no experience; but I may mention, that the experiments performed by Dr. Sharpey on the frog, and which he kindly allowed me to embody in my paper read before the Royal Medical and Chirurgical Society, shew, even more clearly than the above, that the action of the Calabar bean on the heart, when administered by the mouth or by a wound, is not that of a cardiac poison. In one of the experiments related, circulation was observed in the web of the frog's foot about sixty hours after apparent death. Dr. Sharpey also found that, although the ordeal bean leaves the blood-heart unaffected, it possesses the power of arresting the pulsations in the lymph-hearts of the frog. He further found that, when, before poisoning a frog with the bean, a ligature is applied to one of the hind legs of the animal, in such a way as to include everything except the sciatic nerve, reflex muscular contraction can be induced in the limb in which the circulation has been stopped (consequently, the non-poisoned limb), either by the direct application of mechanical or galvanic stimuli to the limb itself, or to some other part of the body, thereby proving that it is not the sensory but the motor nerves alone that are paralysed. The poison in this respect, as Dr. Sharpey remarked, closely resembles woorara. I may add, that the ordeal bean still further resembles woorara and conia, in leaving the intelligence of the animal unimpaired. In all the animals I experimented upon, consciousness seemed quite unaffected up to the time of death. So that, as Dr. Christison says, it is not the power of volition that is destroyed, but the power of making volition effective.

From these facts, I think it will be conceded that I am justified in stating that the ordeal bean will prove a most valuable addition to the *Pharmacopœia;* and that, besides its ophthalmic uses, the chief benefits will be derived from it in spasmodic affections of the nervous system—such as chorea and tetanus, or other diseases where we desire to subdue muscular spasm without affecting the intelligence. In neuralgic affections, I have no doubt, it will prove equally valuable, on account of its anodyne virtues; but, as to its action in febrile and inflammatory affections, I cannot, with my present knowledge, see how it can be nearly so advantageous as other well known remedies. However, I may see cause as my knowledge increases to alter these views; and I shall only be too glad to learn from my fellow members of the Association how and when the remedy may be most usefully employed.

A Boat is to be established at the Naval Lunatic Asylum at Yarmouth, for the benefit of the lunatics.

Sewage and its Value. Can sewage be turned to any profitable account? is a question continually forced on the attention of the Board. The ratepayers, who are confidently assured that it is worth from one to two millions sterling a year, naturally remonstrate, and the Board of Works, with a cruel sarcasm, answer the remonstrances by forwarding to the vestries an account of the proposals they have received for taking the sewage. These are nine in number, and of very different natures. One is of a kind that would render most of the work already done unnecessary, and compel the expenditure of another million and a-half in additional works. This gentleman estimates the profits to be derived from the adoption of his plan, at a million, on which he merely asks for a percentage, and proposes to give the Board half the balance. A company offers *five pounds* a year for this million's worth of sewage. Others offer a peppercorn rent for fourteen years, after which they propose to divide the profits with the Board, if they can make any. Another proposes to guarantee the Board ten thousand a year; and in this way vanish the ratepayers' hopes of realising that million a year which was to render almost all local taxation unnecessary.

Original Communications.

REMARKS ON THE TREATMENT OF DELIRIUM TREMENS BY DIGITALIS.

By J. W. M. Miller, M.D., M.R.C.P., Physician to the Royal Portsmouth Hospital.

I was summoned on July 14th, 1863, to E. G., aged 35, a military officer, who exhibited many symptoms of alcoholism. The next day, he was slightly incoherent and tremulous; and I then elicited from his wife that he had partaken very freely of brandy, as a medicine, when on the coast of Africa. As his bowels had been relaxed for some hours, I ordered him a creasote mixture, combined with opium, and directed that his diet should consist of beef-tea, arrowroot, and weak brandy and water. On the 17th, every feature of the disease was fully developed; his pulse was very rapid, 140 per minute; and the delirium and restlessness extreme. At 3 P.M., I gave him half an ounce of tincture of digitalis; and this was followed by a drachm-dose every hour, until an ounce had been taken; but not the slightest amelioration of the symptoms ensued—not even an improvement in the character of the pulse. The next morning at three, I commenced the opium treatment, by administering forty drops of the sedative solution; and I remained at his bed-side two hours, repeating the dose at the completion of each hour. My patient soon became calmer. I then left him, recommending patience for a short interval. In the course of an hour or two, he fell into a comfortable slumber, which continued for eighteen hours, with only two short intervals. His recovery from this time was complete and rapid.

Remarks. What is the value of digitalis in delirium tremens? This is a question still *sub judice*. It is now three years since the late Mr. Jones of Jersey brought his experience and views before the profession. In his hands the remedy appeared almost a specific; for out of seventy cases of the disease, sixty-six recovered without any other remedy. At first, this novel treatment received much favour, and digitalis was vaunted by many as a true antidote for alcoholism; however, its reputation has not been maintained. It has received an extensive trial from many practitioners in all parts of the country; and it is my opinion (judging from the cases which I have collected from many sources, as well as those which have happened in my own practice) that, although digitalis is an useful remedy as a calmative, and possesses some advantages over opium, still it has no peculiar power over the disease itself. It does not cut short the attack by inducing sleep at once. Its action is directly upon the nervous system as a calmative and soporific; at the same time, it stimulates the heart and augments its contractility. When it is given in large doses, there appears to be but little risk of increasing cerebral congestion and producing profound coma; and, therefore, it is especially indicated in those cases in which inflammation of the brain is threatened, and where the administration of opium would be attended with danger.

I have recorded the case above just as an illustration of my views. The digitalis here seemed useless; but, in all probability, if the order of the remedies had been reversed, it would have appeared successful, as the disease was running its definite course, and sleep is its natural termination. If we endeavour to determine upon the right treatment of delirium tremens by examining all the recorded cases, and seeking for that medicine which was administered immediately before sleep, and appeared to afford relief, we shall indeed be confounded by a mass of conflicting testimony. The question to be decided is this: What are the best remedies for quieting

the excited brain and calming the disturbed system, so that the patient may fall into a refreshing slumber, in which state alone the nutrition of the organ can be restored? Nature may be thus assisted by the judicious use of calmatives to allay irritation and diminish restlessness; and it is in this way that opium and digitalis may be usefully employed. I believe there is great danger in the old and empirical practice of pushing remedies until artificial sleep or a state of narcotism is induced; and that this ought to be the simple principle of our treatment—to remove, as far as possible, any palpable derangement of the system, and promote tranquillity of mind and body, so that the patient may sleep to recover.

"RED VULCANITE" IN DENTISTRY.

By EDWARD WELLS, M.D., F.R.C.P., Reading.

[*Read before the Reading Pathological Society.*]

REV. MR. C. being, as he considered, in perfect health, went about six weeks back to a dentist in London, who fitted him with a frame containing upper and lower teeth. Immediately upon wearing them, he found a metallic taste in his mouth, which was very disagreeable. By degrees, his health began to fail; he became weak and nervous, lost his appetite, and began to emaciate; had flatulency, fœtid breath, and looseness of bowels.

After wearing the teeth for six weeks, he became convinced that they were the cause of his ailments; that he was, in fact, being slowly poisoned.

This led him to send for me. I found him suffering from nervous prostration. Pulse 100, weak; tongue coated with a white film; the urine was whey-like, having an extremely fœtid odour, faintly acid; specific gravity 1009, slightly albuminous on boiling.

On examining the teeth, which are exhibited, the basis is found to be what is termed "red vulcanite", a composition, as I learn, of vermilion, sulphur, and India-rubber, vulcanised. This composition, therefore, contains the red sulphuret of mercury, probably to some amount, as the colour is entirely due to that salt.

Now, as the "red vulcanite" is largely used in dentistry, it is possible that it may not so rapidly affect many persons as it did my patient; for Mr. C. is peculiarly sensitive to the action of mercury. When ill, he is never able to take the least mercurial medicine without experiencing its toxic effects. This is probably due to his being predisposed to an affection of the kidneys. He was therefore peculiarly susceptible of the poisonous effects of the vermilion contained in the basis; and, from the condition of the urine, I think there is no doubt he was suffering from the injurious impression made by the mercury on the urinary organs. It is not improbable that there may have already existed some disease of the kidney *in a latent form*, which has been called into action by the absorption of the mineral. Such an explanation of his symptoms, however, would not render the use of such a basis—in his case, at least, as well as in many others—a whit the less objectionable.

In the short time that has elapsed since leaving off the teeth, he has become gradually better and stronger. The urine is much less fœtid; the appetite has improved; and the tongue is cleaner. The improvement has been sufficient to leave him still fully convinced that the teeth were the cause of his illness.

I have ventured to bring this case before you, as in consequence of its great adaptability to the mouth, the "red vulcanite" is largely used, and it is possible you may be called to cases in which it is acting injuriously on the system, but in which the patient has failed to discover the cause, and in which it may fall upon the medical attendant to diagnose the *causa mali*.

P.S. The urine has since risen to specific gravity 1020.

Transactions of Branches.

SOUTH MIDLAND AND CAMBRIDGE AND HUNTINGDON BRANCHES.

ON GAOL-DIETS, AND ON THAT OF THE HUNTINGDON GAOL IN PARTICULAR.

By M. FOSTER, Esq., Huntingdon.

[*Read at Peterborough, July 9th*, 1863.]

INCIDENTALLY to the great question of How to Treat our Criminals, much has been said and written about the way in which they are fed. The popular opinion seems to be that the inmates of our gaols live in the enjoyment of a better diet than that of our paupers and our agricultural poor. Having been a gaol-surgeon for now nearly thirty years, I feel justified in bringing the subject before my medical brethren; and wish first to examine briefly and critically our present gaol-diets, and then to relate a little of my experience of the past.

But, first of all, a few words must be said on what a gaol-diet ought to be. The law assumes, and therefore we need not argue the point, that the prisoners ought not to suffer in health through their imprisonment. They must, then, have enough proper food to keep them in health. They do, or rather they ought to, go through a great deal of hard labour. They ought, therefore, to have a quantity of ingesta sufficient to cover the ensuing bodily waste. The influence of the prison is depressing, and most probably lowers the assimilative powers of the body. Their diet, therefore, should be rather in excess of what would be required under other circumstances. The food should be presented in a digestible form; but everything that merely pleases the palate should be avoided. Monotony, on the other hand, inasmuch as it impairs digestion and assimilation, should be shunned. Lastly, the material should be as cheap as possible, consistently with other requirements. In fine, if we consider the prisoners as so many persons to be trained in the easiest and most economical manner for the purpose of undergoing prison-labour, we shall put ourselves in the best position for estimating the value of the various diets suggested for their use.

I purpose in the present paper to consider only the case of prisoners of long sentences; *i.e.*, of above three months imprisonment with hard labour; for it is in connection chiefly with these that any interest is attached to the question of diet; and though making references to other gaols, I shall speak mostly of the Huntingdon County Gaol, with which I am particularly connected.

Let us compare the diet, then, of such prisoners as these with the daily food of other classes.

It is impossible, with our present knowledge, to lay down an incontrovertible standard diet. The best, perhaps, of such standard diets as have been proposed, is that of Moleschott, who says that the standard man should consume within twenty-four hours, of nitrogenous material, 4½ ounces; of starch and sugar, 14½ ounces; of fat, 3½ ounces. This will provide about 300 grains of nitrogen, corresponding to about 600 grains of urea, and about nine ounces of carbon—thus supplying the standard daily waste and allowing a surplus for loss, etc. The dietaries of soldiers and sailors correspond very closely with this.

Our well-to-do classes consume, perhaps, more than this, especially of the nitrogenous elements. I found that a young man, aged 27, weighing between eleven and twelve stone, of active employment, consumed, of nitrogenous matter, 5 ounces; starch and sugar, 13 ounces; fat, 4 ounces.