

way to combining immunity from the disease with other valuable qualities. Meanwhile, it is unwise to lose the chance of preserving those other qualities, which may now be linked with susceptibility to the disease, for want of the sanitary precautions which advancing knowledge puts in our power. Thus the selectionist escapes from Mr. Balfour's dilemma, and may support with a clear conscience all efforts towards improvement in the environment, provided that it is fully realised that improvements in the environment alone will not necessarily improve the innate qualities of the race, any more than better cow-stalls will of themselves improve without limit our breeds of cattle, and, provided that all efforts are also made deliberately to encourage reproduction among the best stocks, and to discourage it among the worst.

But consideration of these general problems, interesting though they are, is not necessarily essential to the application of the principles of heredity to the treatment of destitution—the immediate object of the conference opened by Mr. Balfour's speech. Whether or no there is a general segregation of ability broadly between the upper and the lower classes in this country, it is undeniable that the ranks of the paupers contain a certain proportion of those who, mentally or physically, are hereditarily unsound. It is the fact that the differential birth-rate is telling in favour of the unsound as against the sound that is so sinister, even more so than its effect on the relative rates of reproduction of different social classes.

No one denies that many fall into reach of the Poor Law through no fault of their own. By seasonal unemployment, by movements of trade, by the pressure of temporary illness or economic misfortune, relief becomes necessary. To meet these cases, every attempt should be made to improve the organisation of the labour market, to obtain more effective education, to prevent blind-alley occupations for boys and girls. Such subjects met with their full share of consideration at the conference, and will always appeal with greater force to the philanthropist, who wishes to relieve immediate distress, and to the politician who wishes to capture votes by doing so.

But, as all those who administer the Poor Law with their eyes open know, these cases are but part of the problem. A large number of the occupants of our workhouses and prisons are congenitally defective in mind or body. Often, for the feeble-minded or unsound themselves, there is no hope of improvement, and, even in cases where, at great expense to the community, they can be taught a trade in special schools, as Mr. Balfour pointed out, their acquired characters will not be inherited, and their offspring will tend to reproduce their infirmities. The feeble-minded are specially prolific, and, in this time of a general fall in the birth-rate, are increasing relatively to the other sections of the community. Several years ago, a Royal Commission reported in favour of the compulsory and permanent care and detention of the mentally defective. That nothing has been done to carry out the recommendations of the Commission, in spite of the urgency of the case, is a standing disgrace to the Government and to the Parliament of this country. Were these unfortunates shielded from the degradation which follows their so-called freedom, and prevented from handing on their defects to future generations, this part of the problem of destitution would be solved, and a heavy burden of incompetence and pauperism removed once for all from the shoulders of the competent, who, there is now reason to fear, often restrict the number of their offspring to meet the increasing load of taxation required to support the inefficient members of the community.

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Several of the special papers read to the sections of the conference dealt with the problem of mental defect as a cause of pauperism. On May 30 Dr. F. W. Mott and Dr. A. F. Treadgold dealt with the insane and the feeble-minded in their hereditary aspects. Dr. Mott pointed out the significance of the fact that a considerable proportion of the inmates of the London County Asylums were related to other inmates, while Dr. Treadgold gave evidence that feebleness of mind was more prevalent in the rural districts. It should be noted that rural districts which have specially been depleted by immigration to the towns seem particularly affected in this way. The worst strains get left, and the inbreeding of defective stocks intensifies the evil. Dr. Treadgold said that the real cause of the existence of a certain class of parasitic pauper was germinal defect, and emphasised the folly of allowing such a class to propagate freely. On Wednesday Sir William Chance pointed out that, whatever the cost of segregation, it would be repaid in a generation many times over by the saving in workhouses and prisons. Other papers on mental defect in its bearing on pauperism and crime were read by Mr. T. Holmes, Dr. C. H. Melland, Miss Mary Dendy, and Dr. F. Needham, while Dr. C. W. Saleeby spoke on the eugenic summary and demand.

Whatever be the effect of the conference on legislation or administration, it is impossible to follow its proceedings without perceiving that the thinking world is at last waking up to the fact that biological knowledge has an intimate bearing on sociology. The last few years have seen a great change in this respect, and, though much more is yet to be done, the future is full of hope. W. C. D. W.

PLAGUE.

THE recent epidemic of plague in northern China with its 60,000 deaths, is remarkable in two respects. First it was the most extensive manifestation of pneumonic plague in this pandemic; and, secondly, it was characterised by a more or less sudden cessation. It affords a warning as to the capabilities of the disease, and as to one of its possible developments, and although the outbreak has come to an end for the time being without any great efforts in the direction of prevention, yet it has demonstrated that the plague of the present day is as powerful for mischief and as capricious in action as that of any period in the past centuries. Arising in or close to eastern Mongolia, where the ordinary annual epidemics of plague have for many years shown a tendency to a comparatively high percentage of the pneumonic type, this influenzal form, shorn of the bubonic variety which has hitherto accompanied it and has been its predominant partner, appears to have been conveyed as early as October, 1910, to some of the more recent settlements on the Manchurian portion of the Trans-Siberian Railway.

The increasing mortality in these settlements did not attract any particular attention until December, when, in consequence of panic following an appreciation of the situation, there ensued a great exodus of the Chinese, both by rail and by road, to their homes in the more southern provinces of Shinking, Chili, and Shantung. To the infection thus carried far and wide the rapid and extensive dissemination of the disease and the formation of new centres may be traced. But the virulence and great mortality which characterised the epidemic in some places and its comparative harmlessness in others are not so readily explained. The cause or causes of these variations have always been, and still remain, a per-

plexing problem, and our knowledge regarding the vehicles of infection and the part played by animals, insects, and man in the spread of plague do not at present assist us in its solution.

From the information available it would seem that the early infected centres suffered severely, while those that were infected later suffered but little. Possibly their immunity was because they were infected later in the season, for the disease towards the end of February and beginning of March began everywhere to lose its strength and power of diffusion which could not be attributed to preventive measures. This is no new phenomenon with pneumonic plague, and it is one which is well worthy of close investigation. This occasional self-limitation of pneumonic plague independent of active measures in no sense justifies the conclusion that preventive measures are unnecessary and useless in this form of plague. On the contrary, measures taken earlier would have further curtailed the outbreak. Prompt and early action is important and urgent, because no one can tell when a pneumonic plague is self-limiting and may confine itself to a few villages, or when it may have the force of a pandemic and spread if unchecked from country to country.

While much attention has been directed to the mortality in Manchuria from the pneumonic variety of plague, the ravages of the bubonic form in India have not been noticed, and yet the mortality of the latter far exceeds that of the former. Since 1896, when the disease was imported into Bombay, there have occurred in India seven million deaths from plague. The mortality varies in different years. Some years it is greater and in others less, but never since the disease appeared in the country has any year been free of mortality. Two provinces have been affected more than the others. One is the Punjab, with a population of only twenty millions, the other the United Provinces of Agra and Oudh, with a population of forty-seven millions.

The plague deaths in these two provinces during the past twelve years have been as follows (statistical abstract relating to British India from 1899 to 1909):—

	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
Punjab	255	572	14,959	171,302	205,462	396,357	334,891	91,712	608,685	30,708	35,655	152,387
United provinces of Agra and Oudh	7	135	9,778	40,223	84,499	179,082	383,802	69,660	328,862	22,878	39,394	139,328

In the Punjab the plague mortality increased from 255 in the year 1899 to 396,357 in 1904; then it declined for two years. In 1907 it rose to the enormous number of 608,685, and in 1908 and 1909 fell to a comparatively low figure. In the United Provinces of Agra and Oudh the mortality increased from 7 in the year 1899 to 383,802 in 1905; there was then a decline for one year, a rise to 328,862 in 1907, and a further decline in 1908 and 1909. Both in the Punjab and the United Provinces the deaths in 1910 have again risen, and the upward tendency is being continued in 1911, particularly in the United Provinces, as is shown by the following statement of the plague mortality in January, February, and to the week ending March 25th:—

Months	United Provinces	India
January	35,000	65,000
February	41,000	85,000
March	72,000	131,000
Total	148,000	281,000

In the first three months of 1911 the deaths from plague in India were 281,000, and in the United Provinces 148,000, which are respectively nearly five

times and more than twice the mortality from the disease in China from October to March inclusive.

With this mortality in China and India it is difficult to realise that only twenty years ago plague was considered to be practically an extinct disease. True, it lingered in some of its old homes, but to such a small extent that it was hoped that even in these it would finally disappear. Now the whole position has changed. The slow but wide dissemination of the disease since it first attacked Canton in 1893 and Hong Kong the following year, and which has been followed by the infection of many countries in different parts of the world is one of the most remarkable and sinister events of the age. Its importance hitherto has not been connected with its mortality, for with the exception of China and India the deaths from the disease have been few, but it lies in the fact that every year the sowing of infection among susceptible and subterranean animals becomes more extensive, and that countries which have for hundreds of years been free of plague infection are no longer in that position.

The danger lies in the disease among animals being permitted to acquire a firm foothold wherever it may be, for the infection in such circumstances is difficult to eradicate. The insidious manner in which the infection gets imported into a country, the ease with which human cases have been hitherto dealt with, and the apparent difficulty the disease has in spreading, or even maintaining its hold, are apt to lull the suspicions of even the most wary. Thus with no immediate results forthcoming it is not surprising for it to be assumed that the twentieth-century civilisation has, so far as the West is concerned, deprived plague of its powers. It was to advancing civilisation the disappearance of plague from Europe was attributed, regardless of the fact that a similar disappearance had taken place in the East, and that recessions and long periods of rest from plague are matters of history. Plague, when it broke out in Bombay, had not been there for 184 years. Until then Bombay had prided itself on its sanitation, with its immense waterworks and drainage; and its external appearance was that of a fine and thriving

city. But plague was the most informing sanitary inspector it ever had, and revealed the actual housing condition of the people, and it is just as likely, in due time and under favourable conditions, to visit the crowded and verminous slums of the cities of the West, where the "awakening of the insects" in the houses is as regular in season as that in China.

The disease is one which essentially affects the very poor, whose condition still make the cities of Europe vulnerable. It has always been called the poor man's plague. The one great advantage the West possesses over the East, which it did not possess in former times, is the power of trained organisation. It is an intelligent organisation based on scientific knowledge rather than on any great advance in the housing of the very poor in Europe that reliance will have to be placed to combat the disease and to secure safety from any great epidemic. In the meantime, in addition to systematic and continuous measures against infected animals in places where the disease has been imported, special attention requires to be directed everywhere against verminous houses and verminous people.

W. J. SIMPSON.