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REPORT UPON THE INCIDENCE OF TUBERCULOSIS AMONG RESIDENTS OF PIETERMARITZBURG.

(I) Subjects of Statistical Enquiry:-
(a) To discover the incidence of Tuberculosis, Pulmonary and Non-Pulmonary, in Pietermaritzburg.
(b) To compare that incidence with that obtaining in other cities.
(c) To discover the age incidence, the sex incidence, and the district incidence, of deaths from Tuberculosis.

(II) Notes on the known facts regarding Tuberculosis and its spread.

(III) The findings of the statistical enquiry and the conclusions that may be drawn from these findings.

(IV) The duties of a Local Authority with regard to the prevention and treatment of Tuberculosis.

(V) The action now being taken by the Municipality of Pietermaritzburg.

(VI) The further action that would appear necessary, and the lines such action should take.

(VII) Conclusions.

(VIII) Recommendations.

(IX) Tables.

1. SUBJECTS OF ENQUIRY.

(a) It is a recognised fact throughout the Union of South Africa that the notification of cases of Tuberculosis is incomplete. Several factors lead to this failure, and among them the most important would seem to be -

1. The difficulty of exact diagnosis in early cases where X-Ray examination, Bacteriological examination, and expert medical opinion are not available.

11. The lack of appreciation, especially among uneducated persons, of the danger of Tuberculosis to their fellow-beings, and a lack of knowledge of the early signs and symptoms of the disease.

111. The rapidity with which non-European cases, arriving at the Hospital in the last stages of the disease, die; with the result that such cases are shown first on the death returns and notifications allowed to lapse.

Though other Infectious Diseases are fully notified to this Department the notifications of Tuberculosis are so incomplete in Maritzburg, as will be seen, by comparing Table Vl. with Table 111, that they serve little useful purpose for this enquiry.

The Death Returns provide the only satisfactory evidence as to the incidence of infection here; but it must be appreciated that these underestimate the actual number of infected cases present in the Borough at any one time since, among Europeans proper treatment brings relief and saves lives, while among Natives there is a marked tendency for those sick in the town to go home to their kraals to die.

The Death Rates probably underestimate the incidence of Non-Pulmonary Tuberculosis more than Pulmonary Tuberculosis, since the latter is much more frequently fatal.

(b) For purpose of comparison, Tuberculosis Death Rates are given in Table 11 for Great Britain, the City of Liverpool, the Union of S.Africa, Durban, Johannesburg, Capetown and Bloemfontein.

(c) The various returns with regard to age, sex and district incidence are shown in Tables III and 1V for Pulmonary Tuberculosis. So few deaths from Non-Pulmonary Tuberculosis have occurred that similar tables for deaths from this cause have not been prepared.

11. TUBERCULOSIS.

Tuberculosis is an infectious disease caused by the Bacillus Tuberculosis. These bacilli are widely spread in nature, and various types have been discovered of which the bovine and the human tubercle bacillus are those mainly affecting man.

The Bovine tubercle bacillus may be contained in milk from tuberculous cows and in tuberculous meat; with strict inspection of meat in the Abattoir and the eating only of cooked meat there is little spread of infection in Pietermaritzburg through meat. But tubercular infection through milk is common in some parts of the world. Infections due to the bovine bacillus usually take the form of non-pulmonary lesions, such as of glands, bones, joints, etc.. Bovine tubercle accounts for rather less than 1.5% of phthisis (pulmonary Tuberculosis) cases.

The human tubercle bacillus is frequently present in the sputum of persons suffering with Phthisis. If such infected sputum is repeatedly ejected onto the the floor of a room and allowed to dry or if quantities of it dry upon handkerchiefs, the air of a room may at length, be sufficiently impregnated to become dangerous to healthy people breathing it. From the floor and walls of rooms formerly tenanted by phthisical people Dr. Cornet obtained bacilli by the inoculation of which he produced tuberculosis in healthy animals; the deadly influence of deficient ventilation in workshops, factories, offices, etc., will therefore be appreciated.

There are various factors leading to tubercular infection, though the presence of the tubercle bacillus is always essential - Among these are-

1. Constitutional Liability - there is a definite "tubercular diathesis" or rendering of the soil of certain family constitutions more suitable for the growth of the bacillus than others. So that one person who has this hereditary predisposition when infected with a suitable dose of the tubercular infection, may succumb when his more fortunate and less liable fellow-beings escape. Primitive races like the Red Indians, Australasian Natives, and the Zulus, who have hitherto been free from tuberculosis, show a very high mortality when exposed to infection by contact with civilised communities; while there is a much greater relative power of resistance found among Europeans.

11. Climatic Causes. Phthisis flourishes in every climate but wherever the population is scattered and leads an open-air life, there the disease is less frequent. Wherever overcrowding is rife, and the evils of civilisation are apparant, there it is more common. But certain climatic factors are of importance - (a) Phthisis is less frequent at high altitudes; (b) Dampness of soil - the Phthisis death rate rises with the dampness of the subsoil, and, conversely, the rate falls as the subsoil is dried by improved surface drainage.

111. Social Conditions - Phthisis is essentially a scourge of what we call civilisation. It has well been said that "the varity of Phthisis among nomadic tribes and aboriginal races in all climates, its prevalence in industrial, as compared with agricultural localities, point to social rather than to climaticinfluences as predominant in the æ tiology of the disease. All the depressing conditions of life - anxiety, mental strain, disappointments, poverty, bad sanitation, overcrowding, alcoholic excess, debauchery - are crowded at the centres of civilization".

Overcrowding and deficient ventilation, deficient supply of food, exhausting work, and excessive indulgence in alcoholic drink - all these have been proved to be important factors in the spread of tuberculosis. The sources of infection then, are infected sputum, articles freshly soiled with infected sputum, discharges from any tuberculous lesion; infected milk, butter, cheese, dried sputum, dust or other infected material. And the modes of infection are by inhalation, ingestion, or inoculation of the germ; usually through the mouth/

mouth and nose, from personal contact w. th an infected person especially through sprayed saliva containing the germs in over-crowded, badly ventilated rooms. Infected food utensils, pipes, toys, drinking cups and even kissing may thus spread the inf ection, while flies cannot be acquitted.

LII. FINDINGS FROM STATISTICAL ENQUIRY.

Pulmonary Tuberculosis.

(1) Notifications - Table VI Only 73 Pulmonary cases were notified, as compared with 205 deaths registered, among residents during 1927-1932.

(2) Death Rates. Table 1 and Chart A. The death rate for Europeans has steadily fallen from 0.67 in 1904 - 1905 to 0.14 in 1931 - 1932. The comparable rates for Non-Europeans are available only so far back as 1925-1926 since before that year these deaths were not corrected for non-residents; but the seven years available show definitely that the rates for non-Europeans vary from four to nine times the rates for Europeans and at the same time show no sign of decreasing. Chart B shows plainly that the Tubercular death rate is highest among Coloureds and Asiatics, and that the Native death rate is considerably higher than that for Europeans. The Native death rate would, almost certainly, be higher still if all Native residents suffering with Tuberculosis had remained in the Borough until the time of their death.

By comparing the death rate from all causes with that from Pulmonary Tuberculosis (Table 1 and Chart C) it is seen that about 2% of Europeans dying in Pietermaritzburg die from this disease, while about 11% of Natives, 11% of Coloured, and 14% of Asiatic deaths are due to the Bacillus Tuberculosis.

(3) Age of Persons Dying from Tuberculosis. Table III. The salient points in this table are that about 36% of the European, 58% of the Native, 40% of the Coloured, and 62% of the Asiatic Tubercular deaths occur before the age of 34. The comparable percentage in 1930 for the Union of S.Africa for Europeans only was 48%. Especially noticeable in Table III is the higher proportion of deaths in young European , Native, and Asiatic females.

(4) Districts of Residence of those dying from Tuberculosis. Table IV. For this table the last place of residence of the patient has been taken; it will be appreciated that where the population is floating from district to district within the Borough the 'last place of residence' may not be in the district in which the infection was contracted. But, having discarded all persons who were not resident in the Borough, it is considered that th method of tabulation now used gives a sufficiently correct impression of the incidence of fatal infection in the various parts of the Borough. "City-East" includes that area of the City lying to the east of Commercial Road, and "City West" that area lying to the west of Commercial Road. The Ward figures exclude deaths in those portions of Wards that lie within the City.

The most prominent finding is that the "City-East" area, with its many unsatisfactory dwellings and its tendency to dampness of soil from flooding of the Dorp Spruit and the Umsinduzi River, has the highest Tubercular death rate. In "City-West"the rate for all races is well below that for the whole Borough in spite of the overcrowding that does exist in some of the barracks and other non-European quarters in this area; but soil drainage is much more adequate than it is in "City-East".

In Ward 1, including the Camp Drift area, it is not surprising to find the rate high for all non-Europeans, many of whom have been living in the low-lying area kept damp by the Umsinduzi and surface water from the higher parts of Pentrich; the latter area, on the upper slope of the hill, populated by Europeans, shows no deaths.

Findings from Statistical Enquiry contd:

Ward II , including the Zwaartkop Valley and the high land around Blackridge, shows a low rate.

Ward III. including the Scottsville area built on shale shows a low rate.

Ward VI, including the Town Hill area, returns no death in any race.

Ward V. including the high land from the Race Course to New England, returns only 1 death.

Ward VI, including the Chase and Town Bush Valleys , and a portion close to the City boundary that until recently was an unsatisfactory native area, returns a high native death rate. The most important contributory factor here is probably the poor type of dwelling in which the natives live and to which they mostly return after their days work in the town .

Ward VII, in spite of the large population proceeding to the Native Village during the period of consideration, shows a comparatively low Native death rate. The improved residential condition of natives in the Village must be a factor in producing this low death rate.

Ward VIII, with the Hathorn Hill area in its midst and the banks of the Dorp Spruit as one boundary, shows a reasonably low rate. But it should be noted, in passing, that the 3 native deaths in this area occurred in the insanitary shacks that were demolished in 1931 on the lower side of Hathorn's Hill.

It is suggested, therefore, that evidence has been produced to incriminate as a causal factor in the spread of Pulmonary Tuberculosis in Pietermaritzburg, overcrowding and dampness of the sub-soil.

Completely to substantiate these figures would require evidence as to the exact places of residence of each of the patients over a prolonged period.

(5) Comparison with other Centres. Table II. For Europeans this table very satisfactorily speaks for itself in so far as Pietermaritzburg is concerned. But the non-European rate is markedly higher than that for the other Union town given, with the exception of Cape Town.

Non-Pulmonary Tuberculosis.

Only 3 cases were notified, as compared with 18 deaths during the period 1927-1932. The death rates (Table II) both for Europeans and for non-Europeans compare favourably with those for other centres.

IV THE DUTIES OF A LOCAL AUTHORITY

P.H.Act (No.36 1919) SECTION 18 (1) includes as a notifiable infectious disease "all forms of tuberculosis which are clinically recognisable apart from reaction to the tuberculine test".

Under Sections 24 & 25 the L.A. is required to provide suitable hospitals or places of isolation for the accomodation and treatment of persons suffering from infectious disease; and where, in the opinion of the M.O.H. a person suffering from an infectious disease is not accomodated etc., in such a manner as adequately to guard against the spread of disease, such a person may be removed on the order of the M.O.H. to a suitable hospital or place of isolation.

Under Section 26 it is the duty of the L.A. to ensure that adequate measures are taken for preventing the spread of the disease, including where necessary for that purpose, provision for the accomodation, maintenance, nursing and medical treatment of the patient in a hospital or place of isolation until he is no longer a danger to the public health.

Under Section 50 (1), (b) the Minister may refund one-half of the approved net cost actually and necessarily incurred by a local authority, or by two or more local aithorities acting jointly, in providing and equipping any institution or accomodation for persons suffering from tuberculosis in a communicable form: Provided that the scheme as a whole and the plans specifications and estimates in connection therewith shall be approved by the Minister before the expenditure or any liability therefor is incurred.

Under Section 50 (1) (c) (d) & (e) the Minister may refund onehalf of the approved net cost in maintaining and managing any institution for the care and treatment of persons suffering from tuberculosis in a communicable form, or in the actual treatment and care of persons suffering from tuberculosis in a communicable form. The Minister may also make provision for the treatment and where necessary, the accomodation and maintenance of persons suffering from tuberculosis in a communicable form provided that Govt. can recover half the cost of dealing with such a person from the L.A. within whose boundaries he resides.

Under Section 50 (1) (f) the Minister may make grants-in-aid to L.A's or public bodies or voluntary societies or associations for the purpose of preventing the spread of, and securing proper treatment of persons suffering from tuberculosis.

Under Section 51 it is the duty of the administrator when so requested by the Minister to make provision in connection with general or chronic sick hospitals or eslewhere for the treatment or accomodation, care and maintenance of persons suffering from tuberculosis in a communicable form.

V ACTION TAKEN BY PIETERMARITZBURG MUNICIPALITY.

The Municipality Isolation Hospital is used for Tuberculosis cases only where the patient is a danger to the public health at home, and admission is only permitted as a temporary measure while arrangements are being made for removal to a Sanitorium. The Isolation Hospital is not large enough, nor equipped, for the reception of cases of Tuberculosis.

Cases found to be suitable for Sanatorium treatment are sent to Nelspoort Sanatorium C.P., at the joint expense of the Municipality and Government where the patient is unable to pay the fees. During 1927-1932, two cases were sent by the Pietermaritzburg Municipality, the distance to be travelled, and the difficulty experienced in getting cases admitted, have, among other reasons, led to the small number of cases sent. Most of the cases sick between 1927-1932 have been treated at home or at Greys Hospital.

Local action taken by this Department when a case of Tuberculosis is notified includes fumigation of the place of residence, advice to the contacts, and examination of the condition of the place of residence with special regard to ventilation, lighting, and dampness.

General action with a view to the condemnation of dwellings unfit for human habitation and, therefore, especially unsuitable for cases, or potential cases of Tuberculosis, is taken by this Department as a part of its routine work; as is also the important work of supervision of ventilation and general hygiene of places where persons work and live within the Borough.

In 1931 a considerable number of samples of milk purchased within the Borough were examined at Allerton Laboratory for the presence of the Tubercle Bacillus. In no case was the Bacillus discovered. Too much attention should not be paid to this result, cheering though it is, since this method of testing must needs be one of "hit-or-miss". The most satisfactory procedure would be the examination of samples of milk only from cows found to be clinically suspe cted of suffering with Tuberculosis. A Municipal Veterinary Sugeon is necessary for such a series of examinations. Tuberculosis testing of animals has not been attempted by the Municipality.

VI FURTHER ACTION TO BE TAKEN.

(1) DIAGNOSIS - (a) Bacteriological examination of sputum, etc. This is already undertaken free of charge by the Government Laboratory, Durban.

(b) X-Ray examination - Provision of facilities for such an examination should be available for every case suspected-suffering with Tuberculosis. The necessary plant, etc - is available at Greys Hospital.

(c) Clinical examination - Facilities for the special examination of all contacts, and all suspected cases should be available.

It is suggested that (b) & (c) could be met by the institution at Greys Hospital of a special Chest Clinic to which contacts, suspects, and ambulant cases could attend weekly or whenever necessary. It is further suggested that Council should recognise a responsibility in this matter and should assist with the formation of such a clinic to the extent of undertaking to pay the expense of examination of Borough cases sent to the Clinic. Such a clinic might well act as a valuable centre for the propogation of information regarding the spread of Tuberculosis. It is possible that the Honorary Medical Staff of Greys Hospital would consider running the Clinic, which would, of course, have to serve non-Europeans as well as Europeans.

(2) ISOLATION OF THE INFECTED

(a) Advanced cases for whom treatment is of little avail should be cared for at Greys Hospital.

(b) Early "open" (i.e. with the tubercle bacilli in the sputum) cases can be treated at home where the surroundings are really satisfactory, but the patient usually does better if he has had a period of institutional treatment where he is taught all he needs to know about the disease and how it should be treated at home, how infection is spread and controlled, what mode of life he has to live ~~if he is~~ to avoid relapse and what symptoms should make him suspect early tuberculosis in other members of his family.

(c) Isolation of "open" cases that have unsatisfactory home surroundings in an institution until the sputum has become tubercle free.

It is suggested then, that a period at a "Sanatorium" is essential for both (b) & (c), but that sanatorium treatment need not be carried on in an institution; if its principles are applied there is no reason why, home conditions being satisfactory, a patient should not have sanatorium treatment in his own home.

It is further suggested that in P.M.Burg there is an urgent need for such a "Sanatorium" centre where, especially, non-Europeans can learn something of personal hygiene and the methods of preventinn of Tuberculosis.

(3) DISINFECTION

Disinfection of sputum and all articles infected and all rooms occupied by infected persons. This work can pnly be carried out completely when the individuals concerned learn the importance of disinfection, and when cases in the Borough are discovered at an early stage. The provision of a Clinic on the lines suggested above with its facilities for education and for the discovery of cases, will most rapidly achieve this end.

Dwelling/

VI continued.

(4) DWELLING AND WORKING CONDITIONS.

Housing conditions, especially among the non-European population, improved, the badly nourished fed, and the indigent placed under better living conditions. This will only be achieved by a continual insistence upon brick dwellings, properly constructed; it is, of course, bound up very closely with the economic condition of the non-European population.

A possible line of future action might lie in the construction of "night - sanitaria" as erected by the Soviet Government in Moscow. Domitories, well lighted, well ventilated, and easily cleaned, house tubercular workers during their hours off duty. Nourishing food is provided, regular medical examination and nursing attention (where necessary) is provided, and the inmates are taught the principles of prevention of the spread of infection by the surroundings in which they rest and sleep and by lectures and films that are shown in the evenings. The tubercular worker is thius taught the use of the sterile suptum cup, the necessity for regular hours of rest, the harmfulness of excess of every sort, etc., etc.,.

Industrial establishments properly lighted and ventilated and all dust removed as soon as it is produced. New factories and workshops erected within the Borough must be watched carefully to ensure that they conform with hygienic requirements. While older unsatisfactory shops must gradually be improved or demolished.

(5) INFECTED ANIMALS

In the absence of sufficient evidence that Bovine Tuberculosis is widespread or that it is increasing I am prepared to recommend that council need at present take no action to examine all cattle in the Borough for the presence of Tuberculosis, other than is undertaken at the Abattoir now. If there should be the least sign of increase of Bovine infection, then a Veterinary Surgeon should be appointed and every cow producing milk for sale in the Borough should be regularly examined, and all found to be suffering from Tuberculosis eradicated from milking herds.

(6) TREATMENT OF TUBERCULOTICS

With the inauguratation of a "Chest Clinic" and an increased appreaciation, especially among the non-European population, of the necessity for early treatment, there will be an increased demand for facilities for such treatment.

I have already pointed out above that sanatorium treatment can be carried out in the home. But it is unhappily true that, in the greater proportion of cases, the home is so unsatisfactory that treatment there would be useless. It is also true that many of the non-European cases suffer with so rapidly pulminating a form of the disease that they are really only candidates for the Advanced Case hospital.

But there are those who can benefit by 'sanatorium' treatment and they are not a few. Such treatment means rest for active disease, exposure to cool, moving air; proper feeding; occupation of hand

and mind during convalescence; and instruction for the guidance of th patient in the years that lie ahead. In many cases such institutiona treatment has to be prolinged until they are fit for work or have atta such a degree of compensation or equilibrium that they can maintain their health in spite of the inevitable shocks and buffets of ordinary unsheltered existence.

The Sanatorium cannot do miracles for such a serious organic disease as Pulmonary Tuberculosis and "cures" cannot be expected in th course of six to twelve months treatment. But the Sanatorium can red the activity of the disease to a condition of quiescence in a large proportion of patients restore their working capacity, and teach them how to keep their disease under control in the future.

Treatment does not begin and end with the sanatorium. It is a common experience all over the world that within five years from the date of discharge 0% of cases are dead and only 25% well and at work. The fault lies not with the sanatorium but with the lack of after cure.

Another form of "Sanatorium" centre that is suitable for man of the local tuberlotics is the "Farm Colony" or"Village Settlement" type of institution where ambulant cases can live underconditions hygienically satsifactory and in a healthy district but where they can undertake their own work; the clerk doing office work for the Settleme the cobbler mending shoes, the brisklayer building, the gardner tending the soil, and so on. Econimically such settlements are difficult to r but they provide the ideal method of dealing woth the crippled victims of tuberculosis from the town.

The provision as a part of the treatment of interesting rathe than strictly graduated work, in order to keep the patient's mind healthily occupied and so torelieve the tedium, is an essential factor.

(7) AFTER CARE

It has been pointed out above that the after care of tuberlot leaving the sanatorium is one of the strongest links in the cycle of treatment and prevention. An after-care Committee, with the power to grant monetary and other relief, is essential. The provision of some form of nursing service,either by the committee employing its own nurse or nurses or by subsidising voluntary nursing Associations is the next And the use of the'Chest Clinic for the regular observation of all post-sanatorium cases follows as an equally important factor.

THE NATAL ANTI-TUBERCULOSIS ASSOCIATION was recently formed in the Province to co-ordinate the various Municipal, Provincial, National and Voluntary spheres of anti-Tuberculosis work. One of the first duti es of the asscoiation is to ascertain what is being done in each Municipality and rural district in the way of affording Institutional facilities for (a) Sanatorium benefit, (b) isolation, (c) after-care,etc for local tuberculotics. Having obtained this information the Association will examine and make recommendations upon the future development of existing facilities, both as regards the prevention and cure of the disease. One of the declared obje cts of the association is the establishment of a special sanatorium foe Natal.

In the absence of evidence, as shown in this report, that tuberculosis is widespread or on the oncrease among Europeans Resident in Maritzburg, this Municipality is not especially interested in the erection of a sanatorium catering solely for Europeans.

Advanced/

"Advanced" cases, not likely to number more than three or four per annum (table) unless the disease shows a sudden rapid local increase should be catered for at Greys Hospital. Early and ambulant cases are more frequent, and Maritzburg would probably provide five or so European cases a year for admission to an institution of the "Sanatorium" or "Farm Colony" type mentioned above, and which the Association aims at inaugurating. It is difficult at present to assess the number of non-Europeans, resident within the Borough, suitable for a period of treatment at such an institution, but it is obviously mush greater than the number of Europeans.

But it is certain that from the non-European population lies the danger for the European population as well as for their fellow non-Europeans. In view of the statutical findings (appended) for the latter races, early discovery and isolation of cases and education, is obviously a real need.

It is therefore suggested to Council that while action, along the lines given below under "Recommendations", is necessary as a local matter, every assistance should be given to the newly-formed Association in order that the provision of institutional treatment in the Province, especially for non-Europeans, may as soon as possible be obtained. It will be appreciated that Council will find a part responsibility for one large institution far cheaper than any such institution run by Maritzburg alone.

The Association asks for members at a nominal subscription of 2/6 per annum, largely with the idea of getting as many people as possible interested in the fight against a disease that is preventable. An appeal for funds for an institution will be made later when the propaganda to be issued by the Association has taken effect.

As shown in IV above, a refund of 50% will be available from Government on expenditure incurred under an approved scheme, and it will be appreciated that any scheme is more likely to be approved and to receive support from Government if it can be shown that it has the backing of the general public of the Province as well as that of the various Local Authorities.

In thus recently published "Medicine and the State", Sir Arthur Newsholm, this sums up the modern attitude in Great Britain from the Public Health point of view on the prevention and treatment of Tuberculosis:-

"1. Public authorities everywhere are concerning themselves with treatment as a means of curtailing and often preventing Tuverculosis.

2. In the prevention of Tuberculosis (and still more of venereal diseases) problems of conduct are involved in securing more rapid and more complete success.

3. There is still delay in recognising the existence of tuberculosis in many patients who are under medical care, and an even greater delay on the part of Tuberculous patients in seeking medical advise.

4. A chief object of public organizations against Tuberculosis is to furnish the consultant services which enable prompt diagnosis to be made.

5. Every patient receivesfor a short period hygienic education and training in a sanatorium.

6. The protracted institutional treatment of acute and advanced Tuberculosis when home conditions are unfavourable, is a major need in successful efforts for the diminution of Tuberculosis".

SUMMARY OF THE ABOVE NOTES ON SUGGESTED ACTION TO BE TAKEN.

1. The institution of a local "Chest Clinic" for the observatio diagnosis, and, where necessary, treatment of persons suffering, or suspected of suffering,with Tuberculosis.

2. The isolation of advanced cases in Greys Hospital

3. The isolation,treatment and most importantly, education of early cases at a "Sanitorium" or"Farm Colony".

4. The formaties of an organization to deal with the "after care" of cases who have received treatment.

5. The provision of institutional accomodation can best be achieved by joining with other Authorities in the Province, under the direction of the Natal Anti-Tuberculosis Association.

6. That an "After-care" Committee might be formed as part og t the local branch of the Association, shortly to be started by His Worship the Mayor.

VLL. CONCLUSIONS.

1) That the incidence of Pulmonary Tuberculosis, as shewn by the death rate, among resident Europeans, is satisfactorily low, and that the non-Pulmonary Tuberculosis incidence is also very low. But the actual incidence must be definitely higher than is shown by the death returns.

2) That from the low non-Pulmonary return it is suggested that there is no immediate necessity here for a widespread campaign to search for the presence of cows suffering with Tuberculosis; but that a careful watch must be kept against any future sign of an increase in bovine infections.

3) That the low Pulmonary T.B. death rate among Europeans is probably due to a series of factors among which the good climate, the altitude, the geological formation of much of the land on which Maritzburg is built, the increasing appreciation among educated persons of the causes and methods of prevention of the spread of this disease, and also the comparatively good social position of most European residents which has led to life in uncrowded, dry dwellings, with a sufficiency of nourishing food.

4) That even these beneficial factors are unlikely to prevent the future apread of the disease among Europeans if the non-European population with whom it lives in close contact is to be permitted to become increasingly infected.

5) That there is evidence of a high degree of infection among all the non-European races in Pietermaritzburg. That this high proportion is more marked wherever these people are living in the damper parts of the Borough, or in dwellings that are unhygienic.

6) That Council cannot be expected to cope with the constant influx of non-European, especially native, cases from outside the Borough, but it should so aim at continually improving the residential conditions of non-European residents that the risk of infection from person to person is diminished; at the same time it should teach all residents the simple facts of Tuberculosis, provide facilities for the early diagnosis of cases, and make provision for the isolation of "open" cases and their treatment where necessary along the lines suggested above.

7) That through the Natal Anti-Tuberculosis Association is promised the most satisfactory line of combined effort with other Natal authorities to combat the further spread of Tuberculosis in the Province.

8) That education, improved housing conditions for non-Europeans, and isolation of "open" cases, are the three lines of attack of first importance at present from the point of view of safe-guarding the public health of Maritzburg.

VIII RECOMMENDATIONS.

1) That the Provincial Authorities be approached by Council with a request that, for the earlier discovery of cases of Tuberculosis and the continued observation of known cases, a "Chest Clinic" be instituted at Grey's Hospital to which cases can be sent for diagnosis, observation and treatment. That X-Ray examination should be available for such cases attending this clinic as may be considered necessary. That Council should agree to be responsible for the cost of the examination of persons, resident within the Borough, who are sent to the Clinic by medical practitioners.

2) That a branch of the Natal Anti-Tuberculosis Association be formed in Pietermaritzburg forthwith in order that this Borough may join with the other authorities in the Province in the provision of (1) a suitable centre for the reception, treatment, and education of Tuberculotissof all races other than advanced cases, and (2) an increased attempt to spread wise propaganda concerning Tuberculosis among all races in the Borough.

That Council recognise its responsibility towards those Tubercylar residents whose houses are unsuitable for domiciliary treatment, and approve of the principle of the provision of "Sanatorium" or "Farm Colony" accommodation for such persons.

3) That Council approach the Municipality of Durban with a view to sharing in the erection of any institution for the reception of Tuberculotissof all races that that Municipality may consider in the future, whether at Camperdown or elsewhere in the Province.

4) That attention be once more drawn to the excellent results already obtained by the provision of healthy dwellings for natives within the Borough, and point given to the necessity for so encouraging the erection of an increased supply of suitable dwellings for all non-Europeans within the Borough, and the gradual demolition of the many remaining dwellings that are unfit for human habitation and a prominent cause of the spread of Pulmonary Tuberculosis.

C. C. P. Anning,

30th May 1933. MEDICAL OFFICER OF HEALTH.