The Contamination of Shellfish by Sewage.

The Royal Commission on Sewage Disposal has issued another interim report containing a most important statement. During the various "oyster scares" it has been assumed that the presence of the *Bacillus coli* in the oyster is proof of sewage contamination. The commission have discredited this test. They ordered Dr. Houston to examine a large number of oysters from the purest beds, waters and from beds liable to pollution, in order to ascertain the distribution of the *Bacillus coli* in nature. Over 1,000 oysters were examined, with the result that the organism was found in nearly all, but as a rule much fewer bacilli were found in oysters taken from pure than from polluted water. The commission hopes that eventually it may be possible to establish a quantitative test. The importance of this pronouncement is obvious. The chief sanitary inspector of the City of London recently obtained an order for the destruction of oysters because they contained the *Bacillus coli*. The layings from which they came were consequently withdrawn from the market. But during the hearing of the case it was shown that great pains had been taken to keep the oysters free from pollution.

Correspondence.

The Anglo-American Medical Association.

BERLIN, Feb. 3, 1904.

To the Editor:—The Anglo-American Medical Association of Berlin desires you to inform the profession of its organization and purposes. Realizing the difficulties which beset the path of the stranger the association places its services at the disposal of physicians who intend to study in Berlin. Such are cordially invited to attend the meetings which are held weekly, and any information concerning the work to be had here will be gladly given to any member of the profession who will communicate, on his arrival in Berlin, with Dr. J. H. Honan, president, Lützen Strasse 78, or with the undersigned committee.

ALBERT J. MAYER, M.D., Secretary.

DAVID SHANNON, M.B.

WM. W. GRAVES, M.D.

Albrecht Strasse 22.

NOTE.—Further particulars of this association were given in THE JOURNAL Jan. 30, 1904, p. 320.—Ed.

Susceptibility to Disease.

GODDARD, KANS., Jan. 14, 1904.

To the Editor:—I desire to call the attention of the profession to an important factor in the estimation of susceptibility to disease as influenced by age, namely, the decrease in the number of persons living as age increases. I have not been able to learn by a search of such literature as is available to me, and by a correspondence with several men of wide knowledge that this fact has ever been considered in the construction of tables intended to illustrate the varying susceptibility to a given disease at different ages.

The tables or reports, as constructed, doubtless illustrate truly the prevalence of the disease at different ages, but fail signally in showing the varying susceptibility. Thus, a compilation before me shows that out of 434 cases of pneumonia, 42 occurred between the ages of 10 and 20, and 24 occurred in persons from 60 to 70 years of age. This statement alone indicates a greater liability to the disease at the earlier age than at the later. Let us apply to the statement the American table of mortality and observe the result. This table begins with 10 years of age, and assumes the death of all persons at 96; and is on the whole probably the nearest approach to actual experience in the United States that has been as yet compiled. Out of 100,000 persons at age ten, 99,251 are living at eleven, 98,505 at twelve, and 92,637 at twenty. At the age sixty-one, 56,371 and at age of seventy, 38,569 are living. Assuming that the compiler of the cases of pneumonia meant by the phrase "between 10 and 20 years" from 11 to 20, inclusive, we find the average number living in that decade, out of the original 100,000, to be 95,928, while for the decade 61 to 70, inclusive, there are living an average of 47,996; barely half as many. The ratio of liability,

therefore, instead of being 42 to 24, is, if we take the number living in the first period as the basis of comparison, 42 to 24, multiplied by a fraction of which 95,928 is the numerator, and 47,996 the denominator; that is, 42 to 48—a marked difference.

In the computation of relative mortality, the difference is still more striking. Thus, Osler, in considering the etiology of pneumonia, quotes under the head of age from the census of 1890, that for every 100,000 of population there were between the ages of 15 and 45 years, 100.05 deaths; between 45 and 65, 263.12, and for 65 years and over, 733.77. Reducing this to a percentage, we have for the first period 9.1 per cent.; for the second, 24 per cent., and for the third period, 66.9 per cent.

Assuming that the author meant 15 to 44, inclusive, and 45 to 64, inclusive, for the first and second periods, we find the average number living in those periods to be, of the 100,000 living at 10 years of age, 85,751 and 64,242, respectively, while the average for the period of 65 to 95, inclusive, or the end of the table is 18,458. Assuming the average number living during the first period as the basis of comparison, we find the relative mortality to be, not 100.05 to 263.12, but 100.05 to 263.12 multiplied by a fraction, of which 85,751 is the numerator and 64,242 is the denominator; that is, 100.05 to 351.22. And a like calculation for the third period would show a relative mortality of the enormous number of 3,409. Reducing these numbers to percentages, we find for the first period a relative mortality of 2.6 per cent.; for the second, 9.1 per cent., and for the third, 88.3 per cent. While a comparison of deaths alone for the first and third periods shows a ratio of 1: 7.32, a consideration of the numbers of people living in the respective periods points to a real mortality ratio of 1 to 34.

It is hardly to be expected that many diseases will show such a striking difference in mortality at various ages as pneumonia; but only a careful investigation will determine, and the subject is worthy of such investigation.

In this study, other factors ought to be considered as immunity from a disease at a later age by reason of an attack at an earlier age. Thus, measles in this country is almost exclusively a disease of childhood, because of the well-nigh universal exposure at that time of life, and the consequent immunity, with rare exceptions, for the remainder of life. That it may attack individuals at all ages we know; and the universal predisposition to the disease at all ages, when not protected by an attack early in life, is well illustrated by the epidemic which raged a few years ago on the introduction of the disease into the Fiji Islands.

It will not be easy to eliminate this disturbing factor, though attention being directed to it in this connection, a long course of careful observation will do much toward that end. It will be easier to eliminate the effect of those diseases which, as pneumonia, leaves the patient, after a short immunity, with impaired powers of resistance to further infection. All that we have to do in that case is to exclude attacks subsequent to the first. The instances of second and later attacks of those diseases, one attack of which almost universally grants a life immunity, are so rare as to be perhaps negligible.

Notwithstanding the difficulty and perhaps the impossibility of getting ideal results, by reason of the obstacles alluded to, the investigation ought to be made in the interest of greater accuracy; and I venture to suggest a way of making it. Let a large number of the best hospitals in all portions of the United States be requested to send transcripts of their records bearing on this subject to some central office for compilation and calculation. Only in this way, it would appear, can a sufficient number of cases at all ages be had to give fairly accurate results.

This calculation ought to be made for each year of life. While I have never seen a table of infant mortality, the fact that a number of life-insurance companies take risks on children, points to the existence of such a table; and the short time involved, from birth to the tenth or the fifteenth year, ought to give assurance that the compilers have attained