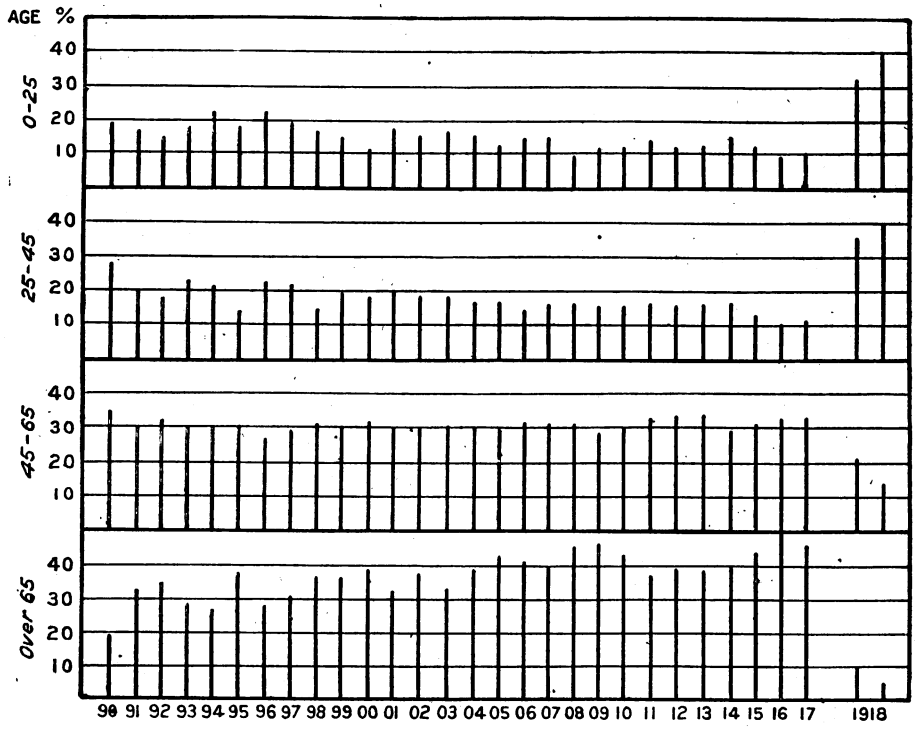
Dr. T. H. C. Stevenson, C.B.E.

I wish to point out by means of a few diagrams relating to London and Paris certain points in which the present epidemic appears to me to differ from those of the past twenty-seven years.



The sum of the four columns relating to any one year amounts to 100 per cent. The two sets of columns relating to the year 1918 refer to the July and October outbreaks, the latter being covered up to November 2 only.

(1) The first diagram shows that its intensity is greatly in excess of that of any of its predecessors. The excess of deaths from all causes over the average for the corresponding week of the previous ten years, corrected for growth or decrease of population, has been taken as representing the total influenzal mortality. Probably this understates the facts, as the diagram shows that, owing to the steadily declining death-rate, the deaths before and after each epidemic were distinctly below the mean. It is important to get some measure of total influenzal

mortality, as the diagram shows that, except in 1918, only a minority of the deaths ascribable to influenza have been so certified. The excess mortality of the present epidemic is understated in the weekly returns, which refer only to civilian deaths, owing to the absence on military service of a large portion of the population at the ages at which mortality is greatest. Although the curves relate to numbers of deaths, not death-rates, they serve as a very fair comparison of the mortality experienced this year and in the four principal previous outbreaks (1891, 1892, 1895 and 1900) owing to the stationary character of the population of the county of London during the period dealt with.

(2) The second diagram, which represents the proportion of the total excess mortality ascribed to influenza, to respiratory, to circulatory, and to all other causes of death respectively in the four chief previous outbreaks and in the two outbreaks of the present year, illustrates a second difference of the latter from the former. In the earlier outbreaks a minority only of the deaths (27 to 41 per cent.) were ascribed to influenza, most appearing as excess deaths from respiratory diseases, but in the outbreak of last July 54 per cent., and in the present outbreak up to November 2, 77 per cent. of all the deaths were returned as due to influenza. This may be because the victims of this year's outbreaks have been much younger than in the other epidemics, for it may be, as in the case of phthisis, that in certifying a slight attack is more likely to be passed over in favour of the bronchitis or pneumonia it has given rise to, in reporting the deaths of elderly patients.

(3) The third diagram shows that the present outbreak in Paris is of the same character in this respect as our own, 65 per cent. of all the excess deaths being ascribed to influenza.

(4) The next diagram (reproduced above) illustrates the sudden and startling change which has occurred in 1918 in the age-distribution of influenzal mortality. The percentage of deaths at 0-25, 25-45, 45-65, and 65 and upwards respectively in each year from 1890 to 1917 inclusive is shown, as well as that in the two outbreaks of this year. It is seen that in all previous years the majority of deaths—generally about 70 per cent.—occurred at ages over 45. But in July of the present year only about 30, and in October about 20 per cent. of the persons dying were over 45 years of age. In this respect as in regard to forms of certification the July epidemic was intermediate in type between the present one and those of earlier years. Only 5·5 per cent.

of the deaths in this outbreak have been at ages over 65 as against an average of 37 per cent. for the years 1890-1917.

(5) The next diagram shows that in Paris exactly the same change in age-distribution has occurred as here. The extent of the change is of course under-represented in both cases owing to the absence of so many young men on military service.

(6-8) The next three diagrams compare the dates of appearance and disappearance of mortality ascribed to influenza, and its growth and decline intermediately, with the corresponding facts for the excess mortality from respiratory and circulatory diseases and other causes of death respectively. They show that in the four previous epidemics illustrated the excess mortality not ascribed to influenza appeared sooner and generally reached its maximum and declined earlier than influenza certified as such. The latter returns are apt to remain in excess for many weeks after the epidemic, as tested by excess mortality from other causes, has come to an end. In July last the mortality from influenza and the excess mortality from other causes appeared and grew almost concurrently, but the delayed fall from influenza is apparent. In October the other causes once more preceded influenza—the order of disappearance cannot yet be illustrated.

(9) The last diagram, referring to the present outbreak in Paris, shows that the experience there has been exactly the same. It also shows that the wave length in Paris has been somewhat longer than in London, the maximum mortality not being reached till the sixth week. As there was no previous outbreak in Paris during 1918, none at least seriously impressing the mortality returns, the present outbreak there compares in this respect with ours of July, which had a particularly short wave length, attaining its maximum in the third week as against the sixth in Paris, and the fourth in most of our previous outbreaks.

Mr. M. Greenwood.

The first point I wish to raise for discussion is as to how far the present epidemic can be regarded as in any sense unique, and to settle that point we must first compare the 1889-94 period with its predecessors. Sir Arthur Newsholme put forward the view that the sequence of events in 1889 and following years formed a new phenomenon in the history of influenza, and that view, first emphasized by Dr. Charles Creighton, has a great deal in its favour; but it is well to recollect that