few words; namely, chloroform and bromide of potassium. It is a well known fact that chloroform inhalation has a remarkable power of arresting epileptic convulsions. Its action in warding off a threatened fit, and in cutting short a violent and prolonged paroxysm, is uniform and certain; as uniform and as certain as the influence of sudden and extreme anæmia in exciting convulsions. I for a time supposed that the chloroform acts by relaxing the cerebral arteries; but Kussmaul and Tenner have shown that animals, when etherised, get no convulsions while being rapidly bled to death, or when their arteries are ligatured. It is probable, therefore, that anæsthetic vapours prevent or stop convulsions by lessening the reflex excitability of the nervous system, so that convulsions do not occur in etherised rabbits, even though the brain be rendered extremely anæmic by hæmorrhage or by arterial obstruction.

Recent experience has amply proved that the bromide of potassium, in full and frequent doses and sufficiently long continued, is of great value in the treatment of epilepsy. The known physiological action of this medicine renders it probable that its curative effect in epilepsy is a result of its soothing, sedative, anæsthetic influence upon the nervous centres, whose reflex excitability it lessens. In short, its action in preventing convulsions is analogous to that of chloroform, differing in being less powerful and rapid in its operation, yet, by frequent repetition, its influence may be rendered more durable and more permanently beneficial.

PLUGGING THE POSTERIOR NARES IN CASES OF PERSISTENT EPISTAXIS.

By G. D. R. MCCARTHY, ESQ., Wrockwardine Wood, Wellington, Salop.

I FEEL obliged—in common, no doubt, with the rest of my professional brethren—to Mr. Mackenzie, Surgeon to the Sidmouth Dispensary, for the interesting account, in the BRITISH MEDICAL JOURNAL for February 8th, of his successful operation in a case of persistent epistaxis; and, having several times performed it with success myself, I beg leave to state the cases briefly and as correctly as my memory will enable me.

It was from my father, a surgeon many years in practice, that I learned the manner of doing it; but had never availed myself of it till about twenty-five years ago, in the case of a man, if I recollect right, of middle age. I adopted the same plan as stated by Mr. Mackenzie, but with a piece of thick catgut; and it succeeded. The next was a girl, about fourteen or fifteen years old, of a delicate constitution, and of hæmorrhagic diathesis, for she subsequently had a copious attack of menorrhagia. The bleeding from the posterior nares was very profuse and persistent, running down into the stomach, and vomited up in large quantities. So, perceiving that to plug the nostrils would be of no use, I passed a piece of thick catgut, to which some silk was tied, having at the other end a plug of lint moistened with water and rubbed in flour. By this means, all escape of blood from the back passage was arrested; and, the silk being secured to the face by adhesive plaster, and the nostrils plugged, all was right. The girl, several years afterwards, I believe, became hearty and well.

The next case was a man, aged about 50, of a constitution much injured by intemperance. The blood was running down from the back of the nares in great quantities, and vomited up in a short time. In this case, I used a tolerably sized bougie, which I found better than catgut. It was easily seized by a pair of curved forceps which I had for the purpose of extracting pins or other foreign bodies from the pharynx, and, the end being brought out of the mouth, and a notch being cut in it, the silk, to which the plug was fixed, was tied to it, and drawn to the back of the passage as before. The epistaxis was instantly arrested.

The last case was a girl, highly nervous and hysterical, aged about 15 or 16. I adopted the same plan, and with success. I found, however, that the silk had cut a little through the ala of the nose; which induces me to think that the lower it is fastened on the face, the better, so as not to be affected by the movement of the lower jaw.

Mr. Mackenzie's plan for removing the plug is very ingenious; but the fact is, in my practice I have not had occasion for it. For, somehow, the silk gave way in two or three days; and the plug, of course, passed away, to be seen no more, though rather to the surprise and uneasiness of the patient's friends. I think I should hardly feel disposed to pass anything to remove the plug, or even to inject warm water, lest I should bring on a return of the epistaxis.

It is pleasant, in cases of this kind, to know that we have so easy (though, indeed, requiring some little manual dexterity) a method of arresting the hæmorrhage, which may baffle all our attempts with styptics.

CONTRIBUTIONS

TO

A NEW CHAPTER IN THE PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM.

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IV.—THE CORRELATIONS OF THE VIS NERVOSA, THE VITAL FORCES, AND CHEMICAL AFFINITY.

MY history of the theories that have been devised to explain the relations of the nervous system to nutrition ends with the doctrine, that the *vis nervosa* and the vital forces on which nutrition and development depend are correlative with the molecular or physical forces of nature. This doctrine brings all the fundamental questions of biology into immediate relation with the most fundamental questions of both physics and metaphysics; so that, if the modern physician would fathom the depths of medicine from its new stand-point, he must be *physicien*, chemist, mathematician, and metaphysician, as well as practitioner. Feeling incompetent so to deal with the new doctrines, I shall only attempt to examine them critically in their relations to better clinical observation and practice.

The physicists say that, when the velocity or direction of motion of a body, or both, change, "we naturally attribute this to some extraneous cause. . . . This cause, of whatever nature it be, is known by the general name of force." (*Dynamics of a Particle*, by Professor Tait, chap. i.) Matter, it is affirmed, has in itself no power to set itself in motion if at rest, or to change its own velocity or direction if in motion. This negative quality is termed the "property" of *inertia*. Force is not always so applied as to cause motion in space; but, when so applied, its equivalent is termed energy. So, also, matter has not always force applied to it, so as to cause it to move if at rest (inert); but, when force is so applied, it manifests energy in resistance to the force: this is termed *vis inertiae*. Inertia is, therefore, a force-equivalent. It is obvious from all this, that these fundamental laws of motion only express our experience of motion as produced by ourselves, and our thoughts thereon: so that, in fact, all our notions of force and motion depend primarily upon the laws of muscular energy, and its applications to cause motion.

But the physicists, abandoning vital dynamics at their origin, proceed to the dynamics of inorganic matter, and investigate the relations of a "particle" or molecule of matter to force and motion; and they further proceed to say that the molecules of matter are in incessant motion, due to molecular forces; which, however, can be converted into each other, and into the work of simple motor force, as expressed by a given weight lifted a given height—foot-pounds or foot-tons: so that, however force may be manifested as energy, it is never lost, but converted into, or "conserved" in, some other form of motion. Thus muscular energy may be made to produce heat, light, electricity, galvanism, magnetism, and that regulated attraction and combination of particles or atoms of matter attributed to chemical affinity; and each may be converted into the other. Physiologically, the *vis insita* of contractile and muscular tissues and the *vis nervosa* of animals, together with the vital forces of vegetables and the contractility and elasticity of tissues, are held to be thus correlative with these causes of molecular motion.

Admitting the doctrine as to the general resemblances of these applied forces or kinds of energy, what we want to know with reference to nutrition and the vital forces is, how they differ in relation to the different kinds of matter of which living tissues are constituted. It is not enough to this end to say that the energy operative in chemical action can be expressed in foot-tons or foot-pounds. This induces very varied changes in the relations of the elementary constituents of matter termed atoms and molecules. It appears that there are at least sixty elementary bodies which thus differ from each other in their atomic constitution. At least fourteen of these enter into the composition of the blood and tissues of the human body, and subserve to vital action. Now, to this end, their moving atoms or molecules undergo a series of ascending combinations. The primary molecule, being either one rotating molecule or two rotating in relation to each other, may unite with one or more of the same kind, when the compound is termed *allotropic*;