

Weather Conditions Which Affect the Appearance of the Hessian Fly.

BY PROF. JAMES FLETCHER, OTTAWA.

The appearance of the fall brood of adults of the Hessian fly is somewhat subject to variations in regard to date. Cool, damp weather during the breeding seasons is supposed to be favorable to the development of these insects, but comparatively little is known on this continent that is applicable to field conditions.

Dr. W. Paspelow, Agricultural Institute, Moscow, Russia, in his examination on this pest as it affects the wheat crop in Russia, observed that the emerging of the summer generation, which began in June, stopped very quickly, and the insects remained in the puparium or flax-seed stage during a hot, dry period which lasted some weeks in July and August.

In his treatise on the subject, he says: "Such retardation in the course of development of the Hessian fly was due to the high temperature and the great drought of the past summer, whereof one could easily be convinced by placing puparia in a moist space in glasses in damp sand, which were placed in moist and shady places in the park. In such cases perfect flies developed from puparia brought in from the fields in two weeks. Puparia left in the fields remained in the puparium stage an unusually long time, until, under the influences of rain, they transformed first to true pupae and after that finally to adult flies."

It would thus appear that if this pest is to be avoided in Western Ontario by deferring the sowing of fall wheat, the prevailing weather conditions at about the normal time when the fall brood of flies appear must be taken into consideration. For instance, if during the last week in August a locality is favored with an appreciable precipitation of rain, associated with moderately cool weather, the flies would be at work depositing their eggs during the early part of September, and it might be considered quite safe to sow wheat on or after the tenth; whereas, if hot, dry weather is prolonged until the eighth or tenth of September, followed by rain and a lower temperature, wheat sown before the twentieth would, in all probability, be seriously affected with the fly.

Prof. Webster, of the Ohio Experiment Station, states that from seven years' observation and experimentation at the farm, wheat sown immediately after the twentieth is usually safe from attack of the Hessian fly. He also observed that the fall brood of flies begin to emerge nearly or quite a month earlier in the northern districts than in the southern parts of the State.

In the extreme northerly districts, the spring brood does not appear until the latter part of May and in June. Such is the case in Manitoba, where under average weather conditions only one brood per year appears, the flies being carried over winter in the puparium stage of the spring or early summer brood. However, it is quite reasonable to expect that a second or fall brood will appear as far north in Ontario as fall wheat is grown.

The result of Prof. Webster's examinations of this pest in 1899 and 1900 fully bears out the idea that fall wheat may be sown in any locality a week or ten days after the fall brood have emerged and commenced laying their eggs, with little danger from the Hessian fly; but that the date when the adult flies appear will depend largely on meteorological conditions is also quite evident. We have here an illustration of how nature protects such insects. The same hot and dry weather that will prevent the germination of seed and the growth of plants will also retard the development of the Hessian fly during a long period of time.

In conclusion, Prof. Webster says: "Of course, in these investigations many dissimilar conditions and influences have been encountered. In some instances, wheat sown very early, under the influence of local showers, sprung up and made a good growth, escaping the fly because these, on account of it being still too early, had not appeared, and that sown later proved to be more attractive on account of being less tough, thus, as it were, drawing off the Hessian flies from the early-sown fields when depositing their eggs. Then, too, there would be a decided difference between wheat sown on stubble ground where the previous crop had been injured by the fly. The resistant qualities known to belong to some varieties of wheat, and the attraction which others seem to have, the protracted warm weather of the autumn of 1899 (which extended well along to December), have all increased the difficulties of carrying out these investigations."

Mr. W. A. MacKinnon, of the Commissioners' Branch, Department of Agriculture, Ottawa, has recently been touring the chief fruit growing and shipping centers of Western Ontario, including London, Woodstock, Ingersoll, and the Lake Huron and Georgian Bay district, in connection with the enforcement of the Fruit Marks Act, which was passed last session, with a view to prevent the fraudulent marking and packing of Canadian fruit, both for local and foreign markets.

Agriculture in the Rural Schools.

In Manitoba, the attempt to teach agriculture in the rural schools has been anything but a success, for reasons which it is not necessary to mention at this time. The Illinois people have tackled the question, and have decided to call upon the school teachers to help stem the tide of emigration of farmer boys to the cities. In some parts of the State it is said that the attendance has fallen off at the country schools in a startling manner, almost threatening their extinction. With the idea of lessening the outgo, an effort will be made to raise the standards of such schools. To provide a practical course of instruction, of real value to boys on farms, the pupils in the rural schools will be asked to answer such questions as the following:

What kind of cattle, horses and sheep are kept in your township? Where, on horses, does a spavin grow? What does knee-sprung mean? What farm, garden and orchard plants will produce only from seeds? Tell what is a day's work at the following: Plowing, cultivating corn, cutting wheat with binders, shocking corn, threshing? How much grain was marketed last year, and how much fed, on your farm? What did the family use, and what was it worth at market price? Describe all the uses of cattle, hogs and sheep, and tell which is the most useful to man, and why? What fruits and vegetables are grown in glass houses for market?

When the boys on the farms run their eyes down such a list of questions, how many can answer every one of them? In case of failure does it appear to be true that the farm is a dull and uninteresting place? If farmers' sons are unable to reply to the questions correctly, what about the city boys, who have an idea that farm life is slow and country people lacking in means of development and progress?

Besides these questions, the schoolboys of the rural districts of Illinois will be asked to set out strawberry plants and observe their growth, and make a collection of leaves from the trees of the neighborhood. They will be asked to write a complete description of some breed of live stock; make a close study of an ear of corn; cut a lemon cross-wise and make drawings of all its parts; plat and



AT THE CALGARY STOCK-YARDS.

write a history of the farm; draw a ground plan of the barn; tell what the farm yields; make a collection of all the seeds and grain grown in the vicinity; examine carefully and identify all the weeds; watch for the first buds and birds, and keep a record of the appearance of each; plant, in pots, lemon and orange seeds, coffee and various nuts, and see if they will grow.

All this course of investigation is to be divided into months, so as not to give the scholars too much to do at once. It is safe to say that some eyes will be opened on the Illinois farms when the boys and girls get to work. Reading, writing, geography and arithmetic will not fall into a slumberous condition with this lively course alongside to quicken the mind.

This will give a practical test as to whether faults in the system of education are responsible for the exodus of the boys from the farms. It would be a fine plan for the farm lads, and the city lads as well, in other States, to try this system of questions on themselves to see how much they really know about important things which are sometimes passed over carelessly.

Calgary Stock Yards.

The cattle industry is the life of the Western country, and according as the arteries of the bovine traffic are pulsating with the movement of the cloven hoof, so in a sense is the prosperity of the rancher gauged. The pulse of this great industry can be felt only at some big collecting point, such as at the Calgary stock yards and the abattoir and cold-storage plant of P. Burns. This establishment is right up to date in its appointments, good slaughtering and hanging rooms, gangways and cold-storage plant all going to make up the working tools of one of Western Canada's cattle barons. The run of the fat cattle of the plains generally starts about July or August, this year being a little late owing to the wet season and the consequent slow-fattening properties of the grass. In conversation with some of the ranchers, it was elicited that the Manitoba stocker was much preferred over his Ontario brother, the losses with the latter being rather heavy.

Home Remedy for Pneumonia.

In response to the request for some simple, reliable home remedy which families might use in such cases of pneumonia as, unfortunately, caused the death of Mr. Donald Alexander and his son David, referred to in the FARMER'S ADVOCATE of June 1st issue, I take pleasure in assuring you of a safe, sure and speedy remedy for such, which I have used for over forty years, in numerous cases, and have yet to record the first failure. Before doing so, however, I must say a few words as to the primary cause of pneumonia and pleurisy, namely, neglect to avoid cold, chilling drafts, and especially when the mind is depressed (as was doubtless the condition of poor Mr. Alexander's mind over the death of his son), or by permitting the mind to be absorbed over some complex mental pursuit whilst sitting or standing in a cold, damp atmosphere. Let me illustrate: A few years ago a bright young lawyer (about 28 years of age) in this city, whose youthful eagerness led him to devote a whole Sunday alone in his office looking up authorities bearing upon an abstruse case he was engaged in, and though the day was very cold, he neglected to have the office heated, and, as a result, that evening he was laid up with a decided attack of pneumonia, from which he died on the following Tuesday. The chilling atmosphere round his body caused the blood throughout the extremities to flow towards the lungs, which became gorged and seemed to defy all the usual remedies of three eminent physicians, who faithfully attended him from Sunday evening until his death. The case I especially wish to describe (as illustrative of how the trouble may be speedily subdued) was that of a married lady, aged about 50 years, who was seriously attacked with pneumonia, coupled with chronic asthma. We were hurriedly called to her case about 4 p. m., when we found her frantically gasping, as if about to choke at any moment. We had a large boiler of water heated to boiling point, into which we mixed about half a pound of mustard; then wrung out two small woolen blankets from the hot water—after carefully spreading a large sheet of rubber-cloth on the bed-cover; over which we laid the doubled steaming hot blanket, and the patient (stripped) over all, quickly wrapping up the whole body from the chin to over the feet with hot blanket and rubber-sheet; giving her a glass of cold water to drink. A second application with the other heated blanket settled the whole difficulty, the patient being out of all danger and breathing freely by 6:30 same evening, when we left. Before leaving, however, we instructed the husband to keep up the temperature of the bedroom to 75 or 80 degrees during the night. Fearing the neglect of this necessary precaution, we called again at six on the following morning, to find the lady sitting up in bed praying that we might live for a hundred years to administer so potent and prompt a remedy. The lady speedily regained her usual strength, and resumed her domestic duties within three days after the treatment.

The above may be called "an old woman's remedy." If so, may God bless the dear old woman—she surely was divinely inspired. In conclusion, I would strongly recommend the possession of a sheet of rubber-cloth by every family (about 2½ yards long by 1½ yards wide) as a safeguard in case of a sudden attack of pneumonia or pleurisy. Such a sheet costs but very little when compared with its real value in times of need.

You will readily perceive that the simple philosophy of said treatment must equally apply to the cure of pneumonia and pleurisy in horses and other valuable live stock if promptly and properly applied. As heat attracts heat, hence the lungs and brain, being warm, soft and pulpy, and very full of blood vessels, offer no resistance to a pressure of blood from the extremities during a chill such as we have described. Reverse the condition by the "old woman's remedy," and avoid tardy druggings.

San Francisco Co., Cal.

DR. J. MCLEAN.

The Dangers of Tuberculin.

Prof. Nocard, of France, has been frequently quoted in support of the tuberculin-test fad, but we find from Pearmain and Moor's late work on bacteriology, published in England, a translation of his treatise on animal tuberculosis, in which he declares that it is only "within certain limits" that he regards the use of tuberculin as "a fairly certain indication of disease in cattle." In view of the fact that a change in the weather or some other variation in the animal's condition will cause as great a rise in temperature (two degrees) as condemns them under the test, we are surprised that Nocard would lend even his qualified support to the theory. But he immediately adds this significant warning: "Its use as a diagnostic of the disease in man is dangerous owing to the possibility that it may start the mischief afresh in a portion of the lung that was healing." Even though the Koch revelations stamp human and bovine tuberculosis as two different diseases, still, in the light of the foregoing warning and the serious consequences so frequently noted in cases of pregnant animals injected with the lymph, there is little doubt but that prudent stockmen will not run the risks of further trifling with such a substance.