

stated in his article in last week's *NATURE*, that in the present outbreak we are concerned with the same disease which was widely pandemic in 1889-92, and prior to that had been almost unknown for forty-three years. Since 1892 influenza has lifted up its head at intervals of a few years, and since war began it has been the cause of a fairly heavy mortality in this country, as well as among other belligerent nations, and farther afield in South Africa, in India, and in various parts of America. A clear general conspectus of our present knowledge, and, it may be added, our lack of knowledge, of the disease is given in a memorandum¹ recently issued by the Medical Officer of the Local Government Board.

The chief peculiarity of the epidemic prevalence of influenza during 1918 is that it has occurred at short intervals, scarcely three months having intervened between the epidemic which culminated in July and the even more severe epidemic which now prevails throughout the United Kingdom, and is almost world-wide. It has recently been stated that the epidemic occurrence of influenza in July should have furnished warning of the present autumnal epidemic. Those who put forward this statement have not made themselves acquainted with our national experience of influenza. In actual fact no previous known epidemic of influenza in this country has had a summer maximum, and no previous epidemic has recurred within three months of a previous epidemic. In the light of events this rapid recurrence is not difficult to explain; for the exigencies of warfare, the rapid transport of many tens and hundreds of thousands of troops across the seas in circumstances which necessitated dense aggregation of persons, have intensified infection, multiplied the opportunities for severe secondary infections, and have exposed the civil population to exceptionally virulent complex infection.

The memorandum referred to above states that the bacillus of influenza (*Pfeiffer bacillus*), which commonly is present in these cases—whether causally or as an aggravating cause of pneumonia—has associated with it pneumococci and hæmolytic streptococci, which produce septic pneumonia and empyema in a considerable proportion of the total cases. The question of vaccine treatment and of prophylaxis by vaccine is considered, and there is some hope of success in this direction, though reliance must be placed chiefly on the hygienic precautions which are detailed in the official document. Of these, probably chief importance should be attached to the avoidance, so far as practicable, of overcrowded conditions; and in this connection special stress is laid on the importance of avoiding large units of aggregation, which greatly intensify the risk of infection. The importance of this consideration is too often ignored in civilian life; under military conditions such large units of aggregation cannot always be avoided.

The main object of this article, however, is to

¹ Memorandum on Epidemic Catarrhs and Influenza. By Sir A. Newsholme, K.C.B. (H.M. Stationery Office.) Price 1d.

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emphasise the need for further research on this disease. Some of the lines on which such research is called for are indicated in Sir Arthur Newsholme's memorandum. "Influenza is to be regarded as a member of a group of catarrhal infectious diseases which in the aggregate are perhaps the chief enemies of human health," and it is significant, that even in the years when the ravages of influenza are greatest bronchitis and pneumonia are each responsible for twice as many deaths as influenza. Thus the general problem is that of the prevention of catarrhs. How can immunity be secured and maintained? Will immunity against one catarrh-causing organism assist in securing immunity against others? If immunity cannot be secured against influenza, can one rob the disease of its terrors by a vaccine against purulent bronchitis or pneumonia?

These are among the problems urgently needing investigation. When the National Insurance Act was passed, one of its most valuable provisions was the 1d. per insured person which enabled the work of the Medical Research Committee to be initiated. During the war the energies of this Committee, and, it may be added, of most pathologists who could have been utilised for a national investigation on influenza, have been diverted to war-work. This work has been of great value; but it may be hoped that ere long staff and time will be available for a steady and continuous investigation of the numerous problems of immunity in relation to catarrhal infections. The public must be prepared to spend money on such investigations on a much larger scale than in the past if success is to be achieved; and for this purpose it will be necessary to train a generation of pathologists who can be certain of a fair livelihood while undertaking such work. Unless careers as pathologists are open to a much larger number of specially qualified workers than are at present available, the work of research will continue to be hampered as in the past. The harvest truly is great, but the labourers are few.

Meanwhile we must depend in the main on avoidance of crowds and on the practice of elementary personal hygiene in the prevention of influenza. The public can minimise this disease only by the active co-operation of every member. This involves a self-abnegation on the part of persons suffering from catarrh which is too often absent; they consider their work as more important than the welfare of their co-workers; and it is evident that so long as this continues influenza will at intervals continue to plague humanity.

DYESTUFFS AND THE TEXTILE INDUSTRY.

NOTHING could be more convincing of the neglect of this country to provide the means whereby the applications of scientific discovery should be made available in the conduct of important industries than the speech of Mr. Lennox B. Lee on the occasion of the annual meeting of

the Calico Printers' Association, of which he is chairman, on September 18. It appears that the association is by far the largest user of colour in this country. Before the advent of the war the 2000 colours it then used were to the extent of 70 per cent. produced solely in Germany, and of the remainder only 7 per cent. were of British origin. At the present time out of the restricted list of 230 essential base colours only 25 per cent. are produced by British makers, one-third of these being substitutes, and only used because better colours cannot be obtained, whilst the cost is not less than from 200 to 1000 per cent. above pre-war prices. Moreover, of the 230 colours above-named, only the commoner colours, including also one or two of the better kind, are obtained from British firms. The association is, in fact, dependent upon the Swiss colour manufacturers for the finer ranges and specialities, while quite half the colours of the said list cannot be obtained at all, amongst them some of the most valuable.

This is a very serious state of affairs, since of the cotton goods export of Great Britain, amounting in 1913 to 56,000,000*l.*, more than half were exported in the coloured state. Unless in the future the colours essential to the industry can be produced in this country of a quality and range and at a price which compare favourably with the production of Germany and Switzerland, this great industry must inevitably suffer, and be doomed to ultimate failure; and not alone this important moiety of our cotton textile exports, for we shall likewise imperil the market for uncoloured textiles also. A boycott which is contemplated on the import of German dyes, with the view of encouraging the production of British dyes, will not meet the case so long as the quality or the class of dye (new dyes are continually being produced), or the price at which they can be sold to the user, will not compare with the product of the foreign manufacturer. The calico printers and dyers, having regard to the fact that they are in competition with nations all over the world in foreign markets, must of necessity get the colours they require in the best and cheapest market, and if they cannot procure these at home must do so where they can. We have the raw material of the coal-tar colours here in vast quantities, which we largely exported to Germany, and in the case of one large firm in the North of England, which is Swiss-owned, the intermediate products are sent to Switzerland, to be there treated and returned to this country in the form of dyes of fine quality.

There is but one effective remedy for this most serious menace to one of the greatest of our industries, and it consists in the provision of a numerous highly trained body of skilled workers which it is the business of our scientific colleges to supply. Therein lies the initial advantage of Germany and Switzerland. Just fifty-six years ago it was confidently stated in an official document that, having regard to the exhibits at the International Exhibition, London, in 1862, "England has now become the dye-producing

nation of Europe," and we now see, because of our lack of enterprise and vision, how completely this has been falsified. Mr. Milton Clarke, the president of the Bradford Dyers' Association, declared in February, 1916, that the establishment of the synthetic dye industry was vital to our national safety, since dyes and high explosives were very closely related, and that complete, self-contained, and independent manufacture of aniline dyes within the United Kingdom was essential to the commercial and martial protection of the State. "Had it not been for the aid we have received from the Swiss makers," he went on to say, "I dare not contemplate what our position would have been during the last eighteen months."

The vital importance of this question is evidenced by the fact that, taking the whole range of the textile industries of the kingdom, the annual exports reach a total value of 200,000,000*l.*, and the number of persons employed is something near two millions. It is, therefore, a matter of serious national concern, and justifies the Government in any prudently considered action which would legitimately and permanently ensure the well-being not only of the dye-producers, but also of the dye-consumers. Wisely conceived, their interests are mutual and inseparable, and must be studied as a whole.

*THE RIGHT HON. SIR EDWARD
FRY, G.C.B., F.R.S.*

SIR EDWARD FRY, who died on October 18, within a few weeks of reaching the age of ninety-one, was born at Bristol, and educated at University College, London. He was called to the Bar in 1854, and, after a brilliant career, was made a Lord Justice of Appeal in 1883. He resigned in 1892, but his services were repeatedly utilised by the Government, particularly as chairman of various Commissions. He was also a member of the Hague Permanent Arbitration Court. A man of wide knowledge and interests, he was a good classical scholar and a student of history, philosophy, and the natural sciences. As a boy he and his younger brother David took a keen interest in the flora of the district near their home in Bristol, an area which included the famous botanical locality, the St. Vincent's Rocks. Mr. David Fry, who died in 1912, was a fellow-worker of Mr. James White, author of the Bristol "Flora."

Sir Edward Fry was especially interested in mosses, and a lecture which he gave in 1891 at the Royal Institution on British mosses was developed into an admirable little text-book in which the life-history, structure, and phylogeny of the mosses are described in a popular but thoroughly scientific manner. A second edition appeared in 1908. A companion volume on the "Liverworts, British and Foreign," appeared in 1911. In the latter work Sir Edward Fry was assisted by his daughter, Miss Agnes Fry, who