

The Farmer's Advocate AND HOME MAGAZINE.

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DOMINION.

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JOHN WELD, MANAGER.

Agents for "The Farmer's Advocate and Home Journal,"
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ada is being laid down to grass, and is not producing one-half the crops and products of which it is capable for lack of help. The world and the cities in particular are clamoring for food which the farms and orchards and gardens might produce if only they were populated with willing hands. Are our governments, Federal and Provincial, going to confess their incapability to grapple with such a problem? Have they no alternative to place before these people in the vast land of hope and opportunity, but to weakly dump them overboard? If confirmed paupers, criminals or diseased, that their own lands should have cared for, the case is different, but for others there is land to clear and work, roads to construct, drainage to be done, and homes to be established under Canadian conditions. Here are great tasks ready to hand for the 20th century statesman.

Nature's Diary.

A. B. Klugh, M.A.

Few insects are more abundant and few are more destructive than the locusts. Year by year they make away with an immense amount of vegetation, and in some localities they increase so much in numbers as to constitute a veritable plague. It is true that we in Canada have never been visited by the immense swarms of Rocky Mountain Locusts which have on several occasions devastated Kansas and other Western States, but we have had in many localities "Grasshopper Years," the memory of which is far from pleasant. The places in which these plagues have occurred are not the well-tilled agricultural districts, but localities in which there is some farm land but a large amount of waste land. This is so because the main breeding grounds of the Locusts are in dry, waste land. The eggs are deposited in such soil in the fall, consequently if land is ploughed they are destroyed.

One very dry summer in North Frontenac the Red-legged Locusts increased so tremendously in numbers that they cleaned up the hay and grain, ate all the garden stuff, stripped the leaves off the bushes and low trees, and even chewed the wood of the fences, barns and other unpainted surfaces. In an attempt to provide some fodder for winter some sowed corn and any of the

grains which were left on the surface were eaten into until they were shaped like an old molar tooth. By the time the corn came up the plague was practically over and it made fair growth before late fall. Many who were unable to import baled hay lost nearly all their stock that year from starvation.

Speaking of the Rocky Mountain Locust, Kellogg says: "One day in early summer of 1879 the people all over Kansas might have been seen staring hard with shaded eyes and serious eyes up towards the sun. By persistent looking one could see high in the air a thin, silvery, white shifting cloud or haze of which the old residents sadly said, 'Its them again, all right.' Now this meant, if it were true, that far from being all right, it was about as wrong as it could be for Kansas. 'Them' meant the hateful Rocky Mountain Locusts, and the Locusts meant devastation and ruin for Kansas crops and farmers. In 1866 and again in 1874 and 1875 the locusts had come; first a thin, silvery cloud high overhead—sunlight glancing from millions of thin membranous wings—and then a swarming, crawling, leaping, and ever and always busily eating horde of locusts over all the green things of the land. And the old residents spoke the truth in that summer of 1876. It was 'them,' uncounted hosts of them."

"The Rocky Mountain Locust has its permanent breeding grounds on the plains and plateaus of Colorado, Wyoming, Montana and British Columbia, at an altitude of from 2,000 to 10,000 feet above the sea level. But in those days there were few ranches and farms on the great plains, and succulent corn and wheat were not at hand to feed the millions of young which hatched each spring. So, after exhausting the scanty wild herbage of their breeding grounds and developing to their winged stage, hosts of locusts would rise high in the air until they were caught by the great wind-streams bearing south-east, and with parchment-like wings expanded and air-sacs in their bodies stretched to their fullest, would be borne for a thousand miles to the rich grain fields of the Mississippi Valley. As far east as the middle of Iowa and Missouri and south to Texas these great swarms would spread, and once settled to ground and started to their chief business, that of eating, not a green thing escaped. First the grains and grasses; then the vegetables and bushes; then the leaves and fresh twigs and bark of trees! A steady munching was audible over the doomed land! And this munching was the devouring of dollars. Fifty millions of dollars were eaten in the seasons of 1874-6 alone.

"There has been no serious Rocky Mountain Locust invasion of the Mississippi Valley since 1876, and there will probably never be another. The Locust is being fed and fought in its own ranges; many are killed every year, and for those that are left there is food enough and to spare in the great grain fields of the north-west plains."

In these plagues all sorts of remedies have been tried, such as scattering straw over the fields and setting fire to it, using 'hopper-doers' (large pans containing coal oil and drawn by horses), rollers, etc., but none have been of any avail against the immense hosts.

The life history of all the locusts is in general characteristics very much the same. The eggs are deposited in bean-shaped packets enclosed in a glutinous substance. The strong, horny ovipositor at the top of the abdomen is worked into the ground, the four pieces of which it is composed are separated, and the eggs and covering mucous material extruded.

The eggs in a single packet vary in number from 25 to 125. The majority of species oviposit in the fall but some in the spring. The young hoppers are wingless, very small and pale-colored. They become mature in two or three months, having moulted five or six times and developed wings. The main factors in controlling the numbers of locusts are our insectivorous birds, as nearly all species eat quantities of these insects.

The farmer can control to a great extent the amount of moisture his land gets by good cultivation, but if it gets little or none, as many districts have this season, he has no real remedy. However, the results of good cultivation are more marked in a season like this than in a season of plenty of rain.

The grain farmer stands to have a hard year in most sections and it is surely going to be another good chance for the mixed farmer. Feed may not be too plentiful, but the rough feed crops promise much better than the grain crops. This fellow that has all his eggs in one basket generally is not long on the market, and it takes him only a short time to spend his small returns. Live stock is agriculture's sheet anchor.

THE HORSE.

Dietetic Diseases in Horses---II.

Pulmonary Emphysema—Broken Wind—Heaves.
—This disease might be classified as a disease of the respiratory organs, as the lungs are the organs principally involved, but as it is usually caused by errors in feeding, we will discuss it as a dietetic disease. When we know that the same pair of nerves, originating in the brain (and called the pneumogastric) supplies to a great extent both the lungs and the stomach, we can readily recognize that a more or less constant irritation to the latter, by overloading with food, or the feeding of food of poor quality, may, through nervous sympathy produce disease of the former. This disease may be defined as a non-inflammatory disease, characterized by difficult and peculiar breathing; the inspiratory movement is performed in the normal manner, the expiratory with two apparent efforts. The difficulty in breathing is liable to remissions, occasionally being hard to detect; a peculiar, hollow cough, hard to describe, but easily recognized, called "the broken-winded cough" is a more or less constant symptom, and in many cases is accompanied by violence of flatus per anus. Indigestion and flatulence aggravate the symptoms.

The causes of broken wind given by various authors are numerous and complicated, but there is little doubt that it is generally due to improper food or improper feeding. More particularly is it due to bad, musty or dusty hay, or coarse hay containing a large percentage of woody, indigestible fibre, usually the result of being too ripe when cut and poorly saved; to habitually overloading the stomach with hay of any kind, but especially with a quality that is more or less indigestible. Horses that are heavy feeders, if allowed large quantities of bulky food are more liable to the disease than those with moderate appetites. Horses with very round chests, not capable of the ordinary degree of expansion are also more easily affected. In a year following a season in which the weather has been wet during hay harvest, and, as a consequence, a large percentage of the hay has been more or less damaged, broken wind will be more frequently seen than in other years. The disease is at first purely a nervous affection, dependent upon the condition of the digestive system, the pneumogastric nerve being especially involved, and the organic lesions are the effect of the nervous disorder. There is at first an abnormal condition of the bronchial tubes and the air cells, which is quickly followed by structural change. The air cells become inflated; this prevents free circulation of blood in the capillaries, hence nutrition to the bronchial muscles and mucous membrane is weakened; degeneration follows, the walls of the air cells become stretched, disorganized, perforated or ruptured, two or more become converted into one, hence the air escapes and infiltrates into the lung tissue, causing the condition known as emphysema.

Symptoms.—Inspiration is performed with ease but the expiratory movement requires two apparent efforts, at the conclusion of which the muscles relax and the flanks fall with a peculiar force. There is usually a peculiar, hollow cough, which seems to be ejaculated with a sort of grunt, which, as already stated, is often accompanied by a passage of flatus per anus. The cough, while peculiar, is hard to describe, but is easily recognized by those who have paid particular attention to its characteristics, and its peculiarity will be noticed whether the horse coughs voluntarily or is forced to cough by pressure upon the larynx (the throat). In some cases there is an irregular, thick discharge from the nostrils during fits of coughing, or when drinking, but in many cases this symptom is not well marked. By placing the ear against the ribs the respiratory murmur will be noticed to be abnormal, but in order to be able to detect this it is necessary to be familiar with the normal sounds, which can be acquired by listening to the sounds in healthy animals. The symptoms are better marked after the animal has been fed. After the stomach has become comparatively empty the respirations may be tolerably easy until he has been fed again. The symptoms are also more marked during damp, close weather than when there is a clear atmosphere. Severe exercise also aggravates the symptoms. The digestive organs are often weak, but this is not a constant symptom.

Treatment.—Preventive treatment should al-