

the evils of that system were as nothing when compared with the frightful evils, both urban and suburban, which are produced by the present system of underground cesspools. Formerly the cesspool was at the further end of the yard or the garden; now it is under, and sometimes even in, the house itself. As it is necessary to convey the closet soil by some means to the outfalls at Barking and Crossness, it is obvious it must pass from the higher parts of London under the streets and houses before it can get there. If I recollect rightly, Sir Robert Rawlinson, who, by-the-bye, is responsible to a great degree for the present system, said at one of the Social Science meetings that "the district of Belgravia was as flat as a pancake, and but for the ventilators, he predicted, he said, a fearful epidemic in that locality." But, if I am not mistaken, the three factors of decomposition are air, heat, and moisture, and without these factors decomposition cannot take place, and if we have to deal with a foul smell underground, I should say these factors should be excluded from it. In London there are many instances where offensive smells emanate from these underground cesspools. In the House of Commons, where a large sum of money has been recently expended in perfecting the cesspool system, the foul odours are already returning. Johnson properly describes a drain or a sewer as a passage for liquid, and if drains and sewers are kept for that purpose, surely they would flush themselves; and it is equally obvious, if the sewage problem is to be solved, that the excreta sewage must be kept separate and distinct from the rainfall sewage, and that the solid portion of the closet soil must be intercepted at the fountain head, where it may be retained in hermetically sealed iron receptacles without the smallest danger, and in them it may be sent to the farmer for use on his arable land. If this were done, sewage utilisation would no longer be a failure, but it would become a sanitary, an agricultural, and a financial success. I have been over the sewage works of London, Croydon, Birmingham, &c., and if the watercloset system is to be continued, and if the sewage problem is to be really solved, I am convinced the solution of the question must begin where the solution of every difficulty usually begins: I mean at the beginning!—I am, Sirs, yours obediently,

Birmingham, Aug. 6th, 1887. EDWIN CHESHIRE, F.R.C.S.

## PAIN AND ITS INTERPRETATION.

To the Editors of THE LANCET.

SIRS,—So much debatable matter appears every week in your columns, that it is surprising that letters of criticism thereon are so few and far between. It would be uncharitable to suggest that this may be due to lack of interest in perusal or to want of energy in putting pen to paper in reply. Last week, however, there appeared an article upon the "Interpretation of Disease," which contains a series of statements so strangely at variance with universal experience, no less than with common sense, that I feel it is incumbent upon anyone who has read them to controvert them. Mr. H. Cameron Gillies, M.B., the author of the article in question, ventures the following among other assertions concerning pain and its causation: "*Pain never comes where it can serve no good purpose. Pain comes at the right time. The measure of pain which attends an injury or a disease is a prophecy, in that same measure of recovery.*" It is in our knowledge that almost all inevitably fatal diseases are not attended with pain."

Now these statements, as is obvious from the context, refer to the beneficent utility of pain to the individual himself, and not in the wider sense in which it would be more possible to read them with patience and a guarded assent. Surely such fallacies scarcely required to be accentuated by italics to stamp them as such. What diseases are above all others "inevitably fatal"? Why, of course, that great class of malignant maladies which pathology comprises under carcinomata and sarcomata. Is pain absent there? Is pain purposive there?—purposive, that is, towards the utility of the individual. Yet Mr. Gillies does not except this great class, this *opprobrium medicince*, from his beneficent "law of pain." Pain, he says, in such cases would "serve no good purpose; there is no pain." Is this the grim comfort he would bring to a suffering woman tortured slowly to death by a sloughing scirrhus of the breast, or to a man, made almost unhuman and killed by inches by the slow yet sure ravages of a rodent ulcer? It is too late in the day to

attempt to prop up a theory of the invariable and direct beneficence of pain, shutting the eyes to facts to save a teleological theory which experience and reason have alike discredited.

To a reverent believer in evolution pain is more nearly comprehended in its true light and meaning, and much of its sting removed in proportion to that comprehension. The gradual growth of the nervous system from the early dawn of consciousness—the mere sense of externality—up to the delicate and impressionable susceptibility from which we derive all that is best and noblest, has proceeded under the direction of a natural process of selection, and eventuated in the fittest's survival. It has thus come about that the advantage in the race which the sharp reprimand of pain on danger's approach bestowed has, with the intensified susceptibilities which we prize, also afforded us increased possibilities and opportunities of suffering. To the evolutionist much, if not all, is explained; "the mystery of pain," which Hinton helped to dispel, is lightened. Hinton demonstrated its relative nature, and the absence of any constant external antecedent of it. Here there is to be found the comfort which science affords—comfort in the knowledge that pain is in obedience to law, is bound up with the progress of the race. With this knowledge and with this hope, far more than with blind assertions as to the invariable beneficence of pain, one can "kiss the rod," and be

"Patient of pain, though as quick as a sensitive plant to the touch."

I am, Sirs, yours faithfully,

W. J. COLLINS, M.S., M.D., B.Sc. Lond.

Albert-terrace, Gloucester Gate, N.W., Aug. 15th.

### To the Editors of THE LANCET.

SIRS,—My friend, neighbour, and adviser, Dr. J. J. B. Taylor of Ulverston, has obliged me with sight of a paragraph in THE LANCET on pain, the result of an inquiry from him, which again was prompted by a conversation between him and myself. May I venture to regard this as an introduction of myself as well as the subject? If so, I would like to submit the following queries:—1. Pain, in spite of its usefulness in the animal economy, nearly always has the air of an intrusion and a disturbance of that economy, but not absolutely so. The two fixed and normal pains in humanity are, it seems to me, those of parturition, limited to one sex, and those of dentition, limited to two or possibly more stages of development. It seems to me that these have a curious analogy, the dentition involving something of a tension of sensitive parts and extrusion of developed germs, although not, as in parturition, a separation from their matrix. It is an important question, Are there any other pains which can be viewed as fixed and normal, so as to take rank with these? It seems to me also that the higher vertebrates, at any rate in their domestic state, in which we know them best, sympathise with humanity *qua* parturition. Is there any knowledge available as to their wild state? And as regards their dentition—e.g., the changes noticeable in a horse's age-teeth—are any pains observed? 2. It seems to me that pain is not only preservative, but didactic—e.g., savage man finds travelling over rough ground painful, and devises mocassins, &c.; civilised man is prompted to discover anæsthetics and anodynes. Thus civilisation grows through pain, whereas pleasure, tending to absorb and satisfy, would never advance our progress, save as regards the means of procuring enjoyment, which, however, terminate in that enjoyment procured and do little to advance humanity. There is (to return to 1) a notable moral effect in the fixed and normal pain of parturition. It seems to impress the mother or dam in the interests of the offspring, and is allied in humanity to the tenacity of maternal affection, and reciprocally to the respect for maternal feelings, of which even hardened specimens of humanity commonly show a trace. And there seems to me to be, when all preservative and didactic uses have been satisfied, a surplus of pain in humanity, of which, I suppose, cancer may be taken as a typical case. It is my belief that this surplus can only be accounted for on moral grounds, as having a disciplinary tendency, not to the sufferers only, but to humanity at large. It is with this moral aspect of the whole question that I am chiefly concerned. But I should for obvious reasons be glad to have answers, so far as the state of our knowledge allows, to the above questions, and the benefit of any remarks to

which my own may give rise. I intended this when I began to be a private letter merely; but if you see fit to publish it, I have no objection, and I do not think my friend, Dr. Taylor, would have any.—I am, Sirs, your obedient servant,

HENRY HAYMAN, D.D.,

Rector of Aldingham; Hon. Canon of Carlisle.

Aldingham, Ulverston, Aug. 15th, 1887.

## USEFUL EMPLOYMENT IN THE TREATMENT OF THE INSANE.

To the Editors of THE LANCET.

Sirs,—I have read with much interest the article in your issue of Aug. 6th on the Lunacy Commissioners' report, and am grateful for the prominence you give to occupation as a cardinal point in the treatment of the insane. The Commissioners have, I think, done well to call attention specially to this point, and to express a hope that more attention may be paid to it as a potent remedial agency in the treatment of the insane.

It is pointed out in the report that "the employment of patients of the private class in hospitals and licensed houses is attended with greater difficulty than that of patients in county and borough asylums," and the case of St. Andrew's Hospital, Northampton, is quoted as a notable achievement, inasmuch as *one-third* of the gentlemen in that establishment are engaged in gardening and farm work. This is very creditable to the energetic medical superintendent of that asylum, as it is only during the past two or three years that he has had premises extensive enough to allow the development of the employment system.

I believe I may claim what little credit there may be in being the first to ventilate in the columns of the *Journal of Mental Science* the advantages of employment in the treatment of mental diseases in the upper classes, having written a paper on that subject for the *Journal* of July, 1882. For the encouragement of those medical proprietors and superintendents who may be afraid of the "much thought, trouble, and ingenuity" mentioned in the Commissioners' report, I should like to state that I have found no reason to depart from the practice I adopted seven years ago of insisting on regular occupation for every able-bodied patient in my asylum, and that I have now not the slightest trouble in getting at least *two-thirds* of my gentlemen patients (i.e., all those who are physically fit for work) to engage in regular useful occupation, which percentage compares favourably with the average in county and borough asylums of  $\frac{1}{3}$ , or the "notable achievement" of St. Andrew's Hospital quoted above, where *one-third* of the male patients are employed. I am perhaps rather too enthusiastic on this subject, but I firmly believe that it has only been found possible to abolish restraint and seclusion in English asylums, and the use of locked doors and airing courts in some Scotch asylums, by reason of the increased and intelligent interest betrayed on the part of asylum superintendents in the useful and rational employment of their patients.

I am, Sirs, your obedient servant,

DAVID BOWER, M.D.

Springfield House Asylum, Bedford, Aug. 11th, 1887.

## BORACIC ACID AS A FOOD PRESERVATIVE.

To the Editors of THE LANCET.

Sirs,—The question regarding the use of borax and boracic acid as food preservatives, upon which a joint preliminary report, referred to in your issue of the 13th inst., was recently presented to the Kensington vestry by Dr. Dudfield and myself, arose through my having found boracic acid in a sample of *potted cream* submitted to me officially for analysis, and subsequently in several samples of milk.

It is obvious that if the vendors of foods containing boracic acid are to be proceeded against under the Sale of Food and Drugs Act, the proceedings must be taken under the most severe sections of the Act—those, namely, which are intended to provide against the admixture of any substance actually known to be injurious to health, or likely to be injurious to health, with articles of food; and it therefore becomes necessary to obtain definite evidence as to whether boracic acid and borax can or cannot be considered as injurious additions. Very little information upon this head is forthcoming; but, as you very justly remark in

your annotation, what little there is is very decidedly against the use of the drug. This, indeed, is the conclusion that one would naturally anticipate on *a priori* grounds, and I may perhaps say that in the early part of 1886, chiefly upon such grounds, I made some remarks in public against the use of boracic acid preservatives, which were subsequently reproduced in the *Chemical News*.<sup>1</sup> In the report above referred to we did not think it necessary to give the full text of Dr. Förster's experiments and conclusions; but I am very glad that this has now been put before the readers of THE LANCET in Mr. Charles Hancock's excellent translation from *Dingler's Journal*, for the matter is unquestionably one of great public interest and importance. The drug was present in smaller amount in the samples of milk than in the sample of potted cream above referred to. The latter, in fact, contained so much of it that its taste was very distinctly perceptible.

Finally, I venture to draw your especial attention to two passages in our joint report. They are as follows:—

"An eminent authority whom we have consulted refers to the tendency of these substances to set up diarrhoea, a disease very prevalent in hot weather, when the preservative is most used to prevent that change which milk and cream are apt to undergo, rapidly, at a high atmospheric temperature."

"We desire to say, in conclusion, that, though in the present state of our knowledge the injurious action of very small doses of borax or boracic acid, even in the case of infants, and even having regard to the doses being continuous, may perhaps be considered as 'not proven,' it will probably become a question whether the use of any known preservative, in lieu of refrigeration, in any amount, however small, should not be prohibited, in view of possible and indeed probable abuse, and while doubt exists as to the action of the drug employed."

These remarks will, I believe, on consideration, be found tolerably suggestive.

I am, Sirs, yours faithfully,

CHARLES E. CASSAL,

Public Analyst for Kensington. St. George's, Hanover-square, and High Wycombe.

Town Hall, Kensington, Aug. 16th, 1887.

## "DISEASE AND MEDICAL ATTENDANCE AT WORKHOUSES."

To the Editors of THE LANCET.

Sirs,—As there have lately been several letters in THE LANCET with regard to the question of admitting "a second medical opinion into the workhouse," my experience in this matter may perhaps interest your correspondents.

I am the resident medical officer of the Chorlton Union Hospital and Workhouse, Manchester, and in the male lunatic wards of the hospital there was some three or four years ago a patient suffering from dementia, and incurably insane. This patient's friends wished him to be removed from the workhouse to a private asylum, and they sent their own medical attendant to visit him in the workhouse. This gentleman, a qualified surgeon, saw the patient in the workhouse, examined him, and filled up the papers necessary for his removal to an asylum. He never communicated with me, and I knew absolutely nothing about the matter until after the patient was removed from the workhouse. I reported the matter at the time to the guardians, and the clerk to the guardians ruled that "a pauper, or the friends of any pauper, had a perfect right to send for any medical man, and such medical man had a perfect right to treat such pauper in any way he pleased, without communicating with the medical officer of the workhouse at all." These were the exact words used by the clerk, which of course settled the matter.

I am, Sirs, yours obediently,

August, 1887.

J. S. ORCHARD, M.D.

<sup>1</sup> March 12th, 1886.

MANCHESTER WATER SUPPLY.—In view of the rapidly-diminishing quantity of water in store at the Manchester Corporation reservoirs, the authorities have had their attention directed to the question of procuring a further supply from some flooded collieries at Moston, a village adjacent to the city. Samples of the water, which is stated to be of splendid quality and practically inexhaustible, have been taken for analysis.