

among the farmers there, objected to the time of the meeting being taken up by any questions and answers apparently of only personal interest to Mr. Steele. Then, immediately I stated that I would be glad to figure out on paper or on a blackboard, for Mr. Steele or any other person, the full details of the calculations which show the results from the tests, at the close of the meeting either in the hall or at my room at the hotel. I also mentioned that an additional explanation of the reasons why the standards of values had been fixed as they were, would appear in the ADVOCATE. After the meeting I could not find Mr. Steele though I was in the hall for some five or ten minutes. Outside on the street I enquired from his brother if he knew where I could find him. But this ardent seeker for truth eluded my search.

Mr. Steele's grim effort at being loftily ironical on the amusing stories which it suits me to tell, furnishes me with one more humorous illustration. I have found them to be such excellent and almost indispensable helps in one part of my work, that I cannot promise him that I will try to desist, even though one mind may fail to perceive or rather to acknowledge their value. The blindness of one man in our garden does not abolish the beauty of its flowers.

Veterinary.

Diseases of Pigs.

BY J. Y. ORMSBY, V. S.

Of all the domestic animals perhaps there is none that has received so little attention at the hands of the veterinary profession as the pig, and, while I am not prepared to say that the profession is to blame principally for this, for I am well aware that most farmers look upon a pig as an animal that is "not worth doctoring," and so prefer to let him take his chances of living or dying to going to the expense of calling in professional skill, still I would submit to my fellow vets. that we are to blame to a certain extent, for, with the exception of that porcine scourge, "hog cholera," which has of late years attracted a good deal of attention among veterinary authorities, on this continent in particular, I find that in the various works on the practice of veterinary medicine and surgery, very little if any attention is given to the diseases that pigs are subject to, and as a result, this, to my mind, very important branch of veterinary medicine is almost entirely overlooked in the course of study taken up at most veterinary colleges of the present day.

When we consider that the pig is endowed with an unusually voracious appetite, which will invariably lead him to eat more than he can properly digest, if permitted to do so, and couple this fact with the unsanitary conditions under which pigs are expected to exist on the average farm, it cannot but seem strange that a greater mortality does not take place annually among the common pigs of the country; still, from my own experience, I am well aware that very many pigs are lost annually to the farmers of this Province, not from any wide-spread pestilence, but from commoner diseases that could be cured by very simple remedies if properly applied. I shall, therefore, in succeeding papers, draw attention to the commoner diseases of pigs and the remedies that I have found most useful in combating them, but before doing so I shall draw my readers' attention to the best methods of ADMINISTERING MEDICINE TO PIGS.

The simplest way, I need hardly say, to do this is to add it to the food; but should, as sometimes happens, the animal refuse to eat it the best plan I have found to be as follows:—

Slip a noose over the upper jaw behind the tusks, then fasten the rope to a staple driven in a post, about five feet from the ground, so that the pig is drawn up slightly from the ground; now, take an old shoe, cut the toe off, and when the pig opens his mouth, as he continually will in his struggles to get free, thrust the shoe in his mouth, and then pour the medicine from a long necked bottle into the shoe. By doing this the necessity of putting the neck of the bottle in the pig's mouth is entirely avoided, and the medicine will be found to pass down his throat without any trouble.

The Farm.

Parasitic Plants—The Farmer's Microscopic Foes.

J. HOYES PANTON, M. A., F. G. S.
(Continued from September issue.)

We now come to the consideration of a parasitic plant, which belongs to another family than that to which those belong we have discussed in the last two issues of the ADVOCATE. I refer to the so-called rust of wheat, well known to all farmers, as it appears on the straw at certain seasons of the year, especially when the weather is close, warm, and the atmosphere damp.

Puccinia Graminis—Rust.

Rust is the product of a minute plant developed from a spore, that has reached favorable con-

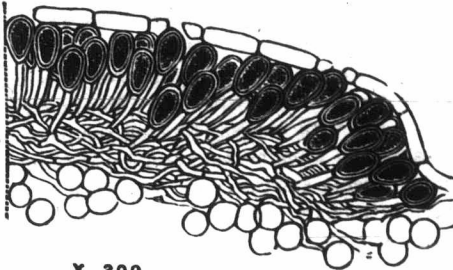


FIG. 1.—Transverse section of straw showing Uredospores, or Summer Spores.

ditions for its growth upon the wheat plant. Here the spore germinates and soon finds its way into the affected plant, and gives rise to a mass of thread-like structures (*Mycelium*) which permeate the host plant and feed upon its juices. Not long after this vegetative condition has been attained spores are produced in myriads on the threads of which it is composed. So numerous do they become that they burst the thin covering of the leaf or stalk, and show the rust colored rupture. If the powdery-like substance thus exposed be examined under a microscope about 200 diameters it will reveal, that what appears to be dust is really a mass of regularly formed seed-like bodies consisting of one cell, oval in shape and reddish in color (Fig. 1).

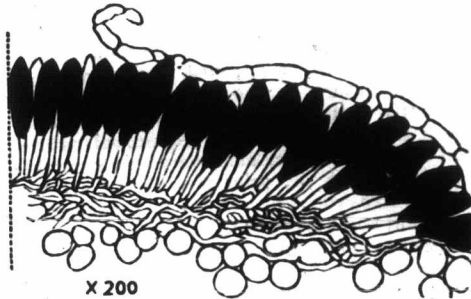


FIG. 2.—Transverse section of straw showing Teleutospores, or Winter Spores.

These spores (*Uredo*) finding their way to wheat plants soon germinate, and again myriads of spores are produced, so that in a very short time, if conditions are favorable, viz., damp, close, sultry weather, a whole field will be

affected. The rapidity of growth in these lower forms of plant life is almost incredible, but the facts are too evident to doubt it. The rust plant does not stop here. A little later in the season on the same thread-like structure (*Mycelium*) another form of spore is produced, but these are usually more common on the lower part of the stalk, and are destined to carry the trouble into another season. The former are frequently spoken of as "summer spores," the latter as "winter spores," these last formed spores (*Teleuto*) are two-celled, pear-shaped and black. (See Fig. 2.)

Affected plants are then said to be attacked with "mildew," and suffer severely from the

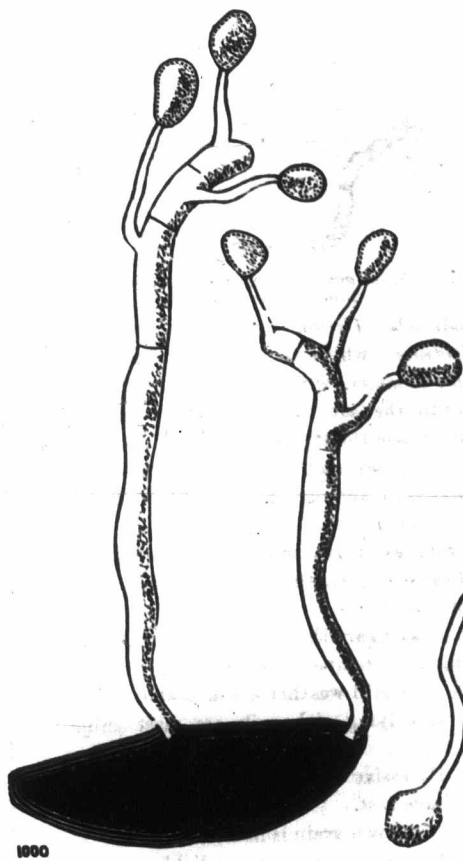


FIG. 3.—Teleutospores germinating and producing Sporidia.

effects of this parasite, just at the time when the plant has reached a stage to mature its seed. These black spores proceed no further that season, and will not again give rise to mildew on wheat until another plant has served as nurse for awhile. Here, then, we have a strange feature in nature; a plant passing through certain

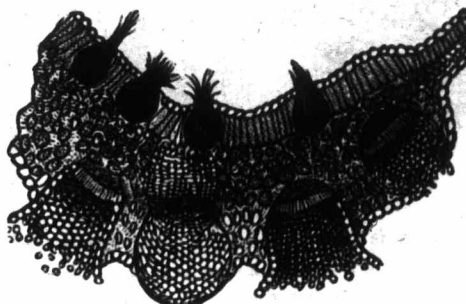


FIG. 4.—Section of a Barberry Leaf showing Aecidia below.

stages of growth upon different plants, which serve for a time as host. We see something similar in animal life in the case of a parasite tapeworm in man. This is developed to a certain extent in the ox, and finally in man when he eats the affected meat of the ox.