him in the briefest terms. The arterial muscle belongs to the non-striated or involuntary class of muscles; and there is ample physiological evidence that *this class of muscle contracts, not when stimulated by its motor nerves, but when these nerves are cut, or paralyzed, or dead.*

Here are the facts, which also show that the arterial muscle is not alone, or exceptional, in the *rôle* just attributed to it.

The muscles which close the glottis and those which open the glottis are both under the motor control of the inferior laryngeal nerve. When this nerve is cut, or paralyzed, as by pressure of a tumor, etc., the glottis closes spasmodically, *both sets of muscles contracting.* and the closure takes place, as Dr. Burdon Sanderson says, "not because the dilating muscles do not act," "but because they are overpowered" by their antagonists. (Handbook for Phys., Laborat. Amer. ed., pp. 308, 317, 319; Dr. Austin Flint, Prac. Med., 5th ed., pp. 294, 309, 371; Guttman, Phy. Diag, p. 40). Spasm of the glottis is therefore due, not to nerve stimulation or "irritation," but to nerve paralysis.

The horse breathes exclusively through his nose, and this cavity is closed by the *contraction* of its constrictor muscles when the facial nerve is divided. As a consequence the horse dies from asphyxia. (Strangeway's Vet. Surg., p. 209).

All our text books assert that section of the vagi produces paralysis of the œsophagus. This is manifestly an erroneous conclusion. If it were true, the œsophagus would be reduced to a mere flaccid tube. Instead of this, Dr. Dalton states that the food and drink swallowed, "in a few minutes are suddenly rejected by a peculiar kind of regurgitation." (Phys., p. 473). Dr. Burdon Sanderson has it among the effects of the section referred to, that "the muscular fibres of the stomach are paralyzed, so that regurgitation of food from the stomach is apt to take place. (Handbook, etc., p. 318). This behaviour of the gastric muscle, and of the œsophageal muscle is a proof, not of paralysis, but of more or less active contraction. If the candid reader agrees with me in this, as I think he must, I will ask him to ponder a moment, on the singular mistake which has been made in interpreting the results of this experiment. Could it be possible that a physiologist could claim for an experiment a result in accordance with the theory uppermost in his mind, in opposition to the visual facts before him, and that others would go on blindly echoing his dictum? Something like this may appear again, as we proceed.

If the reader choose to follow up the enquiry, he will find that the bronchial, intestinal, and other involuntary muscles follow the same law.

Among other effects of section of the cervical sympathetic, as recorded by Dr. Brown-Sequard, are: contraction of the erectile muscles of the ears, contraction of the iris,—of the eyelids,—of "almost all the muscles of the eye,"—of "the muscles of the angle of the mouth," and of others. Among all these evidences of muscular *contraction*, can it be possible that the effect of this section on the *arterial muscle* was one of dilatation? It has been so assumed, and is so stated. But not by Dr. Brown-Sequard. In his "Lectures on the Central Nervous System," in which the effects of this section are detailed at great length, *Dr. Brown-Sequard nowhere speaks of the arteries as relaxed or dilated.* With him, it is always "the blood-vessels" which are "paralyzed," and "the blood-vessels" which are "dilated." He says, "the hanging down of an animal by holding it up by the hind legs in producing a congestion of the head, produces very nearly all the effects of this section." (pp. 140-143). All this, and other facts which might be urged, did space permit, is quite consistent with a condition of mere venous fullness, resulting from arterial contraction.

That this is, of necessity, the actual condition present, is not a mere conjecture, but admits of positive physiological proof, if the law of uniformity of cause and effect counts for anything in physiology.

Dr. Burdon Sanderson shews that the splanchnics are the great vaso-motor nerves of the abdominal viscera, and he states that after their section, "the vessels of all the abdominal viscera are seen to be dilated." What "vessels" are these? The reader has been told by this eminent physiologist that after section of vaso-motor nerves the corresponding arteries are "paralyzed" and "dilated," and he naturally expects to find this shewn to be the case after section of the splanchnics. Dr. Burdón Sanderson does not here once allude to the state of the arteries! What he finds is that "the portal system is full of blood." "A quantity of blood, is, so to speak, transferred into the portal