THE CONTROL OF TUBERCULOSIS IN AUSTRALIA.

BY WILLIAM G. ARMSTRONG,

M.B., M.S., D.P.H.,

Medical Officer of Health for Sydney, New South Wales, Australia; Lecturer on Public Health in the University of Sydney.

The student who undertakes an investigation regarding the occurrence of tuberculosis in Australia, should first refresh his memory as to the prevalent social circumstances of this continent, or, at any rate, such of them as bear upon the subject of inquiry; for otherwise he must fall into many pitfalls, into which he would be led by his experience of parallel European conditions.

Put very briefly and baldly, the outlines of the picture which would be presented are those of an immense isolated island, with an area three-fourths that of Europe and a total population less than that of London. More than one-third of the population is concentrated in six seaport cities, the capitals of the component States of the Commonwealth, two of which cities, Sydney and Melbourne, can each boast a population of over half a million. The residuum of the population is scattered over the continent in groups, which range from two or three individuals to a few thousand. The climate is dry, pre-eminently sunny, but liable to sudden changes. The population is wealthy, and grinding poverty is almost unknown. Outdoor life is possible to an extent undreamed of in the British Isles. The genial climate does not require the housing of domestic animals in the winter, and dairy herds are singularly free from tuberculosis.

Mortality Returns of Tuberculosis.

Compared with English figures, the death-rates from tuberculous disease in Australia are not high. For the year 1904 the death-rate from phthisis for the whole of Australasia was 0.89 per 1,000 of the population, and that from all tuberculous diseases was 1.05 per 1,000; while the mean annual English death-rate from phthisis for the quinquennium ending with 1904 was 1.25 per 1,000, and that for all tuberculous diseases 1.91 per 1,000. The Australian death-rate for phthisis was 29 per cent. less than the English.

Considerable variations in the death-rates occur in the different States of the Commonwealth. In 1904 the rates from phthisis in individual States were as follows: Victoria, 1.11; New South Wales, 0.83; West Australia, 0.82; South Australia, 0.79; Tasmania, 0.63; Queensland, 0.54.
But, though the rates of phthisis mortality in the various States differ so widely from one another, in general the phenomenon has been observed of a rate decreasing steadily from about the year 1885.

The following table shows the rates in New South Wales, the most populous of the Australian States:

**DEATH-RATES IN NEW SOUTH WALES FROM PHTHISIS AND ALL TUBERCULOUS DISEASES PER 1,000 LIVING.**

<table>
<thead>
<tr>
<th>Period</th>
<th>Phthisis</th>
<th>All Tuberculous Diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876–1880.</td>
<td>1.016</td>
<td>1.347</td>
</tr>
<tr>
<td>1881–1885.</td>
<td>1.141</td>
<td>1.446</td>
</tr>
<tr>
<td>1886–1890.</td>
<td>0.960</td>
<td>1.396</td>
</tr>
<tr>
<td>1891–1895.</td>
<td>0.864</td>
<td>1.156</td>
</tr>
<tr>
<td>1896–1900.</td>
<td>0.796</td>
<td>1.027</td>
</tr>
<tr>
<td>1901–1905.</td>
<td>0.816</td>
<td>0.975</td>
</tr>
</tbody>
</table>

The highest death-rate from phthisis and from all forms of tuberculous disease was experienced in New South Wales during the period 1881–1885. After that period the death-rate from phthisis fell steadily until the 1901–1905 period, which showed a very small increase over that of 1896–1900. The rate from all tuberculous diseases has fallen steadily without any check since the 1881–1885 period.

In the other Australian States the phenomena have corresponded to the course of rates in New South Wales, except in West Australia, where, owing, doubtless, to the later development of the State and the social dislocation following on the influx of a gold-mining population, the decline in the phthisis-rates was delayed to a later period than in the other States.

**Administrative Measures.**

Administrative measures directed towards the control of tuberculosis in Australia have, necessarily, been moulded on those framed in older lands. Their operation has been, for the most part, confined to the larger cities, partly, no doubt, because the need is more obvious in the city than in the rural district, and, partly, because the larger cities are better equipped with skilled sanitary staffs, and the necessary machinery was already to hand.

The public health departments of the several States are provided with bacteriological laboratories in the capital cities. They are, on the whole, exceedingly well equipped, and in most of the States private practitioners may have specimens of sputum, etc., examined
bacteriologically without charge on forwarding them to the departmental laboratory. Municipal laboratories are as yet non-existent in Australia.

**Notification of Phthisis.**

Compulsory notification of phthisis was first attempted in the State of South Australia in 1898. The South Australian Health Act of that year made pulmonary tuberculosis a disease generally notifiable throughout the State, under a heavy penalty for neglect. The provision works exceedingly well, and in the capital city, Adelaide, appears to have been productive of very satisfactory results. The State of Victoria in 1903 proclaimed consumption a contagious disease under its Health Act, and made it notifiable in Melbourne, and some time later, in three other large towns. In 1904 the city of Sydney, in New South Wales, enacted a code of by-laws making pulmonary consumption notifiable within the city. A fee of 2s. 6d. is paid for notifying, and failure to notify involves a penalty of £10. These by-laws have proved useful, and work smoothly. They are rather closely modelled upon the Sheffield (England) local Notification Act, and aim at acquainting the health authorities with the existence of cases of phthisis, and keeping them in touch with the subsequent movements of phthisical persons, in order that disinfection of dwellings may be provided for and periodical visits paid to patients. In Perth, the capital of West Australia, phthisis has also become notifiable, but so far it does not appear that notification is very firmly enforced there.

**Public Hygiene.**

Efforts to prevent expectoration in public places have made very great headway in Australia. Municipal by-laws prohibiting spitting on the footways of streets and in public conveniences are in force in all the State capitals, and in a very large number of other Australian towns and municipalities. Hobart, the capital of Tasmania, was the first Australian city to take this step, in 1896. Sydney followed suit in 1901. In the following year over 120 persons were fined in the police-court for expectorating upon the footways of the Sydney streets, and every succeeding year a considerable number of offenders has been similarly dealt with.

**The Protection of Milk and Meat.**

Legislation to prevent the sale of tuberculous meat or milk is common to all the Australian States, and is somewhat stringently enforced. It is a penal offence to sell a tuberculous animal, and condemnation of meat by the Government inspectors for tuberculosis is probably more drastic than in England. The inspection of
dairy cattle is probably most rigid in New South Wales, in which State the notification of tuberculosis in dairy cattle has been compulsory since 1886. In all the States the sale of milk from a tuberculous animal is an offence which is punishable by fine.

**Disinfection of Tuberculous Dwellings.**

Disinfection of premises is a corollary to notification, and can only take place when the existence of the disease has been made known to the health authorities. It is systematically carried out in the cities of Sydney, Melbourne, and Adelaide, but not, so far as I am aware, elsewhere in Australia. In Sydney, whenever a case of phthisis is notified, it is visited by the medical officer of health, and the householder is informed that he must notify any change of address on the part of the consumptive on pain of a fine. If the premises are vacated through the death or removal of the consumptive, they are at once disinfected and cleansed by the trained municipal staff. After any person has been notified as having consumption, he is visited from time to time by the staff of the medical officer of health, and his progress noted. He is instructed in the treatment of himself and his sputum, unless he continues under the charge of a private medical practitioner, who himself undertakes this duty. The procedure in Melbourne and Adelaide is on lines resembling that in Sydney.

**Sanatorium Treatment.**

From the early days of hospital foundation in Australia consumptives have been treated in general hospitals, supported, to some extent, by private subscriptions, but heavily subsidized by the State Governments. The first hospital for the treatment of consumption solely was established in New South Wales in 1876 through the private benevolence of Mr. Goodlet. At the present time the four larger States of the Commonwealth—New South Wales, Victoria, Queensland, and South Australia—are each possessed of one or more sanatoria, supported partly by the public funds, for the treatment of early cases of phthisis among the poor. These sanatoria are situated as near the capital cities as possible, but always in hilly country, at a considerable height above sea-level. In every State the resources and capacity of these sanatoria are overtaxed, and an early increase in their numbers and extent of accommodation is demanded.

Even more urgent is the need for hospitals or homes for advanced and incurable cases whose physical condition indicates hospital attention, and whose means will not permit them, in their own homes, the alleviating treatment which they require or the degree of segregation which the public safety demands. In at least three of the States of
the Commonwealth the attention of the Government has been forcibly
directed to this subject, and projects are on foot for providing the
necessary accommodation.

**General Sanitary Betterment.**

But probably the greatest foe to consumption has been, in
Australia, as elsewhere, the general improvement in sanitary con-
ditions, and particularly in those that more immediately concern the
dwelling-house, that have been effected during recent years. Fore-
most among these have been the diminution of overcrowding, the pro-
vision of better ventilation in dwellings, the condemnation of damp or
dilapidated dwellings, which the larger cities of Australia have been
vigorously engaged in, and which the smaller towns are now beginning
to imitate. The stringent enforcement of by-laws requiring a minimum
of cubic feet of space per person in sleeping-rooms in private dwellings,
as well as in lodging-houses, and permanent fixed ventilators to the
open air in every room, as is the case in Sydney, must have been
responsible for a share in the diminished phthisis death-rate of recent
years. And the improved habits of the people which have followed
the improvements in their dwellings have had an influence nearly, if
not quite, as great.

Closely connected with this part of the subject is the education
of the general population in the knowledge of the outstanding facts
relating to the spread of consumption. Such an education, deliberately
planned and carried out by the public health departments and the
whole medical profession of Australia, has been steadily pressed
forward since the early nineties. The National Association for the
Prevention of Tuberculosis has its branches in every State, and they
are very actively engaged in spreading a desirable knowledge among
the people, and furthering every conceivable movement for hindering
the spread of the disease. For many years the public health depart-
ments have issued posters, explaining in plain, pithy language the
nature of consumption, and furnishing directions for its avoidance, and
these have been posted in railway-stations, police-stations, and other
public places. The public Press, more powerful as a disseminator of
information in this newspaper-reading land than in older countries,
has been enlisted, and officially inspired paragraphs have appeared at
frequent intervals explaining the phases of the fight.
Sanatoria and Hospitals for Tuberculosis in Australia.

In compiling the following list of special institutions for tuberculous cases in Australia (which we have submitted to the officer representing the Commonwealth in London for correction), we are much indebted to Dr. Rufenacht Walters' very comprehensive work on "Sanatoria for Consumptives," third edition, 1903.—EDITOR, BRITISH JOURNAL OF TUBERCULOSIS.

<table>
<thead>
<tr>
<th>Locality</th>
<th>Name</th>
<th>Number of Beds</th>
<th>Established</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echuca, Victoria</td>
<td>Victoria Sanatorium</td>
<td>15</td>
<td>1897</td>
</tr>
<tr>
<td>Mount Macedon, Victoria</td>
<td>Austin Hospital for Incurables</td>
<td>42</td>
<td>—</td>
</tr>
<tr>
<td>Heidelberg, Victoria</td>
<td>Melbourne Hospital</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Amherst, Victoria</td>
<td>Amherst</td>
<td>24</td>
<td>—</td>
</tr>
<tr>
<td>Kilmore</td>
<td>Kilmore</td>
<td>9</td>
<td>—</td>
</tr>
<tr>
<td>Shewell</td>
<td>Shewell</td>
<td>6</td>
<td>—</td>
</tr>
<tr>
<td>Thirlmene, New South Wales</td>
<td>Queen Victoria Homes</td>
<td>42</td>
<td>1898</td>
</tr>
<tr>
<td>Wentworth Falls, New South Wales</td>
<td>Wentworth Falls</td>
<td>20</td>
<td>1903</td>
</tr>
<tr>
<td>Parramatta, New South Wales</td>
<td>Home for Consumptives</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Liverpool</td>
<td>Liverpool Benevolent Asylum</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Belais, South Australia</td>
<td>James Brown Sanatorium</td>
<td>59</td>
<td>1894</td>
</tr>
<tr>
<td>Roma</td>
<td>Roma</td>
<td>30</td>
<td>1902</td>
</tr>
<tr>
<td>Diamantiana, Queensland</td>
<td>Diamantiana Hospital</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

SOME IRISH ASPECTS OF THE TUBERCULOSIS PROBLEM.

By EDMOND J. McWEENEY,

M.A., M.D., D.P.H., F.R.C.P.I.,

Professor of Pathology and Bacteriology, Catholic University Medical School, Dublin; Bacteriologist to the Local Government Board, Ireland; Examiner in Pathology, Royal University of Ireland.

The tuberculosis problem presents far graver aspects in England than in the Sister Is e. There are nearly a million of people fewer in Ireland to-day than there were thirty years ago, whereas in Great Britain the population has increased by nearly 10,000,000. Each year we lose more people by emigration than are replaced by the natural increase. In 1905, for example, the excess of births over deaths was 28,000, but 31,000 people emigrated, and these were practically all in the prime of life and the fullness of strength. Their departure leaves us with an undue proportion of children, the aged, and the unfit. Another disquieting fact is the increase of insanity, which may, without exaggeration, be described as appalling. In 1871 the proportion of the mentally afflicted per 10,000 living was practically the same in England and Ireland (30'5), whereas in 1901, the last year for which I can obtain statistics, it had not quite reached 41, whereas in Ireland it had actually attained to 56 per 10,000!