THE COURSE OF SUMMER DIARRHOEA IN LONDON, 1856-1920.

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A GOOD deal of work has been done in the Statistical Department of the Medical Research Council during the last year on the question of the relationship of weather to summer diarrhoea. This is not yet completed, but a short synopsis of what has been done is given here.

It has, of course, long been known that epidemic diarrhoea is a disease associated with warm summers, and in the report of the Local Government Board published in 1885 Dr. E. Ballard stated that when the underground temperature at the depth of four feet rises to 56°F. summer diarrhoea begins. This observation is roughly true, but in the work we have done it has not been found that the relationship of summer diarrhoea to the earth temperature is closer than to that of the air. In consequence the following remarks are based solely upon the temperature of the air. It has long been my opinion that summer diarrhoea was in the main (for its ætiology must be multiple) not one disease but two, the epidemic of the first type having its maximum in late July or early August, and of the second type in September. The forms of the epidemics are different and also the duration, the first having a steep ascent and a rapid decline, the second a more gradual slope throughout.

The first trials sought to eliminate the second epidemic. This was done by assuming that only those deaths which were in excess of certain levels were to be used for statistical purposes. In taking the correlations, therefore, between temperature and deaths from diarrhoea, the figures for no week were used unless at least 75 deaths from diarrhoea occurred. The sums of the number of cases above this level were first ascertained. The next level chosen was 100 deaths per week, the third 125, and the fourth 150. Corresponding excesses of temperature were also calculated. Using the mean weekly temperature as the standard of temperature the excesses during the summer above the successive levels of 56°, 58°, 60° and 62° were summed. The most adequate measure seemed to be a combination of the sum of the weekly excesses of temperature over 60° and the sum of the excesses of the diarrhoea deaths over 100. In this case the correlation is in the neighbourhood of 0.8. It would be thus possible to calculate, if the excess temperature above 60° were known, the amount of diarrhoea to be expected very approximately.

The second series of correlations apply to the rise of the first epidemic. The excesses of temperature over 60° prior to the 28th week in the year were summed, and the number of deaths from diarrhoea registered before the end of the 29th week placed in comparison. Here again a very high correlation was found, the correlation being above 0.8. Thus if we know the number of degrees of temperature in excess to the end of the 28th week, the number of deaths within an error of 20 per cent. could be calculated. When, however, the matter was considered more fully it was discovered that a strange break in the statistics takes place. Up to 1899 the relationships hold very closely; after 1899 a gradual change occurs. Instead of a considerable proportion of the epidemic occurring before the 29th week, after that year it begins uniformly later. In 1900, 1901, 1904, 1905 and 1906, though the epidemic is of very similar form to that experienced before 1899, it occurs later in the year though the excesses of temperature were such as would have given rise to epidemics in previous times earlier in the year. From 1907 the maximum of the epidemic, in place of occurring as a rule about the 30th to the 33rd week, occurs in the 35th to the 40th week, and instead of a large epidemic occurring—except in one year, 1911—the number of deaths is comparatively small. As already remarked, epidemic diarrhoea seems

to be a mixture of two diseases. Till 1899 the first was predominant. Before that date the later epidemic was most marked in 1895. In 1907 it became predominant; the only year since 1907 in which the amount of diarrhoea was anything comparable with previous experience was 1911. Even in such a very hot year as 1917 a very small epidemic of summer diarrhoea occurred. In former times the deaths associated with such a temperature as occurred in that year would have been well over 200 a week.

It would seem, therefore, that the first type of diarrhoea has become extinct, or nearly extinct, and that the later type alone survives. Inquiring at the London Health Office, Dr. W. H. Hamer tells me that the by-laws for the cleansing of London came into action in 1893, and that by 1898 London had become a vastly cleaner town. This must account for a part of the change, but there is some other phenomenon in addition. For instance, the excess of temperature in 1884 before the 29th week was on all fours the same as that of 1914, and yet the number of deaths in the 29th week of the former year was about 600 and in the latter only 30, while with a very warm summer the epidemic had its maximum in the 40th week of the year. I therefore think it likely that though there may be a good deal of diarrhoea in London this summer it will be late diarrhoea and not on the same footing as the devastating phenomenon of the last century.

CONTROL OF VENEREAL DISEASES.

CONTINUITY OF TREATMENT.

Two important reports, here summarised, emphasise the fact that if we fail to secure continuity of treatment our venereal diseases scheme is a failure. Dr. E. W. Hope estimates that 60 per cent. of patients in Liverpool fail to continue their treatment until they are free from infection. Dr. F. N. K. Menzies and Colonel L. W. Harrison state that the average failure to complete treatment for the whole of the London clinics cannot be put at less than 30 per cent. and is probably higher. The London report points out obvious defects in the arrangements of the clinics which no doubt in part account for this serious state of affairs. The Liverpool report lays stress on the need for fresh legislation to enforce continuity of treatment, and contains a draft of the proposal of the Liverpool Corporation to this end. Both reports merit close study.

CRITICAL REPORT ON THE L.C.C. SCHEME.

The report on four years' working of the joint venereal diseases scheme for London and the Home Counties from the pen of Colonel Harrison (representing the Ministry of Health) and Dr. Menzies (representing the London County Council) shows that the facilities for treatment at the existing clinics are not adequate, and lays emphasis on the need of coördinating the work of the numerous rescue and preventive societies.

The Developing Scheme.

The scheme came into operation in 1917 and consisted of an arrangement between the counties of London, Bucks, Essex, Herts, Kent, Middlesex, and Surrey, and the county boroughs of Croydon, East and West Ham on the one hand and the principal London hospitals on the other hand, for the establishment of treatment centres, the pathological examination of specimens, and the distribution of salvarsan substitutes. The population to be served by the scheme was nearly 8 millions, of which the L.C.C. was responsible for more than one-half. The hospitals taking part numbered 21 in 1917, and the sum payable for treatment in 1917 was £27,000 and for pathological examination £6500. Since 1917 more hospitals have been included in the scheme and during 1920 the work was carried out by 27 hospitals, the total of grants-in-aid for treatment being £75,475 and for pathological work £15,100. Special developments have been the inclusion of eye hospitals in the scheme, the provision of accom-