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[Despatch Abstract.]

Dr. Lankester's report on tuberculosis in India

Recording papers relating to the action to be taken on
the suggestions of Dr. Lankester' for the prevention of the
spread of tuberculosis in schools and colleges.

Government of Madras.

LOCAL AND MUNICIPAL DEPARTMENT.

(MEDICAL).

CONFIDENTIAL.

Letter No. 76, 27th September 1916

Tuberculosis

The Government of India furnished with the views of this Government on the points raised in Dr. Lankester's report on — in India.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT

(Medical).

READ—the following papers :—

I

G.O. No. 695, Public, dated 10th June 1914.

ABSTRACT.—Communicating to the Surgeon-General letter from the Government of India, Department of Education, No. 799-810, dated the 11th May 1914, regarding the deputation of Dr. A. Lankester, M.D., to conduct an enquiry into the prevalence of tuberculosis in India and requesting that necessary facilities may be given to him in carrying out his work.

II

Letter—from the Hon'ble Sir E. D. MACLAGAN, K.C.I.E., C.S.I., Secretary to the Government of India, Department of Education (Sanitary).
To—the Secretary to the Government of Madras, Public Department.
Dated—Delhi, the 23rd February 1916.
No.—111.

With reference to the Department of Education letter No. 799-810, dated the 11th May 1914, I am directed to forward, for information, a copy of a "Report on Tuberculosis in India" by Dr. A. Lankester, M.A. The report is of a provisional nature and is under the consideration of the Scientific Advisory Board of the Indian Research Fund Association. Certain incontrovertible facts, however, appear to stand out after a perusal of the report, the most important being—

- (1) that tuberculosis is very widespread in India;
- (2) that its present prevalence demands earnest consideration of etiological factors and measures of prevention;
- (3) that the distribution of the disease is not unconnected with certain social customs; and
- (4) that the conditions pertaining in certain institutions are conducive to the spread of the disease.

2. The Government of India are of opinion that it will be convenient for final consideration of the various suggestions made by Dr. Lankester and for determining such further investigation as may be deemed desirable if the views of the Local Governments were at once obtained. I am accordingly to request that, with the permission of the Governor in Council, the Government of India may be favoured with an expression of his opinion on the issues raised in the report, more especially in respect of those points which particularly concern the Madras Presidency. It will be a convenience if the matters dealt with in the three parts of the report respectively are separately dealt with in the same way in your reply.

3. I am to ask that a reply to this letter may be sent so as to reach the Government of India not later than the 1st August 1916 and that the report may for the present be treated as confidential.

III

Endorsement No. 1549-1, Public, dated 14th March 1916.

A copy of the letter from the Government of India, Department of Education, No. 111, dated the 23rd February 1916, together with a copy of Dr. Lankester's Report on Tuberculosis in India is forwarded to the Surgeon-General who is requested to submit to Government, by the beginning of July 1916, his opinions on the issues raised in the report, more especially in respect of those points which particularly concern the Madras Presidency. The matters dealt with in the three parts of the report should be dealt with separately.

C. G. TODHUNTER,
Acting Secretary to Government.

To the Surgeon-General.

IV

Letter—from the Hon'ble Surgeon-General W. B. BANNERMAN, C.S.I., K.H.P., M.D., D.Sc., I.M.S., Surgeon-General with the Government of Madras.
To—the Secretary to Government, Public Department.
Dated—Ootacamund, the 10th July 1916.
No.—95 T./T. 232.

In accordance with endorsement No. 1549-1, Public, dated 14th March 1916, I have the honour to forward herewith my opinion on the Report on Tuberculosis in India by Dr. A. Lankester.

2. I have put the report in the form of a summary with comments on each head.

3. The points to which attention is more particularly invited are the following :—

- (1) The importance of a Nursing Service on the lines of that established in England by the example and exertions of Florence Nightingale. This, not only for attending to tuberculous persons, but also for the relief of women in child-birth, and as affording admission to the zenanas for purposes of instruction in elementary hygiene.
- (2) The importance of ensuring open-air conditions everywhere, in the home, the work-room, the factory, and in schools.
- (3) The importance of milk supply in towns.
- (4) The importance of education, not only as to spitting, but in all matters of domestic hygiene. For this to be effective, the teachers must first be educated.
- (5) The importance of light airy schools, built of light materials, for villages.
- (6) The importance of medical inspection of schools, and as a corollary to this, provision of open air schools, or homes where children who are a danger to their companions or who are in the very early stage of consumption may be segregated.
- (7) The importance of compulsory notification as an ideal to be aimed at, but *probably not as yet practicable in India*. The substitution for it of *voluntary* notification induced by the attraction of successful treatment in Tuberculosis Institutes and Sanatoria.
- (8) The importance of first of all educating the upper and middle classes, and through them getting at the illiterate masses of the poor.
- (9) The importance of a Central Health Bureau in charge of a well-paid capable officer, whose business it would be to collect information on health matters, to prepare lectures and pamphlets and to encourage all workers in public health. This in substitution for Dr. Lankester's proposal for a National Health Association managed without official guidance. Such an association without a full-time paid head to act as a driving force would prove a failure.
- (10) The importance of the formation of Sanatoria or "Garden Colonies" near large cities, and the establishment of phthisis wards at all headquarter hospitals.
- (11) The importance of encouraging co-operation by the people in the matter of health in the community, but this must be under guidance as in (9) supra.
- (12) The importance of fresh air, light and cleanliness, the two former to be had in abundance in India, but the latter to be found only after education.

Therefore educate, educate, educate. For this we must begin by educating the teachers.

The one who teaches the teachers must be a first-rate medical man who would lecture to the Saidapet Teachers' College, inspect the schools in Madras City, and take his scholars round to houses, schools, markets, water-works, etc., for practical instruction.

If the future teachers of India are really converted to a belief in the value of sanitation then some hope for the rising generation may be found, not otherwise.

ENCLOSURE.

REPORT ON DR. LANKESTER'S REPORT ON TUBERCULOSIS IN INDIA.

PART I.

Chapter II.—Is tuberculosis on the increase in India?

Tuberculosis in India seems to be following the same course as in Britain, it is spreading from the crowded and insanitary towns to the country by means largely of the contagion brought by country people who having gone to the towns to work in factories or elsewhere, there contract the disease and return to their native place to die. I entirely agree with the concluding paragraph on pages 6 and 7.

Chapter III.—Tuberculosis in relation to climatic conditions.

I am in entire agreement with Dr. Lankester when he says: "The total absence of authoritative statistical returns makes it impossible to do more regarding the different areas than draw comparisons between them based for the most part upon a large body of independent testimony which has been gleaned from those observers, whether Indian or European, whose experience seemed to entitle their opinions to respect" (page 8) and that for accurate statistics "we must await the time of improved methods as regards statistical returns" (page 9). This is one of the great difficulties experienced by Sanitarians in India, viz., the want of accurate returns of births and deaths, owing to the fact that these occurrences are reported by non-medical men; vide in this connection my letter No. 100-T. 220, dated 29th June 1913, and subsequent correspondence recorded in G.O. No. 1754 M., dated 11th September 1914, regarding the appointment of medical men as registrars of births and deaths.

The remarks of Dr. Lankester on the effect of climate, so far as the Madras Presidency is concerned, coincides with prevalent medical opinion, viz., that the Deccan is most favourable as regards climate in regard to tuberculosis, that the rest of the presidency, with the exception of the Malabar Coast, is favourable, while the Malabar district and South Canara are not favourable. The influence of humidity and temperature on the prevalence of tuberculosis is well discussed in the last three paragraphs on page 11, and has an intimate relation to Madras conditions.

Chapter IV.—Tuberculosis in Cities and Towns.

Dr. Lankester begins this chapter by the statement (page 13) "Tuberculosis is a social disease dependent, in India at all events, almost entirely upon infection from man to man". This statement is most important and will command the assent of most medical men in India. It is this that it follows that town dwellers will suffer more than those living in the country; and statistics, such as they are, confirm this opinion.

Dr. Lankester complains again regarding the unreliability of the vital statistics even in the larger towns of India, and he relies to a large extent "upon the personal impressions of those possessing local experience" for the opinions he forms of the prevalence of tuberculosis in them. This is a blot upon the sanitary administration of the country (and Madras is no exception) which can only be removed by the entertainment of registrars of births and deaths who are medical men and properly paid for their work.

That the statistical returns of Indian cities "fail to give any decided confirmation of the general opinion that consumption is greatly on the increase in them" is no doubt due to the fact that a "large number of people, students, labourers and others, who return to their homes at a distance after having become infected with the disease" die in the country and not in the towns, and that therefore the figures showing town mortality "fail to indicate the real mortality" (page 13).

The last paragraph of this chapter (page 19) is important as showing how cities are a danger to their surroundings.

Chapter V.—Bovine tuberculosis in India.

Dr. Lankester is of opinion "that in India bovine tuberculosis does not at present call for serious consideration as an important cause of the human disease" (page 23), but in a footnote on the same page he calls attention to the fact that "Captain Acton, I.M.S., and Mr. G. Taylor of the Punjab Veterinary Department have found a considerable number of cases of undoubted glandular tuberculosis in cattle slaughtered at Perazpur and at Simla". It would be well therefore to have a rigid enquiry into this matter by a body of experts among whom should be comprised a bacteriologist, a veterinary surgeon, and a practical slaughterhouse inspector from England. It should be remembered that tuberculosis in calves is seldom seen, as proved by examinations made on thousands of calves used for the preparation of vaccine lymph at the Local Government Board Vaccine Station at Hendon, or at the King Institute at Guindy.

If the immunity of Indian cattle is real then the question of its cause would arise, and its investigation by expert research men might yield valuable results.

Chapter VI.—Surgical Tuberculosis in India.

This chapter deals with the distribution of surgical tuberculosis as contrasted with the pulmonary form of the disease. While the latter appears universally and equally distributed throughout India the former is much more frequent in the north than in the Madras Presidency.

Dr. Lankester says: "It was very noticeable that in Southern India and to a lesser extent in Bengal such cases of non-pulmonary tuberculosis as did occur were for the most part cases of glandular or intestinal disease, tuberculosis of bones, joints and other organs being conspicuous by their rarity. This inequality of distribution was a marked feature in the reports of hospital surgeons in Southern India, and its explanation presents an interesting problem for further inquiry" (page 27). It is to be noted that the cases of bovine tuberculosis reported in India have hitherto been from the Punjab and Northern India not from this Presidency. This reported common distribution of surgical tuberculosis and bovine tubercle may possibly depend on a common causative factor.

Chapter VII.—Tuberculosis and the Public Services.

The history of the Gurkha Regiments stationed at Bakloh (pages 29 and 30) is very instructive as illustrating the need for sufficient cubic space and ventilation in dormitories where sepoy or policemen sleep.

The establishment of Sanatoria for such men is of course a proper proposal to be carried out when funds permit.

I would suggest that an enquiry as to the prevalence of tuberculosis among railway servants in this Presidency be carried out—vide paragraph 3, page 32.

Chapter VIII.—Tuberculosis in Indian Jails.

This is a most interesting and valuable chapter, emphasising as it does the necessity for free ventilation with an approach to life in the open air day and night.

It will be seen from the table on page 36 that Madras stands fourth in order of merit as regards tuberculosis death-rate in jails; Bombay being first, with an average death-rate per mille of 1.5, the North-West Frontier Province second (1.9), the United Provinces third (2.1) and Madras fourth (2.4). The worst province is the Punjab with a death-rate per mille of 6.4.

Dr. Lankester says: "In almost every province tuberculosis is the disease which is responsible for the largest number of prison deaths" (page 36). He likewise quotes with approval the following extract from Colonel Macnamara's Report for 1913 on the Madras Jails: "Everything is being done that forethought can suggest to curb the ravages of this disease. It is common everywhere, more so outside the jail I believe, than in it, but being of an insidious nature, its discovery is only first made after admission. The conditions in every jail are, in my opinion, far more favourable for the prevention and cure of tubercle than exist outside, and in our cases merely represent the state of affairs amongst the public who furnish the jail population."

Where things are as represented in this quotation these cases in the jail merely represent the state of affairs amongst the free population outside. But where good accommodation is not available or where efficient management by a medical man in supreme control is not present, then conditions will surely arise favourable to epidemic prevalence "owing to exceptional opportunities afforded for the spread of infection" (page 37).

Is there any evidence of prisoners in Madras jails acquiring tubercle infection after admission?

I have no sure means of telling at present but have addressed the medical officers of jails through the Inspector-General of Prisons and will report the results of this enquiry.

Dr. Lankester is inclined to regard a death-rate much higher than 2 per mille as due to conditions obtaining within the jail itself. We have seen that the death-rate in the Madras jails has averaged 2.4 per mille during the past five years and it is therefore necessary to enquire carefully as proposed above as to whether tubercle ever really originates in the Madras jails or not.

Under the head of "Remedial measures", Dr. Lankester emphasises "the vital importance of the efficient disinfection of the clothes and bedding of phtisical patients and of the preservation of food from contamination."

I would, in this connection invite the attention of Government to the fact that no jail in this presidency has an efficient steam steriliser in which clothes and bedding can be disinfected, though the provision of such was recommended in my letter to Government No. 98-T/456, dated 24th September 1914, disposed of by G.O. No. 2695, Judicial, dated 2nd December 1914.

"General measures" he discusses under three heads:—

- (1) Special Tuberculosis Prison.
- (2) A Central Jail for Pathans.
- (3) Improvement of ventilation conditions in barracks and workshops.

The second head does not concern Madras.

(1) *Special Tuberculosis Prison*.—Dr. Lankester says: "There can be no doubt that the provision of a special tuberculosis jail will go far to reduce the prevalence of the disease in the prisons of a province. It will enable segregation to be carried out far more completely than is at present possible, while the bringing of all cases to one centre under a specially trained staff, and where buildings and appliances have been planned with reference to the one purpose, will undoubtedly conduce to greater efficiency of treatment" (page 44). He proceeds to point out that such a tuberculosis jail should not merely be used as a hospital for advanced cases, but that its chief use would be for the segregation and care of suspected or early cases for whom to remain in an ordinary jail would involve the probability of advance to the active stage of the disease. For these latter this jail would be run on the lines of a Sanatorium, with periods of rest and work regulated by the medical specialist in charge, and all conducted under open-air conditions, and with proper diet for each individual.

Hard labour would not of course be excluded in suitable cases.

The establishment of an open-air prison on the above lines would enable protective measures in ordinary jails to be carried out with a real hope of success. I am in entire agreement with the above, and suggest that a sufficiently large new enclosure at the Bellary jail be constructed and used for the above purpose. One large jail for tubercle will be much more efficient as regards staff and treatment than several small annexes to existing jails.

(3) *The improvement of ventilation conditions in barracks and workshops*.—Dr. Lankester emphasises the fact that "a majority of jail inmates are usually village folk" accustomed to live and work in the open-air, and that when shut up in improperly ventilated cells or workshops they are specially liable to consumption. His remarks on ventilation and "the continual flooding of the place with the outer air so freely that the objection from draught no longer arises" (page 47) are very apt, and have a distinct bearing on Madras Jails where unfortunately a considerable number of "back-to-back" cells exist, and where (in Benhamur) within the last three or four years a new set of such insanitary cells were built. The following quotation is very excellent and has my entire support. Speaking of the possibility of improvement to existing badly ventilated barracks and workshops by removal of windows and shutters, Dr. Lankester says (page 47): "an end must come to the utterly mistaken benevolence which hesitates to do this on account of the cold. If delicate school girls can sleep safely in open verandahs in the Northern Punjab, cannot strong men do so in rooms with windows open? Wherever the plan has been tried it has met with unvarying success."

The account of the banishment of pneumonia from the jail at Peshawar, a very cold jail and with a population composed mainly of the very susceptible Pathan, is most striking and convincing as to the truth of the above.

Doubtless as Dr. Lankester points out (page 48) in Madras our conditions are not such as need cause grave anxiety, still I believe we would be wise to have one Central Jail for tuberculosis in a good climate like Bellary, and to insist that whenever new cells are built they be provided with free ventilation approximating as much as possible to conditions of life in the open-air.

Chapter IX.—Tuberculosis and the Indian Christian community.

Being a missionary himself, Dr. Lankester naturally takes a deep interest in the Indian Christian community. He commences by an examination of the burial registers kept by missionaries in several centres of missionary work where separate cemeteries have been established for this community. He believes that these registers enable him to arrive at the true death-rates among the Christian community "with a very small margin of error" (page 50). He arranges his figures which are for periods ranging up to thirty years, in tables, and remarks: "The most noteworthy fact which emerges from these tables is that in almost every case the proportional mortality from tuberculosis, as compared with that from all causes, has remained stationary. This must mean that, contrary to the views of very many, consumption, instead of increasing in this community, is definitely on the decrease" (page 50). This statement seems to me full of hope for the future not only for this, but for all other communities, for it shows that can be done by good management of a community of by no means wealthy persons.

I would invite especial attention to Dr. Lankester's remarks on the spread of tuberculosis in Boarding schools and Orphanages on page 54. There is much truth in what he says with regard to the folly of adopting Western ideas of feeding and clothing in the East, and this Chapter deserves the fullest consideration from all missionary bodies.

These remarks apply with great force to the Anglo-Indian community; of the poorer of whom he says "prevented by pride from enjoying the good things of one race, and by poverty from enjoying those of the other, their homes in some of the great cities show a squalor which recalls the worst slum dwellings of London" (page 56).

PART II.—THE CAUSATION OF TUBERCULOSIS IN INDIA.

Chapter X.—Introductory. *The Tubercle Bacillus.*

In this part Dr. Lankester discusses the social and other factors connected with the spread of tuberculosis in India. These factors (a) may be due to ignorance of the laws of health; (b) may be the result of economic problems; or (c) the product of social customs capable or not of modification.

"In Western Countries, there has been, during the last thirty years, a complete revolution in the ideas ordinarily current upon many matters relating to health, and on no subject has this change been more marked than as regards the value of fresh air in the treatment and prevention of consumption."

The ideas still commonly held in India as to the supposed injurious effect of fresh air in consumption, and the advantages of a warm, closed room, are exactly similar to those current in England 30 or 40 years ago" (page 59).

Then follows a very excellent description of the tubercle bacillus, the discovery of which as the actual cause of the disease, has brought about this change of ideas.

Chapter XI.—Poverty and Overcrowding.

Dr. Lankester begins by saying that though in all countries tuberculosis is essentially dependent on poverty and overcrowding yet, "it may be said that the dependence of tuberculosis upon poverty is probably not nearly so immediate in India as in colder climates. Over vast tracts of the country poverty does not necessitate overcrowding nor does living in the open air entail hardship. Actual starvation as in times of famine undoubtedly prepares the way for phthisis, but where there is not concurrent overcrowding, it is usually by other diseases that poverty and hunger destroy life" (page 61).

On the other hand he points out that overcrowding when combined with want of ventilation—as in cold parts of India—must be accorded the first place in the spread of tuberculosis.

In this connection he invites attention to the advantage of one-storey huts, so common in Madras towns and villages, when contrasted with the many storied "chawls" of Bombay. "The evils resulting from overcrowding in the northerly parts of India tend to be far greater than those in the south from the fact that the cold during a part of the year drives the people to shut themselves closely in their houses, and still more, leads to a style of architecture which discourages ventilation" (page 61). Can these habits and defects be remedied? Dr. Lankester believes they can be, and strikingly contrasts the condition of towns which he has seen on his tour, "where all the authorities, municipal president, secretary, health officer, civil surgeon, District Magistrate are working together determined to improve conditions in every possible way, and those where the same officials are going quietly on in the old paths, content with things as they are" (page 62).

The contrast in the conditions under which Health officers work in these two types of towns is well set forth in the next few paragraphs which should be read and pondered by all municipal councillors, and others responsible for the work they do.

With regard to economy of site areas Dr. Lankester has much to say. He refers to spaces in crowded towns occupied by ruined or uninhabitable houses which remain vacant for years, a nuisance to all concerned. He suggests the giving of powers to the municipality to acquire such by sale or exchange and to build thereon model two storey dwellings. The "joint family system" whereby a once spacious mansion is converted into a series of unventilated rooms, comes in for complete condemnation. This custom is certainly at the root of much overcrowding even among those who are not poor, and should be discouraged as much as possible by the people themselves.

Under "organised efforts to lessen overcrowding" (pages 64-66), he discusses the difficulties involved in providing new and sanitary accommodation for the very poor, and mournfully confesses the general failure of model "coolie lines" on account of the high rents which have to be charged if any profit is to be made on the capital expended.

He suggests that public bodies might content themselves with the provision of a pukka plinth and a regular lay-out, and leave the poor people to build a slight superstructure which they can repair for themselves, and which may be periodically destroyed and rebuilt (page 65).

This is a good suggestion, and deserves serious consideration from architects and engineers interested in sanitation. As Dr. Lankester says: "The successful designing of Indian houses can only be done by those who belong to the people for whose dwellings they plan. India has her thousands of capable lawyers and doctors. Where are her architects?" (page 66).

Chapter XII.—Social customs regarding Women.

This chapter I regard as one of the most important in the report. "The fact that in India more than twice as many women as men suffer from consumption . . . should prepare us to examine these questions (social customs regarding women) carefully and dispassionately" (page 67).

I. *The Purdah system.*—Dr. Lankester says: "In the whole of my tour through the cities of India no single fact was more constantly brought to my notice by ceaseless reiteration than the direct dependence of consumption upon the system of purdah seclusion of women" (page 67). This is not merely the opinion of an European missionary, medical man though he be, it is supported by Indian practitioners as well. "One of the most famous *hakims* in Northern India said: 'It is our purdah system which accounts for the frequency of consumption amongst our women'" (page 67). In the following paragraphs Dr. Lankester proves these statements in a most convincing way and points out that "the rooms of Indian dwellings, rich as well as poor, are usually ill-ventilated and they must in very many cases contain the germs of tuberculosis in an active form. It is by reducing to a minimum the opportunity for exercising fresh air with its strengthening and protecting influence that the purdah system exercises its most serious effects" (page 69).

II. *Child marriage.*—This social custom is only second to the seclusion of women in its evil effects. Dr. Lankester assures us that—with one exception—all the medical men he consulted, and he discussed this matter with hundreds at the meetings he held in all parts of India, were of opinion this was "a most important cause of the prevalence of the disease amongst young girls." How can it be otherwise when one considers the strain imposed on women during pregnancy, the puerperium, and the lactation periods.

The cure for this of course is the raising of the legal age for marriage. Even taking into account the alleged precocity among women favoured by the Indian climate this age should, says Dr. Lankester, be fixed at 15 at least.

III. *The management of child-birth.*—"So far as I know" says Dr. Lankester, this matter has not hitherto been regarded as having any direct connection with the spread of consumption, nor had any such connection occurred to myself before taking up this enquiry. The evidence on the subject however which has reached me is to my mind so conclusive and so general in its extent as to force me to include it in the mention of important causative factors" (page 71). Most medical men in India must, I am sure, be able to confirm this from their own experience. The vivid description of the horrors of the ordinary lying-in of an Indian woman that is given in the report must convey conviction to all. "Need we wonder if—what I unhesitatingly affirm to be the case—a large number of young married women date the onset of an attack of consumption from the time immediately following the birth of their first child?" The advice given on this same page (73) as to avoidance of dangers at this time cannot be too widely read by the Indian public. If it were acted on, thousands of deaths would be prevented.

The remedy proposed by Dr. Lankester is the gradual formation of a nursing service for India on the lines laid down by Florence Nightingale in England.

This means, of course, that the profession of nursing must come to be regarded in India, as in England, as an honourable calling, and one that can be followed with no discredit by widows and women of good caste. "It will provide an honourable means of livelihood for a multitude of women who are now a burden upon home finances, and it will remove from India this great reproach upon her domestic life" (page 75). That religious prejudice need not stand in the way of the formation of such a service is well proved by the case of the Brahman lady related in the second paragraph of page 72.

Chapter XIII.—Habits tending towards the spread of consumption.

"Foremost among the habits which conduce to the spread of tuberculosis must be placed that of indiscriminate spitting." A distinction must of course be made between "closed" cases of tubercle of the lung, and "open" cases. The closed case is one in which the lung has not yet broken down, and where therefore the sputum does not contain tubercle bacilli; the open case is one where tubercular abscesses have opened into the air passages, and where of course the sputum contains millions of tubercle bacilli. "It is to the evil habit of indiscriminate spitting *in-doors* that the spread of tuberculosis in India (as in other countries) is in large measure due" (page 76). The cure for this is, once again, education in the primary schools.

Dr. Lankester lays much stress, and very rightly, on what he calls the "Foul air Habit", i.e., the habit of living in stuffy rooms for the sake of warmth, or, as among the women of South India, on account of fear of robbers (page 78). He likewise refers to the habit of sleeping with the face covered, which however probably prevails more in Northern India than in Madras; again the remedy lies in education.

Carelessness regarding food is likewise touched on, and the danger of common drinking and feeding vessels is pointed out, as also the danger from sputum-infected dust so common in towns. Unwise fashions in clothing both in regard to men and women are mentioned on page 81, but this would appear not so important as the evils arising from the spitting habit.

These habits can be corrected by education of the rising generation. As a corollary it follows that those who teach the rising generation must first themselves be taught.

Chapter XIV.—Other economic and Social Factors.

Dr. Lankester believes that the rise in the price of food "has in multitudes of cases resulted in a gradual semi-starvation, or in such a degree of insufficient feeding as must tend greatly to lower the powers of resistance against disease" (page 82). The scanty supply of milk and its raised price in towns calls for urgent attention. With regard to this latter evil Dr. Lankester points out that "It would be an immense advantage if wealthy land-owners in the vicinity of great cities would combine philanthropy with business and take up dairy farming on a large scale as is done with such success in the West" (page 82). He therefore suggests that "subsidies from local public funds" might be given to encourage such enterprise.

Close inter-marriage, and early marriage of youths come in for condemnation and very rightly so.

Under *Trades and Occupations* which predispose to tuberculosis he mentions tailoring and weaving as most important and attributes this probably with truth to overworking and low pay. He remarks with approval the efforts made by certain large mill-owners to provide workmen's lines for their employees. But he begs to notice that Indian workpeople seldom take the trouble to open windows of workrooms, and that they therefore have to work in a vitiated atmosphere conducive to the spread of consumption. "This remark applies to offices as well as factories and the fact calls for watchfulness on the part of those in responsible charge" (page 85). An instance of this has been brought to my notice recently in the Central Telegraph Office, Madras. It seems to me that medical inspection of factories and large Government offices should be arranged for to obviate such dangers to the operatives.

Chapter XV.—Educational Institutions and the spread of Tuberculosis.

"It is an unfortunate but undeniable fact that educational institutions must bear a considerable share of the responsibility for the spread of consumption amongst children and students in India during the past half century" (page 86). I have no hesitation in endorsing this pronouncement. Western education was introduced before the value of fresh air or the danger of infection from tubercle was understood and the consequences have been most serious.

To show the great prevalence of consumption among young scholars, Dr. Lankester cites the report of a schoolmaster who said that "not more than one, two or perhaps three pupils had died from consumption during the past year" in schools of from 80 to 200 scholars. He then shows that such a death-rate, which does not shock the teacher, represents a mortality almost exactly ten times as great as that found to exist amongst the children of a similar age in one of the great cities where the disease is rife" (page 86). The seriousness of this is realised when one thinks, not of the children alone, but of their after history and their potentiality for spreading the disease among their friends and relatives at home.

Dr. Lankester lays stress not only on home-sickness but also on the charge of environment, such as the imposition of restraint and regular life as a factor in the production of a depression which favours the onset of tuberculosis among children in orphanages, but he likewise emphasises the danger from badly planned school-buildings and overcrowding. He points out that children living in closed and roofed-in buildings are exposed to two dangers (a) that of infection of tuberculosis and all other infectious diseases, and (b) that of lessened powers of resistance to disease. "The one main safeguard for both these risks is in the provision of fresh air in abundance, and the necessity of this is greater in proportion as the children have been more accustomed to being in the open air at their own homes" (page 88).

With regard to schools with unsuitable buildings, it is remarked that in many cases the responsible heads are fully alive to the necessity for improvement as regards sufficiency of cubic space and ventilation, but there are "very many schools which remain unimproved because those who are in charge of them entirely fail to realise the need for alteration" (page 89). This is who are in charge of them entirely fail to realise the need for alteration. "Here the need surely is for a great campaign of education in the elements of practical health knowledge, which if it is to be successful must begin with the educationalists themselves" (page 89). I have ventured to underline the last part of this sentence as I am sure nothing of any value can be done until the teachers are given a special and practical course of lectures and demonstrations while they are being trained for their life work. They must be made to believe in the value of fresh air, light and cleanliness otherwise they will never be able to make their scholars believe in them. If we can get the rising generation to value fresh air, light and cleanliness, there may be seen that improvement in the homes of the common people which is so necessary.

With regard to village schools Dr. Lankester has much that is wise to say. He advocates the use of lighter materials in the buildings, an angle-iron framework, with thatched roof and asbestos sheeting walls. The floor of course beingukka on account of the danger of dust, and to facilitate cleansing (vide photos, page 126). The ideal to be aimed at is to have the air in the school the same as regards purity as the atmosphere around it. In this way draughts are avoided. He recommends lean-to verandahs as being cheap and suitable as they are wholly open to the air on one side.

He refers with praise to a school near Puri where all the teaching is carried on in the open air for nine months of the year. "The dining hall is a broad cheaply built 'lean-to' verandah entirely open to the air on one side. The dormitories were built to accommodate six students each and measure 22 feet by 10 feet. A block of ten such rooms accommodating sixty boys cost only Rs. 600. *Not a single case of consumption has occurred in the school since its commencement*" (page 91). The superficial area in these dormitories is 30.6 square feet for each scholar, which is of course very large when contrasted with the "20 to 25 square feet" laid down by "the best authorities" (page 90), but the result amply justifies the expense.

This chapter is an appeal for a forsaking of the Western type of school buildings, and a reversion "to the more open style of architecture of which the audience halls of many an old Indian palace present such excellent examples" (page 93).

Chapter XVI.—Educational Institutions and the spread of Tuberculosis (continued).

The necessity for segregation in boarding schools is of course obvious if epidemics of any kind are to be avoided. In regard to tuberculosis it ought to be possible, by segregation, to eliminate the risk of infection in a school. To do this, however, the Superintendent must possess the requisite knowledge to detect early cases. How can anyone, in the absence of regular medical inspection, insure this early detection? Dr. Lankester says: "First and foremost the body weight is a most valuable guide. I would strongly urge that a weighing machine be regarded as part of the regular equipment of every boarding school" (page 95). Not only *loss of weight* but *failure to gain weight* in a growing child must be looked for. Dr. Lankester gives excellent advice on this matter, as also on the treatment of scholars in the incipient stage of tuberculosis (page 96).

The real difficulty arises when efforts to restore health in the school fail. What is to be done?

If the child is sent home, this means almost certain death, and also the risk of the disease spreading to brothers or sisters or parents. The other alternative is not as a rule available in India at present, namely, to send the child to an open air sanatorium, which if it may not in all cases cure the disease, at least avoids the danger of spread to others. "There is scarcely any need more urgent in reference to the spread of tuberculosis in India than that of the provision of sanatorium accommodation both for incipient and for advanced cases of consumption occurring amongst the boys and girls of schools and colleges" (page 96).

This naturally leads up to the recommendation of a system of medical inspection of schools. We may agree with Dr. Lankester when he says: "The medical inspection does not fulfil its full object unless it provides at the same time safety for the healthy pupils and the possibility of treatment under favourable conditions for those in whom signs of the disease are detected" (page 97). Medical inspection of schools, and especially boarding schools and orphanages, should be introduced, but it will fall short of its full beneficial effects unless sanatoria are also provided for the tainted children discovered by this agency.

Under "Errors as regards Diet" it is pointed out that defective feeding in schools depends usually on three conditions:—

- (a) Lack of knowledge of the needs of Indian children, and of the food values of Indian articles of diet;
- (b) Failure to recognise that food sufficient for a child living at home in idleness is not enough for one leading an ordered life under discipline, and engaging in constant mental effort, and physical exercises in the playground; and
- (c) Actual lack of funds necessitating the omission of such important articles of food as milk and ghee. The pages (97—101) where these important matters are discussed should be read and studied by all in charge of boarding schools and orphanages.

Errors in curriculum are discussed on pages 101 and 102, and a much needed warning as to the folly of demanding severe work from girls going in for Secondary and University education is emphasised. A word of praise is bestowed on the Madras system of educating girls in the problems of home life and usefulness, and omitting certain subjects taught to boys.

Other, perhaps less important, sections follow (pages 103—104) in which such subjects as the covering of the face during sleep, errors in clothing, physical exercises, school desks and mode of sitting, are discussed.

Under concluding observations Dr. Lankester discusses the method of dealing with famine orphans, and very rightly deprecates the housing of these children in bungalows not originally meant for this purpose. They should be housed in temporary "chappars" in villages, and kept afterwards under village conditions.

Under such conditions no sign of tuberculosis will appear, while if housed in brick or stone buildings as was the fashion in too many cases in recent famines, devastating epidemics of tuberculosis ensued.

PART III.—THE PREVENTION OF TUBERCULOSIS IN INDIA.

Chapter XVII.—Existing Anti-Tuberculosis efforts.

The importance of the prevention of tuberculosis in India has in recent years occupied a considerable amount of attention, but as Dr. Lankester says, "it must be admitted that in India administration has been very slow to follow scientific enquiry and the progress of the West" (page 109). It is true that in many parts of India Anti-Tuberculosis Leagues have been founded, and attempts at combating the disease made, but the results have been lamentably small. In Madras for instance we have only one sanatorium in the mufassal and the beginning of a tuberculosis institute in the presidency town. "It is an astonishing and even discreditable fact that in those centres where the need is greatest such special wards for the treatment of phthisical patients are conspicuous by their absence. This is the case as regards the presidency cities of Bombay, Calcutta and Madras." Naturally there is reluctance on the part of physicians to admit cases of open phthisis to their wards, and only such are taken as can be used for the clinical instruction of students. It is evident that the time has come when more must be done in the way of provision of places where consumptive patients may be received for treatment and instruction. As Dr. Lankester says "the conditions throughout India are suggestive of a gradually increasing unrest on the subject of tuberculosis both on the part of medical men and the general public, and an increasing anxiety for the promotion of preventive measures, restrained often, however, by doubts as to what is the best direction which such measures should take."

Chapter XVIII.—Measures for the prevention of Tuberculosis in India.

Dr. Lankester remarks that an investigation such as he has made over the length and breadth of India "is calculated to prove a most efficient corrective to oversanguine expectations of accomplishing anything immediate or dramatic." The evil is too gigantic and the customs of the people too deeply ingrained for any such miracle. But he urges that there are certain new tendencies, and efforts which may be set in motion with the object of a "gradual levelling up of the standard of sanitation throughout the country, and a steady improvement of the conditions which have been pointed out as tending towards the spread of the disease" (page 114).

The questions to be decided are (a) whether schemes considered advisable in Western countries are suitable to India, and (b) whether it is possible to apply such methods to the problem as it exists in India. Dr. Lankester would answer that Sir Robert Phillip's methods cannot be introduced into India for the next thirty years because of lack of workers and money.

Also one important measure which exists at home is not yet available in India, and that is compulsory notification. But if I mistake not, compulsory notification did not exist in Edinburgh when Sir Robert Phillip began his work some twenty-five years ago in a humble way in a flat near the High Street. His work proved the need for notification and educated the people to acquiesce in it. Why should we not do the same here in Madras? If, as Dr. Lankester believes, the enforcement of this measure would "be the greatest mistake" (page 114), because it would rouse universal opposition among the Indian practitioners of Western medicine and their patients, then we must try some other way of finding out where tuberculous patients live, and by the employment of visiting nurses, and men and women doctors, getting at the cases of incipient phthisis as Sir Robert Phillip does in Edinburgh. By co-operation of medical practitioners, health officers, and specialists it ought to be possible in course of time to effect the same reform in Madras as in Edinburgh. With the help of the King Edward Memorial Tuberculosis Institute a commencement is now being made on these lines for dealing with tuberculosis in Madras city. As Dr. Lankester himself says "we must recognize the advantage of notification, i.e., of obtaining early information of cases of the disease (page 115). He however argues that no compulsion must be used otherwise cases will be hidden and in consequence the commencing cases in which alone we can hope to do good, will not get relief until too late for cure. "We must organise our machinery for dealing with cases, for helping with advice and treatment those who apply to us, and thus attract voluntary notification rather than enforce it by compulsory regulations" (page 115). The Bombay compulsory notification system is reported by Dr. Lankester to have proved a failure and to have been replaced by a voluntary one. If so then I fear we also must not attempt the impossible, but await the time when education shall have prepared the people to accept compulsory notification; and philanthropy (state aided or not) have provided the means for segregation, treatment and instruction in open-air sanatoria. Dr. Lankester concludes this chapter by suggesting various lines of scientific enquiry which will undoubtedly repay research.

Chapter XIX.—Educational measures.

It is evident from what has been set forth above that in regard to preventive measures "the main stress must be laid upon education" (page 117). Education as defined by Dr. Lankester "means something very elementary but exceedingly practical; a knowledge that shall aim

at influencing conduct and practice in the common details of daily life. There are numberless matters in connection with the health of the community in which public opinion needs to be profoundly modified or even to be created anew" (page 117). It is not so much poverty that blocks the way, for insanitary conditions are not limited in the main to the very poor, for "in India it is not so much amongst the labouring classes that consumption and other diseases dependent upon unhygienic conditions are most rife, but rather amongst the fairly respectable section of the community, who live under conditions which they have the power, but neither the knowledge nor the will to rectify" (page 117). If then we begin by convincing and educating those who can help themselves, we create thereby a body of public opinion through which the very poor can be reached and helped. The problem of education resolves itself into "an active campaign of instruction amongst the upper and middle classes of the people". Dr. Lankester proposes to call in to his help "the vast resources of voluntary effort, which are available throughout the country and only waiting for stimulation and guidance". He enumerates various societies, social or religious such as the Arya Samaj, the Islamia Anjumans, the Servants of India Society, Depressed Classes Mission, the Y.M.C.A., the Salvation Army, the leaders of schools and colleges, etc., as being likely to give help in this campaign. "The Army of helpers already exists, it only needs to be organized and enthused for action" (page 117). The educational authorities have done much in certain parts of India by diffusing knowledge of domestic hygiene and health matters among children and especially valuable are the courses given in normal schools and colleges and to gatherings of school teachers, but, he says, these efforts are "but the beginnings of what might be effected in this direction. Even if they were to be developed to the utmost possible extent, they would only serve to emphasize the need for similar efforts, on still wider and more popular lines, to be made outside the schools. What is required is an organization very wide in its scope, very simple in its constitution, which will serve as the social response to all that is being done by Government to improve the health of the people" (page 118). The case for the establishment of such a new organization to deal with public health in India from the side of the people may be decided, says Dr. Lankester by the answers to three questions:—

- (1) Is there the need?
- (2) Can the need be met by any existing society or organization?
- (3) Is there good hope that any new organization will meet the need (page 118)?

In reply to the first question we may reply, undoubtedly the need is there. Ignorance exists everywhere and should be dispelled.

With regard to the second query, Dr. Lankester believes that existing organizations "have not shown any such vigorous vitality as would justify the hope that they would be successful if their activities were suddenly extended to the whole of India. The most notable of them, the King George V Anti-Tuberculosis League of Bombay has recently addressed all the Collectors in the Presidency with a view to interesting the various municipalities, district and local boards on the subject. The replies received were, however, by no means satisfactory. The various municipalities and boards with very few exceptions expressed their inability or unwillingness to take any action" (page 118). The St. John Ambulance Association is likewise referred to as a possible means of coping with the need, but Dr. Lankester believes that its constitution is too elaborate, and that it has plenty to do with its First Aid and other work.

Existing agencies being thus rejected what does Dr. Lankester propose as a substitute? At first he was in favour of the formation of a "National Association for the Prevention of Consumption", but as his enquiry proceeded he became convinced that "India is not yet ripe for this" and that an association of a more general character was needed. He believes that India has not yet undergone the sanitary awakening which took place in England between 1860 and 1880, and that therefore efforts should be made to start this general sanitary awakening here rather than to try to begin with a specialized campaign against consumption alone.

For the above reasons he advocates the establishment of a "National Health Association of India", the objects of which are set forth in pages 119 and 120 of his report. A national health bureau would be established where information on all matters connected with health would be made available through pamphlets and lantern lectures, and everything be done to enable local workers to do something towards the diffusion of a knowledge of health matters. Special lectures would be prepared to suit all classes of hearers—the well educated, students, women and the villager.

Dr. Lankester lays emphasis on the members of this association being urged to do personal service and not be content with a mere subscription. For this reason he thinks it would be better to have no large subscriptions, but merely an entrance fee of one rupee. The association is also to be, as far as possible, non-official in character, though he realizes that "its prominence and stability" will "depend to a great extent upon its being able to enlist the spontaneous and energetic support of Government officials, both Indian and European" (page 121). For the management of this huge organization, he proposes to call in the aid of the Post Office, to sell membership tickets at all post offices, much in the same way as quinine is now sold in packets. To reach the poor he relies on the personal efforts of the members, each village being treated as a unit to be dealt with by a few such members as their particular care.

Dr. Lankester closes this chapter by quoting part of a speech by Lieutenant-Colonel Browning Smith, I.M.S., Sanitary Commissioner of the Punjab, suggesting the establishment of an association on similar lines for the Punjab, and adds, "his words would seem to have fallen upon deaf ears, since two years have passed without apparently any attempt at their fulfilment" (page 123). Here I am afraid he touches the weak spot in his scheme. It is in the first place too large in that it is proposed to include the whole of India in one vast association. In the second place there appears to be no paid head or staff provided, and without some such powerful propelling force his scheme will share the fate of Colonel Browning Smith's in the Punjab.

In my opinion no such society can be started in India without a very capable man at its head who must devote his whole time to the work, and be well paid for it. Each Presidency should have such a man in charge of a Public Health Bureau, whose business it would be to collect information, to lecture on sanitary matters and to prepare lectures and collect slides to illustrate them which could be lent out to those willing to lecture. A scheme of this sort was outlined by Major Glen Liston, I.M.S., at the Sanitary Congress held in Madras some four years ago.* This is, I think, the only practical way of starting and conducting a health campaign and I am in favour of trying a scheme of this sort in Madras Presidency.

* (Proceedings of the second All-India Sanitary Conference held in Madras, 1912, Vol. III, pages 103 and 104).

Chapter XX.—Institutional measures: I.

Dr. Lankester is of opinion that the energies of private individuals or communities should be directed towards the establishment of institutions for the treatment and cure of consumptives, i.e., those in the early stages of the disease; and those of Government to the prevention of spread of the disease, i.e., the provision of open-air schools and sanatoria for consumptive children and the segregation of advanced cases in special hospitals. He quotes the opinion of Dr. Leonard Crossby as saying: "in my opinion a hospital for advanced cases should be the first provision made in all schemes for dealing with tuberculosis; unfortunately it is generally the last" (page 125). Colonel Hehir, I.M.S., is also quoted as approving of the establishment of sanatoria as "one of the best methods of attempting to eradicate the disease from communities."

He then considers what measures of immediate application are possible. He advocates the plan of adding open-air wards to existing hospitals. This can be done in most cases without the expense of additional administrative buildings, and with only a small addition to the subordinate staff. The building he advocates would be of the very simplest construction, such as those shown opposite page 126 of the report, which shows a ward to accommodate 24 beds built at a cost of Rs. 2,500, or about Rs. 104 per bed only. Under the orders of the Madras Government no thatched structure is to be built near any public building, so the cost in this Presidency would work out somewhat higher than this. Still the cost would be very small, and the plan might be adopted with advantage.

With regard to the establishment of tuberculosis dispensaries in the larger towns, Dr. Lankester is of opinion that all such institutions should be under the control of the local Government Medical Officer, and should not be independent. With this opinion I am in complete accord. "Much steady work must be done in educating public opinion before such institutions can expect to be really successful and popular" (page 127). He advocates rather the strengthening of the staff of the existing Government hospitals by the addition of a tuberculosis expert and nurse for the above open-air ward or wards.

With regard to institutional measures for limited communities or classes of people, he proposes the opening of open-air schools, or homes for tuberculous children and is of the opinion that there is no more urgent need than this. It is a corollary to the medical inspection of schools. There seems not much use in finding out how many children suffering from tubercle attend our schools, if nothing for their treatment and cure can be done after discovery. In Bombay the Government "have offered to pay to any municipality that may be ready to found special schools either for tuberculous children, or for children who are in danger of becoming tuberculous, three-quarters of the cost of the necessary buildings, and the same proportion of the cost of maintenance of the schools" (Memo. on some recent Sanitary developments in the Bombay Presidency, 1914, page 14). One such experimental school might be tried in Madras city as a demonstration.

Dr. Lankester cites the example of a sanatorium for girls at Tilanania near Ajmir, as an example of what can be done at small expense. "At Tilanania the annual expenditure (excluding the superintendent's allowance) of an institution with 74 inmates, only reached the astonishingly small total of Rs. 7,556, out of which Rs. 5,676 or more than two-thirds was borne by 'fees' i.e., board allowances contributed by the various schools or missions from which the patients had been sent" (page 129).

Dr. Lankester likewise advocates the establishment of sanatoria for railway employees, on account of the great prevalence of tubercle among them; "amongst the employees of a single railway 1,093 deaths occurred from this one cause during the past five years, mostly amongst the

upper grades of workers, clerks, stationmasters, ticket collectors, etc." (page 130). It would be well to institute enquiries in this Presidency to ascertain if such a serious state of affairs exists amongst the employees of our railways. He likewise advocates sanatoria for sepoy of the Indian Army and Police.

Chapter XXI.—Institutional measures: II—Open-air colonies for consumptives.

Dr. Lankester begins by pointing out that a great change in opinion has taken place as regards the effect of climate in the treatment of tuberculosis. Formerly it was thought that the climate of the hills was necessary for success. Now credit for success in treatment of consumptive cases is attributed to the regime carried out in open-air sanatoria, and not so much to climate. A hot atmosphere if fairly dry is by no means harmful if open-air regime is followed. It may be allowed that sanatorium treatment in the hills gives the most favourable results, provided warm clothing and artificial heat are provided in abundance, but this is beyond the reach of the poor. Besides in most cases such residence means a long and fatiguing journey, and separation from the family. "To adopt the view that a mountain climate is essential for institutions for the treatment of consumption simply amounts to shutting the door absolutely against the poor, since the expense involved is so great as to render hill sanatoria impossible of establishment on any really extensive scale" (page 132). The view for Government to take is to adopt the measures that will bring the greatest help to the greatest number. Therefore sanatoria must be established near the towns where the people reside, for they are thus spared a long journey and banishment from friends, they are not exposed to the cold of the hills, and the climate is what they are accustomed to. With regard to Madras, a sanatorium at St. Thomas' Mount or Pallavaram would fulfil all requirements for dwellers in the Presidency town. The essentials for such an institution are set forth on page 133, and the conclusion is arrived at that "the form of institution which will be of most general utility with reference to the treatment of tuberculosis, and most suited to the conditions in India, will be an adaptation of the "Garden Colony" or "Settlement idea" (page 133). As conditions which mark out India as a country pre-eminently suited for an experiment of the kind, he instances (1) the great need, (2) the simple habits of the people, (3) the ease with which large sites can be acquired, (4) the cheapness of building, and the suitability of cheap materials for the climate, and (5) the closeness of the family bond, and the seclusion of women. Such a colony would require to be close to a town and easily accessible by rail, it must be on porous soil and have a good water-supply and climate. Accommodation would have to be found for the moderately wealthy as well as for the poor, and an open-air day school should be provided. This is no doubt ideal, but in these days where is the money to come from? Dr. Lankester recommends "three or four places where the greatness of the need seems to coincide with the conditions requisite for success" (page 136). One of these places is Hyderabad (Deccan). It may be pointed out that Bellary has a very similar climate, also Coimbatore, both having only about 20 inches of rain yearly.

Conclusion.—Dr. Lankester is of opinion that plenty of co-operation from all classes of Indians will be forthcoming, and I dare say he is right, provided skilled guidance is supplied as outlined above (page 12 supra). It is most important to reach the women of India, who have so much to do with the ruling of individual households. A well-known Hindu leader said to Dr. Lankester "your Zenana Missionaries are the people to do this work; instead of teaching sewing and reading in the Zenanas (as they have done in mine) let them tell our women how to keep healthy" (page 138). As regards tuberculosis there is no doubt that it is much in people's minds at present, it is believed to be greatly on the increase, its infectivity is becoming known, and it is greatly dreaded in the home. The Indians are beginning in consequence to ask for the same remedial measures, as have been successful in the West. Yet the number of beds available for open-air treatment in England is 1 to 5,000 of the population whereas in India it is only 1 to 1,500,000. A warning is given that an over-insistence upon the dangers of tuberculosis infection may result in grievous hardship to individuals. "The needs of the community imperatively demand the instructing of public opinion as to the means of checking consumption, but in doing so the main emphasis should be laid on the facility with which safety may be secured; upon the positive value of fresh air, light and cleanliness" (page 139). Domestic hygiene must be improved. It is knowledge that is lacking, therefore we must educate in elementary hygiene. In this the schoolmaster must have the principal part, and he must be taught, and made to believe what he is taught.

W. B. BANNERMAN, Surgeon-General,
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Surgeon-General with the Government of Madras.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT

(Medical).

No. 76.

From

THE HON'BLE MR. C. G. TODHUNTER, I.C.S.,

Acting Secretary to the Government of Madras,

Local and Municipal Department (Medical),

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

DEPARTMENT OF EDUCATION.

Dated Ootacamund, the 27th September 1916.

SIR,

I am directed to reply to your letter No. 111, Sanitary, dated 23rd February 1916, in which the Government of India invite the opinion of this Government on the issues raised in Dr. Lankester's report on tuberculosis in India, more especially in respect of those points which particularly concern the Madras Presidency.

2. Before proceeding to examine the several questions raised in the report, I am to refer briefly to the measures adopted from time to time in connection with the campaign against tuberculosis in this Presidency. In May 1910 the Conference of the South Indian Missionary Association drew prominent attention to the prevalence of this disease and suggested that definite action should be taken for the dissemination of information about tuberculosis, the medical inspection of school children and the establishment of sanatoria. The Government of India having, about the same time, recommended to Local Governments the establishment of well-equipped sanatoria for the treatment of tuberculous patients, the Governor in Council appointed a committee to formulate proposals to this end. This Committee recommended, inter alia,

- (i) the establishment of a hospital for advanced cases of consumption;
 - (ii) the provision of small phthisis wards in district headquarter hospitals;
- and
- (iii) the opening of sanatoria for cases in the early stages of the disease.

In the meanwhile, the Committee for the management of the King Edward VII Memorial Fund decided that that memorial should take the form of a tuberculosis institute, and such an institute has just been opened in the Madras City. The scope and objects of this institute have already been explained in Mr. Horne's letter, No. 4705-12, Public, dated 9th October 1913; the Governor in Council hopes that the institute will form a nucleus from which, if and when funds permit, tuberculosis dispensaries opened in up-country stations can be equipped with a qualified and properly trained staff. This Government have also liberally helped the South Indian Missionary Association in the establishment and maintenance of a tuberculosis

sanatorium at Madanapalle in the Chittoor district which is doing useful work. The provision of phthisis wards in important district headquarter hospitals has been accepted as part of the policy of this Government; a standard plan has been designed for the same and one such is under construction.

3. *Part I.—The prevalence of tuberculosis in India.*—His Excellency the Governor in Council observes that Dr. Lankester's general conclusion on this branch of the subject is that, in so far as this Presidency is concerned, conditions are not serious. In the opinion of this Government there has been a tendency in recent years to exaggerate the importance of tuberculous disease in Southern India. In Europe, where people live and work in close and ill-ventilated buildings, tuberculosis is, no doubt, a very important disease; but in this Presidency, where, owing to climatic conditions, all buildings are comparatively open and where the vast majority of the population spends its life in the open air, the disease is of minor importance, and has attracted an amount of attention greater than it deserves when compared with other causes of sickness and mortality.

It is also probable that the increased attention paid to the subject is largely responsible for the apparent increase in the prevalence of the disease. The statistics of civil hospitals and dispensaries in this Presidency show that, between the years 1910 and 1915, the number of cases treated for tubercle of the lung has risen from 8,177 in 1910 to 10,480 in 1915, or by 28 per cent in six years. This increase is *prima facie* unlikely, as there has been no such change in the conditions of life and work of the people during this period as would lead to such a result. It is probable that the change has been only in the amount of attention which medical officers now devote to the subject and that many a patient whose illness was classed under "fevers" a few years ago is now properly stethoscoped and returned as a case of phthisis. In this connection I am to invite attention to Dr. Lankester's conclusions as regards tubercle among Indian Christians in chapter IX of the report.

The question of improving the agency for the registration of vital statistics which is touched on by Dr. Lankester was considered so recently as in 1913. The remedy lies in the employment of medical men as registrars of births and deaths and this will not be feasible until more medical schools are opened and the annual output of qualified sub-assistant surgeons is considerably increased, a matter which is engaging the attention of this Government.

4. *Bovine tuberculosis in India.*—The Governor in Council agrees with Dr. Lankester in the view that the part played by bovine tuberculosis in producing the disease among human beings is altogether negligible and does not call for serious consideration at present. As regards the inquiry suggested by Dr. Lankester into the causes of the immunity of Indian cattle to tuberculosis, I am to observe that the staff and money required for this inquiry are not at present available and that effort must first be concentrated on combating diseases like rinderpest which cause great mortality among cattle.

5. *Surgical tuberculosis in India.*—Dr. Lankester considers the inequality in the distribution of surgical tuberculosis in India as presenting an interesting problem for further inquiry. The Surgeon-General with this Government has drawn attention to the reported similarity in the distribution of bovine and surgical tuberculosis in this country and suggests that both may possibly depend on a common causative factor. It does not appear to this Government that any strong case for a special investigation on the subject exists, and if one is to be undertaken, I am to suggest that it should be relegated to a low place in the programme.

6. *Tuberculosis and the public services.*—The Governor in Council is of the opinion that, in view of the report that tuberculosis is not particularly common among the public services in South India, there is no need for an enquiry on this subject in this Presidency.

7. *Tuberculosis in jails.*—Conditions in the jails of this Presidency are pronounced to be fairly satisfactory; it is nevertheless observed that the death-rate here has averaged 2.4 per mille during the last five years. Enquiries will be instituted on the lines suggested by Dr. Lankester and his recommendations under this head will be separately considered.

8. *Tuberculosis and the Indian Christian community.*—The Governor in Council has no special remarks to offer on this chapter.

9. *Part II.—The causation of tuberculosis in India—Poverty and overcrowding.*—Turning now to part II of the report, the Chapter dealing with "Poverty and Overcrowding" (Chapter XI) which raises large questions of importance, will be prominently brought to the notice of municipal councils and local boards for careful consideration after the report has been published. I am to add that the questions dealt with in this chapter are receiving attention in this Presidency. In many of the larger towns of this Presidency, schemes for the relief of congestion and of town extension have been drawn up from time to time and carried out in accordance with the advice of the Sanitary Commissioner and the Town-planning Adviser and the Government have made it a rule to insist upon adequate provision being made for housing the evicted persons before existing residences are acquired. In the town of Madura which is specially mentioned by Dr. Lankester, two fairly large schemes of town extension for the well-to-do classes have recently been organized on a remunerative basis, while several smaller schemes for the benefit of the poorer classes have also been carried out. A set of building by-laws drawn up in consultation with the Town-planning Adviser (Mr. Lanchester) has also been circulated to municipal councils. These by-laws provide for a limitation of the proportion of the area to be built upon so as to leave sufficient open space in and around each building and also for a raised plinth. The minimum area of the site to be built upon is larger here than that of 20' x 20' which Dr. Lankester quotes with approval on page 66 of the report.

10. *Social customs regarding women.*—Dr. Lankester here states that "in India more than twice as many women as men suffer from consumption" and that this result is due to the three social evils of (1) the purdah system, (2) child-marriage and (3) defective management of child-birth. The "purdah system" is not an evil of such magnitude in this Presidency as in Northern India, while as regards early marriages, this Government consider that legislation for raising the age-limit should be initiated by non-officials.

As regards the third of these evils, His Excellency in Council has, during the last few years, been taking active steps for the formation of an efficient nursing service which is one of the greatest needs of the country. The first step is the provision of a proper supervising staff and towards this object attempts, of which some have been successful, have been made to secure the services of English matrons or of nuns or religious sisters in the larger hospitals in this Presidency. Once an adequate and suitable supervising agency is provided, it is proposed to train local women as nurses with the co-operation of the various missionary bodies who maintain hospitals receiving aid from Government. Arrangements have also recently been made to train a large number of women as midwives in the hospitals in the Madras City and elsewhere, and a scheme for the employment of lady health visitors is under consideration.

The question is, however, beset with difficulties and so long as no respectable Indian "family women" will take up nursing, the problem of an efficient nursing service will not be successfully solved. District visitors, who would ordinarily have to be Europeans, may, however, be able to do something to spread the knowledge of hygiene.

11. *Habits tending towards the spread of consumption.*—Instruction is now given in schools and training colleges in hygiene. This includes a few lectures on tuberculosis. An extended scheme of health lectures is under consideration.

12. *Other economic and social factors—milk-supply.*—This Government have recently offered land, on certain conditions, for the starting of dairy farms and they hope that these will come into existence in course of time and that a gradual improvement in the condition of the milk-supply will be effected in the Presidency.

13. *Medical inspection of factories and large Government offices.*—The provision of special medical inspection to ensure the proper cleaning of offices and the provision of free ventilation in them seems hardly necessary. This object can best be secured by insisting on the responsibility of the head ministerial officers to see that the offices are properly swept and the windows kept open.

14. *Educational institutions and the spread of tuberculosis.*—Dr. Lankester's remarks regarding the design of school buildings are separately under the consideration of this Government who are also examining a proposal that provision should be made for the regular medical inspection of large hostels attached to educational institutions.

15. The whole of Chapter XVI of the report will be very useful to school managers as soon as it can be published. Separate consideration will then be given to it and the necessary action taken by this Government. I am to invite, in this connection, the attention of the Government of India to Mr. Rajagopala Achariyar's letter No. 124, Educational, dated the 9th February 1915, from which it will be observed that this Government have already made a commencement in the matter of the general improvement of the conditions of schools and the medical inspection of students. A preliminary report drawn up by Lieut.-Col. C. Donovan, I.M.S., on the results of the medical inspection of some of the elementary schools in the city of Madras came recently under the consideration of this Government who have directed that the inspection of the schools should be completed and a full report submitted to them to enable them to judge of the value of the system.

16. *Part III.—The prevention of tuberculosis in India—Existing anti-tuberculosis efforts.*—The only two institutions in this Presidency which are specially intended for the treatment of tuberculosis are, as stated in paragraph 2 supra, the Union Mission Tuberculosis Sanatorium at Madanapalle and the King Edward VII Memorial Tuberculosis Institute at Madras. The latter institution is for the present located in a rented building and plans and estimates for a substantial building are being drawn up. The Government have made very liberal subsidies to both these institutions and they propose to watch their working for some time before embarking upon further large schemes of expenditure in this direction. A type-design for a phthisis ward to be attached to hospitals has been approved and the question of assisting local bodies in the construction of wards in accordance with this design and in opening special tuberculosis dispensaries in the mufassal will receive further consideration when the necessary trained staff and the required funds become available.

17. *Measures for the prevention of tuberculosis in India.*—The Governor in Council accepts the conclusion arrived at by Dr. Lankester that the time has not yet come for the introduction of the system of compulsory notification of tuberculosis in this country. The various measures suggested by Dr. Lankester, which involve scientific enquiry, will, this Government trust, be undertaken by the Indian Research Fund Association.

18. *Educational measures.*—The Government of Madras are somewhat doubtful as to the feasibility of Dr. Lankester's scheme for a "National Health Association of India". Whether this is formed or not, however, His Excellency the Governor in Council considers that the formation of a Presidency Sanitary Association is a matter of necessity and he feels little doubt that a number of voluntary workers will be forthcoming to help in the diffusion of sanitary knowledge among the people. In connection with the scheme of health lectures recently inaugurated in this Province, it has already been decided to form central and local committees consisting of official and non-officials for arranging for lectures, demonstrations, etc., in English and in the vernaculars on sanitary subjects, and a committee consisting of the Surgeon-General, the Sanitary Commissioner, the Director of Public Instruction and the Secretary of the local branch of the St. John's Ambulance Association has been appointed to formulate proposals for a carefully-designed experiment on these lines in selected areas. The first thing to be done, however, is to teach the instructors and on this point His Excellency in Council is in complete agreement with Dr. Lankester's concluding remarks.

19. *Institutional measures.*—The Government have accepted the principle of adding tuberculosis wards to important hospitals wherever necessary but, as already explained in paragraphs 2 and 16 above, the paucity of specially trained officers stands in the way of giving effect to this proposal on any large scale at once. It is, however, hoped that it may be possible hereafter to arrange for the special training of medical officers

at the newly opened tuberculosis institute. The establishment of open-air schools for tuberculous children will be separately considered when the results of the medical inspection of schools in the Madras City are known.

20. *Open-air colonies for consumptives.*—The establishment of open-air colonies for consumptives is a difficult matter. It is not clear how the consumptives will earn their living while they are in the colony, and if they are to be supported, how the funds required therefor can be provided. The support of consumptives in an open-air colony with the help of State funds cannot be easily justified so long as the protection afforded to the general population against malaria, cholera and other diseases which are responsible for many more deaths than tuberculosis is as inadequate as it at present is. The Government, therefore, consider that the provision of such colonies cannot be undertaken for the present and all that is possible, in their opinion, is to make a small beginning at a few centres by providing cheap open-air houses to which a few consumptives might be sent by medical officers. Such houses should be close enough to the towns to enable the patients to attend to their ordinary work. The Government are, however, aware that much benefit cannot be expected from this arrangement and that the main remedy lies in the diffusion of education, especially of sanitary knowledge, and in the gradual improvement in Indian habits—for example, the abolition of the segregation of women.

I have the honour to be,

Sir,

Your most obedient servant,

C. G. TODHUNTER,

Acting Secretary to Government.

Confidential

Home Est., Dep.

C. No 3748

3748-1 d/11.11.16

memo

An extract of chapter XV of a report on tuberculosis in India by Dr. A. Lancaster is forwarded to the D.P.J. who is requested to favour Govt. with his views on the suggestions contained therein ^{and} regards ~~the~~ school buildings. The Director is also requested to state whether, in his opinion it is desirable to institute a regular medical inspection of large hostels attached to educational institutions.

Re-Examine
with memo
D.P.J.
14.11.16

2. The D.P.J. (with enclosure)

My
Hand

A
8.11.16

18/11

CONFIDENTIAL

HOME
EDUCATION DEPARTMENT.

Received

191

Registered

191

Subject.

Submitting Director's views on the suggestions
contained in Chapter 15 of Dr. Lankester's Report on
Tuberculosis in India.

ENCLOSURES

No.

R.C. No. 9416/1916

Spare copies

Station Madras, Dated the 4th December 1916.From (Name) the Hon'ble Mr. J.H. Stone, M.A., C.I.E.,
F.R.H.S.,(Designation) Director of Public Instruction,
MADRAS.To The Secretary to the Government of Madras,
Department.HOME
EDUCATION

Sir,

With reference to Cl. Memo No. 3748-1 dated 11th
November 1916 requesting the Director to submit his views
on the suggestions contained in Chapter XV of Dr. Lankester's
"Report on Tuberculosis in India", I have the honour to
state that, so far as School planning goes, I do not think
that the Educational ^{and} the Public Work Departments have
greatly offended against the principles advocated by Dr.
Lankester. The existing evils are admitted - there is over-
crowding, especially in large urban areas, there are badly
designed schools, there are unhygienic prejudices and there
might with advantage be more schools. But there is nothing
very novel in the suggestions put forward to remedy the

Page 20 C.F.

evils resulting ~~from~~^{from} defective accommodation. It is certainly not the case that the Department in this Province discourages holding classes in the open air or types of school buildings of the verandah kind. Before recognition or aid is accorded, plans are scrutinized and ~~through~~^{through} air and ventilation are insisted upon. Further^{ly}, in the last ten years, matters have greatly improved, a large number of good new school buildings and hostels having been constructed. Larger funds and more liberal conditions of aid have gone hand in hand with a growing recognition on the part of managers of the need for healthy buildings and surroundings. Elaboration is not, I think, at all over-emphasized; but I cannot agree with Dr. Lankester that forty years is long enough for a building to last. As regards other particular suggestions such as that regarding floor space, our requirements are not low, but I am considering these points in connexion with the revision of the Madras Educational Rules with especial reference to the rules prevailing in the Bombay Presidency - vide G. O. No. 1106 Educational, Mis., dated 4th October 1915.

20. As regards the medical inspection of hostels attached to Educational institutions, this is part of the general question of the medical inspection of schools, and so far as my knowledge of hostels goes it is not so urgently necessary as to require that it should be taken up apart from the larger question.

I have the honour to be,

Sir,

Your most obedient Servant,

G. kryzmarowici

for Director of Public Instruction

Y. V.

~~Mc~~
2-4-11-16

Letter
Ref.

To the Secy to the Govt of
India, Dept of Education

52

I am directed to invite a reference to your letter No 111 Sanitary of 23.2.1916, and this Govt's reply No 76 Medical of 27.9.1916, and to enquire when the Govt of India intend publishing Dr Lancaster's report on Tuberculosis in India.

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 Government of India,
 DEPARTMENT OF EDUCATION.
 (Sanitary.)
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From
 J.M. Mitra, Esq., Rai Bahadur, M.A.,
 Asstt. Secretary to the Government of India,
 To
 The Secretary to the Government of Madras,
 Local and Municipal Deptt.

Sir,
 In reply to your letter no. 1410-1, dated the 28th June 1918, I am directed to say that opinions of local Governments on Dr. Lankester's Report on Tuberculosis in India are still under the consideration of the Scientific Advisory Board of the Indian Research Fund Association.

I have the honour to be,
 Sir,
 Your most obedient servant,

J.M. Mitra
 Asstt. Secretary to the Govt. of India.

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CONFIDENTIAL.

NOTES CONNECTED WITH LETTER No. 76 (MEDICAL), DATED
27TH SEPTEMBER 1916.

[SUBJECT.—*Report on Tuberculosis in India by Dr. Lankester, M.D.*]

I

Previous papers:

G.O. 279-80, Judicial, 14th February 1908.	G.O. 1754 M., 11th September 1914.
" 675, Public, 2nd August 1910.	" 1104, Educational, 22nd "
" 713 " 11th " "	" 2227 M., 12th November "
" 757 " 23rd " "	" 2094 L., 20th "
" 1017 " 1st November "	" 2695, Judicial, 2nd December "
" 125 " 6th February 1911.	" 2265 L., 18th "
" 316, Educational, 26th May "	" 120 L., 2nd February 1915.
" 1064, Judicial, 2nd July 1912.	" 123 A., Educational, 9th "
" 1092 " 6th " "	" 348, Public, 9th March "
" 1323 " 19th August "	" 801 " 24th May "
" 1633 " 8th October "	" 1268, Judicial, 11th June "
" 1993 " 3rd December "	" 1211, Public, 14th August "
" 29 L., 3rd January 1913.	" 1218 " 16th "
" 490, Public, 10th April "	" 1946, Judicial, 18th "
" 394, Educational, 1st May "	" 1382 M., 6th September "
" 632 " 7th July "	" 1591, Public, 9th November "
" 1621, Judicial, 11th August "	" 2965, Judicial, 3rd December "
" 1224, Public, 1st October "	" 23 L., 6th January 1916.
" 1111, Educational, 26th November "	" 22, Educational, 7th "
" 152, Judicial, 22nd January 1914.	" 1017, Public, 25th May "
" 313, Public, 13th March "	" 880 W., 12th June "
" 720 L., 14th April "	" 1133, Public, 13th "
" 1091, Judicial, 12th May "	" 1130 M., 1st July "
" 695, Public, 10th June "	" 1882, Judicial, 26th "
" 1105 " 1st September "	" 945, Educational, 7th September "

II

*From the Government of India, Department of Education (Sanitary),
dated 23rd February 1916, No. 111.*

III

Endorsement No. 1549-1, dated 14th March 1916.

IV

From the Surgeon-General, dated 10th July 1916, No. 95-T T-232.

In forwarding for the information of this Government the provisional report drawn up by Dr. A. Lankester, M.D., on Tuberculosis in India, the Government of India request that they may be furnished with an expression of this Government's opinion on the issues raised in the report, more especially in respect of the points relating to this presidency. They desire that the matters dealt with in the three parts of the report, respectively, should be dealt with in the same way in the reply. A reply is requested by the 1st August 1916.

2. The subject of Tuberculosis has attracted considerable attention in this presidency for the last six years. The movement had its origin in certain efforts of the South Indian Missionary Association who brought to notice the serious prevalence of this disease all over South India and suggested certain remedial measures, e.g., the medical examination of students prior to their admission to schools and sanatorium treatment in the early stages of the disease. A full account of the subsequent measures taken by Government as well as by private

agency will be found set forth in the notes drawn up for His Excellency the Governor on the occasion of the opening ceremony of the new buildings of the Union Mission Tuberculosis Sanatorium at Madanapalle in June 1915—vide G.O. No. 1211, Public, dated 14th August 1915.

3. Of the various measures advocated by Dr. Lankester in his present report, for the prevention of tuberculosis, many have already come under the consideration of this Government at different times. The following pages give a summary of the several points raised in the report, together with the remarks of the Surgeon-General thereon, and the action, if any, that has already been taken by Government in the matter, arranged in the order in which they are dealt with in the report. It will be seen that, with one or two exceptions, the Surgeon-General is almost entirely in agreement with the conclusions arrived at by Dr. Lankester, and that on many of the issues raised in the report, no further remarks than a mere expression of concurrence in the views expressed by Dr. Lankester will probably be necessary. On the other hand, several other points appear to deserve careful consideration; and, on these, orders are requested as to the reply to be given to the Government of India.

K.N.—27-7-16.

N.K.—16-8-16.

PART I—PREVALENCE OF TUBERCULOSIS IN INDIA.

Chapter II—Is tuberculosis on the increase in India?

Dr. Lankester is of opinion that this is the case and that the disease is gradually spreading from towns into villages in the following three principal ways:—

(1) by the substitution of the city factory and workshop for the old home industries;

(2) by the multiplication of philanthropic, educational and other institutions at a time when the importance of fresh air was imperfectly recognized;

(3) by the increase in the means of communication between villages and towns.

The Surgeon-General is in entire agreement with the above conclusions. This is also borne out by the figures quoted by Dr. P. S. Chandra Sekhar in his paper read at the Second All-India Sanitary Conference held at Madras in 1912—vide pages 284 and 285 of the proceedings put up. It is, however, recognized that the figures appearing in statistical returns are not reliable guides in arriving at a decision on this point. The general conclusion that the disease is on the increase appears, however, to be well founded.

K.N.—27-7-16.

N.K.—16-8-16.

Chapter III—Tuberculosis in relation to climatic conditions.

Although, owing to the lack of accurate statistical returns, it is not possible to speak authoritatively on the point, it appears to be generally conceded that the climate of the Madras Presidency (with the exception of the Western Coast) is on the whole favourable as regards tuberculosis and that the considerable prevalence of the disease

in this presidency is referable in the main to social and not to climatic conditions.

Page 11 of report.

As regards the distribution of the disease within the presidency itself it would appear that Malabar heads the list, and is followed by Madras, South Canara, Tanjore, Coimbatore, Madura, Tinnevely, Nellore,

Kurnool and Trichinopoly in the order given. The most favourable centres in the presidency for the treatment of tuberculosis are, according to the report of the Committee appointed in 1910, Madanapalle in the Chittoor district, Coimbatore and

Dindigul.

The Surgeon-General invites attention in this connection to the recommendation made by him in 1913, for the appointment of medical men as registrars of births and deaths with a view to obtain more accurate information as to the cause of death. Attention is also solicited to his remarks under chapter IV on page 9 of current file. As will be seen from the notes on page 15 of Notes to G.O. No. 1754 M., dated 14th

Yes; the first thing necessary is to provide more medical men. The Surgeon-General should in 1913 have proposed to increase the outturn of medical men before he proposed to make them registrars of births and deaths. As yet the men required for such a purpose simply don't exist.

A. G. C[ARDEW]—4-9-16.

September 1914, the scheme had to be abandoned on financial grounds and for lack of support from the municipal councils concerned. The soundness of the proposal has, however, been accepted by Government, but this question need not be considered in connection with the present report.

K.N.—27-7-16.

N.K.—16-8-16.

The prevalence of tuberculosis in this presidency as indicated by the cases treated in hospitals, etc., is seen in the two statements below. These bear out the general conclusion in the report in regard to the disease being on the increase and to the particular localities in which it prevails. The improvement of statistics by the employment of medical registrars is largely a question of funds; also we have not got the necessary number of medical men yet and shall not have for many years to come, even with the increased facilities given for the training of sub-assistant surgeons.

V. T. KRISHNAMA ACHARIAR—24-8-16.

STATEMENT I—showing the total number of in- and out-patients treated for tubercular diseases in the civil medical institutions in the presidency for the last six years.

Year.	Number of cases treated.		Total.
	Tubercle of the lung.	Other tubercular diseases.	
1910	8,177	5,813	13,990
1911	8,733	5,411	14,144
1912	9,328	5,085	15,013
1913	10,245	5,043	15,888
1914	10,020	5,979	15,999
1915	10,480	5,450	15,930

Note.—The above statement includes all the six classes of institutions.

STATEMENT II—showing the number of patients treated for tubercular diseases during 1915 in the State public, local fund and private aided institutions in the presidency.

Malabar	2,045	Salem	386
Madras	1,480	Chittoor	381
Tanjore	885	Guntur	303
South Canara	782	Anantapur	261
Tinnevely	693	South Arcot	256
Trichinopoly	628	Ramanad	250
North Arcot	591	Ganjam	232
Madura	513	Vizagapatnam	212
Nellore	456	Cuddapah	145
Gollavari	440	Chingleput	144
Kistna	402	The Nilgiris	95
Bellary	401		
Coimbatore	397		
Kurnool	389		
		Total	12,857

I hope the time is not so very far distant when we shall have a largely increased staff of sanitary inspectors, of whom a steadily increasing proportion will be qualified as sub-assistant surgeons, as well as of district and municipal health officers. The amalgamation of the services of sanitary inspectors and deputy inspectors of vaccination would help towards this end. With such a staff we could make a start towards better registration. Attention is invited in this connection to Dr. Chandrasekhar's scheme at page 285 of the proceedings of the Sanitary Conference of 1912.

A. G. C[ARDEW]—4-9-16.

Yes. I should like to see more medical schools started, say, at Madura, Coimbatore, Bellary.

P. S. S[IVASWAMI AYYAR]—10-9-16.

C. G. TODHUNTER—16-8-16.

There has been much exaggeration about the importance of tubercular disease in this country. In Europe, where people live and work in closed and ill-ventilated buildings, tubercle is a very important disease, but in India where, owing to climatic conditions, all buildings are comparatively open and where the vast majority of the population spends its life in the open-air, the disease is of very minor importance. The medical profession, unable to resist the example of Europe, has thus exaggerated the importance of tuberculosis in this country and the subject has attracted an amount of attention far greater than it deserves when compared with other causes of sickness and mortality. It is probable that the increased attention paid to the subject of tuberculosis is also largely responsible for the apparent increase in the disease. It is prima facie most unlikely that the number of cases of tubercle of the lung attending hospitals has increased from 8,177 to 10,480 or by 28 per cent in six years. There has been no such change in the conditions of life and work as would lead to such a result. The change which has occurred is in the amount of attention of medical officers directed to the subject, and there can be little doubt that many a patient whose illness was lumped under "fevers" a few years ago is now properly stethoscoped and

Chapter IX.

returned as a case of phthisis. See Dr. Lankester's conclusion as regards tubercle among Indian Christians.

A. G. C[ARDEW]—4-9-16.

Chapter IV—Tuberculosis in cities and towns.

Dr. Lankester considers Madras as the most favourable of the three presidency cities as regards the prevalence of

Page 13 of report.

tuberculosis, with a death-rate of .9 per mille in 1913, while the maximum rate in one crowded part of Georgetown was 2.5.

Page 16 of report.

Salom with a death-rate from tuberculosis of 1.03 per mille in 1914 is considered typical of the more favourable cities of Southern India, while in Calicut, Madras and Mangalore, the prevalence of tuberculosis is considered excessive, and probably upwards of 3.0 per mille.

Page 17 of report.

The greater prevalence of the disease in cities as compared with villages is explained by the fact that tuberculosis is

Page 13 of report.

a social disease dependant—in India at all events—almost entirely upon infection from man to man, and that the mortality from it rises almost exactly in proportion to the density of population in an area.

K.N.—27-7-16.

N.K.—16-8-16.

The statement II above may be considered in this connection.

V. T. KRISHNAMA ACHARIYAR—23-8-16.

Chapter V—Bovine tuberculosis in India.

It is admitted that bovine tuberculosis (with the exception of rare instances in the Punjab) is comparatively absent in this country, and this coupled with the fact that the practice of boiling milk before using is almost universal throughout India,

Page 23 of report.

justifies the opinion that the share of bovine tuberculosis in the causation of the disease in India is altogether negligible, and does not call for serious consideration at present. Dr. Lankester considers that

Page 22 of report.

an inquiry into the causes of the immunity of Indian cattle might lead to results of great practical interest and importance. The Surgeon-General agrees with this view and suggests a rigid enquiry into this matter by a body of experts among whom should be comprised a bacteriologist, a veterinary surgeon and a practical slaughterhouse inspector from England. This proposal may be brought to the notice of the Government of India.

K.N.—27-7-16.

N.K.—16-8-16.

V.T.K.—23-8-16.

Such an enquiry may be desirable, but in view of the facts elicited by Dr. Lankester, it should have, I think, a very low place in the programme.

C. G. TODHUNTER—27-8-16.

This seems to me a most random suggestion of the Surgeon-General. On the one hand it is agreed that the part played by bovine tuberculosis in producing the disease among human beings is "altogether negligible", yet it is seriously proposed to put one of our very few veterinary officers and still fewer bacteriologists on to make a special investigation of the complaint. At present we have but one veterinary executive officer for the whole presidency and he has to combat single-handed such diseases as rinderpest which cause a cattle-mortality enormously greater than that caused by tuberculosis. It would be sheer waste of power from the veterinary standpoint to appoint such a commission as the Surgeon-General proposes until we have got rinderpest under control while from the standpoint of human tuberculosis it seems, from Dr. Lankester's conclusions, to be unnecessary.

A. G. C[ARDEW]—4-9-16.

I agree.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter VI—Surgical tuberculosis in India.

Speaking in general terms, Dr. Lankester says that this form of tuberculosis is met with most frequently in the Northern

Page 27 of report.

Provinces of India, and least in Madras. It is also found that such cases as do occur in Southern India are of the glandular or intestinal disease, and that tuberculosis of bones joints and other organs are conspicuous by their rarity. Dr. Lankester considers this inequality of distribution as presenting an interesting problem for further inquiry. The Surgeon-General seems inclined to connect the peculiar distribution of surgical tuberculosis in India with that of bovine tuberculosis and says that both may possibly depend on a common causative factor.

It may be mentioned in this connection that recently there was under the consideration of this Government a proposal to establish a separate home for tuberculous cripples, based on the offer of a private gentleman to provide the initial cost. It

G.O. 1017, Public, 25th May 1916.

has been decided to postpone the establishment of such a home, since the prime movers in it, Lieut.-Col. Symons and Major Bradfield, I.M.S., are not now in this presidency. Though it appears from the present report that the prevalence of surgical tuberculosis is rare in the Madras Presidency, a separate home for the treatment of twenty tuberculous cripples may still meet a want in view of the figures given against "Madras" on page 26 of the report. The point may be borne in mind when the Surgeon-General addresses Government on the subject.

K.N.—27-7-16.

N.K.—16-8-16.

V. T. KRISHNAMA ACHARIYAR—23-8-16.

The further investigation suggested—as to the reasons why this form of the disease is not prevalent in Madras—may also be placed at the bottom of the programme.

C.G.T.—27-8-16.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter VII—Tuberculosis and the Public Services.

Dr. Lankester deals with only three important services, namely, the Army, the Police force and the Railway employees in India. This Government is mainly concerned with the Police force only and, as stated on page 31 of the report, tuberculosis is not particularly common among them in South India, whatever may be the

case in the Northern parts. Hence no remarks appear to be called for under this chapter. The Surgeon-General's proposal for the establishment of sanatoria for soldiers and policemen is not applicable to the conditions obtaining in this Presidency, while the suggested enquiry as to the prevalence of tuberculosis among railway servants is an all-India question and may perhaps be remitted to that Government for consideration.

K.N.—27-7-16.

N.K.—16-8-16.

We have no need for special sanatoria for policemen. The Railway Administrations should take the initiative in regard to their servants.

V. T. KRISHNAMA ACHARIYAR—23-8-16.

A. G. C[ARDEW]—4-9-16. There is certainly no indication of urgent need for enquiry here. We have many more pressing matters to attend to.

C. G. TODHUNTER—27-8-16.

I agree. The Surgeon-General's remark is quite a passing reference and I do not suppose he would seriously advocate sanatoria for policemen suffering from tubercle!

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter VIII—Tuberculosis in jails.

The Surgeon-General considers this a most interesting and valuable chapter and has accordingly discussed the subject at some length. It is stated that in many jails the rate of mortality from tuberculosis is altogether out of proportion to that obtaining amongst the population from which their inmates are drawn. The chief reasons for this are stated to be the following:—

Page 27 of report.

- (1) Overcrowding.
- (2) Insufficient ventilation.
- (3) Inefficient management.

Page 39 of report.

In Madras, however, it is stated that the problem is not one of real seriousness and that this state of affairs is due to the warm climate which tends towards less closing up of buildings and so better atmospheric conditions. There are also special tuberculosis wards in the jails at Bellary and Trichinopoly, and they are reported to be sufficient and satisfactory.

Page 48 of report.

In spite of the above, the Surgeon-General is of opinion that, as the death-rate in Madras jails has averaged 2.4 per mille during the last five years, it is necessary to enquire carefully as to whether tubercle ever really originates in the Madras jails or not. On this point he has addressed the

This may be awaited.

V.T.K.—23-8-16.

The Surgeon-General also makes the following suggestions based on Dr. Lankester's recommendations:—

Provision of efficient steam sterilisers for the disinfection of clothes and bedding in the jails.—This was considered by this Government in December 1914 and abandoned on account of the heavy expenditure involved,

when the financial restrictions are removed, the question may be raised again, with special reference to the larger jails.

V.T.K.—23-8-16.

viz., Rs. 70,000 for providing a steriliser to each central and district jail—vide G.O. No. 2695, Judicial, dated 2nd December 1914.

Construction of a sufficiently large new enclosure at the Bellary central jail to serve as an open-air prison which could be run as a sanatorium for the segregation and care of suspected or early cases for whom to remain in an ordinary jail would involve the probability of advance to the active stage of the disease. The Surgeon-General is of opinion that one large jail for tubercle will be much more efficient than several small annexes to existing jails. It will, however, be seen from page 48 of the report that Dr. Lankester considers the accommodation already provided in Bellary and Trichinopoly to be sufficient and satisfactory.

Provision of free ventilation whenever new cells are built.—The Surgeon-General condemns the system of "back-to-back" cells which are common in the Madras jails. The Government have already decided in G.O. No. 1946, Judicial, dated 18th August 1915, that such cells should not be constructed except in unavoidable cases.

The above suggestions seem worthy of consideration, but it appears unnecessary to discuss them with the Government of India. The administration of jails in this Presidency as regards the control of the disease is considered to be satisfactory and, though there may be still room for further improvement, it is submitted that the question of effecting them may be considered independently of the present reference.

K.N.—27-7-16.

N.K.—16-8-16.

Conditions in the Madras Presidency are pronounced to be fairly satisfactory. When the present restrictions on expenditure are removed, we may consider the question of—

(a) attaching an "open air" prison to the Bellary Central Jail for suspected or early cases; and

(b) supplying steam sterilisers for the disinfection of clothes and bedding in the more important jails.

The remarks made in regard to the construction of new cells may be communicated to the Home Department (Judicial). It may be noted that back-to-back cells are not approved by Government (G.O. No. 1946, Judicial, dated 18th August 1915).

V. T. KRISHNAMA ACHARIYAR—24-8-16.

We may note the Surgeon-General's recommendations for consideration when funds are available and other more urgent needs have been dealt with subject to the reservation that further enquiry should be made as to Bellary being the most suitable place for tuberculous prisoners. Dr. Chandrasekhar writes of it as "Bellary, which is very often recommended as an ideal place of residence for consumptives by medical men who have never been there" and points out that it stands 16th in the list of districts in the Presidency, Trichinopoly being 10th, in the order of hospital cases (All-India Sanitary Conference, 1912, page 286).

C. G. TODHUNTER—27-8-16.

This part of the subject mainly affects the Home Department (Judicial) and may be considered in that department separately after the rest of the subject has been dealt with.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter IX.—Tuberculosis and the Indian Christian community.

As pointed out by the Surgeon-General, this chapter is mainly intended to denote the interest which Dr. Lankester takes in the Indian Christian community, in his capacity as a Christian missionary. The observations contained in this chapter are mainly for the guidance of the various missionary bodies and no special remarks appear to be called for.

K.N.—27-7-16.

N.K.—16-8-16.

It would be useful to frame a popular health lecture on the facts collected in this chapter for the benefit of the communities concerned.

V.T.K.—21-8-16.

The Indian Christians are comparatively free. The instructions regarding them are rather for the missionaries. I am afraid the poor Eurasians want something more than health lectures. The Friend-in-Need Society's home for sickly children at St. Thomas' Mount is a step in the right direction, though a small one.

C. G. TODHUNTER—27-8-16.

No special action seems called for.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

PART II.—THE CAUSATION OF TUBERCULOSIS IN INDIA.

Chapter X.—Introductory—The *Tubercle bacillus*.

Page 59 of report.

Attention is drawn in this chapter to three main factors connected with the spread of tuberculosis in India, namely—

- (1) Ignorance of the laws of health;
- (2) Economic condition.
- (3) Social customs.

The succeeding chapters deal with the various ways in which the above factors tend to spread the disease.

K.N.—27-7-16.

N.K.—16-8-16.

V. T. KRISHNAMA ACHARIYAR—24-8-16.

Chapter XI.—Poverty and overcrowding.

Dr. Lankester points out that in most parts of India poverty does not actually necessitate overcrowding, but where there is such overcrowding and insufficient

Page 61 of report.

ventilation, this tends towards the spread of consumption in three ways—

- (1) by the multiplication of opportunities for contact and infection;
- (2) by the absence of free currents of air which would disperse the tubercle bacilli;
- (3) by the loss of vitality and power of resistance due to the absence of fresh air.

The following measures are recommended to lessen overcrowding in cities:—

Pages 63-65 of report.

- (1) Opening up of congested areas and providing new and sanitary accommodation for the very poor.

- (2) Economy of site areas.
- (3) Opening out of town extensions.
- (4) Improvement of dwelling houses.

The main difficulty in giving effect to these remedial measures seems to be the want of co-operation between the Health Officers and members of Municipal Committees in cases where the recommendations of the former are opposed to the latter's interests. A striking instance of this will be found on page 259 of Dr. Chandrasekhar's paper on tuberculosis read at the second All-India Sanitary Conference. Another limiting factor is the financial one which stands in the way of most local bodies. The suggestions contained in this chapter must have already engaged the attention of local bodies in connection with plague-preventive measures and presumably by-laws have been framed in all important municipalities to secure the construction of dwelling houses in accordance with modern Hygienic principles. It will be well, however, to find out whether, as stated by Dr. Lankester, the provision of new broad thoroughfares or

open spaces in Madras has resulted in still more serious crowding of the neighbouring areas. No heroic measures are possible to the evils of overcrowding, and the Government of India may be informed that the subject is constantly engaging the attention of both the Local Government and the local bodies and that effect will be given to the suggestions made in the report as far as circumstances will permit.

K.N.—27-7-16.

N.K.—16-8-16.

This chapter raises large questions which are already receiving attention here. Progress in this respect is a matter of generations. Though it must be admitted that all municipal councils are not sufficiently alive to the importance of enforcing building regulations, there has been some improvement in this respect within the last few years. Our schemes for the relief of congestion and town extension are organised under the advice of the Sanitary Commissioner and, in every case, we insist on provision being made for re-housing the evicted, before sanctioning acquisition of houses, etc., for relieving congestion. In Madura (which is specially mentioned in this report) two extensions for well-to-do classes are being organised on a remunerative basis.

When Dr. Lankester's report is published, this special portion of it may be brought to the notice of municipal councils and local bodies.

V. T. KRISHNAMA ACHARIYAR—24-8-16.

In due course we may commend this chapter to the attention of local self-governing

A.G.C.—4-9-16.

bodies. There is matter for the Sanitary Commissioner in it too. He is not unapt to oppose small schemes for open drainage (page 63) pending introduction of larger ones for underground drains, which may never come to pass. And, since the very scavengers sometimes refuse to live in the model dwellings made for them, the plea for lighter buildings and houses that will not last too long may well be taken to heart. I have lately commended the plan of the salt peon's hut to the attention of the committee that is revising the type-designs. A draft of a new set of building regulations, drawn up in consultation with Mr. Lankester, has recently been sent to all municipal councils for opinion. They provide for a limitation of the proportion of the area to be built upon and for a raised plinth. It is interesting to note that Dr. Lankester quotes with approval a scheme that provides for sites only 20' x 20' (page 66). This is much less than our minimum.

G.O. 1130 M., 1st July 1916.

We have done better.

P. S. S[IVASWAMI AYYAR]—10-9-16.

C. G. TODHUNTER—27-8-16.

Chapter XII.—Social customs regarding women.

Dr. Lankester ascribes the fact that more than twice as many women as men suffer from tuberculosis to the evil results of the social customs mentioned below:—

Page 67 of report.

- (1) The Purdah system.
- (2) Child marriage.
- (3) Defective management of child birth.

In the case of the first two it is not perhaps possible to bring about any appreciable improvement till the "Sanitary conscience" is created and a considerable advance made in the general education of women in the country. The Surgeon-General's suggestion in regard to the raising of the legal age for marriage to 15 can hardly be supported at the present juncture. The remedy proposed by Dr. Lankester in regard to the third is the gradual formation of a nursing service for India on the lines laid down by Florence Nightingale in England.

Page 74 of report.

Attention is in this connection invited to the discussions contained in G.O. No. 1591, Public, dated 9th November 1915, regarding the formation of a nursing service for this Presidency. The one insuperable difficulty in the way of giving effect to this proposal was the heavy outlay involved and the difficulty of securing efficient supervision and the right class of women willing to undergo the training. More recently however the Government have taken active steps for the improvement of the training of midwives in the Presidency and the question of utilising mufassal institutions for the training of a larger number of them than is possible under present conditions is now engaging attention.

G.O. 1133, Public, 13th June 1916.

K.N.—27-7-16.

In this connection it is for consideration whether a few special stipends may not be sanctioned for the benefit of Brahman widows and other caste women to induce them to undergo training in a women's hospital as nurses or midwives and ultimately take to private practice. In the beginning, there may be difficulty in attracting suitable candidates, but the experiment may be made.

N.K.—16-8-16.

The "purdah system" is not an evil of such magnitude here as in Northern India. We have taken steps for increasing the number of trained midwives in the Presidency but progress in this respect can be only gradual. Legislation for raising the age-limit should proceed from non-officials.

V. T. KRISHNAMA ACHARIYAR—24-8-16.

Dr. Lankester regards it as hopeless to improve the practices of the indigenous midwife. I don't think we need take this for granted. I fancy that many trained

maternity nurses in England today trace their descent to the "Sarah Gamps" of Dickens' day. If we can get these women to improve, their employment affords the line of least resistance.

P. S. S.[IVASWAMI AYYAR]—10-9-16.

Dr. Lankester mentions the great change that results when the indigenous midwife is kept in permanent relation with a lady doctor (page 74). This, I submit, is a state of affairs we should do our utmost to establish. We are far too liable to build the hospital first, employ the lady doctor second and then confine her activities to the building. I would employ all the lady doctors we can afford, letting them treat the women in their homes to start with, and let the building of the hospitals follow after.

C. G. TODHUNTER—27-8-16.

A nursing profession is a tremendous need for India but how is it to come into existence so long as no respectable Indian "family woman" will take up nursing? The nurses available are at present East Indian women who leave very much to be desired in every respect. I think little will result till Indian women take up the profession and that is not yet likely.

District visitors, who would ordinarily have to be Europeans, may do something to spread knowledge of hygiene.

A. G. C[ARDEW]—4-9-16.

The Secretary's suggestion that we should employ as many lady doctors as we can get without thinking of buildings at the very outset is attractive but here also the question of funds will come in.

P. S. S.[IVASWAMI AYYAR]—10-9-16.

Chapter XIII—Habits tending towards the spread of consumption.

The foremost among these, according to Dr. Lankester, are—

- (1) indiscriminate spitting,
- (2) the habit of living in rooms with the doors closed,
- (3) sleeping with the face covered,
- (4) use of common drinking and feeding vessels,
- (5) intemperance in the use of alcohol and drugs, and
- (6) unwise fashions in clothing.

The remedy for these, he says, lies in the wide diffusion of knowledge. The Surgeon-General considers that this should be done by the education of the rising generation and that in order to do this the teachers should first themselves be taught.

It will be seen from the discussions in G.O. No. 1224, Public, dated 1st October 1913, that the Educational Department proposed to take action in the matter of giving definite instruction in schools on the dangers of tuberculosis under the head of "hygiene in schools". With regard to the second suggestion made by the Surgeon-General it may be mentioned that a beginning was made in 1913 by the institution of a course of lectures in school hygiene to the students of the Training College. Similar instruction is given in other training schools also.

K.N.—27-7-16.

N.K.—16-8-16.

It is possible to extend the system of instruction in schools.

2. Our popular lectures scheme, when it comes into operation, will deal with this subject.

V. T. KRISHNAMA ACHARIYAR—24-8-16.

We shall have made a beginning when clerks in Government offices learn to open the windows. The account of the railway office at page 33 would be true of many offices in Madras.

C. G. TODHUNTER—28-8-16.

A. G. C[ARDEW]—4-9-16.

P. S. S.[IVASWAMI AYYAR]—10-9-16.

Chapter XIV—Other economic and social factors.

The rise in the price of food and the scanty milk-supply are mentioned as being important factors in the spread of the disease. It is therefore suggested that wealthy landowners in the vicinity of great cities should be encouraged by means of subsidies from local public funds to take up dairy farming on a large scale as is now done in Western countries. There appears to be very little prospect of the suggestion being adopted in this Presidency.

Certain trades and occupations, e.g., tailoring and weaving, are also regarded as predisposing to tuberculosis on account of the over-crowding and the low pay drawn by these members. The fact is also brought to notice that Indian workmen seldom take the trouble to open the windows of work rooms. The Surgeon-General suggests that medical inspection of factories and large Government offices should be arranged for to obviate such dangers to the operatives. Attention is solicited to the notes to G.O. No. 1633, Judicial, dated 8th October 1912, which explain the circumstances under which the medical inspection of factories was ordered to be discontinued. There appears to be very little case for the medical inspection of employees in public offices.

I agree that such special measures are not called for.

V.T.K.—24-8-16.

K.N.—27-7-16.

N.K.—16-8-16.

The Government have recently offered land, on certain conditions, for the starting of dairy farms, etc. The Corporation of Madras may consider the question of the milk-supply of the city.

V.T.K.—24-8-16.

I hope dairy farms may come in time.

Medical inspection is hardly necessary to ensure the proper sweeping of offices and the opening of windows. But we might insist on the responsibility of the head ministerial officer and have a good many clerestory windows removed altogether. Another practice which is undoubtedly insanitary is that under which every clerk, as soon as he rises to a position of sufficient dignity, surrounds himself with screens and

partitions. A bank or merchant's office, where the European assistants work in the midst of the clerks, always presents a marked contrast in respect of fresh air and cleanliness to a Government office. Some of our offices also are very confined and dusty. The Custom-house is such a one and I believe that enquiry would show that the death-rate among the men employed there is abnormal. The deaths reported while I was Collector were numerous.

C. G. TODHUNTER—28-8-16.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter XV—Educational institutions and the spread of tuberculosis.

Dr. Lankester deals at length with the conditions obtaining in boarding schools

V.T.K.—24-8-16.

majority of the educational institutions in India the boarding system is not common. As regards the day schools, the usual type of building based on Western models is considered quite unsatisfactory for India, and Dr. Lankester is of opinion that the tendency should be rather in the direction

Page 89 of report.

more airy structures, in the building of which the aim will be the attainment as nearly

These remarks may be considered in the Educational Department.

V.T.K.—24-8-16.

incompleteness of the weather. If this proposal is to be adopted, rule 33 of the Madras Educational rules will have to be suitably amended. As regards the Surgeon-General's remarks on page 9 of Government

Page 92 of report.

hygiene, attention is solicited to the undermentioned papers:—

(i) Paragraph 7 of resolution on page 4 of G.O. No. 394, Educational, dated 1st May 1913.

(ii) G.O. No. 632, Educational, dated 7th July 1913.

(iii) G.O. No. 123-A, Educational, dated 9th February 1915.

The importance of the subject has already been fully recognized, and no further action appears to be necessary.

K.N.—27-7-16.

N.K.—16-8-16.

This should be done, I think.

A. G. C[ARDEW]—4-9-16.

Provision may be usefully made for the regular medical inspection of large hostels like the Victoria hostel.

V. T. KRISHNAMA ACHARIYAR—24-8-16.

I am afraid I cannot agree with the office that the importance of the subject has been fully recognized. On the other hand I think we need an absolute revolution in school-building, coupled with courses of instruction to teachers. Dr. Lankester says (page 93) there is not a design in the Government of India's elaborate publication on school-buildings that complies with his requirement—I should have thought

* Vide plan on page 107 of Occasional Report No. 6.

† Vide page 81 of Occasional Report No. 6.

personally that there were two—a Banna* village school and an Assam† design. We were trying last year after a design that would have complied with his requirement, but rather for criminal settlements than for schools in general. I submit that what is needed is to make the standard for village schools "a glorified imitation of the healthy type of mud hut seen in many village districts in India, where the sloping roof, usually of country tiles, is supported upon a bamboo frame work; the walls of mud being filled in later, and not reaching to the level of the roof" (page 92). When we have set this standard and got it appreciated we shall have

a large part of our grants to spare for expenditure in other directions. I know an Oxford Mission school at Bahala near Calcutta built on these lines which admirably fulfils all purposes, and a number in Tinnevely built at five times the expense which were inadequate for the pupils at the outset and now, by the closing in of verandahs, have become as insanitary as the bazaar houses they were designed to replace.

C. G. TODHUNTER—28-8-16.

I agree very much with the Secretary's remarks. The matter may be considered separately in the Educational Department.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter XVI—Educational Institutions—cont.

As already stated, most of the remarks of Dr. Lankester in this chapter which

Page 105 of report.

are summarized on page 10 of the Government Order apply to mission institutions of the boarding school type. The following recommendations, however, appear to admit of general application to all schools:—

Medical inspection of schools.—This question has already been taken up by this Government. In G.O. No. 22, Educational, dated 7th January 1916, the Government arranged for the medical inspection of the schools opened by the Corporation of Madras and the Director of Public Instruction was asked to submit a report on the inspection together with his remarks on the question of extending the system. The Director of Public Instruction's report has just been received and is now under consideration in the Educational Department. It is to be regretted that Lieut.-Col. C. Donovan, who supervised the inspection, had no time to make a stethoscopic examination of the chest of the school children and that in consequence the prevalence of tubercle was not ascertained. The report without this must, as stated by the Surgeon-General, be considered incomplete. In forwarding the report the Director of Public Instruction has stated that similar inspection is desirable in the mufassal also and the provision of a system of remedial measures such as obtains in the United Kingdom.

A. G. C[ARDEW]—4-9-16.

It has since been decided to complete the examination of the schools in the Madras city as recommended by the Surgeon-General.

Provision of special schools for tuberculous children on the sanatorium system.—

Page 96 of report.

This proposal was considered by Government in 1913 and negatived as impractical—please see the notes on pages 2, 5, 10 and 11 of the Notes to G.O. No. 1224, Public, dated 1st October 1913. The necessity for such special schools will, however, be apparent only after statistics have been collected of the actual prevalence of the disease in the school population. The consideration of this question has therefore necessarily to await the results of the medical inspection of schools contemplated in the previous paragraph. At the same time, as pointed out on page 97 of the report, there appears to be very little use in arranging for systematic medical inspection unless subsequent segregation and sufficient treatment can be secured.

K.N.—27-7-16.

N.K.—16-8-16.

The measures adopted for improving conditions in schools are described in the letter to India printed in G.O. No. 123-A, Educational, dated 9th February 1915.

2. The report of the medical inspection of the schools in Madras city is now under consideration. From the point of view of the subject dealt with in this file the report is not of much value as the prevalence of phthisis was not ascertained but the report sufficiently indicates the difficulty of organizing medical inspection on any large scale. Till this report is considered and the system of medical inspection is extended we shall have no statistics on which to decide whether special schools on the sanatorium system are called for.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

The whole of this chapter will be very useful to school managers as soon as it can be published. Action by Government will follow in due course. The preparation of a pamphlet on school dietaries (page 99) is an item which might perhaps be taken in hand at once. Major Ross, when Health Officer of the Corporation, gave the Friend-in-Need Society some very useful notes on this subject. They were applicable, however, only to the case of Eurasian children.

C. G. TODHUNTER—28-8-16.

I presume this chapter will be considered in the Educational Department.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

PART III.—THE PREVENTION OF TUBERCULOSIS IN INDIA.

Chapter XVII.—Existing anti-tuberculosis efforts.

In the Madras Presidency, the only two institutions for the treatment of tuberculosis are the Union Mission Tuberculosis Sanatorium at Madanapalle and the King Edward VII Memorial Tuberculosis Institute at Madras. Proposals for the establishment of one or more additional sanatoria at other centres (e.g., Coimbatore, Pallavaram, etc.) were under consideration from time to time but had to be abandoned mainly owing to want of funds. It may be mentioned however that this Government have been very liberal in their grants to the two existing institutions and until the working of these has been observed for some time, it would perhaps be too early to launch into additional expenditure on similar institutions.

K.N.—27-7-16.

Special wards for consumptive patients are to be provided in the new General Hospital to be built on the Spur Tank. In paragraph 12 of G.O. No. 1017, Public, dated 1st November 1910, the Government undertook to contribute towards the construction of temporary phthisis wards in a few specially selected district hospitals but, so far no progress has been made in this direction. It will be seen from papers IV and V printed on pages 3 and 4 of G.O. No. 1224, Public, dated 1st October 1913, that, for want of the necessary trained staff, effect cannot be given to the wishes of Government to open special tuberculosis dispensaries in the mufassal.

N.K.—16-8-16.

A. G. C[ARDEW]—4-9-16.

These facts may be stated in the letter to India.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

Type-designs Nos. 142 and 143.

G.O. 2227 M., 12th November 1914.

There is one in Tellicherry I think.

C.G.T.—11-1-16.

Paragraph 8 of the Administration Report of the Tellicherry Municipality.

As Dr. Lankester holds up the example of Bombay for imitation, we might perhaps ask for a copy of "their important Tuberculosis resolution of February last" (page 111).

A. G. C[ARDEW]—4-9-16.

C.G.T.—28-8-16.

Chapter XVIII.—Measures for the prevention of tuberculosis in India.

Dr. Lankester is strongly of opinion that it would be a mistake to introduce in India the one important measure which is usually regarded as an essential preliminary to any useful efforts towards the prevention of tuberculosis, namely compulsory notification. It is stated that this system has proved a failure in Bombay. The Second All-India Sanitary Conference held at Madras in 1912 recommended the introduction of compulsory notification at least in the larger towns and in pursuance of this the Corporation of Madras proposed to take action which was also recommended by the Surgeon-General. While recognising that the system of compulsory notification was a necessary measure as far as the Madras City is concerned, this Government decided to postpone its actual introduction until the Tuberculosis Institute was at work and necessary facilities for giving practical effect to the notification were available. The larger question whether the system could be introduced in all the large towns in the Presidency was also considered but set aside as impracticable at present. In view however of the decisive pronouncement of Dr. Lankester on the subject and the failure of the attempt made in Bombay, the Surgeon-General now feels inclined to withdraw his former recommendation and states that "we must await the time when education shall have prepared the people to accept compulsory notification and philanthropy (state aided or not) have provided the means for segregation, treatment and instruction in open air sanatoria." There appears to be nothing for it now but to accept this conclusion for the present.

I think this view is sound.

V.T.K.—25-8-16.

Undoubtedly.

A. G. C[ARDEW]—4-9-16.

I agree.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Leaving compulsory notification out of consideration, the measures which Dr. Lankester recommends are divided into three groups, viz:—

- (1) Preliminary measures.
- (2) Educational measures.
- (3) Institutional measures.

As regards preliminary measures, Dr. Lankester suggests various lines of scientific enquiry in regard to the peculiarities of distribution of the disease in the different parts of the country, the sociological aspects of the problem, the comparative immunity of cattle from the disease and other matters. The educational and institutional measures are dealt with in the succeeding chapters.

K.N.—27-7-16.

N.K.—16-8-16.

The case against compulsory notification is very strongly stated by Dr. Lankester and the experience of Bombay is not encouraging. The proposal to introduce it in Madras may be reconsidered.

2. The different lines of inquiry suggested by Dr. Lankester will, no doubt, be undertaken in the Tuberculosis Institute as time goes on.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

I agree as regards compulsory notification. The further enquiries suggested are, I think, rather for the Indian Research Fund Association.

C. G. TODHUNTER—28-8-16.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter XIX.—Educational measures.

The problem of education, according to Dr. Lankester, resolves itself into an active campaign of instruction among the upper and middle classes of the people.

Page 117 of report.

None of the existing voluntary organisations in the country are considered suitable for the purpose; so Dr. Lankester draws up an elaborate and somewhat ambitious scheme for the formation of what he calls the

Pages 119 et seq. of report.

"National Health Association of India"

which should be as far as possible non-official in character.

The Surgeon-General is not very hopeful about the success of such a huge scheme for the whole of India, but is in favour of a separate Public Health Bureau for each Presidency, whose business it will be to collect and diffuse information on sanitary matters among the people.

Now that the Edward VII Memorial Tuberculosis Institute has been started, it will serve all the purposes of a Public Health Bureau advocated by the Surgeon-General and there will be no necessity to open a separate bureau on this account. Attention is in this connection solicited to the letter of Dr. Chandrasekhar which was published in the *Madras Mail* of the 19th July, a cutting of which is attached below. It will be seen that the Institute is to form—

- (a) a centre of diagnosis;
- (b) clearing house and centre of observation;
- (c) centre of curative treatment;
- (d) centre for examination of contacts;
- (e) centre for aftercare of cured patients;
- (f) information bureau and educational centre.

The staff of the institute will be prepared to inspect the house conditions and render advice on points of domestic sanitation, feeding, etc. They will also deliver from time to time popular lectures on the causes, recognition and treatment of tuberculosis and on elementary hygiene with the help of lantern slides.

It will thus appear that the nucleus for an organization of the sort recommended by the Surgeon-General already exists here, which can be developed in course of time. Dr. Lankester's proposal appears too ambitious to be practicable.

G.O. 720 L., 14th April 1914.
 " 2094 L., 20th November "
 " 2265 L., 18th December "
 " 23 L., 6th January 1916.

Besides the Government have already arranged for the delivery of popular lectures on health subjects—vide Government orders noted in the margin.

K.N.—27-7-16.

N.K.—16-8-16.

Cutting from the "*Madras Mail*", dated 19th July 1916.

THE TUBERCULOSIS INSTITUTE.

SIR,—As you are probably aware, it was decided some years ago by the Committee of the King Edward VII Memorial Fund to utilize the funds for the erection of Tuberculosis Hospital or Sanatorium (or both) for the relief of the tuberculous sick in the Presidency. The decision met with the approval of the Local Government which gave a substantial grant. As the total funds were not sufficient to start both a hospital and a sanatorium, it was finally decided to start only a tuberculosis institute for the present in the City of Madras.

The functions of the Tuberculosis dispensary or institute were summed up in the interim report of the department committee on Tuberculosis in England as follows:—

- (a) Centre of diagnosis.
- (b) Clearing house and centre of observation.
- (c) Centre for curative treatment.
- (d) Centre for examination of contacts.
- (e) Centre for after care of the cured patients.
- (f) Information bureau and educational centre.

The Institute should be the centre of all anti-tuberculosis endeavours in the surrounding districts. All the world over, the anti-tuberculosis measures adopted by various bodies, have been modelled on the lines laid down by Sir Robert Philip of Edinburgh, so early as 1887. Patients often do not seek advice until the disease has passed the curable stage. In fact, the disease may exist for some time before the patient shows any symptoms or begins to suspect its presence.

The consumptive will not infect others in the earlier stages of the disease; but the moment he begins to expectorate, he becomes a source of infection if certain necessary precautions be not carried out. Early diagnosis, before the lungs begin to break down, will enable us to cure the consumptives and diminish the chances of the spread of the infection to others.

It is necessary in the interest of public health to prevent cases of closed early tuberculosis becoming cases of open advanced cases. The early diagnosis and treatment of consumption forms the most important part of the prophylactic measures.

Therefore it is necessary to detect cases in the early stages. Such detection is one of the important functions of a Tuberculosis Institute.

The King Edward VII Tuberculosis Institute is, at present, located at Kennedy Villa, Pantheon Road, Egmore. It will be removed to the Spur Tank as soon as the new buildings are erected. I may assure the public, in this connection, that Tuberculosis Dispensaries are not sources of danger to the people in the neighbourhood. It is the uncontrolled consumptive that is a source of danger. The consumptive who will visit the Institute will all be under control.

The staff of the hospital consists of myself, a Lady Assistant Surgeon and two Sub-Assistant Surgeons. The patients who come to the Institute will be examined and sorted out. If they be advanced cases requiring careful nursing and rest in bed or surgical help, they will be referred to the General hospital. The early cases will be treated in the Institute as out-patients. At the same time the staff will be prepared to examine the contacts of such patients and find out whether they are in an early stage of the disease. All cases in an early stage of the disease and mild advanced cases which can be treated as out-patients, will be treated out-patients. If desired the staff will be prepared to inspect the home conditions and render advice on points of domestic sanitation, feeding, etc. We hope to have in the near future some wards for observation and emergency cases and some wards for the advanced cases when the Institute is removed to the Spur Tank.

It is the intention of the staff to deliver from time to time popular lectures on the causes, recognition and treatment of tuberculosis and on elementary hygiene with the help of lantern slides as soon as the slides are available. The staff will only be too glad to offer information and advice to all interested in the subject.

The Institute will be open to the public from Wednesday the 19th of July 1916. Patients will be seen between 7 and 9 a.m. at the Tuberculosis Institute, Pantheon Road, Egmore.

The facilities of the Institute will be available for all persons needing treatment for tuberculosis.

P. S. CHANDRASEKHAR,
 Director.

King Edward VII Tuberculosis Institute, Madras.

I think an All-India Organization as outlined by Dr. Lankester is unworkable. We must have an organization for this Presidency which will work through large numbers of local branches.

2. The conclusion that such a League, if it is to be successful, should not confine itself to an anti-tuberculosis campaign is also, I submit, sound.

3. In this Presidency, the need for an organization for popularising elementary sanitary principles has already been felt and it has been decided, in connection with the scheme of health lectures, to form central and local committees for arranging for lectures, demonstrations, etc., on such subjects. This is just the organization required for the "educational measures" advocated by Dr. Lankester.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

His Excellency the Governor, at the health lectures last year, preshadowed the formation of a Presidency Sanitary Association, and I regard this as a matter of urgent necessity. Whether we should link up with an All-India Organization or not might be left over for the present. I am not, however, by any means so despondent

as the Surgeon-General and the Under Secretary as regards the prospects of getting workers. I think there are plenty of Indians who would be ready to help. Unexpectedly excellent results have been secured through volunteers at recent festival gatherings, e.g., the Chitral festival at Madura. The first thing, however, would be to teach your instructors. See also on this head Dr. Lankester's concluding remarks.

C. G. TODHUNTER—23-8-16.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter XX.—Institutional measures.

The following measures are recommended as being capable of immediate application :—

(1) *The addition of open-air wards to existing hospitals.*—This proposal has already been considered by this Government. Please see page 6 of Notes to G.O. No. 1224, Public, dated 1st October 1913. It is doubtful whether special wards for the treatment of advanced cases will be largely availed of, seeing that Hindus generally prefer to keep persons who are hopelessly ill to die quietly at home. Although the Government were prepared to make grants to local bodies desirous of opening special tuberculosis dispensaries, the proposal could not be given effect to owing to the scarcity of qualified medical men and nurses suitable for employment in such dispensaries.

V.T.K.—25-8-16.

It may perhaps be possible hereafter to arrange for a course of special training being given to medical men at the new Tuberculosis Institute, but until then it appears that no appreciable progress can be attained in the matter of special tuberculosis dispensaries.

(2) *The establishment of open-air schools for children.*—As already pointed out on page 13 ante, the necessity for such schools in this Presidency can be ascertained only after the results of the medical inspection of schools are known and no immediate action seems possible at present.

V.T.K.—25-8-16.

The other points touched upon in this chapter do not appear to call for remarks.

K.N.—27-7-16.

N.K.—16-8-16.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

The most important suggestion in this chapter is that we should abandon Tuberculosis dispensaries and add Tuberculosis wards and specially trained officers to our ordinary hospitals and their staff. The Surgeon-General supports this suggestion which, I submit, may be accepted in principle.

The institution of open-air schools and sanatoria for railway employees may await the result of enquiries as to the extent of prevalence of the disease among school children and railway men.

Pages 128-129 of report.

C.G.T.—28-8-16.

I should go in for open-air schools at once but it is a matter for Educational Department.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Chapter XXI.—Open-air Colonies for consumptives.

Though hill stations are reported to give the most favourable results, they are beyond the reach of the poor. Consequently, the Surgeon-General recommends the establishment of "garden colonies" near the towns where the people reside and suggests the following places as suitable for this purpose :—

St. Thomas' Mount or Pallavaram.

Bellary.

Coinbatore.

These recommendations may perhaps be accepted in principle, but owing to the present financial stringency it may be necessary to postpone their actual execution, while experience may be gained in the meantime in regard to the working of the Edward VII Tuberculosis Institute.

K.N.—27-7-16.

N.K.—16-8-16.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

If we could only get the Military authorities to give us up Pallavaram, we might make a start there with the well-to-do, who would build for themselves. I believe many take bungalows out there now. Tambaram near by was selected in 1912 as the site for a sanatorium, but the project was abandoned in favour of a Tuberculosis dispensary.

Page 12 of G.O. 313, Public, 13th March 1914.

C. G. TODHUNTER—28-8-16.

The idea of open-air colonies for consumptives seems to me somewhat visionary. How are the consumptives to earn their living while they are in the colony and, if they are to be supported, how are the funds to be provided? Why should the State support consumptives in an open-air colony, while it leaves millions to die of malaria and while it fails adequately to protect tens of thousand against cholera and other diseases? The Surgeon-General may be told that for the present the provision of open-air colonies by the Government cannot be undertaken. Perhaps it might be considered in Local and Municipal whether the Municipalities of Bellary and Coimbatore and the Corporation of Madras would make a small beginning of providing cheap open-air houses to which a few consumptives might be sent by the District Medical Officer or by the Divisional Medical Officers or the officer in charge of the Tuberculosis dispensary. Such houses should be close enough to the towns to enable the people to attend to their ordinary work. But I confess that I don't expect much from such a remedy. The only real remedy is the diffusion of education and especially of education in hygiene and the gradual improvement in Indian habits, e.g., the abolition of the segregation of women.

A. G. C[ARDEW]—4-9-16.

I agree generally.

P. S. S[IVASWAMI AYYAR]—10-9-16.

In conclusion, Dr. Lankester draws attention to the fact that the improvement of domestic hygiene is more important than the establishment of sanatorium institutions and that here again the one great need is knowledge. The Surgeon-General also lays the greatest emphasis on the necessity for imparting instruction in domestic hygiene and states that the schoolmaster, who must have the principal part in this work, must first be taught and made to believe what he is taught.

A. G. C[ARDEW]—4-9-16.

K.N.—27-7-16.

N.K.—16-8-16.

Detailed comments on all the suggestions in the report are not apparently required at this stage and the problem is not so serious here as in other presidencies. In reporting to India we may briefly state the action taken in this Presidency from 1910 (as summarised in the note to G.O. No. 1211, Public, dated 14th August 1915) and refer prominently to the opening of the Tuberculosis Institute and to the scheme of health lectures and the organization—central and local—proposed in connection with it.

V. T. KRISHNAMA ACHARIYAR—25-8-16.

The Government of India wish for an opinion on the issues raised in the report, especially as they affect this Presidency. I think we must say, as regards each of Dr. Lankester's recommendations, whether we accept it in principle and what prospect there is of our carrying it out in practice now or hereafter.

2. I submit his report direct instead of circulating to the Home Department as it has been unduly delayed in the office and we have already received a reminder from the Government of India. We can only answer in general terms at present and our reply need not commit any other department.

C. G. TODDHUNTER—30-8-16.

A. G. C[ARDEW]—4-9-16.

P. S. S[IVASWAMI AYYAR]—10-9-16.

Drafts are submitted for approval. After issue the papers may be printed and copies forwarded to the Home Department and the Local and Municipal section for necessary action in respect of the points relating to them.

V.T.K.—17-9-16.

K.N.—14-9-16.

V.S.—16-9-16.

Drafts submitted.

V.T.K.—18-9-16.

I think the Home Department will wish to see this draft before we commit them to it.

I should be obliged if they would deal with it as early as possible as the reply is already nearly two months overdue.

Paragraphs 6, 7, 14 and 15 are those that chiefly concern them.

C.G.T.—19-9-16.

HOME DEPARTMENT (EDUCATION).

Paragraphs 11, 14, 15 and 19 of the draft concern the Education section. As orders have since been issued on Lieutenant-Colonel Donovan's report, the last sentence of paragraph 15 may be modified as shown below :—

"A preliminary report drawn up by Lieut.-Col. C. Donovan, I.M.S., on the results of the medical inspection of some of the elementary schools in the City of Madras came recently under the consideration of this Government who have directed that the inspection of the schools should be completed and a full report submitted to them to enable them to judge of the value of the system."

G.O., 945, 7th September 1916.

N.K.—21-9-16.

HOME DEPARTMENT (JUDICIAL).

Paragraph 6 relating to Public Services (Police) and paragraph 7 relating to Jails may be accepted in Judicial.

W.B.S.—21-9-16.

M.V.V.—21-9-16.

C. RAMANUJA ACHARIYAR—21-9-16.

E. A. HARVAY—22-9-16.

Home is concerned with paragraphs 6, 7, 11, 14, 15 and 19 of the draft letter to India. I accept paragraphs 6, 7, 11 and 19. In regard to paragraph 14, I would deprecate telling India that this Government consider that a "revolution" in the type of school buildings is needed. This is an extreme statement. The whole question of school buildings is a somewhat difficult one and in regard to it divergent views are held by educationists and others. Lately a great deal of money has been spent both from Provincial and Imperial funds, both directly and indirectly, in constructing substantial school buildings. The standard plans for these buildings are framed by the Public Works Department in consultation with Educational and changes are also made therein from time to time. Taking all these circumstances into consideration I would deprecate committing Government to any decided view that a thorough change is needed. I venture to think that it would suffice to tell India that this question will be considered.

With reference to paragraph 15 of the draft, it may be modified on the lines suggested by the Registrar.

P. RAJAGOPALA ACHARIYAR—22-9-16.

LOCAL AND MUNICIPAL DEPARTMENT (MEDICAL).

Paragraph 15 of the draft. The last sentence may be modified as suggested in the Home (Education) section.

Paragraph 14 of the draft may be rewritten as suggested in pencil on page 13 of the draft.

V. T. KRISHNAMA ACHARIYAR—22-9-16.

The draft as amended with reference to the above notes is submitted for approval.

C. G. TODDHUNTER—23-9-16

I have only altered a few words.

A. G. C[ARDEW]—25-9-16.

Issue at once.

C.G.T.—26-9-16.

[Letter No. 76 (Medical), dated 27th September 1916.]

d + m (M.B. Dept)

us.

A notes copy of letter No 76 med of 27.9.16 may, it is submitted be forwarded to the Home (Educational) Dept with reference to the notes of on page 20 of the notes connected therewith.

KR
20.10.16
20/10/16

V.TK
1.10

Mem no 550-1/16

21-X-16

Home (Edu) U.O

Home (Edu) Dept

Please see the S.G.'s remarks on Chapters XV & XVI of Dr. Lancaster's Report on pages 9-11 of G.O. No 76 (Medical) of the 27.9.16 and the notes on pages 12-14 of the notes ante. Action on the suggestions contained in Chapter XVI of the report is to be taken only after the report is published (para 15 of letter to India No 76 (Medical) of the 27.9.16). An extract of the Chapter XVI may be forwarded to the D.P.D. and his remarks invited on the suggestions contained therein. He may also be asked to submit his views on the question of instituting regular medical inspection of large hostels attached to educational institutions. Draft G.O. is submitted for approval.

M
20/10/16

CR
2.11.16
A

[Mem. No. 3748-1 of 11-16]

CN 3748 E8



NOTES.

Page 23

Home (Education) Department.

C.No.4483..

From the Director of Public Instruction, R.C.No.9416,
dated the 4th December 1916.

Pages 21-22 of CF

Extract at Page ②

The Director of Public Instruction submits his remarks on the suggestions regarding school buildings contained in chapter XV of Dr. Lankester's report on Tuberculosis in India.

2. Rules as regards ^{the} accommodation to be provided in school buildings are contained in chapters II and III of the Madras Educational Rules. Rule 13 relates to primary schools, ~~and~~ ^{it} provides that the building used for the school should be suitable, be kept clean and admit sufficient light and air. Rules 30-37 relate to secondary schools. No school is recognized unless it is held in a building of which the site, dimensional sketch and accommodation have been approved by the Director. The dimensions of the building ~~shall~~ be such as to provide at least eight square feet and 80 cubic feet of space for each pupil on the rolls. In calculating the dimensions, verandahs which are solidly constructed and on which class rooms open may be included. Before recognition is accorded, the management has to produce a certificate

signed

Rule 30

Rule 33

Rule 35

signed by a qualified medical officer that the accommodation provided for each of the several classes is sufficient for the maximum number of pupils taught therein and is properly ventilated and lighted. No class room, laboratory or workshop shall be permanently used as such by a larger number of pupils than the Inspector or the Sanitary Officer has declared it sufficient to accommodate.

3. Dr. Lankester considers that the time has come for the reduction of expenditure on school buildings and that the future tendency should be rather in the direction of less expensive, less substantial but far more airy structures, in the building of which the aim should be the attainment as nearly as possible of open air conditions so far as might be compatible with the educational requirements, the security of person and property, and the protection against actual inclemency of weather. He suggests that, in future school planning, calculations as to cubic capacity and even many of the present ideas as to scientific ventilation should assume less and less weight and that the aim should be to make the atmosphere within doors, as far as possible, one with the atmosphere without, not

Appendix I - page
56 of the Rules

Rule 36

Page 8 of Exhaust
①

Page 10 of Exhaust
①

cautiously admitting outside air into rooms purposely built large so as to obviate the chilling draught, but flooding rooms and dormitories with fresh air from outside in such abundance that the thought of draught would not arise. He also recommends the holding of classes especially in village schools in broad "lean-to" verandahs or shelters, arranged so as to give the maximum protection from sun, wind and rain. He considers that it will be sufficient if school buildings are constructed to last for, say, 40 years. To effect economy he suggests the use of lighter building materials such as iron, not in heavy girders but in light framework and sheeting, asbestos tiles and sheeting, lath and plaster panelwork and light well-sawn timber. As regards village school houses, he makes the following suggestions:--

- "In villages where the climate admits of
- materials like bamboo, rush, straw, or matting,
- the difference which might well mark off the
- school building from the ordinary village hut
- would be that the former would always have a
- pucca floor, while the walls and roof of matting
- or thatch, admirable from the point of ventilation, would be kept in place by a light framework
- of angle-iron instead of the usual poles of
- bamboo or rough timber. x x x.

"For buildings of a simpler kind it would in

31

many climates be quite suitable to have the walls only reaching partly to the roof, which latter overhanging so as to afford protection against rain is supported upon iron or timber uprights."

4. The Director states that, so far as school planning goes, the Educational and the Public Works Departments have not greatly offended against the principles advocated by Dr. Lankester, that elaboration is not at all over-emphasized and that there is nothing very novel in the suggestions put forward by Dr. Lankester to remedy the evils resulting from defective accommodation. He also points out that, before recognition or aid is accorded plans are scrutinised and thorough air and ventilation are insisted upon and that the department in no way discourages the holding of classes in the open air or types of school buildings of the verandah kind. The Director does not however agree with Dr. Lankester that 40 years is long enough for a building to last. He also ~~states~~ ^{states} that the requirements in the Madras Educational Rules as regards floor space are not low, but that he is considering the question in connection with the revision of the rules with special reference to the rules prevailing

Page 13 of Extract (C)

Pages 21 + 22 of CF

Wickham

Wickham

Wickham

* Since disposed of in p. 1026 7.8.17
(with)

Page 13 of Extract (C)

Page 21 + 22 of CF

Wickham

Wickham

200 of info before and p. 25

NOTES.

Page 27

in the Bombay Presidency communicated with G.O. No.1106, Educational, dated the 4th October 1915.

5. Attention is solicited to the Director's unofficial note on pages 13 and 14 of G.O.No.1106, Educational, dated the 4th October 1915, wherein he stated that "one sees plenty of elementary school buildings built or building that differ little from those for secondary schools." It appears desirable to check the tendency of local bodies to construct expensive buildings, and it is for consideration whether Dr. Lankester's suggestions may not be printed and communicated to all officers of the Educational and Public Works Departments and also to local bodies with the request that the suggestions contained therein should be given consideration ~~as far~~ as local conditions might permit.

It is understood that the preparation of a type design for elementary schools is now under consideration in the Public Works Department. That Department may perhaps be asked to consider Dr. Lankester's suggestions and ~~submit~~ ~~them~~ ~~as~~ ~~in~~ the preparation of a suitable design. It does not appear feasible to issue any further detailed instructions in the matter.

Page 22 of 24

6. As regards the medical inspection of hostels attached to the educational institutions, the Director states that it should be treated as part of the general question of the medical inspection of schools and that there is no particular urgency in the matter. In G.O.No.945, Home (Education), dated the 7th September 1916, Lieutenant-Colonel Donovan was requested to complete the medical inspection of the elementary schools in Madras City and to submit a further report to the Government. The Government have also expressed concurrence in the Director's view that the question of instituting the medical supervision of schools generally on a thorough scale should be deferred till normal financial conditions are restored. No further action is therefore necessary at present.

The suggestions at K's & L's overlap may be approved and the file sent to L.M. & P.D.D for remarks as to whether they agree.

At
16.1.17

L.M. & P.D.D.

26

17

Colno 3748-2/16



CM-102 Med

20-1-17

2004 (rev.) 044:

with reference to the suggestion of the
House (Edl.) Sept: at K on page 27 ante
it is submitted that as Dr. Dankester's
report has not yet been made public, his
suggestions can be communicated only
after it has been published. It is presumed
that Edl. will wait till then.

8
20/1/17

Edm Reple

Submitted that this defunct memb
may accept the proposal at 16 on page 27.
to communicate on date sheet on 28/1/17
to local societies, these suggestions
are explained in para 3 on pages 24 to
26 supra

22-1 26
22/1/17

V.TK
23/1

24 JAN 1911

$$a_{i,j}^2$$

Med. no. 624.

23-1-17

Si $\rho_{ND} \approx 0$

23

West
Wald

Dr. Lankester's report has been examined by the Consulting Architect and he notes as follows:-

"Dr. Lankester's report deals with schools all over India. His criticisms of existing institutions presumably apply to parts of India where severe cold is experienced as in the plains of the Punjab. He points out that the problem is to renew the atmosphere in rooms without causing draughts. So far as we are concerned in Madras Presidency (excluding Hill stations) the more draught we can get the better we are pleased".

"Generally I think that in Madras Presidency (in the plains) glazed shutters are unnecessary and undesirable in dormitories. Venetians are better. I do not think it is possible to over-rate the importance of Dr. Lankester's statement that where windows are glazed all calculations regarding cubic capacity and floor space per head are valueless if those in charge fail to realise the importance of fresh air.

"I do not think there is anything to criticize in Dr. Lankester's report. I believe his aims and advice are thoroughly sound, and that it ought to be easy in the climate of the plains in this Presidency to profit by his recommendations. In the Hills the problem is much more difficult. Open air schools and verandah class rooms are not feasible all the year round. Buildings must be dry which means they must have a good roof walls which will resist monsoon, and probably wooden floors, so that in the Hills I do not think it is practicable to build

"structures with a view to lasting only 40 years. But
"compliance with the general sense of Dr. Lankester's
"report, the provision of plenty of air and means
"for changing it, never ought to be forgotten."

The Chief Engineer agrees with the opinions
expressed especially on the point of ventilation.
With these remarks the file may be sent to Home (Edl.)
u.o.

4.6.18
Home (Edl.) uo

4.6.18

Home (Edl.) Dept

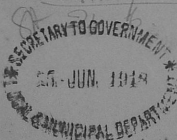
~~Dr. Lankester's report~~ In the
linked file a new and cheap design for small
elementary schools ^{adapting model} ~~according to~~ Dr. Lankester's
suggestions has been proposed.

2. Action has ~~there~~ now to be taken only
in respect of paper marked 'K' on p. 27 ante.
No action can, however, be taken ~~now~~ in this
direction until the publication of Dr. Lankester's
report - please see L.M. (Medical) note on p. 29 ante.
Submitted that ~~this~~ L.M. (Medical) Dept.
^{to state whether} ~~the~~ report has been
may be requested u.o. ~~if~~ published

Ca
21.6.18

22/6/18

Com (Ment)



L.M. uo 1410 Accl KN
25/6/18

37

dmh m/sy

h.s.

It is submitted that, as far as this Dept is aware, the report has not been published. It is for consideration whether the Govt of India may be asked when this will be done.

Please put up a draft letter

100
25/6/18

V.TK
26.6.

Draft submitted.

100
27/6

V.TK
27.6

see

28/6/18

p 23 CF.

Letter No 1000-7 m/sy 28.6.18

h.s.

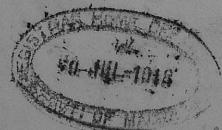
It will be seen from the newspaper cutting below that Dr. Lankester's report is only now being considered by the Scientific Advisory Board of the Indian Research Fund Assn. Its publication will probably take some more time.

The file may be returned to Home (Edn) Dept. with the remarks that the Govt of India's reply to the reference on p 23 CF will be forwarded to them on receipt.

100
19.7.18

V.TK
28/7

Home (Edn) u. o.



Ltr m/sy 1410-2 m/sy
20/7/18

CM-1929A. From the Govt of India, No 235
8/16.7.18.



p. 26 gcf.

The Govt of India state that the opinions of local govt on Dr. Lankester's report are still under consideration. Till the report is made public no action can be taken with reference to the suggestion at 'K' on page 27 ante. It is for consideration whether these papers may not be recorded, a note being made ~~here~~ in the Call book as to the further action to be taken. Callbook 1 Dec 1918

8/16
2.8.18

A
2/8/18 L

Muxy
3/8/18

Submitted that the L.H. (Med.) Dept may be requested to state whether Dr. Lankester's report has now been published.

8/16
7.12.18.
Hb
9/12/18

A
10/12/18

L to Muxy.

Home (Ed) in 3011 A-1
11.12.18

Ans 27/64 met
13-12-18
Hb
13/12

L and H (Medical) 12/12/18

Submitted that Home (Education) may be informed that no further communication has been received from the Govt. of India on the subject.

21 Nov. 02764-1 Indl
18-12-18



Home (Edn) Dept.

Submitted that the file may lie over till the beginning of ^{Feb.} ~~April~~ next.

8A
21.12.18.
MK
27/12/18

CA
6.1.19
L
LWS
7.1.19

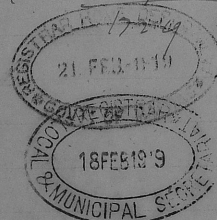
Submitted that the LTH (Res) Dept may now be requested to state whether the Sanskrit report has ^{since} ~~now~~ been published.

LTH (Indl) W. 02764-2
21.2.19.

8A
15.2.19.
MK
15/2/19

CA
17.2.19
L
LWS
17.2.19

Home (Edn) W. 311 A/8-2



Submitted that Home (Edn) may be informed that we have not heard anything further from India on this subject.

8A
18/2

W.C. Home (Edn) W. 20.2.19

Home (Estⁿ) Sept

Submitted that the file may ~~be sent~~ lie over till the middle of April next.

SK
21-2-19.

NY
24/4/19

A
25/7/19
W 26/2/19

x ~~of~~ ~~the~~

(R)

From the foot of India's letter ^{the 14: 2-19} ~~the 14: 2-19~~ it will be seen that ~~the~~ Lankester's report is not to be published. The proposal at 'K' on page 27 ante cannot therefore be adopted. The foot of India however state that Dr Lankester will bring out a popular handbook containing the results of his investigation as modified by the views of the local foot. The book will presumably contain suggestions in regard to the designing of school buildings. When the book is published, it may perhaps be brought to the notice of school authorities in the Presidency. No further action is necessary on this file.

and the papers may be recorded.

SK
17.3.19.

NK
19/3/19

CA
20/3/19

Has the D.P. I got a copy of
D^r Laukester's report (confidentially)?

NK
20/3/19

C. 950 (Medl)

31.3.19.

p. 207 C.F.

+ Key ①

It is understood
that a spare copy
of the report is not
available in d.H.
(Medl).
SK

SK
24.3.19.

NK
22/3/19

CA
24.3.19

I would furnish the D.P. I
confidentially with a copy of
the report for his personal use &
secure this file.

NK
25/3/19

Submitted that the d.H. (Medl)
Dept may be requested to
supply this Dept with a
copy of the report.

SK
25/3/19. NK
26/3/19

CA
27.3.19 Lommo



Ed. 3011 A-3
28.3.19.

NK
28/3

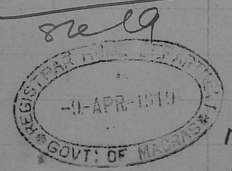
Only one copy of Dr. Lancaster's report is available in this office and it will be required for reference here. Govt of India will ^{therefore} have to be addressed if it is considered that the D.O.S. should be supplied with a copy. Home (Edn) may be informed accordingly. It may be noted that Dr. Lancaster is bringing out a popular handbook containing the results of his investigations as modified by the views of the Local Govts.

lgl
8.4.19

7-4-19. Home (Edn) u.o.

Vide Govt. of India letter at slip (R).

Dep. No. 82 950-1 Mnd.



Home (Edn) Sept

It is for order whether a copy of ~~the~~ Dr. Lancaster's report should be obtained from the Govt of India or whether it will be sufficient to furnish the D.O.S. with typed extracts.

8/4
9.4.19

May we not wait for the issue of the handbook?

11.4.19
5

Very well. This may be
Revised
12/4/19

FROM

THE HON'BLE MR. H. SHARP, C.S.I., C.I.E.,

Officiating Secretary to the Government of India,

TO

THE SECRETARY TO THE GOVERNMENT OF MADRAS, LOCAL AND MUNICIPAL DEPARTMENT.

THE SECRETARY TO THE GOVERNMENT OF BOMBAY, GENERAL DEPARTMENT.

THE SECRETARY TO THE GOVERNMENT OF BENGAL, MUNICIPAL (SANITATION) DEPARTMENT.

THE SECRETARY TO THE GOVERNMENT OF THE UNITED PROVINCES, SANITATION DEPARTMENT.

THE FINANCIAL SECRETARY TO THE GOVERNMENT OF THE PUNJAB.

THE SECRETARY TO THE GOVERNMENT OF BURMA, GENERAL DEPARTMENT.

THE SECRETARY TO THE GOVERNMENT OF BIHAR AND ORISSA, MUNICIPAL (SANITATION) DEPARTMENT.

THE SECOND SECRETARY TO THE CHIEF COMMISSIONER, CENTRAL PROVINCES.

THE SECOND SECRETARY TO THE CHIEF COMMISSIONER OF ASSAM.

THE HON'BLE THE CHIEF COMMISSIONER AND AGENT TO THE GOVERNOR-GENERAL IN THE NORTH-WEST FRONTIER PROVINCE.

THE CHIEF COMMISSIONER OF COORG.

THE CHIEF COMMISSIONER OF DELHI.

*Delhi, the 14th February 1919.*Department of EducationSanitary.

SIR,

With reference to the correspondence ending with your letter

76-Med., dated the 27th September 1918
 5764-148-confid., dated the 24th August 1918
 595-San., dated the 30th August 1918
 576-C, dated the 24th August 1918
 C-460-Med.-3 dated the 10th October 1918
 1332-16-X-5, dated the 30th August 1918
 11729-M, dated the 8th September 1918
 782-VI-23-4, dated the 2nd September 1918
 3322-M., dated the 26th July 1918
 821-S., dated the 31st July 1918
 2250, dated the 28th July 1918
 4540-Edn., dated the 30th June 1918

no. I am directed to forward for in-

formation and such action as may appear to ^{the local Government} _{the local Administration} desirable a copy of
 a memorandum by the Scientific Advisory Board of the Indian Research Fund
 Association on Dr. Lankester's Report on Tuberculosis in India.

[An extract of paragraph 10 of the report of the Inspector General of Civil Hospitals, Punjab, referred to in the memorandum is enclosed.]] not to Punjab.

2. I am to say that the Government of India have decided not to make the Report of Dr. Lankester public, but it has been arranged that he should bring out a popular handbook containing the results of his investigations as modified by the views of the local Governments and Administrations.

I have the honour to be,

Sir,

Your most obedient servant,

H. SHARP,

Officiating Secretary to the Government of India.

Extract paragraph 10 of letter no. 954-S. (Genl.), dated Simla, 31st July 1916, from the Hon'ble Colonel H. Hendley, M.D., K.H.S., I.M.S., Inspector-General of Civil Hospitals, Punjab, to the Officiating Additional Secretary to the Government of the Punjab.

* * * * *

10. In the Punjab we now have six Medical Inspectors whose duty it is to make a yearly inspection of all boys in Anglo-Vernacular Schools, to record their results on a card provided for each boy for the period of his school life and to give advice as to his future for the information of the school authorities and his parents. They also inspect and report on the sanitary condition of the school buildings and their surroundings. I have made tentative proposals for a similar examination of girls by Women Inspectors, but hitherto without success, mainly, I understand, because parents would not welcome any official discovery of latent or even patent disease which would damage the prospects of a girl in the marriage market.

I think later it should be found possible to utilize these Inspectors for giving lantern hygiene lectures in schools at the time of their visit.

MEMORANDUM.

The Scientific Advisory Board, after a careful consideration of Dr. Lankester's Report on Tuberculosis in India and the opinions of local Administrations on the Report, recognise that at present any large administrative measures cannot be framed to deal with the housing and other social conditions largely responsible for the prevalence of tuberculosis.

While no definite proof of the increase of the disease of late years in India are adduced in the Report owing to defective statistical data available, there is no question as to its extreme prevalence in India.

In their opinion any measures to be taken for the prevention of this disease can only be part of more general measures which require to be adopted to combat the spread of all preventable diseases—foremost among which they would place the education of public opinion and especially the training of the young.

(1) *Education.*—(a) Health teaching should be made compulsory in every educational institute from the primary school to the college. The Scientific Advisory Board feel that unless this teaching be made a compulsory part of a curriculum there is little chance of any real advance being made in combating the spread of the disease.

This would doubtless mean that one of the compulsory subjects would require to be dropped. In the primary schools a very simple course would be necessary, dealing with the value of cleanliness, light, air, etc.; in the college course, the essential facts about the most prevalent Indian diseases and a certain amount of elementary physiology and personal hygiene should be included.

2. For girls, domestic economy, nursing and the care of children might be dealt with in an elementary fashion.

They would like to see Hygiene and Public Health an optional subject for Matriculation.

The Board realise that the training of teachers in such subjects must be the first step to any real progress in this direction. They are of opinion that this matter should be taken up as soon as possible.

(b) *The education of public opinion.*

This would naturally take the form of lectures and demonstrations and issues of pamphlets.

The circulation of lantern slides of model lectures, drawings, etc., would help greatly to overcome the inertia which tends to prevent the starting of such instruction for the public.

The gradual enlightenment of the public as to the dangers of indiscriminate spitting, to the value of fresh air and abundant light in the prophylaxis of tuberculosis, in methods of house construction so as to furnish cheap and sanitary dwellings for the poor, may be expected gradually to evolve a public conscience in these matters. The present methods of housing the large bodies of population in cities, for example, may be expected to improve under the pressure of an enlightened public opinion.

State inspection.—This would take the form of medical inspection of scholars in schools and colleges and possibly of much more detailed inspection of operatives in factories. The great benefit of such inspection to the health of the child community has been thoroughly recognised in Great Britain; there is no question of its value. The difficulty in India is dependent upon the present paucity of medical officers; their want of training for this particular type of work and the initial cost of instituting such measures. A beginning might be made by training Assistant Surgeons and Sub-Assistant Surgeons and thereafter allotting this duty of inspection and report to them as part of their routine work.

The Board wish to direct attention to what is being done on a small scale in the Punjab for Anglo-Vernacular schools *vide* paragraph 10, page 81 of the Report of the Inspector General of Civil Hospitals, Punjab, on the "opinion of local Administration" on Dr. Lankester's Report.

3. The Scientific Advisory Board desire to make a reference to the danger of concentration of tuberculous subjects in or around Hill Stations—to the very great danger of existing populations. It would appear that special powers are required by Hill Station municipalities to prevent the development of this danger in their midst by the thoughtless and unscrupulous action of patients or their medical attendants. The chief danger here is that of concentration of massive infection within confined limits. Legislation on such lines is under consideration by the Government of Bombay, *vide* paragraph 9, page 19, "opinion of local Administrations" on Dr. Lankester's Report.

4. Special tuberculosis wards in Hospitals for the treatment of advanced phthisical cases are very desirable, but it must be realized that at present much difficulty is likely to be experienced on persuading such patients to reside therein except for very limited periods.

The development of tuberculosis dispensaries should be encouraged. They require suitably trained men and women to officer them. The tendency in Great Britain seems to be more and more to have recourse to the dispensary as a cheap and efficient means of affording treatment for the affected and of distributing information on the subject of the precautions essential to protect a household harbouring an infected person.

They consider every encouragement should be given to philanthropic enterprise to erect Sanatoria under proper safeguards for the protection of surrounding populations. They however desire to endorse the opinion expressed in some of the "notes" that the sanatorium, as distinguished from the hut shelters, is for the rich and even then for only a small fraction of the affected.

Further, the subject of Bovine tuberculosis merits further study.

Extract from a report on tuberculosis in India by A Lankester
M.D., London.

Chapter IV.

Educational Institutions and the spread of tuberculosis.

It is an unfortunate but undeniable fact that educational institutions must bear a considerable share of the responsibility for the spread of consumption amongst children and students in India during the past half century. While education has been doing much to diffuse amongst the people the knowledge of better ways of living, yet the institutions and methods connected with education have not always been above criticism and - for those who have had eyes to see the clearest danger signal, warning of error either in institutions or management, has, in many cases, been the insidious spread of consumption amongst the inmates.

Western education came to India at a time when the causes of consumption and the nature of its infection were nowhere understood and when the special dangers inherent in bringing large numbers of children into close contact with one another were most imperfectly realised. Had the establishment of schools, colleges and orphanages been delayed until the present time when the proper relation between the training of the mind and that of the body is beginning to be fully understood, and when the value of fresh air and physical exercise is recognised on all hands, there might have been no cause to connect the work of the school master with the spread of consumption.

There are some who will roundly question the grounds for anxiety or the necessity for any change, who believe that even as it is worst the school is better than the home, and that any prevalence of tuberculosis that may have been noticed in school children is due almost entirely to infection from their own homes. To these I would only reply that any who speak thus must be ignorant either of the conditions in very many schools or of the normal prevalence of the disease in the general population.

The great majority of the institutions visited in the course of

my tour were wholly admirable, providing for their inmates health conditions uncomparably better than they would obtain at their own homes. There were however a not inconsiderable minority regarding which the report would be given, and given without any sense of stating what was exceptional or specially calling for consideration that not more than one, two or perhaps three pupils had died from consumption during the past year and this in schools of from 80 to 200 scholars.

In order to ~~xxxx~~ understand the seriousness of figures such as these it is necessary to inquire as to the normal frequency of deaths from consumption amongst children in our cities. Selecting Lahore as a city where the prevalence is somewhat extreme we find that, out of a population of 210,271, there were in 1913 a total of 630 deaths from tuberculosis; and further, that out of this total number only 114 ~~xxxx~~ were children below 15 years of age. From these figures taking 365 as the number of children below 15 years of age in each 1,000 persons, a simple calculation gives the death-rate per mille of children below that age as almost exactly 1.4. This means that if in an institution containing 1,000 children, 3 died of consumption in every 2 years this might be regarded as reflecting the mortality from the disease in the general population. Even then, however, it would be the duty of the head of the institution to make further efforts, as many are doing with success, aiming at reducing the mortality of the institution to a figure below that of the children in cities. If then in any institution containing say 100 inmates under 15 years of age there have been 3 deaths from consumption within 2 years, it would seem that this represents a mortality almost exactly ten times as great as ~~xxxx~~ that found to exist among the children of a similar age in one of the great cities where the disease is rife. Far more serious even than this heavy mortality is the degree to which infection must take place amongst the remaining inmates under the conditions of intimate intercourse afforded by most of the institutions under notice. The records of the after history of the children who have been at such schools show all too clearly that

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5.
that the toll taken by the disease is not limited to the number of these who die during childhood.

The facts stated in the above paragraph, I hope, justify my entering with some detail into the subject of the prevalence and causation of tuberculosis in educational institutions, and in doing so I shall naturally confine myself to those aspects of the subject and to these particular classes of institution which have seemed to me ^{to} possess special connection with the question under inquiry.

It is not easy to separate the subject into sections since the general effect of the present educational system is the resultant of a variety of causes which ^{act} are not separately but in combination. It may however conduce to clearness if we attempt to deal in succession with certain of the outstanding possibilities of harm from the tuberculosis standpoint as they have forced themselves upon my notice during the inspection, of a large number of educational institutions of all kinds and grades throughout India. May I add that for the large majority of these seen there could only be unqualified praise; the undoubted need in many other cases for modifications in methods or plant must be my excuse for mentioning their defects in some detail.

1. CHANGE OF ENVIRONMENT.— The fact needs to be more clearly recognised that the contrast for an Indian child who leaves home to go to a boarding school, is incomparably greater than that which obtains in the case of a European child. In the latter case the whole regime, the ordered hours of work and meals, the discipline, merely represent a certain "tightening up" of the routine of life as at home; in the former it means an almost complete reversal of all previous experience.

A somewhat close acquaintance of the conditions of the Indian life is needed to enable one to realise the extraordinary freedom of a little child's life at home. The laxity of discipline, the absence of strict rules as regards times of rising, of going to bed, or of meals, the frequent opportunities of obtaining food between meals, the general freedom from restraint, are such as to greatly accentuate the degree of change of environment involved in the sudden plunge into life in a boarding school managed on Western lines. It is not

my purpose to criticise either regime. They both have their special points of advantage; what I would urge however is that the sudden change of environment calls for most understanding and sympathetic treatment on the part of those who have the charge of such little ones.

Tuberculosis is the disease which more than any other tends to come to the fore as the consequence of this somewhat sudden change in the conditions of life. There is an instructive analogy in the case of monkeys and certain other wild animals who in spite of the comparative freedom of their life when in ~~samany~~ captivity in well appointed zoological gardens, yet need the most scrupulous care to protect them from dying of consumption. The fact that children are often able to be more in the open air when at home than ^{when} at school, in this change of environment tending towards tuberculosis. These ~~various~~ various factors will be dealt with later on under their special headings. It is the resultant of them which suffices to produce in the unstable frame of the growing child just that loss of elasticity with diminution of vital power to resist disease, which prepares the way ~~for~~ consumption, whilst the aggregation of many children in the one institution brings with it the possibility of infection.

It is in the case of orphanages, more especially those which have been suddenly established as a sequel of famine scarcity, that the results of such change of environment are most clearly to be seen and where the most far-sighted precautions are required. In such institutions it is only to be expected that there should be a certain amount of sickness and death at first owing to digestive disturbances set up by the preceding starvation conditions. But as regards the sickness which follows later, and which has so frequently taken the form of epidemics of tuberculosis, I urge that the time has come to abandon once and for all the time-honoured explanation of "constitution ~~undermined~~ undermined by hardships in early childhood" and seek for the cause in the institution itself.

There are orphanages where not a single case of tuberculosis

ever occurs, and there are others where it has been a decimating scourge, and the reasons of the difference are seldom hard to discover.

To sum up these general observations; what is to be remembered is that the element of change itself is in young children fraught with the possibility of danger and that we do well to keep under careful restraint our ardour for the immediate correction of habits of life (connected e.g. with time, food, or clothing) which may seem objectionable or even evil, avoiding sudden breaks of continuity and bringing in gradually and softly the reign of better things.

2. SCHOOL BUILDINGS AND OVER-CROWDING.-As regards educational buildings in India one is struck by the very wide difference between the two extremes of the scale of excellence. At the one limit there are palatial buildings erected with lavish expenditure of money and with arrangements comparable with school and college buildings anywhere in the world. At the other end of the scale, however, we have schools by the hundred or even by the thousand of which the conditions are most unfavourable, and which in a Western country would not be tolerated for a moment.

Speaking generally with regard to the financial aid given by Government for school-buildings it is very true that "to him that it shall be given." For many of the high class institutions whose arrangements are modern and whose plant already expensive, money of recent years been poured out so abundantly as almost to tax the spending powers of those in responsible charge, and it has rarely been difficult to obtain funds to raise them to some higher pinnacle of perfection. For the less fortunate institutions, however, good work is being done under less favourable conditions, the smaller amounts which would raise them to a moderate level of educational or sanitary efficiency are often with difficulty obtaining.

In planning buildings where a large number of children are to be accommodated it is necessary to bear in mind that the crowding together of a number of children into a close and confined space involves of necessity two dangers:-(a) that of infection by great numbers of other diseases, such as diphtheria, which if it is to be successful must involve what of lessening the vitality of the children themselves.

resistance to disease.

The one main safeguard for both these risks is in the provision of fresh air in abundance, and the necessity of this is greater in proportion as the children have been more accustomed to being in the open air at their own homes.

In a vast number of cases this fundamental need has been and is still simply ignored. In the earlier days of education in India, the principles underlying ventilation and the spread of disease were unknown, and school-buildings were designed with a view to protection from the extremes both of heat and cold. The best means was isolation from the outside air. Hence the thick-walled mud structures in the Punjab with their impervious roofs and small windows, or the still more objectionable old-fashioned school buildings in the United Provinces and elsewhere, with their immense roofs of thatch sloping low down to the verandahs and rendering efficient ventilation or lighting almost impossible. It is very true that an immense number of such schools have been modified, or have been rebuilt on modern hygienic lines, but it is no less true that multitudes still remain which are an obvious source of danger both to teachers and taught.

As a typical instance of the sort of buildings alluded to may mention a girls' boarding school containing 150 girls. I found two rooms each 16' by 16' by 12' both of them used as class rooms all day and as dormitories at night, when they were occupied by 50 children each, all sleeping upon the floor. Until quite recently both shutters and doors were kept closely closed at night time, leaving four small oval apertures provided for ventilation, 10 feet from the ground. The roof which was but impervious. Cubic capacity 115 c.ft. per child; floor area 9.6 sq.ft. per child; lateral ventilation comes through shut 6 sq.ft. for 50 children. Another dormitory of 30 children accommodating 40 children. Here also all shutters and doors were kept carefully closed at night time. Cubic capacity 10 c.ft. per child; superficial area 8 square

So much for boarding schools. As for day schools, there are thousands of these in India, especially primary ones in villages, where the limit of accommodation seems to be literally the physical impossibility of crowding more than a given number of human beings into a fixed space. In one such school there were 50 children and 2 teachers in a room 16' by 12' with no window, and only the doorway for light and ventilation. In another the school room measured 13' by 11' and here again the average number present was 50. Both these rooms were approximately 10 feet in height, so that the former instance gives a cubic space of just under 37 cubic feet per child and a superficial area of 3.69 square feet, while in the latter case the cubic accommodation works out as 28.6 cubic feet and the area at 2.3 square feet per child. The British Board of Education gives a minimum superficial space for class rooms, 9 square feet for infants, and 10 square feet for older children.

As to these unsatisfactory buildings there are those whose responsible heads realise and deplore the defects in their institutions but plead the lack of money needed to remedy them. This would seem to call for an arousal of a fresh opinion amongst educational authorities, missionary societies, other teaching organizations and leaders of Indian thought in the directions of:-

- (a) A more equitable distribution of the funds available for educational purposes, aiming at a higher level of average efficiency.
- (b) A clearer recognition of the heavy responsibility resting upon those who attempt to educate the young whilst neglecting their physical development and well-being.
- (c) Most important of all, a thorough-going revolution in many ideas commonly held as to the most suitable lines upon which school buildings should be constructed.

There are however very many schools which remain unimproved because those who are in charge of them entirely fail to realise the need for alteration. Again and again excuses such as the following are made:--"What has been good enough in the past is good enough now." "A certain amount of sickness from time to time is only to be expected and such cases of consumption as occur have almost all been due to home infection." Here the need surely is for a great campaign of education in the elements of practical health knowledge which if it is to be successful must begin with the educationalists themselves.

such a campaign for the ^{dissemination} ~~discussion~~ of knowledge will not mean the addition of a few subjects to an already over-burdened curriculum; but it will mean the creation, first in the teacher, then in those under his influence, of a new appetite for those conditions--fresh air, light, cleanliness--which are available to all, and the value of which, once realised would work revolutions both in schools and homes.

It would be doing the greatest possible injustice to those responsible for Indian education, if I failed to acknowledge the enormous progress that has been made of recent years as regard improvements in school accommodation. Everywhere new schools and colleges have been erected, a large proportion of the old established institutions have had their buildings completely renewed or greatly modified, and in practically all cases the new have been immeasurably better than the old, from the hygienic as well as the educational point of view.

Have we however as yet attained the ideal as regards buildings for educational purposes? I would humbly express a negative belief and would venture to suggest that higher efficiency might be obtained with far greater economy, thus leaving money available for the primary schools where the need for improvement is so urgently felt.

My own hope is that, with the exception perhaps of the great provincial colleges, we have reached the maximum limit of expenditure upon school buildings, and that the future tendency will be rather in the direction of less expensive, less substantial, but far more airy structures, in the building of which the aim will be the attainment as nearly as possible of open air conditions so far as may be compatible with educational requirements, the security of person and property, and a protection against actual inclemency of weather.

In the construction of the present day school buildings space and money have gone hand in hand. Careful calculations are dictated exactly the correct amount of superficial area of cubic capacity for each child together with the area of ^{itself} ~~it~~ space for ventilation. It is estimated a child requires

not less than about 1,500 cubic feet of fresh air per hour, and the problem of efficient ventilation is to secure this by constantly renewing the atmosphere without at the same causing violent currents of air which will have the chilling effect of "draughts".

The best authorities give the amount of cubic air capacity required in school rooms during hours of work as 150 cubic feet per child with a superficial area of 10 square feet, while it is reckoned that the capacity of dormitories should be not less than 250 cubic feet per child, with a superficial area for each one of not less than 20 or 25 square feet. Such figures as these however are based on the assumption that the ventilation arrangements are such as to ensure the constant and automatic renewal of the air in the rooms.

The immediate result of standards such as these is that a large number of school authorities, finding the immense disproportion between the new standards proposed and the previously existing conditions, frankly express the impossibility of even approaching them and their schools remain in statu quo. On the other hand those who feel that the dictates of science must be obeyed without question where health is concerned, have regarded the heavy expenditure as inevitable, and thus the fashion has been set of the present style of school building, heavy and substantial in construction with lofty halls and class-rooms, fitted to be a lasting memorial to their promoters, but at the same time a heavy burden upon the local finances.

Furthermore, since the windows in such institutions are always carefully glazed, all the elaborate calculations regarding cubic capacity and ventilation fall at once to the ground, if those in charge of the class rooms or dormitories fail to realise themselves the value of fresh air. While acknowledging that in this respect also great and rapid improvement is apparent, yet even now it is very common to go into a crowded class room where windows are sufficient, and to find them all closed. The experience has recently been not at all an uncommon one--in visiting both schools and hospitals--of being conscious of a chaprasi having been despatched in advance to make all ready in this respect.

In advocating a less substantial style of architecture for school buildings it is not the ordinary Indian conception of a light and airy structure which I would praise; "wattle and daub" with a

framework of rough untrimmed timber, of which the work as well as the materials are alike "kutchas" and in constant need of repair. A lightly built structure needs the best of materials and the best of workmanship if it is to be lasting, and if even so it be objected that it is not so permanent as the stone or brick edifice, I would reply that in India at all events permanence beyond a certain limit is not an advantage. Conditions are changing so rapidly that in the case of ordinary schools a lifetime of say 40 years is in my opinion quite sufficient to aim at. As with cities so with public buildings, it is the heavy stone structures which often block the way of progress. It goes without saying of course that for schools which are to last for 40, instead of 80 ~~years~~ ^{years} the need for economy in building is all the greater.

So may we not hope to see--as now on all sides in Western countries--the lighter building materials used for Indian schools iron, not in heavy girders but in light framework and sheeting, asbestos tiles and sheeting, lath and plaster panelwork and light well-sawn timber. In villages where the climate admits of materials like bamboo, rush, straw, or matting, the difference which might mark well mark off the school building from the ordinary village hut would be that the former would always have a pucca floor, while the walls and roof of matting or thatch, admirable from the point of ventilation, would be kept in place by a light framework of angle-iron instead of the usual poles of bamboo or rough timber, (see the photos, page 126). The increase in expenditure is far more than compensated for by the additional permanence and tautness of the structure.

What I am anxious to see is the popularization of such a style of architecture for schools as shall lend itself more naturally to the open-air regime both for teaching and for sleeping, which is so rapidly forcing its way into the best of our educational institutions.

In future school planning, calculations as to cubic capacity and even many of the present ideas as to scientific ventilation will assume less and less weight and will, I believe, gradually be relegated to the past, while the aim will be to

make the atmosphere within doors as far as may be, one with the atmosphere without, not cautiously admitting outside air into rooms purposely built large so as to obviate the chilling draught, but flooding rooms and dormitories with fresh air from outside in such abundance that the thought of draught does not arise. It will be objected that there will be danger from cold and discomfort from heat. But if in England and North America ^{such} open-air schools are possible, surely they are far more so in India where the really unpleasant weather is usually concentrated into two months of the year and can be for the most part avoided by careful arrangement of holidays. As has been already pointed (see page 75) the excessive heat of the Punjab is not less, but far more easily endurable in a space so open as to admit of the freest possible circulation of the air.

In the actual detail planning of such open-air schools local climatic conditions will naturally need consideration more than in the case of ordinary brick and stone buildings. There are numerous books on the subject of open-air schools in Europe and America, and in these there will be found plans and illustrations showing how difficulties of rain, wind, light, etc., may be met. In districts where dust storms are very frequent, it may be necessary to arrange for the complete closing ^{of teaching} rooms when necessary but this need not prevent the school being so built as to admit of open air teaching as a routine practice.

In very many schools of the prevailing type where the number of scholars has largely increased it has become the regular custom for the junior classes to be accommodated on all but very rainy days in the verandahs, which themselves are often badly suited for the purpose, being exposed to wind and glare. Why should not the verandah type of accommodation become the normal one for all junior classes, class rooms being reserved for the senior classes who need more apparatus. The verandah would then naturally be expanded into a spacious roofed area, sheltered by the school building proper on the side of the prevailing winds, and divided up, if necessary into spaces for separate classes. Since almost everywhere verandahs are already used for class room purposes why not build them accordingly, and secure the great advantage which comes from purposeful adaptation?

12.
As regards village schools especially I would urge this system of building for fresh air. Everywhere one sees Indian masters showing their appreciation of the advantages of the open air by holding their classes out in the school compound whenever conditions permit, but how seldom does one find deliberate building of shelters as distinguished from closed school-houses. In choosing the site for village schools how often is the priceless value of the shady tree overlooked, while, given one closed room for office purposes and necessary furniture, it is probable that in very many of such schools the best possible teaching accommodation would consist of broad "lean-to" verandahs or shelters, arranged so as to give the maximum protection from sun, wind, and rain.

It is true that open-air teaching has ^{the} one objection that it may render mind concentration and attention more difficult. This may explain part of its popularity with the scholars and most of its unpopularity with the ordinary educational authorities. It is usually however not difficult to make arrangements such as will secure ~~from the outside world, while the gain in health and mental freshness for the children is far more than commensurate with any loss in educational efficiency.~~ for the separate classes some measure of isolation from each other and from the outside world, while the gain in health and mental freshness for the children is far more than commensurate with any loss in educational efficiency.

At Sakhi Gopal, a well-known pilgrimage centre near Puri, there is an institution, the Satyabadi High School, established five years ago, on philanthropic lines by a body of earnest young Hindus. Three years ago the main buildings were destroyed by fire, and ever since this time all the teaching for 9 months of the year has been carried on in the open air, to the great satisfaction of teachers and students, which latter number 540 boys. The classes which are held in a large grove of beautiful spreading trees, are completely isolated from each other by thick shrubs, winding footpaths leading from class to class. The boys sit on rush mats on the ground, with their books upon very low benches in front of them (see page 104). The dining hall is a broad cheaply built "lean-to" verandah entirely open

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to the air along one side. The dormitories were built to accommodate 6 students each and measure 22' by 10'. A block of ten such rooms accommodating 60 boys cost only Rs. 600. Not a single case of consumption has occurred in the school since its commencement.

It was difficult not to view with great regret a large two-storied brick building of the ordinary type now being erected at a cost of some Rs. 12,000 apparently as a necessary sequel to affiliation with the Calcutta University. If the new building tempts the masters away from the open-air we shall hear of consumption cases at Satyabadi as in other schools. At the village Boarding School at Bolpur, of which the famous Bengali poet Sir RabinDRAMATH Tagore is the presiding genius, the same simple open-air regime is as far as possible adopted, only there in the absence of spreading trees most of the teaching is done in verandahs. Sir RabinDRAMATH Tagore himself was enthusiastically in favour of the effect of open-air education both on the physical and the mental development of his students.

Surely education under such conditions is more in keeping with the traditions of an Eastern country and it would seem that general tendency on the part of educational authorities up to the present has been in favour of the more or less closed buildings. I have heard of Inspectors who have actually forbidden classes to be held in the open-air.

For schools where plenty of money is available, it is easy to obtain in infinite variety, adjustable shutters, partitions, and windows which will ensure protection against the elements whilst affording open-air conditions whenever possible. For buildings of a simpler kind it would in many climates be quite suitable to have the walls only reaching partly to the roof, which latter, overhanging so as to afford protection against rain is supported upon iron timber uprights. We have thus in fact a glorified imitation of the healthy type of mud huts seen in many village districts of India where the sloping roof, usually of country tiles is supported by a bamboo frame-work; the walls of mud being filled in later, reaching to the level of the roof.

For schools in villages and small towns where it is desired to have open-air conditions together with protection from weather when necessary it would seem that the use of the tripple horizontal shutters or "bastas" so often used in the shops and front rooms of Punjab houses would be suitable. These shutters which normally rest hidden upon a ledge above are lowered successively when needed much after the manner of the windows of railway carriages. They are simple, do not get out of order and could easily be lighter than those in ordinary use.

For dormitories, especially in those for girls the necessity of protection against intrusion must be provided for. In rooms of the style mentioned above whose walls are only partially built up, the space above can easily be protected by iron bars or open work of some kind or other. In most of the larger schools the dormitories are on an upper storey when the problem is simple; when such upper storey dormitories have broad spacious verandahs, the conditions are ideal. All over India there are scattered schools whose principal glory in the fact that all their scholars sleep in the open air practically all the air round, and whether in the warmth of the south or the bitter cold of the Punjab winter they never complain of chills and rarely catch cold. On the other hand in schools tenfold more numerous, those in charge are afraid of the risk:—"The children catch cold as it is; what would it be if we did not take care to keep them in the warm at night?" I was at a school recently where over 200 pupils slept at night inside rather crowded dormitories because the principal shared the common belief that the north wind causes paralysis. The only ground for the belief seemed to be the case of a single child who had suffered several years previously from paralysis apparently of the ordinary convulsive type, which the relations had attributed to sleeping in the north wind.

Of course common sense is needed. For those sleeping in the open air bed clothes must be given more generously; In the case of the children it is better to depend on very warm night clothing as they are apt to throw off their bedding. In almost all cases protection

protection from dew is needed but any such protection is sufficient for this; while if there is wind, or the air is unprotected head is feared, woolen balaclava caps are cheap and comfortable. There are in some parts especially in South India, special prevailing winds, sometimes from the sea, sometimes from the land, sometimes over rice fields, which have a local evil reputation as causing disease. In almost every case the real factor of danger which needs guarding against, is change of temperature, and this can be done by care as regards bed clothing.

In many schools the spacious flat roof could without any very great outlay be converted into magnificent open-air sleeping accommodation by the addition of a light roof upon iron uprights, and with suitable protection on the "weather" aspect.

Scarcely anywhere are the conditions under which education is carried on more unfavourable than in many of the day-schools for little girls in crowded cities. On account of considerations of purdah such schools are as a rule held in houses in the bazaar, and as these are usually only rented for the purpose, no attempt is made at even adapting them to the purpose for which they are used. Dreadfully overcrowded, with mud floors continually rubbed into dust by the movement of the children, a proportion of whom will frequently be found to be suffering from tuberculosis these schools in many most urgently called for improvement. It would often be in the power of local authorities to obtain such buildings on lease or the purchase, and with comparatively little expense to fit them for the invaluable work for which they are needed. Even a layer of lime greatly in place of the usual worn out chital would annihilate the present dust.

To conclude this rather long section I do not advise the impossible, or suggest that existing school building should be scrapped and rebuilt. I do urge however that the open-air advocated may be borne in mind in future projects for new or enlargements of existing ones, and that Government officers in general, and educational authorities in particular, may in the most possible way that they view with favour the tendency to or Western type of school buildings with which the efforts.

For some time have been in the past associated, and I revert to the more open style of architecture of which the audience halls of many an old Indian palace present such excellent examples.

In the volume of descriptive illustrations of Educational Buildings issued recently by the Indian Education Department, I looked in vain amongst the illustrations of above 140 institutions, and throughout the letter press, for any hint regarding schools of the type which has been suggested above.

Note. Since writing the above I have received from the Honorary Secretary of the Satyabadi school, Mr. Gopabandhu Das Das of Puri, the following extracts from the remarks of the Divisional Inspector, dated the 30th March 1915:-

"The classes are still held out of doors and under the trees of the garden, an arrangement which is not only picturesque but also sensible and healthy. The rains will put a temporary stop to this, and the school will have to take refuge indoors. An ambitious school house is in process of construction. It is a pity that the building does not harmonise better with the general open-air idea of the school. I am sure that if the authorities of the school had anticipated the chorus of approval which this project has elicited from inspecting officers they would have devised a school house which could have been completed by now with the outlay already made and which would have sheltered the boys without depriving them of air. The scheme has advanced too far now to be altered. However, a valuable lesson has been learned from the experiment here made. It is clear that a high school in India can be efficiently conducted through the greater part of the year in the open-air provided it possess a piece of land shaded by plenty of trees. And it appears that for use in the mind a building of the simplest description, consisting mainly of roof and partition walls is all that is required. It is strange that it has been

taken

taken so many generations to make this discovery.

The dining hall is suggestive of the manner in which the school buildings might have been designed; the front of it is entirely open to the outer air."

I have quoted this extract as giving confirmation on the part of an educational authority to the views which I have ventured to put forward above. Two or three sentences, however, from the covering letter of the Secretary will show that in all its initial stages this experiment has been made not as an outcome of the progressive educational policy of those in authority, but in fear lest it should be prevented by other opposition:-

"The open-air system at Satyabadi is not a virtue of necessity;

it was in my mind from the very existence of the institution and the situation of the place for the school at Satyabadi in the midst of beautiful and picturesque groves was not at all accidental. But from the very beginning I was apprehending objections to the system from the department, which is almost relentless about buildings and other equipments as requisite conditions for the efficiency and maintenance of a school. Before the destruction of the old school house by fire we used to hold our classes in the garden for the most part of the year except on the occasions of visits from inspecting officers. When the old house was burnt down the pamphlet you refer to was written with a view to raise funds for the construction of a new building to satisfy the requisitions of the University and of the department. So in order to induce the people to open their purse we had to make out the necessity of a building in clear and emphatic terms. I am almost sure the school would not have obtained recognition had we persisted in our open-air system without having a building for the compliance with the conditions of the University.

The next thing to which I should like to draw your attention is our hostel system. You perhaps remember that the rooms in our hostel are made up of mud walls with straw thatching. They are simple huts, so to speak, but quite airy and tidy and are made more with regard to what our boys have at home than what they have in hostels set up in towns. The Director of Public Instruction has approved of it. He says:-

"These blocks (of the hostel) are of the simplest description. The Secretary wisely remarks that he does not wish the boys to be brought up in expensive surroundings which might only make them discontented with the conditions in which they are likely to have to pass their lives."

To make education cheap and efficient, the object which we have always in view, we have devised this simple, natural and healthy system in the arrangements of classes and hostel. This is also in perfect keeping with our ancient system. But any departure from the traditional course laid down by the department has to be introduced very cautiously and with due regard to the wishes and opinions of the authorities."

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