

Nature's Diary.

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A rather striking moth, which is sometimes not uncommon in the vicinity of vines of the Virginia Creeper, is the Eight-spotted Forester. The adult of this species is black with two very pale yellow spots on each of the fore wings and two white spots on each of the hind wings, and measures about an inch and a quarter across the spread wings. One of its most interesting features is the possession of little bright red tufts of feathery scales on the upper part of the two front pairs of legs, which give these legs the appearance of being clothed in red knee-breeches. In this species the male and female differ from one another in the fact that in the male the inner white patches on the hind wings are much larger than in the female. The larva of this insect feeds on the leaves of the Virginia Creeper, and occasionally becomes abundant enough to do a considerable amount of damage to this ornamental vine.

In some parts of Ontario the Elm Leaf Aphid, (*Callipterus ulmifolia*), is extremely abundant this year. The presence of this plant-louse is usually revealed by the leaves of the Elms, and objects under these trees, becoming spotted and dampened by the sugary excretion, which this insect, in common with other plant-lice, exudes. This fluid, which glistens in the sunlight, is known as "honey-dew" and is a favorite drink of many species of ants.

This Aphid in the adult condition is yellowish-green winged, and about one-tenth of an inch in length, while the young are the same color but smaller and wingless. As the young grow they moult several times, and their cast whitish skins cling to the leaves for a considerable time.

Like all the plant-lice these insects suck the sap of the leaves, and when trees are badly infested many of the leaves are seen to be dead and brown.

The best means of combating this insect is to spray with kerosene emulsion, made by dissolving one-half pound of hard soap in a gallon of boiling water, and while it is still hot adding two gallons of coal-oil and stirring until the mixture is thoroughly emulsified. For use this mixture should be diluted in the proportion of nine parts of water to one of emulsion. It is most important that the spray be directed on the lower surface of the leaves, as it is here that the insects are found. This remedy may be applied to a few isolated ornamental Elms, but the cost of spraying large numbers of such big trees prohibits its general use, and we are consequently obliged to rely upon its natural enemies, such as the Lady Beetles, to keep it in check.

A very beautiful plant which is now in full bloom is the Blue-bell, or Hair-bell. The flowers of this species are bright blue, bell-shaped, half to three-quarters of an inch in length, and droop from hair-like stalks. The earliest leaves produced at the base of the plant are nearly round, and wither early, the leaves which are present on the stem at flowering time being long, narrow, and pointed.

The Blue-bell hangs its head, not from modesty as the poets would have us believe, but to protect its pollen from rain and from crawling insects. These insects would brush off the pollen which had collected on their bodies on the grass as they crawled through it, so that none of it would reach another flower to bring about cross fertilization. The Blue-bell advertises for winged insects by its bright color, and succeeds admirably in attracting bees, since blue is their favorite color. These visitors cannot very well walk on the vertical petals, and must clasp the pistil if they would secure the nectar secreted at its base. In doing so they dust themselves, and the immature pistil with pollen from the surrounding anthers. This does not result in the fertilization of this flower as the stigma is not yet ready for pollination. By the time all the pollen has been removed and the anthers have withered, the pistil has grown longer, until it looks like the clapper in a bell, and the stigma at its end has separated into three sticky lobes. When an insect, dusted with pollen from a younger flower, enters the bell, some of the pollen adheres to the sticky surface of the stigma and the flower is thus cross-fertilized.

We are quite used to seeing one animal devour another, a large fish swallow smaller ones and birds consume insects, in fact all around us we find one form of life existing at the expense of some other form. But the wide-spread application of this fact is brought home to us when we witness a tragedy such as I observed the other day. While examining some Protozoa, those minute, single-celled animals which are the lowest forms of animal life, under a high power of the microscope, I saw a Stentor, a trumpet-shaped Protozoan about one-hundredth of an inch long. This form has an opening known as the mouth, at the upper end and round it a row of cilia, (fine hairs), which by their motion create a current of water towards the mouth. In the current was an Amoeba, the simplest of all Protozoa, about one-thousandth of an inch in diameter. When the cilia beat rapidly the Amoeba was drawn towards the mouth of the Stentor, when their action was lessened it moved slowly away. Finally the Amoeba was drawn into the mouth of the Stentor and through the transparent substance of that animal could be seen in its "gullet." The Stentor had a meal; there was one Amoeba less in the world.

THE HORSE.

Under no conditions throw cold water over a heated horse, unless it be put on the legs and feet only.

Don't forget that the horse is your friend and without horses even we in Canada would starve.

Remember that on a hot day the horse appreciates a short rest in the shade of a tree as much as does the driver.

Plenty of salt in the pasture field and an abundance of fresh water are necessary to the best development of the colt.

When taking your refreshing drink in the middle of the forenoon or afternoon think of the horse. A pail of cool water will add much to his comfort.

Relieve the weight from the horses' necks by the use of tongue-trucks on all implements and machinery where these are suitable and can be easily attached.

When tying your horse to be left for several hours select a cool, breezy spot. Do not, because it is handier, hitch him up to the south side of a building in the blazing sun and out of the breeze.

Keep the stable well ventilated. Horse stables are very often about the hottest part of the building in the summer. A current of air passing through the stable but not directly over the heated horse, will soon lower the temperature and allow the animal to cool down.

This is not the best season to breed the mare. It would probably be advisable to arrange for a fall colt, if she has been missed up until this late date. However, circumstances must always be taken into consideration and some would rather have a late June colt than an early fall colt. At any rate if you have a good mare do not hesitate to breed her to the best horse in your locality.

Shipping Draft Geldings Co-operatively.

The following article is composed of extracts from a speech delivered by G. E. Wentworth, superintendent of the Horse Department of the Union Stock Yard and Transit Company, Chicago, Ill., and was recently published in the Breeder's Gazette. It gives such a good idea of the horse market situation in the United States that we feel sure our readers will appreciate it.

The co-operative marketing of horses impresses me with its wonderful possibilities. It is actually needed, positively demanded and not longer to be evaded. It must come.

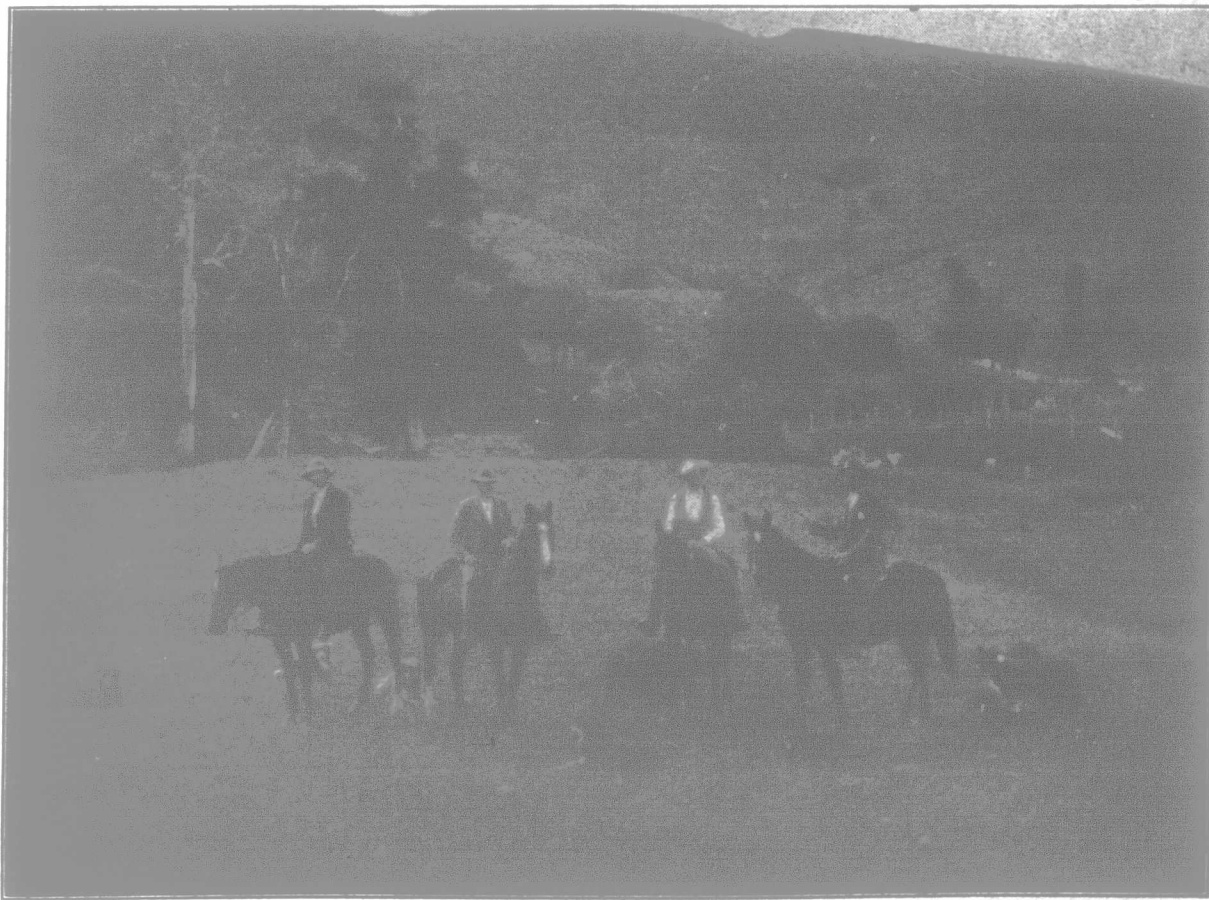
The co-operative method of disposing of all classes of goods is undoubtedly one of the best which has ever been discovered. The many advantages to the farmer of disposing of his draft geldings through co-operative shipping appears at first blush so clear that no argument should be required to convince him. On second thought, however, the sad fate of numerous co-operative associations presents itself

vividly. Hundreds of co-operative life insurance companies have fallen by the wayside for lack of proper support from the supposed beneficiaries. Co-operative buying has failed time and time again owing to the incompetency or the dishonesty of chosen agents. The co-operative selling of cotton in certain southern districts was abandoned because super-heated imaginations led to expensive management. These are the rocks upon which co-operative enterprises split: lack of support, debt, expensive management, incompetency or dishonesty. In Scotland and Ireland farmers have succeeded because of their great thrift and honesty, and in the United States farmers have successfully marketed co-operatively their cattle, sheep and hogs, obtaining the best prices and dividing the whole profit.

In the early days of our horse market we received loads consigned jointly by many owners. Few horse buyers or middlemen operated in the country. Market commission men invested no money and were called upon to pay no drafts. Horses were billed by their country owners direct to commission men. The commission men sold the horses at auction for the high dollar and returned satisfactory proceeds to the farmers. Horses were plentiful. Prices were low, trade was active, sales were rapid and returns quick. There was a place for every horse. No horse that came to market was without its particular job. Export trade was good. Domestic trade was good. Drafters, bussers, expressers and street car horses could scarcely be obtained fast enough to satisfy the demand. Even before horses were unloaded from the cars knots were tied in their tails through the slats of the stock car to signify that such and such an exporter was entitled to first bid on the horse so marked. Each buyer for export had his own peculiar knot. Horses needed no selling, but themselves according to their classes. That time is coming again. Horses of class will sell themselves.

In those days the business got so good that horse commission men became eager to secure more and more horses for themselves. The desire to get all of the horses, to put all competitors out of business, arose in the mind of some hungry commission man. From this desire to get it all was born the custom of furnishing buyers with money to pay for horses in the country. The horse buyer was injected into the game. This effort to corner the horse market, to secure for one firm all of the horses in the world, was met by all other commission men and by all other markets. The farmer disappeared from all horse centers and to-day practically all the commission man's money is invested in all the horses shipped to market. Every dollar expended by a market horse buyer in railroad fare, hotel bills, in high living, or laid up as profit out of a horse which sells itself, is lost to the farming interest.

Not that the market horse buyer is totally useless. There are many horses which could never be marketed profitably except through the offices of such a man. It takes an operator to place horses whose job is not plainly obvious by reason of their bad appearance, their ungainly proportions or their serious defects. A horse dealer has his uses. He knows exactly where he can sell this or that horse which he buys, if it can be used at all in the world's work. There are alley peddlers who pay \$60 for a plug and other alley peddlers who pay \$250 for a real horse. It would be difficult for your manager of a co-operative shipment to discover which peddler uses the magnificent draft horse for peddling his



Shepherds with Their Horses and Dogs on a New Zealand Ranch.