

Scientific.

Electro-Physiology.

Electric Shocks produced by Cats and Cows.
 —The fact that certain species of fishes possess the power of producing benumbing sensations and shocks was noticed very early, as appears by the writings of Pliny and Aristotle. This power has been found by modern science to be identical with that of electricity. Several different species of fishes are known in our time, as producing electricity at will; among them the *Sidurus*, the *Gymnotus* and the *Torpedo* are pre-eminent. Humboldt, travelling in South America, had the opportunity of seeing horses knocked down by the *Gymnotus*, and experienced severe pain in his knees during the whole day, from having unconsciously trodden on one just drawn out of water: The source of this magnetic power has been traced by learned men to vesicular organs, filled with a mucous substance, subserving the purpose of a galvanic battery. In one organ Mr. Hunter counted 1,182 different cells, all connected by nerves. In studying these facts, Prof. Beckenstein, of Lyons, was struck by the analogy of the cells of electric fishes with certain minute vessels, united by nerves and moistened by mucus, which exist in nearly all kinds of animals, and are found most developed in man at the period of the greatest strength, but collapsed and dried up in old age. He began a series of experiments, and after three years' investigation has lately published the following results: When the temperature is below 32°, the wind north and the sky clear, expose a cat to the cold until his fur lies close to the skin and appears greasy; expose your hands to make them equally cold; then take the animal on your knees, apply the fingers of your left hand on its breast, and pass your right hand down its back, pressing moderately; at the fifth or sixth pass, you will receive a slight electric shock. At first the cat appears pleased, but as soon as it feels the shock it jumps away, and will not stand a repetition of the experiment during the same day. After the experiment the animal looks tired; some days afterwards it loses its appetite, seeks solitude, drinks water at rare intervals and dies in a fortnight. The same experiment has succeeded with rabbits; they die the same day. It is unsuccessful with dogs, once only it has been made on a cow; she was tied to an iron ring; the ground was frozen; one hand was placed on the breast and the other passed down the back, when such an electric shock occurred that Mr. B. was thrown to the ground. The cow appeared very much irritated, but it was impossible to know if she suffered from it, since she was killed by a butcher three days afterwards.

On the Treatment of Deafness, arising from a Diseased Condition of the Mucous Membrane of the Throat and Air Passages.
 By WILLIAM HARVEY, Surgeon to the Royal Dispensary for Diseases of the Ear. London: Renshaw.

The Author of this work takes, in the first place, a review of the enlargement of the tonsils, as being more or less a cause of deafness. The work professes to give a history of the disease.

"I have examined," says Mr. Harvey, "to some extent the structure and physiology of the numerous glands or mucous follicles which are found scattered along the whole extent of the lining membrane of the respiratory tubes. These glandular bodies are themselves the primary seat of important structural changes. That peculiar affection of the throat, which under the appellations of bronchitis, chronic laryngitis, clergymen's sore-throat, &c., has occurred, especially during the last ten years, so frequently among public speakers and others, consists primarily and essentially, as I shall be able, I think, to demonstrate, in a diseased condition of the glandular follicles of the mucous membrane of the throat and trachea, commencing generally in the mucous follicles of the fauces."

The Author proceeds to show the various phases of this disease, and its progressive action towards the ear, producing a dulness of hearing, and sometimes a loss of the organ, unless the due attention be early directed to it. On this particular, some well-timed observations are made. We believe Mr. Harvey is the first who has shown how very frequently influenza is the cause of this condition and its effects on the organ of hearing. In the affections which we are now considering, influenza, has as just been noticed, is a

very important agent, particularly during the autumn and winter months; producing disease in the throat, and as a consequence, deafness in either one or both ears. This affection more frequently exhibits a rheumatic character, and the structures of the ear are particularly subjected to its aggression, the mucous membrane becoming sometimes dry and sometimes granular. This appearance is continued up to the internal lining of the ear, after producing a thickening of the sides of the pharynx, and frequently enlargement of the tonsils and loss of voice. The same consequences are observed to take place in the scalp and pericranium. This condition, now described, is attended with considerable dulness of hearing; it may occur suddenly or come on gradually during the course of the influenza attack, affecting one or both ears, until it arrives at so high a degree as to occasion much inconvenience to the patient. It may so happen, that one ear only suffers, the other but participating in the diseased action. Noises in the ears, says Mr. Harvey, are present during the whole course of the disease, which often continue to distress and harass the patient for some time after convalescence. This latter symptom, viz., the distressing noises and singing, does not necessarily indicate any seriously unfavourable change in the structure of the organ, whilst the symptom may be referrible to chronic inflammation about the fauces and left palate; these appear swollen, and the uvula elongated and considerably relaxed. We have followed the Author here more particularly, for this reason; that these latter changes about the throat so often give rise to a very troublesome and annoying symptom, that of singing in the ears, which is the occasion of much quackery and imposition. Other portions of this valuable treatise relate to some of the nervous affections. We have reason to think that the work will have an extensive circulation, and will alter much of the hitherto indefinite mode of treating a distressing malady. We may observe, in closing this notice, and for the benefit of public speakers, that, when the throat is affected only to the extent of a relaxed uvula, a port-wine gargle is a never-failing remedy.

THROAT DISEASES.—Dr. Ira Warren has recently published a long article in the Boston Medical and Surgical Journal, by which he appears to have made important improvements on the old methods of treating lung and throat affections. As Dr. W. has, for years, untiringly devoted himself to treating these disorders, the article is one of much value. Dr. Smith, the editor of the Journal, bears the following testimony to the excellence of the instruments:

Bronchial Syringes.—Dr. Ira Warren is the inventor of several instruments for the application of medical remedies to the throat, which are not only quite new in pattern, but beautiful in workmanship. The barrels of each syringe are of glass; but the pipes are of silver, of different lengths and curves, and terminated by small perforated balls. With this construction, any part of the air passages may have the full benefit of solutions, more effectually than by the methods usually practised. The new method of treating bronchitis has been extensively adopted, and if it is to be continued, the probang and other contrivances heretofore resorted to will in many cases be superseded by these ingenious instruments.

The Farm.

On the Power of Soils to Absorb and Retain Manures.

We extract the following remarkable statements from an article on this subject, in the *North British Agriculturist*; and we insert them with the expression of a hope that some of our agricultural readers may be able to supply us with facts—in verification, or otherwise—bearing on a question of so much practical moment to the farmer:—"Upon the east coast, (the writer, of course is speaking of this island) with the minimum of rain, about half the quantity of manure only is applied, compared with the west coast upon which the maximum of rain falls; and on similar soils, apparently with the same results. This distinctly proves that a very great waste of the constituents of plants necessarily takes place; and that though the absorbent powers of soils may be established in experiments in the laboratory, practically and in the operations of the farm, these absorbent powers must not be too much relied on, for it is always to be remembered, that the results of the

laboratory, however satisfactory, are only to a certain extent available in practice. Besides, the discovery of the absorbent power of soils, gives the farmer no new power as regards the retention of the manure, and consequently, without practical experiments, ought not greatly to modify his general practice. But we would specially direct attention to a point of, we think, great importance, alluded to by Dr. Anderson, and hitherto strangely overlooked in this investigation. Before being of practical utility, there must be established to exist in soils, the power not only of absorbing, but what is of greater importance, the power of retaining the constituents of plants, till the plant is ready to absorb them. The experiments we are noticing, have simply established that certain substances, such as alumina, &c., have the power of absorbing certain other substances, and that water impregnated with these when passed through such soils, leaves behind, up to a certain limit, the substance with which it was charged. But what we object to is that these experiments have not gone further, and tested the power of the soils to retain them, by employing distilled water to wash out such substances, and also by the employment of currents of air to ascertain what proportion of these elements is removed. Many practical farmers after forming a high estimate of the value of liquid manure, have found its practicable not sustaining that estimate, and even after the expense of the necessary apparatus for its application, have given up applying it directly to the soil. If the soil possessed the power of absorbing and retaining, and making available all the constituents contained in the liquid manure, such a result could scarcely have been expected. It would therefore appear that chemists have not only to show that soil absorbs, but that they also retain and retain in an available form the constituents, particularly ammonia, thus given to them; and this appears to us to be the force of Dr. Anderson's observations. Farmers occupying moorish soils of a gritty silicious texture, know that it is injurious to autumn-plough such soils, and that when ploughed in spring, if rain falls previous to sowing, the heart of the soil, as they speak, is washed out of it, and they only apply manure in the drill to potatoes and turnips, and consider that any other application of it is comparatively lost, or, as they say, perfect wastery. Most experienced cultivators have also found that there is a certain limit beyond which the application at one time of manure is unprofitable, while the repeated application of the same amount answers. An experiment came under our own observation, the soil being a loamy clay of superior quality resting upon limestone, which was under a few feet of the surface. The land was previously in fair condition; the crop grown was Swedish turnips; a series of different amounts of farm-yard manure was applied experimentally, from 8 tons up to 32. It was found that 16 tons produced about the same weight of Swedes as 24 or 32 tons, the produce of the whole being above an average weight, and what even practical men will have some hesitation in believing, in the after crops of wheat, grass, and oats, no perceptible difference was ever observed, nor did the crops of the second rotation derive any apparent benefit. This experiment was the means of inducing several neighbouring farmers to apply smaller quantities of manure, and more frequently. We have entered more fully into the practical bearings of this question, because such experiments as Professor Way's, have a tendency to perpetuate and extend what we consider a very prevalent mistake in farm practice, viz: the applying of large quantities of manure to the fallow crop, in the belief that the soil will retain it for the benefit of after crops. The more perfect system would indicate that the manure should rather be extended over the whole rotation, than confined to one particular crop."

Scalded Shorts for Horses.

Shorts, as they are familiarly termed, when scalded, make an excellent diet for sick animals. The usual method of preparation is, to turn two or three quarts of shorts into a bucket, to which add boiling water, so that the mixture, when stirred, shall be about the consistency of a soft poultice; it is then covered with a cloth, and not given to the horse until sufficiently cool. When a horse has taken cold, and labors under a discharge from the nostrils, the mash may be put into the manger while hot, with a view of steaming the nasal passages, and favoring the discharge of

morbid accumulations. It is our general practice, when treating horses for acute disease, to prescribe an occasional mess of the above; and we invariably observe some benefit derived. In acute diseases of alimentary canal—inflammation of the bowels for example—the practice is open to some objection, on account of the irritation which the article might produce on the mucous surfaces. During the active stage of such disease, food of this description is inadmissible, and such articles as are mucilaginous, lubricating are indicated. The best we know of, is flax-seed, marsh mallows and slippery elm. It is customary in England, in large stables, to set a boiler, in which hot water is continually kept for the purposes of the stables, and more particularly for making bran mashes, at night, if any of the horses look dumpish, (fatigued,) a bran mash and a good bed of straw, generally restore them. Let a man who has performed a hard day's work, arriving at home late at night, his clothes drenched with rain, his feet icy cold, and his frame shaking like an aspen leaf, now partake of a bowl of warm gruel and tumble into a good feather bed—he can afterwards understand how a poor horse, under similar circumstances, might be benefited.—White recommends bran mashes in fever and all inflammatory complaints; they are useful, also, as a preparative to physic, serving to remove any indurated feces there may be in the bowels whereby the operation of the medicine is rendered more safe and effectual. When a horse has been fed high for some time, a change of diet to mashes for two or three days will often do a great deal of good.—*Am. Vet. Journal.*

On Feeding Animals.

The following is an extract of the Address of William Little, which we take from the Fifth Report of the Ohio State Board of Agriculture:—"And now having, I hope engaged your attention to the necessity of providing suitable food for dumb animals, let me ask you the question, how do you feed your animals? In matters not how perfect the form, and how pure the blood of your colt or your calf may be, if they are not properly fed and sheltered during the winter months. By this I do not mean that they should be pampered and stuffed to the ruin of their constitutions for the sake of having the fattest and largest yearlings in the neighborhood; but I mean that all animals, of any age, on your farm ought to have a shelter, in which they may abide during the severe storms of our northern winters; and I mean that all animals ought to have sufficient quantity of food to keep them in a healthy growing condition, all through the long season when winter reigns supreme. It will not do to say, you cannot afford it. As I said before on another subject you cannot do otherwise, for just so certain as you do, you will lose money. How many of you have experienced the fact, that you have been offered more money for an animal in the fall, than the same animal would bring in the spring. As I do not wish to preach any thing which I do not practice, I will tell you my own course. My calves are provided with a large airy shed, in which they have plenty of room to exercise. This shed is well bedded down with straw, and kept clean by the addition of fresh straw every day. The best of hay is given them, as much as they will eat, and in addition about a quart of meal or chopped feed is given to each one every day. The result is, that I can realize in the spring, from \$15 to \$20 per head for my yearling heifers and steers. Now what is the difference between the cost of keeping calves in his way, and the more usual plan? Each of the calves will eat, in the course of the winter, perhaps three dollars worth of hay, and in addition to the chopped feed, will cost about one cent per day, or about \$1.50 for the winter—in all \$4.50 in the spring they are worth \$20 each. In the other place, the calf is fed on straw or refuse hay, and at three years old will, if a steer, bring perhaps \$20; if a heifer, \$12. It requires no great skill in arithmetic to tell which is the most profitable. The same observations will apply to all other stock. My own practice is to have a stall or shed for every family on the farm; and my own opinion is, that no farmer ought to keep one single animal more than he can accommodate."

He who anticipates his inheritance will be the inheritor of beggary.

Never scramble for the fruit till the tree is well shaken.

One to-day is worth two to-morrows.