

PRESERVATION OF THE TEETH BY MECHANICAL MEANS.

As long as appearances are preserved by the presence of the front teeth, the loss of the side teeth, or grinders, is frequently viewed as a matter of little importance. This is a great error, for it is the presence of the grinders which keeps the mouth sufficiently open to prevent the front teeth from coming in contact during mastication. When, therefore, the grinders are lost, and their places are not supplied by artificial means, the front teeth soon become either worn away, or loosened, and pushed from their sockets.

Few persons are aware of the cause of losing their front teeth. Some attribute the loss to a local defect in the teeth themselves, and others to constitutional causes. They seldom or never reflect that the front teeth were not intended, and hence, are not adapted for masticating purposes, which invariably destroy them. The entire process of mastication belongs to the grinders, and the only function which the front teeth are intended to perform is comprised in the word "cutting."

When even a single grinder is lost, the whole of the teeth on that side of the jaw are weakened by the breach which it leaves, and which deprives them of mutual lateral support, and renders them apt to be pushed from their proper perpendicular position towards the opening, by the opposite teeth. But this is not all, for as soon as a tooth in one jaw loses its masticating opponent in the other, it begins to protrude from its socket, loosen, and ultimately falls out. So that the loss of one tooth, by rendering its opponent in the other jaw useless, amounts to the loss of two.

When the teeth remaining for mastication are too few in number, to sustain the force of the jaws, they are soon destroyed, by being either forced into their sockets, so as to produce disease and absorption, or crushed and broken, occasioning grievous pain, followed by the total loss of such teeth. The front teeth being unprotected, through the loss of the grinders, are soon destroyed in the way before described; and, proper mastication being now impossible, derangement of the digestive functions ensues, attended by privation of comfort and loss of health.

Fortunately, the whole of this mischief may be remedied, and the greater part of it prevented, by the timely adoption of artificial teeth. When any of the side teeth are lost, their places should be immediately supplied by properly constructed artificial teeth, so as to prevent the others from slanting towards the opening left by the lost teeth. Artificial teeth, by meeting the natural teeth in the opposite jaw, preserve

them by preventing their protruding from their sockets; and, mastication being thus restored, health is recovered and preserved. The artificial teeth, by preventing the jaws from shutting too close, preserve the front teeth, which would otherwise be destroyed, by meeting together in the process of mastication.

The object in supplying artificial teeth has hitherto been too generally confined to mere show, at the expence of the other teeth; whereas, the whole aim should be to preserve the remaining teeth, and restore mastication, which secures comfort and health. When many teeth are lost, all tampering with the remainder, in the shape of picking and filling, can only increase suffering, and hasten the loss of teeth so tampered with. The operator must be perfectly aware of this; but as the continual suffering produces constant visits, and unmerited fees to the picker, these unhappy patients are the most profitable to him. Such practitioners, instead of pointing out the proper artist capable of affording the only real relief, strenuously advise their patient dupes against the adoption of preservative pieces of artificial teeth; for mere tooth pickers, being incapable of supplying this remedy themselves, know that delusion would be dispelled, and their malpractices exposed, if their victims fell into the hands of a competent mechanical artist.

PHILOCRUST.

THE EXCITO-MOTORY SYSTEM.

LETTER FROM MR. CARPENTER.

To the Editor of THE LANCET.

SIR:—As Dr. Marshall Hall has not thought proper to give any *direct* reply to my letter of Dec. 31, I had not intended to have trespassed again on your pages in reference to the matter which it concerned. There is, however, in your last Number, a remark, *quasi* editorial, which shows such a complete misapprehension of the point at issue, that I must claim once more the privilege of setting myself right with your readers.

I imagined that I had stated, in the letter to which I have referred, in as explicit a manner as possible, that I then regarded, and always had regarded, the doctrine of the *distinct system of excitor and motor nerves* as completely Dr. M. Hall's own, whatever might be its other merits. That he should have thought it necessary to write to M. Flourens for a disclaimer of this, in opposition to what I had stated of the opinions of the latter physiologist, shows a kind of misapprehension on Dr. Hall's part, which, were I disposed to make use of his epithets, I might with much show of justice designate

as wilful and malicious. But I do not think so uncharitably of Dr. Hall; and rather believe that his zeal to establish his favourite opinions, and his own property in them, has in some instances (and this among the rest) somewhat got the better of his judgment.

I again repeat that in stating, as I formerly did ("British and Foreign Medical Review," April, 1838, p. 532) that "the general results set forth by M. Flourens appear to us to contain nearly all that Dr. M. Hall can be said to have demonstrated," I did *not* include the doctrine of the distinct system of excitor and motor nerves, a part of the article in question being directed to show that it *could not* be regarded as a *demonstrated* truth. If Dr. M. Hall will procure from M. Flourens an assurance that he has not, from the time of Sir C. Bell's discoveries, held the opinion that the impressions conveyed to the spinal chord by the efferent nerves may, in virtue of its "excitability," produce sympathetic actions through the motor nerves, without sensation and volition, I shall be quite ready to admit that I have mistaken the tendency of M. F.'s previous writings, which appeared to myself, as well as to others, obviously to lead to this "general result." But I shall never admit that I have *wilfully* misstated his opinions with any desire to detract from Dr. Hall's merits; because my conscience perfectly acquits me of any such intention.

You intimate, Sir, that M. Flourens' concurrence with Dr. M. Hall's doctrines is a strong argument in their favour. But you do *not* mention how many physiologists of at least equal eminence,—Professor Müller and Dr. Alison, for example,—withhold their assent from them.—(I am alluding, of course, to Dr. H's *peculiar* doctrine, that of the *distinct system*.)—So that if authority is to guide us, I apprehend that its balance will be still against the theory.

But, Sir, this is a question which is to be decided by evidence, and not by authority. In the article which has formed the basis of the present discussion, I pointed out that whilst the doctrine did not seem necessary to explain phenomena, there was nothing to prevent its being established, could additional evidence be produced in its favour. My verdict, in short, was one of *not proven*. I have recently been engaged in searching for such additional evidence, with, I hope, no incapacity to receive or appreciate its value; and Dr. M. Hall will, I doubt not, be surprised at my candour when I say that the results of my inquiries are, in my own mind, decidedly *favourable* to his *peculiar* doctrines. I should have much pleasure in communicating them to him, did I suppose that he could set any value upon them; but so long as he regards me capable of wilfully perverting truth for the sake of depreciating his merits, it is obvious that no evidence

adduced by me in his favour can be relied on by him. Whenever he is disposed to admit that I have an equal desire with himself for the establishment of TRUTH, from whatever source it may come, I shall be quite ready to unite with him in the search for it. I am, Sir, your obedient servant,

WILLIAM B. CARPENTER.

February 21, 1839.

REDUCTION OF ARSENIC.

To the Editor of THE LANCET.

SIR:—I should, before this, have noticed Dr. Wilks's reply in THE LANCET for the 19th January, to my criticisms on his alleged improvement of Mr. Marsh's apparatus, but I waited for leisure to perform some experiments on the subject, that what I have to state might be on the evidence of my senses, as well as on the conviction of its truth by reasoning.

Dr. Wilks does not attempt to defend his assertion, that in Mr. Marsh's method the arseniuretted hydrogen is rapidly dispersed, carrying with it a great deal of the metallic arsenic unreduced, consequently I conclude he admits my proofs to the contrary. In answer to the danger of explosions which I said there would be, from the admixture of hydrogen with the air of the bottle and tube, Dr. W. says:—"It is only necessary to wait till the gas comes over briskly before it is inflamed, and then all danger of explosion is prevented." Now, the last time I tried his proposed improvement, on putting a light to the end of the tube when the gas was coming over briskly, the bottle and tube were blown into minute pieces with a loud explosion, and scattered in all parts of the room. I fortunately escaped with a few slight cuts of the face, but I strongly caution others against the same experiment.

To my statement that where only a minute quantity of arsenic was present, it would be gone with the first portion of hydrogen, before the gas came over sufficiently briskly to be ignited, Dr. W. replies, that "pure hydrogen being lighter than arseniuretted hydrogen, the former escapes first, a fact of which any one may convince himself by watching the experiment." I have convinced myself of the very contrary by watching the experiment, and have found what I first stated to be true; besides, that pure hydrogen should escape first is at variance with the laws of chemistry. When there is any oxide or salt of arsenic in the solution under experiment, the metal begins to combine with the nascent hydrogen from the very commencement, and the arseniuretted hydrogen arises from the fluid along with the free hydrogen gas, and both are, in the bottle, in a state of intimate mixture, and gases when once mixed do not again sepa-