

when grain was bound by it had to be bound while because the thistles were so there were small boys made to keep the thistles in chiseled out with a spud ed out. But when the self- de it possible to bind thistles lean grain the boys were the farmers who wanted to t by summer-fallowing or by of hoed crops. The spud is for modern methods of farm- uth were known I would not that many a man now high our country made "up his rm while spudding thistles in

time importance disappeared. Before there were wire es on the farms it was quite or even girls to spend many g days we used to have, in the crops were being hauled r was working in the fields seem to mind letting down g it up every time he went, rned, but when hauling in gap had to be left open so be done with a rush, and h it so as to keep the cows of the grain. And the cat- re different from the kind we d modern cows, sheep and pigs zy and look as if they were ir picture taken for "The but the old-time "critters" eaky brutes that could not ute. Even when they were r of the field and as far as they could get it was a run to the house to "get- soon as a fellow's back was ake a run for the gap and But all this is ancient even the farms where there outh gates, and it is many boy "minding a gap."

still survives to some extent familifar is that of herding a while we see a large left to hay while the other n. After the hay has been l to turn in the cattle to le and along the fences, and herd them away from the hile I see a boy at this job, of times when I had to do ore myself, but my memory pleasant, for I had learned to do it and with a book e did not hang too heavily. d at such times still comes d with the fields and cattle, months part of an old read while herding in one of ck constantly as I think uliar pathos struck me as a ed it to memory without ome back with a poignant ot sure that I can quote the I have not seen the song in hood days, but this is the back to me:

the gloamin' s are roamin' e lassies at bogie to play. e sits dreary er dearie— forest are a' wede away."

Julien and Langemarck may or the heroism shown was an boys, but when we re- at is being paid for the on Canada,—the land which d from the forest—we all th tears, that "The flowers wede away."

re's Diary. Klugh, M.A. mostly silent, except for a such as the Red-eyed Vireo. Bird music is now largely music. Most of the insect members of the order to which belong the Grass- ckets and Katydid. The insects cannot really be o vocal apparatus produces ulation, that is a noise pro- rubbing together of two various parts of the insects n producing these sounds, ers, or a leg and a wing-

Hart's-tongue, (*Scolopendrium vulgare*). In the whole of the United States there are but two places where this species grows. In Canada we have three localities in which the Hart's-tongue occurs—Woodstock, N. B.; Durham, Ont., and in the portions of the Counties of Grey and Bruce which lie along Georgian Bay. Until ten years ago it was only known to grow in the latter region in the immediate vicinity of Owen Sound, but field work which I did in 1905 extended its known range by many miles both east and west of that point.

The Hart's-tongue is an interesting species because of the shape of the fronds (see Fig. 1), which are undivided and in this respect decidedly "un-fern-like." The sori, or fruit spots, are also rather peculiar as they are arranged in straight lines running from the mid-rib outward. This Fern is found only in limestone areas, growing in the woods in crevices of the rock. It may at first seem strange that the specific name of a species which is so rare on this continent should be "vulgare," but it is one of the commonest of English Ferns—hence the name.

Another Fern which is found in the same localities as the Hart's-tongue is the Holly Fern—a very handsome species, as may be seen from Fig. 2. The name Holly Fern is very appropriate for two reasons—the teeth of the pinnae ("leaves") are tipped with sharp bristles and the species is evergreen.

On the surface of ponds and other still waters we often at this season find minute floating green plants. These little plants are usually abundant, lie close together and cover quite extensive areas. They are known by the common names of Duckweed and Duck's-meat, and they are flowering plants of extremely simple organization. One very common species, (*Lemna minor*) consists of two tiny fronds, with a single rootlet hanging down into the water, while a second common form (*Spirodela polyrrhiza*) is slightly larger and has numerous rootlets. They produce flowers which consist of a single naked stamen or pistil, and while reproduction takes place to a certain extent by fruit from these flowers it is mainly carried on by vegetative growth. This growth takes the form of lateral branching, the branches being but slightly connected by slender stalks and soon separating. In the autumn these disconnected branches fall to the bottom of the pond, but rise and again increase in size the following season.

In another species which is fairly common, though not as abundant in Canada as either of the preceding, is *Lemna trisulca*, in which the fronds are shaped somewhat like a tennis racket. In this species the fronds usually remain connected so as to form a chain-like series. These minute plants are more closely allied to the Arums, of which the commonly cultivated Callily is a type, than to any other group of plants.

THE HORSE.

Alsike Poisoning.

During the autumn cases of alsike poisoning are frequently reported. They often cause horse owners considerable anxiety but if detected in time the outcome is seldom serious. In order to recognize cases of alsike poisoning the following symptoms may assist in diagnosing such cases.

On the skin are inflamed areas, appearing first as more or less vesicular swellings, varying from one-half inch to five or six inches or more, in diameter. The hair over the affected areas stands erect, and has a dull appearance, indicating loss of vitality. Later the skin becomes hard and puffed out, as the result of the formation of puss underneath. Finally the deadened skin is cast off, leaving a deep, raw, angry-looking ulcer, which eventually heals, with the formation of a conspicuous scar, covered with more or less white hair. These changes in the skin may occur on any part of the animal, but especially on the limbs, body and croup. The eye symptoms consist of a marked conjunctivitis, with swelling of the eyelids, sensitiveness to light, and a watery discharge from one or both eyes. The mucous membranes of the mouth become inflamed, ulcers form, and the animal slobbers and refuses to eat. The advanced cases are frequently accompanied by emaciation. The tongue is usually affected, and the inflammation may extend throughout the entire digestive tract. The functions of the liver may be disturbed, and a yellowish coloration of the tissues follows. In such cases symptoms of colic are not uncommon, and the respiratory tract may become involved, and pneumonia develop.

Cases taken in time seldom prove fatal. They should be removed at once from such pasture and the wounds subjected to an ordinary antiseptic treatment, such as a frequent washing with a 5 per cent. solution of some coal-tar disinfectant and the application to the ulcers on the skin of drying powders consisting of boric and tannic acids in equal amounts.

Reducing the Cost of Horse Labor.

The cost of keeping a farm work horse for a year varies to a considerable extent, depending on the size of the horse, the amount of work performed and the price of feeds. Yet in every case the cost of horse labor constitutes a considerable item of expense in the operation of a farm. During the year 1913 it cost \$122.50 each to feed the horses kept at the Central Experimental Farm, Ottawa. These horses, 14 heavy drafters and 4 drivers, are kept stabled practically all the time. In 1914, on a large Ontario farm where a strict account of feed was kept, the cost of feeding thirty work horses, figured out to an average of \$117.79. These figures are for feed alone. On the ordinary farm where the horses are turned out to pasture when idle, the cost can be reduced to a very considerable extent. To this feed cost must be added the cost of shoeing, interest on capital, depreciation in value, and the labor of feeding, grooming etc.

In considering ways and means by which the cost of horse labor may be reduced the feed cost of each horse must be lowered, the capital invested and annual depreciation must be diminished and the earning capacity of each horse must be increased.

In Canada oats are considered, and rightly so, the best concentrate for horses. On all farms this grain constitutes the bulk of the ration fed; on many farms it is the only grain used for horse feeding, no matter what the price may be. In other countries where oats cannot be so successfully grown, experiments have been made

One of her lines of production is not impaired so long as she will breed.

A few good judges and good trainers have been able to reduce their labor cost by buying unbroken colts, breaking them, using them for a couple of years and then selling again. A man must be specially qualified in order to make a success of this. There is always considerable danger of young horses developing unsoundness or becoming blemished during the first few years of work.

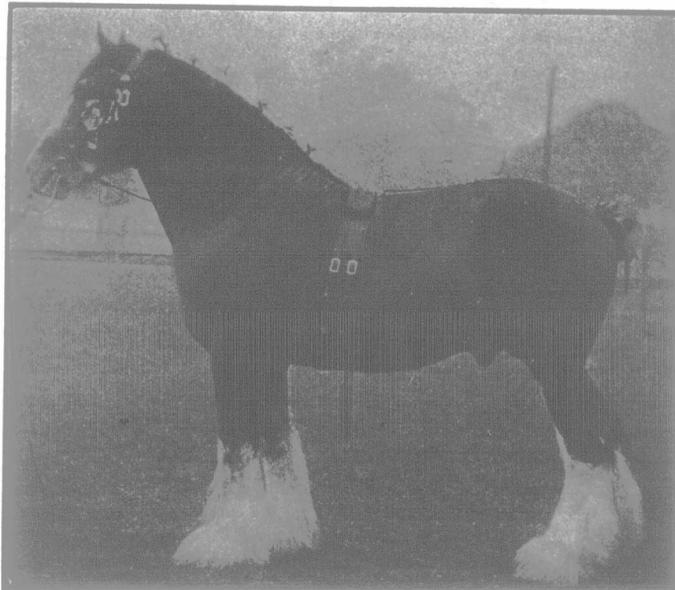
LIVE STOCK.

England's Royal Show a Great Success.

Editor "The Farmer's Advocate":

It says something for the virility of English farming and live stock breeding that in a time like the present the Royal Agricultural Society's Show can be held—as it was at Nottingham from June 29 to July 3—and can be made into an all-round success, so far as assembling entries of the best quality and getting together thousands of sightseers, are conjointly concerned. It was a great show, because of the tip top quality stock submitted. Those exhibitors not yet in the front rank, who in peace times would send their entries more as a sporting venture, kept their money and their animals at home. Never were there such dairy Shorthorns, never such a brilliant array of beef breeds; hardly ever such a

fine lot of Shire horses, and certainly never such a great lot of breeding stock in the Hunter horse section. This latter fact may appear strange to Canadian readers, but we in England put great store on, and much treasure in our hunters bred by the aid of the thoroughbred race horse. For the horse section £2,253 were offered and that drew 500 entries; Shires totalling 110 head. Clydesdales 53, breeding Hunters 109, and so on. The cattle section had £2,530 offered on its behalf, and 185 Shorthorns of the beef breed came into the ring; 101 dairy Shorthorns; 50 Lincoln Red Shorthorns 70 Herefords; 87 Jerseys; 53 Holsteins; and 64 Guernseys. There were 862 head of cattle all told. Sheep were offered £1,793 in prize money and drew 575 entries, including 66 Southdowns; 54 Shropshires; 68 Kents; 69 Lincolns; 33 Hampshire Downs and 30



Bury King's Champion.

Champion Shire stallion at the Royal Show, 1915.

and good results obtained with many other concentrates. Equally good results have been obtained with a ration composed of half oats and half corn, or dried brewer's grains, or a mixture of these with bran and oil meal, as when the whole ration was composed of oats. Usually feed nutrients can be purchased more cheaply in these other feeds than in oats, and where many horses are kept it will often pay to sell some oats and buy other feeds, even for the horses. As a general thing not much can be saved by reducing the capital invested in horses unless the number can also be reduced. A horse is usually valued according to the amount of work he can perform. Occasionally a serviceably-sound horse can be bought at a bargain, and to those who are willing to consider a horse a machine for work only, a saving in capital invested, and in the amount of annual depreciation, may be effected by using this class of horses.

The earning capacity of a horse may be increased by so arranging the work of the farm that the horse may be worked as continuously as possible. As much hauling should be done in the winter season as it is possible to do. More horses are injured by spells of idleness than by continued use. With a gelding the earning capacity is limited altogether by the work he can perform, but with a mare the case is entirely different. A good mare properly handled should do about three-quarters as much work as a gelding of the same quality, and at the same time raise a foal which should sell for \$75 to \$100 when a year old. Such a mare will cost about \$20 or \$25 per year more than the gelding, for stallion fees, insurance, veterinary attention, etc. Capital invested will be slightly more, but this is partially offset by a smaller annual decrease in value, as an aged brood mare will always outsell the gelding.

Suffolks. There were Lonks (A Lancashire breed) and Derbyshire Gritstone sheep and others you have never heard of. For £783 offered in pigs, 360 porcines weighed in, Large Whites aggregating 111 entries; Large Blacks 77; Middle-sized Whites 40, and Lincolnshire Curly Coated ones 40.

A CANDID CRITICISM.

Taking the cattle classes one might pay some attention to the dairy Shorthorns, into which type so much good money is at the moment invested—as a gilt-edged security say some. In "The Farmer's Advocate" recently I told of the record price of 950 guineas given by R. L. Mond, for the dairy Shorthorn heifer, Barrington Duchess 53rd. It is now only too obvious, that she was thought good enough to win at the Royal and everywhere else. That was why the price soared so high when she was sold at the Rothschild dispersal a little time ago—when solid and substantial men cheered like lads on the achievement of a record price. She turned out at Nottingham in the heifers in milk, wherein 33 others, a peerless collection, were arrayed against her. Still, she had to give way and filled only second place to J. Moffat's heifer, Primrose Dairy-maid, a roan bred in the hills of Westmorland, that area of England where every farmer knows a dairy cow by instinct. Primrose Dairy-maid's udder is a perfect one. She has full quarters and her teats are neat and beautifully set. Her shape is perfection, and her fall is well laid on. She gave 30½ pounds of milk in the show, which was four pounds more than the record-breaker. There was a rush to buy Primrose Dairy-maid after her victory, and Lord Lucas, a young Parliamentarian who has been at the Board of Agriculture offices and knows what is what, got her at a good price. Of the loser it must be said she has all