

The Farmer's Advocate AND HOME MAGAZINE.

THE LEADING AGRICULTURAL JOURNAL IN
THE DOMINION.

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JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
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man who has once made a success with grades is in an excellent position to enter the pure-bred business and make it even more successful.

Feeding the People.

The cost of foods does not appear to be a factor in preventing money making in the restaurant business. The Lyons' joint stock Company of London, England, now running for some twenty years is a striking illustration of what enterprise and system can accomplish. During that period it has paid dividends amounting to 55½ per cent. in cash or an average of over 27½ per cent. per year, apart from shares distributed as bonuses. For the fourth year in succession, the recent annual report recommended a dividend of 42½ per cent., while appropriations for depreciation are increased and the undivided surplus is raised to a sum equal to 15 per cent. on the ordinary share capital. The company conducts a large chain of light refreshment depots, cafes, popular restaurants and catering houses. In spite of the cost of food, fluctuations in general prosperity, and even depressions this concern has held its own and increased its profits. It is reported that in Canada and United States cities similar enterprises have been correspondingly successful, though the details are not at hand as in the case of the English concern. So long as the people continue to swarm into the cities they must be fed, and the Lyons' and other companies have so utilized the feeding enterprise as to make it a great money-maker. The success of these establishments is a reminder of the vast and regular stream of foods required to keep them going. Their supplies are drawn from the garden, the orchard and the farm. The outlook for the latter should therefore rest upon a good and substantial basis. Of course, the excessive growth of city and town population is a heavy, deterring drain upon the power of production,

which re-emphasizes the need for improved resources in that direction and also better systems in distribution so that the men of the garden and the farm will receive adequate compensation for their labor and returns for the increasing investment involved and general burdens of taxation to be borne.

The Grade Stallion Passing.

A significant statement was made by the secretary of the Stallion Enrolment Board in a recent letter to "The Farmer's Advocate", when he wrote that since last year many owners of grade stallions finding business bad have had their stallions castrated. This means that the grade is going, and if his exit keeps up at such a rapid rate as indicated there is not likely to be many left by 1916 or 1918 for the amended act to drive from the stud to the harness. The Act did not seem to be made strong enough in the beginning and yet it has had more effect than some have been willing to concede. When all the amendments become law the scrub horse will have been pretty well driven out of business.

Nature's Diary.

A. B. Klugh, M.A.

One of our commonest, and at the same time one of our handsomest flowers is the Blue Flag, (Iris versicolor). In midsummer it makes our marshes, and patches of swampy ground from Newfoundland to Manitoba gay with its striking blossoms. If we examine the flower carefully we see that the outer row of three floral leaves are



Fig. 1—Blue Flag (Iris versicolor).

broad and recurved. These are the sepals and in this flower they are far larger than the three narrow petals, which make up the inner row of floral leaves. Arching over the sepals are three narrow segments with expanded, flap-like tips. These are the three divisions of the style.

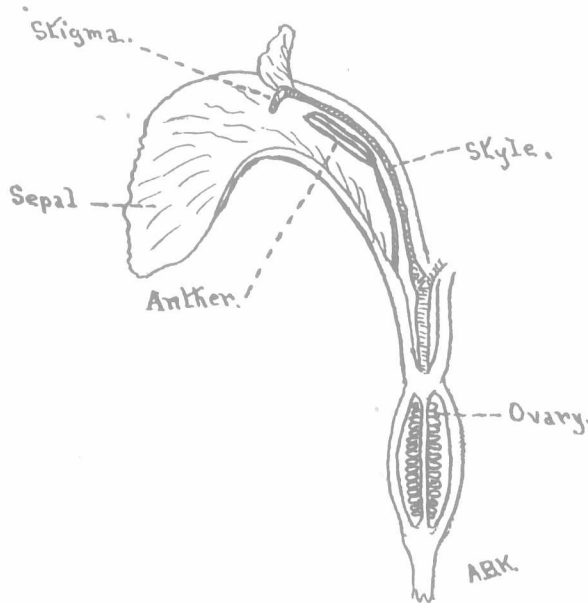


Fig. 2—Longitudinal Section of Portion of Flower of Iris.

In Fig. 2, which shows a length-wise section of part of the flower, we see that the stigma is just under the expanded tip of the style, and is in the form of a little shelf projecting downwards. We also see that the anther is behind and beneath the stigma. When we study the pollination of this species we see how this structure ensures cross-pollination. When a bee alights on the sepal and crawls in to sip the nectar, which is

secreted at the base of the sepals, it comes in contact with the anther and some of the pollen is dusted on its back. As it withdraws from the flower it does not touch the stigma, because it is situated on the upper face of the little shelf which is pushed upwards as the insect retreats. But when the bee visits the next flower its back comes against the stigma and some of the pollen is deposited on it, thus pollinating this flower with the pollen from the first flower.

In the same marshes in which we find the Blue Flag growing so abundantly we are very likely to see the Water Horsetail, a plant which is often known by the appropriate name of "Pipes." This is one of the Equisetums, which are, though they do not look like it at first glance, allies of the Ferns. In these plants, as in the Cacti, the leaves are reduced to mere functionless scales, and the work of manufacturing food is done by the stems. The stems are jointed, hollow except at the joints (hence the name "Pipes"), and may be likened to a drain-pipe, each section of which fits into the slightly flaring top of the one below it. The stems are grooved externally and in the Water Horsetail these grooves number from ten to thirty.

At the top of each joint of the stem there is a papery sheath which is toothed along its upper border. These teeth are all that remain to represent the leaves. These stems are also unique among plant stems in having a coating of Silica (i.e. the same extremely hard chemical compound which forms quartz) and because of this coating the stems of some species of Equisetum were once used for scouring, and were termed "Scouring Rushes."

There are two kinds of stems, fertile and sterile. The latter in most species bear whorls of branches, as in the case of the Water Horsetail. The fertile stems have catkins at their tips. Each catkin is made up of a large number of six-sided plates, which are attached to the stem by a central stalk, and bear on their under side from five to nine little sacs. The sacs extend horizontally towards the centre of the catkin, and only the plates can be seen before maturity. These sacs contain the spores. When ripe, the catkin lengthens slightly, drawing the plates apart, the sacs open on the side next the stalk, and the spores escape.

The spores are tiny, globular, single-celled bodies bright green in color. Each possesses two thread-like appendages, called elators, which are attached to the spore by their middle. These elators coil tightly around the spore when moist and spread out when dry. As the spore-case becomes dry at maturity, the elators uncoil and assist in liberating the spores, and when the spores are free they assist in floating them in the air. It is most fascinating to watch these spores under the microscope. If a mass of spores is breathed upon, the elators all coil round the spores, but as they dry out the elators uncoil with sufficient violence to cause the spores to dance about in a most lively fashion.

The spores upon germination produce little green bodies known as prothallia, just as do the spores of ferns, but in the case of the Equisetums the male and female organs are borne upon separate prothallia, instead of both organs being borne upon one prothallium. When the egg in the female organ (archegonium) is fertilized by the sperms from the male organ (antheridium) it develops into a plant similar to that which bore the spores.

Our Equisetums are the descendants of plants which grew to tree-like proportions in the Carboniferous period, the remains of which are very perfectly preserved in the coal measures.

THE HORSE.

Salt-cellars for Horses.

On our recent trip to the Lynndale Farms in Norfolk county we noticed a system of salting horses which appealed to us and which the Superintendent of these farms thinks is the best yet, in order to keep a constant supply of salt in front of the horses without waste. Many people make it a practice to have a large double handful of salt on a ledge over the manger where the horses can lick it at will and this is a good practice but much salt is wasted; the horses after getting enough often mischievously nose considerable of it down under their feet or into the bottom of the manger. Too many do not keep salt before their horses at all, it being supplied only at very infrequent intervals.

The horses on the Lynndale farms each have their salt receptacle which consists of a stone jar inverted and so arranged that the horses get the salt from the bottom it being a constant feeder and allowing of no waste whatever. These are placed in the corner of the stall over the manger and while standing watching the horses we noticed several of them reach up and take a few licks of the salt. They are in every way satisfactory and practicable and we believe they could be advantageously used in most horse stables.