chiefly upon bread because they could not afford to buy anything else. Times have changed since then and bread has lost a good deal of its importance. It has gone out as a necessity and it has yet to come in as a luxury. At the same time any resident in London or any large town can have the most palatable and perfect bread possible if he would only take the trouble to look for it. He may be certain of one thing, that housewives, now they have once been emancipated, will never again return to the bondage of home-baking.

I am, Sirs, yours faithfully,

EDITOR OF THE BAKER AND CONFECTIONER.

Chancery-lane, London, August 14th, 1901.

* * The defence that modern conditions of life make substitution a necessity was to be expected. But the defence is unsatisfactory. Cane sugar crystallises, and therefore jam or marmalade cannot be made with it any longer. Would glucose be used in substitution if it cost three times as much as cane sugar? Of course it would not.—ED. L.

"FATAL INTESTINAL HÆMORRHAGE IN PNEUMONIA."

To the Editors of THE LANCET.

SIRS,—The very interesting paragraph on fatal intestinal hæmorrhage in pneumonia on page 460 of THE LANCET of August 17th might give the impression that pneumococcic colitis was not described in this country. Therefore it seems only fair to English medicine to point out that pneumococcic colitis will be found described on page 942 of the article "Diseases of the Colon" in vol. iii. of Allbutt's System of Medicine, published four years ago.

I am, Sirs, yours faithfully,

Harley-street, W., August 19th, 1901.

W. HALE WHITE.

THE MEDICAL GUILD.

To the Editors of THE LANCET.

SIRS,—I have the honour to forward you the following resolutions which were unanimously passed at the last meeting of the Medical Guild, Manchester, on July 26th, as follows:—

(1) That in the opinion of the Medical Guild, seeing that vaccination is made compulsory in the interest of public health, the parent or guardian of a child should have the right to select any registered medical practitioner, who is willing to do so, to perform the vaccination, and that the cost of the same should be defrayed by the State at a fixed rate.

(2) That, in the event of the foregoing resolution being passed, the Council be requested to consider what steps can be taken to influence future legislation on the subject.

I am, Sirs, yours faithfully,

Manchester, August 17th, 1901.

DAVID OWEN.

THE STATISTICS OF DIPHTHERIA.

To the Editors of THE LANCET.

SIRS,—From time to time a communication is published drawing attention to the marked decrease in the death-rate which has followed the introduction of antitoxin. In looking over the 1899 report of the medical officer of health of the County of London a diagram showing the annual rate of deaths from diphtheria calculated per 1000 of the population, struck me forcibly in this connexion. It showed that for the last two years given, 1898 and 1899, this rate was almost identical with the actual mean rate of the last 40 years, while a table pointed out that the death-rate calculated on the number of notifications has fallen from 23 to 14 in the last 10 years. These apparently incompatible results raise questions which are not easy of solution.

If we assume, as in the face of all the clinical evidence we are bound to assume, the inestimable value of the antitoxin treatment, we are met by the obvious difficulty that increased isolation (the Asylums Board hospitals now take 60 per cent. of all notified cases as against 30 per cent. previously), improved sanitary arrangements among the poorer classes, and increased efficiency of treatment have not prevented an outbreak of diphtheria which for purposes of comparison with previous years should be represented by a population death-rate of 0.73 instead of 0.43. That is to say, that if we assume the value of antitoxin and leave it out of question for the moment the former 23 per cent. notification death-rate applied to the notifications of the years under examination would give 0.73

deaths per 1000 living, thus showing how formidable is the epidemic in question. If, on the other hand, we assume that the antitoxin treatment has only stimulated the powers of notification of the profession and has had no effect on the actual number of deaths we make a serious charge against the treatment. That charge receives very considerable support from the diagrams shown of Metropolitan Asylums Board hospitals. In the first is shown the ratio of deaths from diphtheria in hospitals to deaths from diphtheria in London, and in the second the ratio of admissions to notifications. Year by year for 10 years these ratios are almost identical. That is to say, that the introduction of antitoxin has not improved the treatment of cases in hospital as compared with the total cases in London. For example, in 1883 30 per cent. of the total cases notified were treated in hospital and 30 per cent. of the total deaths occurred there; in 1893 60 per cent. of the total cases notified were treated in hospital and 60 per cent. of the total deaths occurred there. Such a stimulation of notification as I have suggested would result in an increase of cases with no change in the number of deaths, the result statistically being a fall in the case mortality.

The three most potent factors in the spread or retardation of such a disease as diphtheria are isolation, sanitation, and aggregation. I propose to take as an example of each of these factors scarlet fever, enteric fever, and measles, and to compare the increase or decrease of the population death-rate of each. In none of these diseases has there been a radical alteration of treatment and the spread of each is regulated in the main by only one of these factors.

Table showing the Death-rate per 1000 of Living in various Diseases.

	1899.	Mean of period from 1888 to 1898.	Mean of period of longer duration.
Diphtheria	0.43	0.49	0.43
Scarlet fever	0.09	0.21	0.54
Enteric fever	0.17	0.13	0.19
Measles	0.47	0.62	0.58
Whooping-cough	0.38	0.54	1.49

On the face of it such a table would suggest that if any specific has been found it would not be for diphtheria, but for scarlet fever or whooping-cough. First, as to scarlet fever, the population death-rate has gradually fallen from 0.21 to 0.09 per 1000; the case death-rate in the Metropolitan Asylums Board hospitals has fallen from 12.2 to 5.9 in the course of 23 years. If isolation has any effect on diphtheria it should, as in scarlet fever, reduce not only the case-rate but the population-rate *pari passu*; isolation has increased, as I pointed out previously, from 30 to 60 per cent. of the total number of cases. Secondly, as to enteric fever, the march of sanitation has reduced the population death-rate from 260 per 1,000,000 to 130 per 1,000,000 in the course of 20 years; 1899 was a bad year and considerably above the average. Thirdly, as to measles, it has been asserted that this outbreak of diphtheria of such magnitude is due, in part at any rate, to the aggregation of children in board schools, and the fact that the proportion of notified cases within the school age (from three to 13 years) has increased in 10 years from 50.9 to 62.9 per cent. of the total notifications is adduced as evidence. We should expect therefore to find a similar rise in the population death-rate of measles. Measles is, of course, very variable in its incidence, but the table shows definitely that on the whole the aggregation of children has not increased the population death-rate from measles. We must also bear in mind that the number of children attending school increased during this period very considerably, and that at this period of life follicular tonsillitis is most common.

Hence we find in conclusion that a disease subject to fluctuations dependent on causes which have steadily produced a fall in the population death-rate of other similar diseases, and further aided by a treatment which has almost halved the case-mortality, has yet achieved the distinction of remaining steady at the mean population death-rate of the last 40 years. There are two possible solutions of the difficulty: (1) antitoxin is a failure and the attention drawn to the disease has resulted in greater accuracy in notification; and (2) for some unknown reason a cause not acting on the like diseases had induced a widespread epidemic, modified