered under the proposals for provincial administration.

The Department of Epidemic Services shows little change from Section IV., save that the suggestion is made to bring sea quarantine under it. This is a difficult matter, for it involves complex international questions, and no one can say how it will yet be settled. Inland water transport is mentioned, as it plays, or may play, an important part in the spread of plague and cholera when these diseases are epidemic in Egypt.

The Hospital Section becomes the Department of Medical Services, and the shortcomings which have been mentioned indicate the measures required for their remedy. In addition to an increase in general and infectious hospitals and a new policy as regards the treatment of prostitutes in the former, it is essential that technical inspectors be appointed to visit periodically the 23 general Government hospitals and to reside in them from time to time for limited periods. In some of these hospitals, also, post-graduate courses might with advantage be instituted.

Absorption of Other Medical Services.

The medical service of the Ministry of Education might with advantage be brought under the control of the Ministry of Health. The medical inspection of school children in Egypt is of the highest importance and requires to be developed with the help of technical inspectors. It will be seen that those medical services which have been outside the fold or have strayed from it are to be shepherded into it, so that the whole health work of the country may be properly coördinated, while the medico-legal work no longer figures under general sanitation, but is brought into this department. It would, indeed, be well if some of the burden of this class of work could be borne by the Ministry of Justice, but the question is a difficult one, and the Commission had to content itself with expressing some pious hopes in that direction. Certainly a great deal of the time of the Markaz doctors is taken up with duties which are nearly as much legal as medical.

The medical control of prostitution and venereal diseases has been relegated to this department, and only those who have carefully studied the problem in other countries can appreciate all that it involves. More lock hospitals are required, clinics for the treatment of venereal diseases must be established, the populace must be instructed, and facilities for preventive treatment provided. The whole question bristles with difficulties, but we know that these exist to be overcome, and money and determination, and above all things common-sense, can work wonders.

Provision for Incurables and Lepers.

As regards provision for incurables and lepers, I cannot do better than quote again from the Commission's report:—

"Homes for incurables would meet a great need in Egypt. The country is full of crippled and debilitated mendicants, for whom little or nothing is done. The *tektyas* of the Ministry of Waqfs deal with a few incurable cases, but the number of these establishments is quite inadequate. These unfortunate individuals are often beggars, are liable to become foci of infection, and present a problem which can only be solved by making provision for them. Even then, only a certain proportion of them can be housed, but this will help in some measure. So far as Cairo and its neighbourhood is concerned, the proposed transference of Qasr el 'Aini hospital from its present site would leave vacant a suitable building for a hospital for incurables; others, however, are required in various parts of Egypt. This is not the work for the Ministry of Health, except as a controlling and inspecting body.

"It would appear to be the privilege of the Waqfs Medical Services to make such provision. Amongst charities, that which benefits the aged, the infirm, and those who are beyond the skill of the physician and surgeon surely holds a high place. It is true that some waqfs are allotted by their donors for definite purposes, but we are assured that there are ample funds on which there is no reservation and which might well be devoted to this good cause.

"Closely associated with the question of incurables is that of lepers. We have been unable to obtain any reliable statistics as regards the present prevalence of leprosy in Egypt, but there are undoubtedly a number of lepers in certain places—for example, Damietta. There is nothing to prevent them from handling foodstuffs intended for sale; and though leprosy does not appear to spread much in Egypt, and though the channels of communication from the sick to the sound are not fully known, such risks should certainly not be permitted. Even if, from the public health point of view, it may not seem very necessary to segregate lepers in Egypt, there is the humanitarian aspect of the case to be considered, and an asylum is undoubtedly required for maimed and helpless lepers, as well as for those who are probably an active source of infection. A leper colony in which work could to some extent be carried out on the land would be a wise provision, and the attention of the Ministry of Waqfs might well be drawn to this charitable object.

It will be seen that the lunatic asylums should form a section of the Health Ministry under a Director of Lunacy. This is in accord with the modern trend of thought as regards the work of the alienist. Lunatic asylums are, however, so specialised that they cannot be grouped with other hospitals, but must form a separate department.

MEDICAL EDUCATION IN EGYPT.

And now we reach a very important subject—that of medical education in Egypt, which, however, can only be very briefly considered. We saw that the Kasr-el-Aini School of Medicine owed its foundation to Clot Bey. It has proved, especially of late years, a most useful institution both in the way of teaching and of research, and its professoriate has included men of European reputation. Unfortunately, the school is now too small to meet the needs of the country, and though it attracts the intellectual élite from the secondary schools the Ministry of Education has to refuse many applications owing to lack of accommodation. The vast majority of the students who pass through the school find employment in the Public Health Service, and in the absence of any University system in Egypt it is deemed advisable to bring medical education into the Ministry of Health, there to be placed under the control of a director, who must of necessity be given a free hand not only as regards medical education, but with respect to the training of dentists, pharmacists, nurses, midwives, and dayas. Medical research work, demanding access to clinical material and requiring the calm of academic surroundings for proper development, would be conducted in

the laboratories of the school of medicine and would be distinct from the applied research work of the public health laboratories, which is of a different type though equally important.

The curriculum of the school can be improved in certain directions, as by establishing instruction in diseases of children and in protozoology. A chair of hygiene should undoubtedly be instituted and a diploma granted, either in public health alone or in tropical medicine and hygiene. Like the medical school, the great teaching hospital of Kasr-el-Aini requires extension and improvement. Indeed, a new building on a new site has long figured on a programme which has never been fulfilled. Facilities for dispensary work might prove valuable, and the question of training Egyptian women doctors is one meriting serious consideration.

In Egypt there is also great need for a powerful board to control the practice of medicine, dentistry, and pharmacy, and to deal with all questions of malpraxis and vivisection.

It will be seen from the graph (No. 2) that it is proposed in certain respects to expand the work of those public health laboratories. Protozoology requires more attention than hitherto, and food control and sewage control services must be established. As will be noticed, there is a plan to decentralise the work in some measure by means of provincial laboratories, while the existing quarantine laboratories should be brought under the sway of the Director of Medical Intelligence. The chief sanitary engineer of the old graph becomes a Director of Sanitary Engineering, a subject which will undoubtedly become increasingly important as schemes for drainage, water-supply, disinfection, and so forth develop.

THE SOLUTION OF PROVINCIAL ADMINISTRATION.

Such are the main recommendations of the Commission as regards central organisation. Let us see how it proposes to solve the problem in the provinces. Recognising that there are far too few divisional inspectors, it recommends an ample increase in their numbers and insists that they should live in their districts, be housed, well paid, and given every facility for getting about rapidly. Opportunities should also be afforded them for seeing in rotation something of the Central Administration and gaining an insight into the work of those departments of the Ministry, the chief posts in which some of them will one day fill.

Introduction of the Sanitary Inspector.

There is nothing very novel in these recommendations, but an entirely new idea, so far as Egypt goes, is voiced by the suggestion to introduce qualified British sanitary inspectors, one of whom would be attached to each divisional inspector to aid him in his work and, under certain conditions, to train those inspectors of nuisances whom we have mentioned and who figure in the graph. There can be no doubt that intermediaries of this kind are greatly needed. If the right class of man is obtained—and he should be forthcoming in greater numbers now the war is at an end—he should go a long way towards solving some of the problems I have mentioned, for efficient inspection means everything in this kind of sanitary work. Qualified sanitary inspectors of this type have proved their value in the Sudan. They are employed under the Colonial Office administration in various parts of Africa, and I hope to see the day when it will be possible to train them in the rudiments of tropical hygiene before they leave this country for their posts abroad. Their ordinary training is excellent so far as it goes, but at present time is wasted after they reach the tropics in giving them instruction in antimosquito measures, in native habits and customs, in conservancy methods in vogue in hot countries, in new aspects of the fly question, in those improvisations which form so great a part of the sanitarian's outfit abroad, and in all those *minutiae* which mean so much and which can perfectly well be imparted to them by one having experience. It is true that many have become *au fait* with these matters during the war, but we have to think of the future, and the sooner this training is instituted the better for the Empire. It has been too long delayed.

We need not again consider the strictly medical work in the provinces, but from what has been already said it is clear that the Mudiriya health inspectors should be better paid and have better prospects. The posts should be filled by

younger and more energetic men who may be expected to take an active interest in their duties, especially if they are diplomats in public health.

Two Categories of Markaz Doctor.

And now we come again to our friend the Markaz doctor. What is to be done about him and his manifold perplexities? Two courses may be followed. The ideal scheme, and one which eventually must be adopted, is to divide the Markaz doctors into two categories according to the work, sanitary and medical, as shown in the subjoined table:—

Markaz Doctor in charge of Public Health Work (excluded from private practice).	Markaz Doctor in charge of medical work (allowed private practice).
General sanitation. <i>Etablissements insalubres</i> . Communicable diseases (public health aspect). Vaccination and vaccination inspections. Pilgrims. Quarantine. Passenger control. <i>Mûlêds</i> . Schools and <i>kuttabs</i> (sanitation). Prison lock-ups (sanitation). Cemeteries. Registration of births and deaths. Public health delegate on Local Commission. Public health representative on the Markaz Sanitary Commission. Contraventions against public health laws and regulations.	Communicable diseases (clinical). Medico-legal examinations and reports. Dispensary. Prostitutes. Medical Commission work:— Examination of sick Government employees. Examination of <i>ghafirs</i> . Prisons (in certain places). Schools (medical).

The Markaz doctor engaged on sanitation would not be allowed private practice, would be freed from medico-legal work, and would have an initial salary of £E.25-30 a month. He would also be pensionable. From this category the Mudiriya health inspectors would be chosen.

The Markaz doctor engaged on medical work would be paid as at present, would carry out the official duties listed in the above table, and would be on contract until found satisfactory. He could then be placed on the cadre. As at present, his chief prospects would be in the direction of private practice.

Provisional Measures.

Unfortunately, at present this scheme cannot be carried into effect, for there are not enough Markaz doctors in Egypt, there are not enough private practitioners, there are not sufficient medical graduates. Still, it might be tried on a small scale in certain districts, a course the Commission recommended.

The second plan is to multiply the number of doctors in each Markaz, strictly defining their respective areas, and making no change in the nature of their work or in their pay. Even this simple solution of the problem will be difficult of realisation until the medical school is enlarged and is able to cope with the medical needs of the country. How true is the old proverb, "Things move slowly in the Nile Valley!" "Haste," however, we know, "is begotten of the devil," and if we can only combine the slowness with sureness no great harm will be done, provided that slowness does not degenerate into sluggishness, a very different affair.

The Inspector of Nuisances and Sanitary Barber.

Inspectors of nuisances may be recruited from the ranks of the better educated sanitary barbers or from men of the artisan or mechanic class, or possibly even from ex-non-commissioned officers of the Egyptian Army. Trained by the sanitary inspectors, paid out of local funds, in close touch with the people, the inspector of nuisances would supervise the scavenging and cleansing of villages, and, if village latrines and incinerators prove feasible, he would see that they are properly used and kept in repair. He would inspect water-supplies, markets, *birkas*, and other mosquito-breeding places. He would endeavour to show the people how their villages could be improved and how they could live in more cleanly and also more comfortable surroundings. He should have some knowledge of building construction, and of the rôle of flies in the spread of disease.

The sanitary barber, who should also be paid, would, in addition to his present duties, furnish information on matters of public health interest occurring in the village, while a conservancy staff would represent the lowest rung in the sanitary ladder.

The Working-out of the Scheme.

Here, then, is a definite system, providing, apparently, for all contingencies, costly no doubt but not unduly so, and

avoiding too heavy a strain upon the central treasury. It remains to be seen if it will be adopted in its entirety and, if adopted, how it will serve the medical needs of Egypt. It has been said that the report of the Commission afforded cause for complaint by the Egyptian Nationalists inasmuch that, save in the case of the Minister, all the higher posts in the Health Ministry were allotted to Britishers. The statement is doubtless true, but requires to be qualified, for, owing to the lack of technical training which has been mentioned, there are at present no Egyptian doctors capable of holding these posts. Furthermore, I would like to point out that the Commission expressly recommended an improvement in the status and pay of the Egyptian Mudiriya health inspectors and advocated their advance to divisional inspectorships as soon as possible. Their report also provides for a large increase of Markaz doctors and the creation of a new class of Egyptian employees—namely, the inspectors of nuisances. The national aspect of the question was duly and sympathetically considered and, as has been stated, recommendations were made which, if carried into effect, will create a body of Egyptian hygienists capable of serving their country to the best advantage in the interests of the public health.

Application to Urban Areas.

In the case of the individual towns measures closely resembling those just detailed must be applied. Cairo requires qualified sanitary inspectors and inspectors of nuisances. So does Alexandria. The latter city must no longer be permitted to act as a law unto itself in public health matters. The Commission recommend that a Controller be appointed by the Ministry of Health, which itself should approve all public health appointments. The Qism doctors should not be allowed private practice and should devote their whole time to public health duties, in which they should be specially trained. In short, a radical change is needed if the stigma now resting on the city is to be removed and the health of its populace safeguarded. At the same time, it is only fair to state that the chief engineer of the municipality has been busy with schemes for replacing the *echêches*, of which I spoke in the first lecture, by model dwellings. Building regulations have also been framed and a town plan introduced, so that the outlook is distinctly more hopeful. As regards other towns, the method in vogue at Port Said may be followed with advantage until such time as each is able to work out its own sanitary salvation on a sound basis of local self-government.

Time does not permit a discussion of other points considered by the Commission, such as the future of the medical services of the Ministry of Waqfs, that department which controls large funds earmarked for charitable purposes, the amendment and progress of public health legislation, the dissemination of information, and the great desirability of lay officials taking a real interest in sanitary reform and keeping themselves acquainted with what is happening in the hygienic world of Egypt.

THE REMOVAL OF A REPROACH.

It all sounds very simple, but in reality how hard it is to make headway against ignorance, inertia, and prejudice! Let us, however, hope for the best.

Along with this reform, or rather advance, in public health administration an active campaign should be instituted against these three deadly enemies of the fellaheen—bilharziasis, ankylostomiasis, and pellagra. Leiper and his colleagues have already thrown much light on the first-named, we know a great deal about the second, the third alone remains a mystery. Given money and research on sound lines, the mystery will assuredly vanish, and given funds and a progressive sanitary policy the people of Egypt will be freed from the burden of all three diseases.

I have spoken in vain if it is not apparent that the sanitary condition of Egypt still remains in many respects a byword and a reproach. Great Britain has declared that ancient land a Protectorate, and has protected it from the Teuton and the Turk on the east and the Senussi and the Turk on the west. There are, however, other foes of its own household, and unless this country realises its responsibilities and undertakes to rout the forces of disease which hold Egypt in thrall, it will have failed in its duty, and one day there will be written of it, as there was of Belshazzar of Babylon, "Mene, mene, tekel, upharsin"—Thou art weighed in the balances and art found wanting.