

surface on metals, which is found in Bohemia, in vast beds some 15 feet in thickness; is on examination found to be composed of the flinty shells of minute animalcules in a very good state of preservation, presenting a vast diversity of organization, and great beauty and variety of structure. Linnæus fails to convey any idea of the excoelomic minute dimensions of these animals, except to say that when I tell you that one single grain of this Tripoli, is computed to contain upwards of 181,000,000 of their shells.—Multiply that sum by 200 and you leave the contents in animalcules of one cubic inch.

Literary Notices.

A Popular Account of Discoveries at Nineveh By Austen Henry Layard, Esq., D.O.L. Toronto, A. H. Armour & Co.

This volume is abridged by Layard from his larger work, and is embellished with numerous wood cuts. It is a charming volume, to which we may safely promise a wide circulation and an unbounded popularity. The great feature of the abridgment is the introduction of the principal biblical and historical illustrations (forming a separate section of the original work) into the narrative, which, without sacrificing any matter of importance, makes the story more compact, useful, and indeed complete, in its abridged than it was in its original form. In his brief preface Mr. Layard remarks that the more recent discoveries, and the contents of the inscriptions as far as they have been satisfactorily deciphered, have confirmed nearly all the opinions first expressed by him on the subject. There was no necessity, therefore, to introduce a change in any material point into the abridgment. He is still disposed to believe that all the ruins explored represent the site of Ancient Nineveh, and while still assigning the latter monuments to the kings mentioned in Scripture, he continues to feel that a considerable period had elapsed between their foundation and the erection of the older places of Nimroud. Mr. Layard differs from some other antiquaries, however, in thinking that the state of the inscriptions by no means as yet authorizes the use of any actual names for the earlier kings mentioned in them.

Agriculture.

INSECTS INJURIOUS TO THE CROPS.

There are certain animalcules and insects very injurious to the wheat and corn crops, the effects of which are well known to every farmer, though they are not aware of the real causes producing them. The first which I will notice, are called the *cibris tritici* or cels of the wheat. This strange animalcule attacks the farinaceous parts of the grain, producing a disease commonly known by the name of "pepper-corn," on account of assuming the appearance of a black pepper-corn, the whole being affected by its appearance; the chaff holes open—the awns become curiously twisted, and the grain turns to a black colour. Upon its being opened it will be found lined with a white cottony-mass occupying the place of the flour which at first appears to be a quantity of white,

closely packed together, but upon being put on a slip of glass and moistened by water, will soon be seen to divide, giving a milky colour to the water. I viewed this cottony-mass by a microscope and found it to be a dense body of living oval shaped animalcules wriggling about with great vivacity. This animalcule was accidentally discovered by Mr. Tuberville Needham, an English farmer, in 1713. Mr. Curtis published in the sixth volume of the Journal of the Royal Agricultural Society, his observations of the various insects affecting the corn crops. In his papers relating to the above animalcule he says—"that the *vibrio* belongs to the class *infusoria* and believes that its eggs are taken up by the sap and are hatched in the stalk and germs;" the grain containing them are sown with good seed,—they burst in the spring and are therefore set at liberty to follow the ascension of the plant or germs from the earth. Experienced Entomologists mention some of these cels having reached the length of a quarter of an inch, and at a short distance from the extremity of the tall, they have discovered an orifice whence the eggs issue in strings. Mr. Curtis says, "the eggs come in strings of five or six together, and are detached in water: the young worm can be seen through the transparent skin. In about an hour and a half after the egg is laid in water the young worm begins to extricate itself; a process which took one of them an hour and twenty minutes to accomplish." The curious formation of the head may be very easily observed when highly magnified—it is furnished by a proboscis capable of contraction and extension, similar to the tubes of a small telescope. The large *vibrio* mentioned by entomologists never reach the ear; they lay the eggs in water, and dis soon after, the production of those eggs are what appear in the ear—brought up by the germination of the seed, indeed, it has been estimated that no less than from forty to fifty thousand are gathered together in the soft stringy mass of a single ear-cockle. Those located in the infected grains retain the capability of exhibiting signs of active life "immured for years in their dark and resinous receptacles"—the infected grains have been preserved for six or seven years and still they exhibited considerable power of motion—how this vitality is preserved has not been decidedly proved, but is attributed by some writers to the glutinous matters remaining in the shell where they abide—this is only a conjecture. I do not consider this disease prevailing in every wheat-field to any extent, still, there are no fields without it—in some it prevails considerably.

A writer recommends as a remedy for this disease "to soak the seed in water sufficiently warm to kill the vibriones, which cannot stand a high temperature, but it must not be hot enough to destroy the vitality of the seed." The above is only one experiment, and, I think, a dangerous one to an inexperienced farmer, the writer has alike tried it—but he has not given us the temperature, and I am sure it will take water, and that in a very warm state to destroy them, besides a risk of the vitality of the seed, "it would, as well, most certainly for those who are con-

versant with this portion of the principal food of man, if they were acquainted with its real properties and disease."

ERGOT.

This disease has been attributed to the production of an insect, for the purpose of depositing its eggs, such as is well-known in other remarkable exertions on plants, for example, the Oak Apple-galls, Not-galls, &c., some of which are useful to man;—this is not the case in the Ergot, it is invariably accompanied by a fungus, and no doubt the disease is caused by it. Professor Henslow says, "the Ergot is a monstrous staid of the seed in which the embryo, and particularly one part of it, is preternaturally enlarged, protrudes beyond the chaff, and often assumes a curved form somewhat resembling a cock's spur, from whence the name "Ergot," which is of French extraction. It is black superficially, and of a spongy texture internally, containing much oily matter, so that it will burn like an almond when lighted at a candle."

A sugar, which Daniel's calls "Mushroom sugar," is derived from Ergot, consisting of twelve equivalents of carbon, thirteen of hydrogen, and thirteen of oxygen; also, a non-aerated vegetable matter denominated *Ergotine*, being obtained in the state of a brown powder, of a pungent and bitter taste, narcotic and poisonous. Its composition and principles are as yet not ascertained—probably it will be found to be a mixture. Several writers state that the ergot contains oily, and saccharine properties, and when taken into the system its effects are extremely violent. The active power of the Ergot is well-known to the faculty—of late that of the wheat has been found more potent than the other. Its results on the animal frame, if taken in any quantity are truly awful. "Animals which refused ergot mixed in their food have been compelled to swallow it, and it reduced them to a wretched condition. It was tried upon pigs, and also upon poultry, and the consequences were, sickness, gangrene, and inflammatory action, so intense, that the flesh actually sloughed away. In some cases, the limbs rotted off and no description of animal suffering has ever exceeded the distress, (the thus depicted. These experiments were with a view to determine whether the ergot of rye, constantly ground up with the flour in some parts of France might not be the cause of the gangrenous diseases so prevalent amongst the poor in certain districts." There seems to be very little doubt as to the cause of the epidemic diseases so often prevalent, having their origin in the free use of the flour of wheat and rye diseased by the Ergot. M. Lessier, a French gentleman paid a great deal of attention to this malady, and mentions a case which came under his own observation—"a family were in great destitution, and the father begged of a neighbouring farmer a quantity of Ergotted rye, to supply the urgent calls of his distressed family for food. The farmer gave it him, but added, that he was afraid it was not wholesome; still the calls of hunger prevailed, and, in the face of this caution it was eaten." This resulted in the death of the father, mother, and five children.