Take also that new outcome of the same line of research, brain surgery. By recent methods of investigation two most important lines of inquiry have been followed out, the first leading to the localisation of cerebral injury or disease, so that the surgeon may at once direct his operative measures to the precise spot in the brain affected. This localisation of cerebral action has done for brain surgery and the accurate diagnosis of cerebral disease what auscultation did more than half a century ago for diseases of the chest; namely, giving precision to the diagnosis, and consequently more certainty to the prognosis and the treatment.

But the methods of research that led to the definite localisation of cerebral action led to another and most important result of a very practical character, namely, the discovery that the operation of trephining, which had almost been banished from modern surgery, owing to its extreme fatality, might be rendered almost perfectly safe by the proper employment of the antiseptic method. The animals operated upon in the earlier experiments could not be treated antiseptically, as they always pulled off the dressings that were applied over the trephine opening. These nearly all died. So soon as efficient means had been devised to retain the antiseptic dressings, which was simply done by fixing them to the animal's hair by means of collodion, so that when pulled upon pain was the result, then the operation of trephining lost its fatality and recovery became the almost invariable rule.

I have thus given a few instances of what the experimental method has led to in modern practical surgery. I might multiply these instances to a great extent, were time given me.

The old lines, also, of ordinary clinical observation and of dead-house pathology have long since been followed to their final termination: we can but multiply the facts already so carefully observed, and so admirably recorded by countless observers in every civilised country. It is not by following these old lines that modern surgery will owe its advance, but it is in the application to it of those means of experimental research which are now being worked out in the biological and pathological laboratory, that we may hope to find the solution of many of those problems that have hitherto baffled the surgeon.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF PUBLIC MEDICINE,

*At the Annual Meeting of the British Medical Association
held in Brighton, August, 1886.*

By RICKARD PATRICK B. TAAFFE, M.D., F.R.C.S. ENG.,
Medical Officer of Health for Brighton: President of the Section.

VARIOUS TOPICS IN PUBLIC MEDICINE.

I AM fully sensible of the compliment paid me in my having been asked to preside over so important a section; but, before proceeding farther, let me heartily join in welcoming the Association to Brighton, and more especially that portion of it which is embraced in the Section of Public Medicine; and I trust that not only the members of this Section, but those also of the other sections, will take advantage of being here to visit and inspect the various sanitary arrangements which the Sanitary Authority of Brighton has provided to meet the wants of so large and populous a town. There is the Sanatorium for the reception and isolation of cases of infectious disease; there is also a sanatorium belonging to Hove, quite ready, I believe, for use. The water-works will well repay a visit; also the sewage-works, and the intercepting sewer by means of which the sewage of Brighton and Hove is carried four miles beyond the town before it is discharged into the sea. I hope sincerely that the visitors will have an enjoyable time during their stay, and that profit and pleasure may be the result.

In this address I intend to bring to your notice the following subjects:—The Abatement of Smoke from Private Chimneys; The Decrease of the Death-Rate in 1871 to 1880; The Mortality of Infants under One Year of Age, from Diarrhoea caused by Improper Feeding. I shall then offer a few remarks on the milk-scarlatina at Hendon, in Middlesex, concluding with a few general observations.

It is an old saying, that where there is smoke there is always fire; but I shall assume that the converse, namely, that where there is fire there must necessarily be smoke, is not true. I shall therefore, in commencing, take as my first subject the Abatement of Smoke; and so take the opportunity of beginning with, instead of, as many things do, ending in smoke.

SMOKE-ABATEMENT AND PURIFICATION OF GAS.

A great deal has been done to procure an abatement in the nuisance caused by smoke from chimneys, by putting in force the clause relating thereto in the Public Health Act of 1875. But the clause only applies to the chimneys of factories, breweries, bakehouses, etc., and not to those of private houses. We owe a debt of gratitude to Mr. Ernest Hart for the efforts he has made in connection with the recent Smoke-Abatement Exhibition. As an outcome of that exhibition, our attention ought now to be directed, not only to the chimneys of factories, breweries, etc., but also to the chimneys of private houses. Imagine London with an atmosphere free from smoke, rivalling, in that respect, continental cities; imagine Brighton, although comparatively free, being absolutely free, from smoke; the same remark applies to other towns and health-resorts. Every particle of smoke that ascends into the air is deposited again, in the form of soot, into the air we breathe, and some of it finds its way into our houses and into our lungs; the black sputum expectorated every morning by persons living in London is familiar to Londoners and visitors staying there for any length of time; and, although it has been said by a celebrated person "that there was no such thing as dirt, but only matter in the wrong place," it cannot be doubted that the deposition of soot in our air-passages is not the deposition of matter in the right place, and must of necessity cause irritation to the mucous membranes of the bronchial tubes.

Every housekeeper would gladly be rid of the great drawback to cleanliness, namely, the blacks which find their way into our houses through every cranny. Dr. Angus Smith, on the Air of Towns, 1858, says: "The smoke of large towns is guilty of an offence to the eye, and through the eye it offends us both intellectually and aesthetically; in other words, the darkness and gloominess react on the character, especially of those not accustomed to the place, in such a manner as to make them distinctly conscious of a change. Those accustomed to it are not conscious of the effects; nevertheless, it acts upon them in such a way as to destroy some of the finer instincts of perception of natural beauty. About 1 per cent. weight of the coal used is sent off in the condition of carbon or tarry matter. This will be equal to 60 tons a day for Manchester," or 21,900 tons for 365 such days. That was in 1858. No doubt, the use of smoke-consuming furnaces has improved that state of things very greatly. Now, if all the smoke were consumed in our fires, what a large gain we should have both in a health point of view, and also in economy of fuel.

The remedy has been found in the construction of smoke-consuming grates, notably the underfed, such as were shown in the recent Smoke-Abatement Exhibition. The employment of these grates in private houses might be made compulsory; and this could be done gradually by compelling occupiers to replace one of the old grates by one of the new every year, one for each year of occupation. By this means, in twenty or thirty years time, except of course in very large houses, the old-fashioned wasteful grates would be replaced by the new or smoke-consuming grates.

The money saved by economy of fuel would soon cover the expense incurred by the changes; and the new grates might be held to be fixtures, to be transferred from tenant to tenant at a valuation. It is worthy of note that the fires in the "underfed" grates are always bright at the top, which adds greatly to their cheerful appearance, and to the amount of heat given out.

It is to be hoped that the day is not far distant when we shall be able to have our rooms lighted by the electric light, with all the advantages of breathing air free from the deleterious products of combustion of gas, and having the walls and ceilings of our rooms free from the blackness of smoke; but, until this happy time arrives, we ought to take advantage of any means we can command to remedy, as far as possible, the evils arising from the burning of gas in our homes.

Mr. W. J. Cooper has invented a method for purifying gas. It is done by using limed coal instead of pure coal in the process of manufacture, in the proportion of 2½ parts of slaked lime and 100 parts of coal. The advantage of using limed coal, according to Professor Wanklyn, is as follows. "The coal yields a larger fraction of its nitrogen, in the form of ammonia; it also yields a slightly larger fraction of its carbon, in the form of a volatile compound. It gives a very much smaller portion of its sulphur in volatile forms; and the non-volatile residuum, the coke, is found to be considerably improved in quality. In the distillation of the coal, the lime forms, with the sulphur in it, sulphuret of calcium, which becomes so incorporated with the coke as to be quite inseparable from it; and, when burnt, this sulphuret of calcium, being in the presence of an excess of lime, remains in the ash, thus preventing the sulphur which it contains being given off as sulphurous acid, as is the case with coke made

from coal only. Small as is the addition of lime to the coals, and its after appearance in the coke, it has the effect of promoting combustion, as it acts as a conductor of oxygen, and causes the coke to burn more brightly and cheerfully—in fact, considerably better than ordinary gas-coke ever did or ever can." The advantage of having gas deprived of volatile sulphur-compounds cannot be overestimated, and I hope the Legislature will make the process compulsory in all gas-works. It is being successfully employed at Tunbridge Wells.

I may mention the inventions of Benham and Wenham for carrying off the products of gas from rooms, which doubtless will be further improved, and the difficulty attending the action of horizontal flues overcome.

DECREASE IN THE DEATH-RATE, 1871-80.

Passing to the next subject, I shall touch upon the striking decrease in the death-rate of 1871-80. The Registrar-General, in the supplement to the Forty-fifth Annual Report, has shown that the mean annual death-rate in England and Wales in the decennium 1871-80 was 21.7, which was lower than in any preceding decennium since civil registration began; the death-rate, although varying from year to year, practically remained stationary during the thirty-three years 1838-70, averaging 22.4.

Mr. Noel Humphreys has pointed out "that the mean death-rate of the first two years of the current decade was so low as 19.3."

Now taking the mean rate of 1883, 19.5; 1884, 19.6; 1885, 19.0; we see that 19.3 is maintained as the average mean death-rate for the first half of the current decade; this shews a decrease (which it is hoped will be continued in the second half) of 1.9, and of 3.1 from the mean rate of 1838-70.

In the Registrar-General's supplement already quoted, Dr. Ogle says: "There can be no reasonable doubt that the very marked and progressive decrease in the general death-rate is due to the effects of the ever-increasing efforts to improve the sanitary condition of the country; and that sanitation should have more distinctly affected the mortality of the young than the old is only what might be naturally anticipated, for it is against noxious influences to which the young are more particularly sensitive than the weapons of sanitary reform have been chiefly directed."

Dr. Ogle further says:—"That sanitary administration can do much to lower the mortality of a given place, is indisputable. The very great general decline in the death-rates since the commencement of active efforts to ensure more efficient sanitation is sufficient evidence of this; as also is the further notable fact, that the decline in the death-rate has been greatest in those parts in which the sanitary administration has been most active, that is to say, it has been greater in the urban than in the rural districts." Again, "The old English life-table, based on the mortality of 1838-54, gave the mean after-life time, or expectation of life after birth, for males 39.91, and for females 41.85; while a life-table which has been based on the mortality of 1871-80 gives the expectation of life for males at 41.35, and for females 44.62, that is, an increase of 1.44 for males, and 2.77 for females."

"By the old table one half of every million males born would be dead before the end of their 45th year; by the new table half would not have died till after the end of the 47th year; that is, an increase of more than two years."

"By the old life-table, half of every million females would have died before the end of the 47th year, whereas by the new life-table half would still be surviving at the end of the 52nd year, or an increase of more than five years." Good news this for the ladies!

"The mean life time of males is by the new life-table 41.35, whereas by the old it was 39.91 years; according therefore to the new table, a million males would live 1,439,139 years more than would be the case according to the old table. Similarly, a million females would live 2,777,584 additional years."

"The mean annual number of births in England and Wales in 1871-80 was 858,878, and of these births, 437,492 were of males, and 421,386 of females. The additional years lived by this annual number of children, if subject to the reduced rates in the new Life Table, would be for males 629,612, for females 1,170,435, or for persons including both sexes, 1,800,047."

Mr. Chadwick says: "The changes in the death-rate have given to the community an annual addition of 1,800,047 years of life shared among its members; and allowing that the changes in the death-rates are the direct consequence of sanitary interference, we must regard this addition of nearly two million years as an annual income derived from the money invested in sanitation."

"That, in accordance with the experience of the Friendly Societies, for every adult death of the wage classes, there are at the least twenty days of bed-lying sickness, involving the loss of wages during the time; and that, according to Sir James Paget, the insurance of those

classes against excessive sickness and premature mortality amount to no less than £25,000,000 annually."

The Borough of Brighton has shared in the general reduction of the death-rate. The average death-rate in the two decades 1851-60, 1861-70, was 22.0; in the decade 1871-80 it was 20.2; in the decade 1874-83 it was 20.0; in that of 1875-84 it was 19.8; and in that of 1876-85 it was 19.3, showing a decline in the death-rate of the municipal borough of 2.7 per 1,000, without making sufficient allowance for visitors in the population.

In the year 1885, in the Parliamentary Borough of Brighton and Hove, the annual death-rate was 16.4; and allowing for an addition to the population of an average of 10,000 visitors (a moderate addition), the death-rate was only 15.2 per 1,000; this latter being the real death-rate per 1,000 of Brighton for 1885. The death-rate for the year 1885 was 13.1, 14.1, 12.9, 12.5, in the Palace, Kemp Town, Preston, and Hove districts respectively, of the parliamentary borough, no sufficient allowance being made for visitors in the population, which allowance would of course have made the rates lower.

The important conclusions arrived at by the Registrar-General must be my excuse for quoting so largely from his report;—conclusions which must prove most satisfactory to the sanitary authorities of the kingdom, and to all persons engaged in practical sanitation, and which doubtless will serve as an incentive to continued efforts on their part.

THE REGISTRAR-GENERAL'S WEEKLY RETURN.

Before leaving the subject of vital statistics, I should like to offer a few remarks on the weekly reports of the Registrar-General. In 1881, I wrote to Dr. Ogle, the Superintendent of the Statistical Department of the Registrar-General's Office, and pointed out that the introductory remarks, on the first page of the weekly returns, were vague in stating that the highest mortality from scarlet fever had shown itself in Hull, Nottingham, and Brighton, the latter being a very different kind of town from the two former; and that, unless the number and the rate per 1,000 were given, the public would take an exaggerated view of the mortality, and imagine it to be much greater than it really was. After some correspondence, Dr. Ogle kindly informed me that a portion of my suggestion would in future be adopted in the introductory remarks of the weekly reports, but that he did not see his way to giving the number of deaths without also giving the population, and that to do so would be cumbersome, space being limited.

For one week, in the autumn of 1881, the death-rate from fever in Brighton was announced as 1 per 1,000, in the Registrar-General's weekly return. A few days afterwards, I happened to meet a Doctor of Divinity of Cambridge, who, to my astonishment, expressed himself much concerned at so high a rate, and on inquiring further, I found that he had inferred that a rate of 1 per 1,000 meant 107 deaths reckoned upon the gross population of that year, 107,934. I explained to him that the Registrar-General took a weekly population as a constant by means of which he calculated the annual death-rate for any one week; and that this constant was obtained by dividing the gross population by 52,174.7 (the correct number of days in a natural year being 365.24226), thus getting a weekly population; and by multiplying the number of deaths by 1,000, and dividing by the constant or weekly population, the Registrar-General obtained the annual death-rate. In the case mentioned, the death-rate of 1 per 1,000 was equivalent to 2 deaths, and not, as the Doctor of Divinity supposed, 107 deaths; the next day I met a Fellow and gold medalist of the Royal Society, and I found that his reading was the same as that of the Doctor of Divinity. I was somewhat startled at this similarity of opinion, and I inquired of medical men whom I met from time to time, and ascertained that they also had the same idea as the Doctor of Divinity and the Fellow of the Royal Society. It so happened that at this time we had a Health Congress assembled in Brighton, and I had an opportunity of speaking to several medical officers of health on the subject; I was told by them all that their experience went to show that the death-rates were misunderstood by the public. I firmly believe that the general death-rate is as carelessly read as the "fever" death-rate, and the same hazy notions are entertained with regard to it; for whenever the rate has been as high as, say 23 or 25 per 1,000, in a week, I have received numerous and anxious enquiries and letters on the subject; but, when the death-rate has been unusually low—and it has been as low as 9.0 per 1,000 in Brighton in the week ending June 12th of the current year, no one appeared to see it or take the least notice; and I draw the inference that the weekly reports, which should be read one week with another for several weeks, are misunderstood. The value or significance of an annual death-rate may depend on the composition of that rate; as to whether it is principally made up of

deaths of old people, or again, as to whether it is principally or largely made up of deaths from the zymotic diseases. A death-rate of 26 or 30 per 1,000, if the deaths be principally from old age, would be a better rate than one of 13 or 15, if made up principally of the most deadly diseases of the zymotic class.

In the weekly reports of the Registrar-General, it is only the introductory remarks on the front page that are copied by the newspapers. I do not say that the reports mislead, but I do say that they are misunderstood. The public do not clearly understand that the so-called rates are not actual rates at all, in the same sense as the annual or mean death-rates; they do not realise that these figures merely represent what the annual rate in proportion to the population would be, if the number of deaths should prove to be the same each week throughout the whole year.

Recently, the Registrar-General, in the introductory page, in addition to giving the death-rate for the week, has also given in parallel columns the rates of the three previous weeks; this is a great improvement, inasmuch as it substitutes four observations for one, as previously given. I would respectfully suggest the following arrangement as being more easily understood, giving four columns, as at present used, the space being the same.

Towns.	Popula- tion.	Week ending July 3rd.		Thirteen Weeks' Average.
		No. of Deaths.	Annual Rate.	

The above plan, if adopted, would give the average of thirteen observations instead of four, and the number of deaths could be given in that part of the weekly report (front page), in which notice is taken of the towns which have the highest zymotic death-rates; the population being given in the second column, meets the objection of Dr. Ogle to giving the number of deaths without giving the population. I would also suggest that a short explanation might be given, in the introductory page, of the method by which the weekly annual death-rates are obtained. In an educational point of view alone this is desirable.

It having been shown by the Registrar-General that the decrease in the death-rate, 1871 to 1880, was principally due to the decrease in the mortality of the young; it appropriately follows that I should take as my next subject one of the principal causes of the mortality of very young children, and point out how the already decreased death-rate of the young may be still further diminished.

INFANTILE DIARRHŒA.

Of 582 deaths from diarrhœa at all ages, recorded by me in seven years, 526 occurred among children under five years of age; and, of the latter, 433 were of children under one year. The deaths occurred principally during the months of August and September; in two of the years, there were deaths in July, 1883-1884. Of 441 children who died from diarrhœa, as regards whom (by special inquiries) the method of feeding was ascertained, 49 only were nursed by the mother, and died at the ages in the following table.

Under 3 Months.	3 and under 8 Months.	8 and under 10 Months.	10 and under 12 Months.	13 Months.	14 Months.	15 Months.	16 Months.	17 Months.	2 Years.
15	18	3	5	1	3	1	1	1	1

Of 392 children fed more or less artificially, who died under one year, the ages at death were as follows:

Under 3 Months.	3 and under 8 Months.	8 and under 10 Months.	10 and under 12 Months.
126	207	39	20

Of these, 260 were fed by milk from the bottle (69 on condensed

milk), 36 were nursed by the mother and fed also upon artificial food, 21 were fed entirely on artificial food, 7 were fed on condensed milk only, 62 were fed by milk from the bottle and also by artificial food, 4 were nursed by the mother and fed also from the bottle, 1 was fed on condensed milk and bread sop, and 1 on milk and oatmeal. The following were the artificial foods used: arrowroot, corn-flour, baked flour, Ridge's food, Mellin's food, tea-cakes, tops and bottoms, bread sop, beef-tea, oatmeal.

From these facts it may be deduced that improper feeding and improper nursing, even when the mothers nurse their children, are unmistakably among the principal causes of infantile mortality from diarrhœa. Not only is the kind of food injurious, but I know, from my own experience in the out-patients' room of the Royal Alexandra Hospital for Children in Brighton, that most, if not all, infants have food given to them from hour to hour. If one asked a mother how often she nursed her baby, the answer was almost always, "Whenever it wants it;" and that meant, in most cases, whenever it cried. How is it possible that infants can be reared by such improper feeding? Take an adult, and give him a meal every hour, and watch the effect. He will soon suffer from derangement of the stomach and bowels; indeed, I scarcely think that he will bear such gross feeding for more than a few days. How much more, then, will this mode of feeding prove injurious to infants, whose digestive system is far more delicate?

The statistics of this account of infantile diarrhœa shows that the mortality from diarrhœa has been chiefly among children under 1 (433), and between 1 and 5 years of age (93), leaving only 56 deaths from diarrhœa in persons over five years of age. I am led to believe that the results of the inquiries tend to prove that even infants at the breast may be improperly fed by a too frequent supply; indeed, it is the prevailing custom among monthly nurses, whenever an infant cries, at once to apply it to the breast, or feed it on artificial food—a practice that cannot be too strongly condemned, for by it the child's digestive functions are being constantly employed, with consequent irritation, derangement, and diarrhœa, aided by an impoverished and debilitated condition of the mother, caused by the constant drain.

A great majority of these deaths of infants under one year occurred in poor and more densely populated neighbourhoods. I believe that diarrhœa among the children of the poor is much more frequent and fatal than among the children of the rich and well-to-do, for several reasons. 1. A great number of the labouring classes bring up their children by hand, from the first, in order to allow the mother greater facilities for labour and domestic duties. 2. Due care is not always taken as to the cleanliness of the bottle, or the quantity of the artificial food, which, under these circumstances, in hot weather, is apt to undergo fermentation. 3. Lastly, medical advice is not so easily obtained by the poor as by the rich. No infant at the breast, or who is being brought up by hand, should be fed more than once in three hours during the day, and twice in the night; after four months old, every four hours in the day, and twice in the night. If brought up by hand, the food should consist of only milk-and-water, to be sucked from a bottle. For the first day or two, the proportions should be milk one-fourth, water three-fourths; after the first day or two, and up to two months old, milk one-third, water two-thirds; from two to four months old, milk and water in equal parts; from four to seven months old, milk two-thirds, water one-third. A dessert-teaspoonful of sugar of milk may be added to each bottleful. No child under seven months old should ever be fed by the spoon, or receive farinaceous food of any kind. During the months of July, August, and September, it is advisable that the milk used should be boiled. It is safer to have milk boiled at all seasons.

But this improper feeding does not give the whole explanation of the cause of infantile diarrhœa, because the improper feeding, doubtless, takes place throughout the year; but it is principally in the diarrhœa summer quarter—or July, August, and September—that we get epidemics of the disease. Why is this? The only explanation I can at present offer is, that the stomach and bowels are in a state of subacute congestion (or irritation) for months previously, and the climacteric or other epidemic influences now act secondarily in determining the advent of diarrhœa as an epidemic. Probably, when diarrhœa is once started among infants, it may spread by infection. An additional cause is that the poor do not, as a rule, pay much attention to ventilation, so that the air becomes foul and polluted. It is a matter of observation, well recorded, that a long dry summer is a factor in the production of diarrhœa; doubtless owing to foul emanations, which will happen, more or less, even in the best drained places. That warm temperature is a great factor we are quite certain, for the epidemics begin to lessen in severity as the weather becomes cooler, and finally cease, as a rule, in October.

The subject to which I shall now refer is one of great moment, namely, milk scarlatina.

MILK SCARLATINA.

Mr. Power, one of the Inspectors of the Local Government Board, and Dr. Klein, have reported quite recently on an outbreak of scarlet fever spread through the medium of milk in London, and at Hendon, in Middlesex; and the conclusion they have come to is somewhat startling, namely, that cows at the dairy farm were affected by scarlet fever as a constitutional disease, with local symptoms consisting of vesication and ulceration of the udders and teats; that the disease was communicable to the cow from the human subject, I presume by inoculation, and from cow to cow by infection; that the milk in itself was not infected, but became so in the process of milking, from infective matter from the ulcers on the udders and teats.

The inquiry is to be continued by the Local Government Board, and the attention of sanitarians and pathologists will be anxiously directed to the results: 1, as to whether scarlet fever can exist in the cow, without having in the first place been communicated from the human subject; 2, whether the hands of milkers can become infected by contact with the ulcers on the udders or teats, as in the case of cow-pox (this does not appear to have happened in the Hendon cases, so far as the report goes); 3, if the cows are affected constitutionally and locally, whether the disease is communicable to the human subject only by the milk becoming infected in the process of milking. In the meantime, it is most advisable that all milk should be boiled.

If medical officers of health keep an accurate record of the milk-supply in connection with the existence of infectious disease in families, as I have myself done for years, I scarcely think such an occurrence as that reported at Hendon could very well escape observation and detection.

CONCLUSION.

I may say in conclusion that in 1872 a Public Health Act became law, which enacted that the country should be divided into urban and rural sanitary districts, and that medical officers of health should be appointed; three years afterwards followed the Public Act of 1875. From 1872 to the present time, a period of fourteen years, the progress made in the education of the public on sanitary matters has been of the most satisfactory nature,—indeed, almost marvellous, considering the great difficulties that stood in the way, namely, the unsanitary ideas which had been existing for generations, and which were handed down as a sort of unsanitary legacy, so to say; old-fashioned prejudices had to be combated. The notion that every man's house was his castle had to be dispelled. But, of course, the greatest difficulty was, and still is, though greatly lessened, the great and very natural dislike on the part of owners of property to be put to expense; but I am bound to say that, during twelve years' experience, I have found a large number of owners of property perfectly open to reason and moral suasion, and only too anxious to do all in their power to further sanitation; and I believe, as time goes on, and the benefits of having healthy houses and healthy surroundings become better known and understood than they are even at present, the difficulties will become gradually less and less. On the other hand, the obstinate and recalcitrant have to be dealt with; but the process is too slow and tedious. A notice has to be served, of a warning character; if not attended to, an order has to be made by the sanitary committee; this order has to be sanctioned by the sanitary authority. A certain time is given in which to do the work or abate the nuisance; if not done in the time specified, a summons is issued, and an order is made by the magistrates that the work shall be done within a certain time. All this takes, it may be, weeks before a nuisance is abated. The provincial magistrates, under the Public Health Act of 1875, have power to inflict a fine at the time the summons is heard. There ought to be a quicker process. Dr. Dadfield, President of the Society of Medical Officers of Health, in his opening address in 1884, called special attention to the tedious method at present existing for the abatement of nuisances. The case of occupiers is a very different one from that of owners. An occupier having a nuisance dangerous to health on his premises, such nuisance being due either to his own act, connivance, or negligence, should be liable to be at once summoned before a magistrate without any notice whatever.

It is quite time that the Public Health Act of 1875 should be amended in the above and other respects, such as relegating the registration of births and deaths in the various districts to the sanitary departments of those districts. Also, provision should be made against keeping dead bodies so long before interment, especially in warm weather. In the case of deaths from infectious disease, the process of disinfection is delayed by the deferred burial, with manifest risk to the inmates of the houses.

We in the provinces naturally look to London to take the lead in

all matters belonging to sanitation or in connection with the sanitary service. London is a great and vast city; it is the seat of the Government of the United Kingdom; in it are located the Local Government Board and its staff of sanitary inspectors, the Asylums Board, Board of Works, Privy Council, the University of London, the great hospitals, the Colleges of Physicians and Surgeons, and last, but not least, the powerful London medical press. When the local government of London is placed on a uniform basis or plan, and thoroughly reorganised, from the example of London we shall look for great things in the extension of the science and practice of sanitation; and we may hope that State Medicine or Public Health will ere long attain the position to which it is so justly entitled.

AN ADDRESS

DELIVERED AT THE OPENING OF

THE SECTION OF PSYCHOLOGY.

At the Annual Meeting of the British Medical Association, held in Brighton, August, 1886.

By T. S. CLOUSTON, M.D., F.R.C.P.E.,

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THE RELATIONSHIP OF BODILY AND MENTAL PAIN.

It would be possible to say a great deal regarding the relationship or bodily and psychical pain, and the meaning of this relationship from the physiological and psychological points of view. Even from the metaphysical point of view, a most interesting discussion as to their connection is possible. The whole of the questions regarding peripheral sensory apparatus, centripetal nerve-conduction, basal ganglionic receptive functions, and cortical perceptive action, would come in. The distinction between the nerve-fibres of common tactile and thermal sensation and those of pain; the difference between pain and hyperæsthesia; the connection between sensation and cortical reflex action; the connection between cortical inhibition and pain; the subjective differences between the feelings of organic well-being and ill-being; the causes of the differences between painful and pleasurable emotion, and between painful and pleasurable recollection; the necessary association of mental pain with certain mental images and of mental pleasure with others—all these questions would have to be taken into account in such a discussion. And further, questions as to perception and memory, as to association of ideas and volition, as to the entity that feels any sort of sensation or pain, bodily or mental, and as to consciousness, would have to be touched on in any really exhaustive examination of the relationship of bodily and mental pain. I do not propose to enter on any such wide discussion of this subject. My aim will rather be to be clinical and practical in what I am to say, and, if possible, to select and draw attention to certain facts in this matter, that have come under my notice as a physician practising chiefly in mental diseases, which may be suggestive of similar and wider clinical experiences to my brethren in the same department, and to others who see more of bodily and less of mental pain than we do.

My experience has been a peculiar one, if a very close connection between bodily and mental pain in many cases of disease be not a certain clinical fact. And if this is so, my inference cannot be wrong that it is a fact of immense importance, which has not had sufficient attention directed to it.

I shall not attempt to define what bodily pain is. I shall assume that the term covers and includes all subjective bodily sensations, that are consciously disagreeable. As I shall have occasion to point out, some of the kinds of bodily pain that have a close association with mental pain, are not of the keen typical sort, such as facial neuralgia or the pain of burning, or cutting, or bruising the skin where most sensitive. All kinds of perverted sensations of the unpleasant sort are clinically associated with mental pain, in cases of melancholia. But I shall shortly define the sense in which I shall use the term psychical or mental pain. As yet, the terminology of mental symptoms in disease has been apt to be, with most writers, inconstant and wanting in scientific accuracy. If a clinical writer wished to express the fact that a patient suffering from an exhaustive chronic brain-disease was impaired in his higher volitional and original energising power—the very highest faculty of a human being—he was often described as “lazy,” “purposeless,” “lacking in energy,” or “void of ambition,” or in some other such vague way as