

Warning! White Grubs.

Editor "The Farmer's Advocate":

During 1913 and 1914 the Entomological Branch of the Dominion Department of Agriculture has, in co-operation with the United States Bureau of Entomology, been investigating the life-histories of the different species of white grubs, which are the larvae of the well-known May beetles, or June bugs, the chief work having been done at the entomological field stations in Ontario and Manitoba. In these provinces eight different species are under observation. During the spring of the present year the adult beetles were very numerous, and this, of course, would indicate a severe outbreak of white grubs in 1915. The chief destructive species of May beetles require three years to complete their life-history. For instance, the beetles which appeared last spring deposit eggs which hatch in about a month's time. The young grubs, during this, their first year, however, feed largely on roots and decaying matter. Next year, however, (1915) the grubs, of course, will be much larger and more voracious, and their food will consist almost entirely of living roots, preferably of corn, timothy, potatoes, strawberries, etc. Much damage will doubtless result in localities where the grubs are abundant. In the spring of 1916 the grubs will feed, more or less, until June, when they enter the earth preparatory to changing to the adult state, the adult beetles, however, not appearing until the spring of 1917.

The United States Department of Agriculture have just issued a circular letter in which it is stated that white grubs are likely to cause untold losses in 1915 in many of the northern States of the Union. Conditions in Ontario are very similar to those obtaining in northern Ohio. The following information is given:

"The beetles lay their eggs in land covered with vegetation at the time of their flights (May and June), consequently land in small grain, timothy, and such crops which cover the ground, as well as land overgrown with weeds at that time, are most likely to be infested the following year. It is also noticeable that ground nearest timber will be heaviest infested, other conditions being equal, since the parent beetles feed on tree foliage and do not fly great distances if they can find suitable places to lay their eggs near by.

METHODS OF PREVENTING THE PEST.

Fields likely to be infested with grubs should be thoroughly ploughed between September 15th and October 10th. The date of ploughing will depend on latitude and the weather conditions, for the grubs go down as cold weather approaches, and it is desirable to plough the fields just before they go down when possible. If the grubs are abundant hogs should be allowed to run in the field wherever this can be done; chickens and turkeys are also valuable aids if allowed the run of newly-ploughed ground. If it is impracticable to make use of hogs to rid the infested fields of grubs, a deep and thorough disking should follow the ploughing, and in 1915 only crops least susceptible to injury, such as small grains, buckwheat, clover, vetch, etc., should be planted, and by no means should susceptible crops, such as corn, timothy, and potatoes be planted. While fall ploughing should be practiced and is of great value for destroying grubs, nevertheless it cannot be depended upon solely to eradicate grubs. Corn fields which were kept cultivated and free from an undergrowth of weeds in May and June of 1914 may, with reasonable safety, be planted to corn or potatoes in 1915, although it is advisable to inspect the field first for grubs. While it is not ordinarily advisable to follow corn after corn, nevertheless it is important at this time, in those sections where the grub will be abundant, to adopt this rotation for the coming year, even though it may become necessary to assist the second successive corn crop with artificial fertilizer.

Proper precautions and planning of rotations for next year at this time will save many thousands of dollars in crops which otherwise would almost certainly be destroyed by the grubs.

ARTHUR GIBSON,
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Some Choice Seed Grain at the Canadian National.

Contrary to the expectations of many who believed that most of the grain this year would be light, the seed and grain exhibits at Toronto showed some of the best seed we have ever been privileged to look upon. The exhibit of grain and sheaves from the prize-winning fields in the Standing Field Crop Competitions was as large as usual, and the most noticeable feature was the improvement in the make-up of the sheaves. Never have we seen so many sheaves with the individual stalks of grain composing them so well arranged. They made a feature of the grain exhibit, which brought forth favorable comment from all those interested in this phase of agriculture. The straw was long and bright and

well headed. In the bags the grain was very plump, and many where they who after looking it over will surely go home convinced that it pays to breed good seed grain.

The disappointment of the grain show was the international competition put on in barley, fall and spring wheat, corn, beans and peas. As a special prize open to the world of \$100 in each class was offered by the Exhibition Association. It was the poorest of the grain exhibit; some of the entries were scarcely worthy of a prize at a country exhibition. If it had not been for the grain from the Field Crop Competition entries which was also entered in this class it would have been a fizzle, as the outside entries were in no way comparable with the field crop stuff.

GRAIN.

Oats.—Division one: 1, H. L. Goltz, Bardsville, variety, Imp. Scotch. Division two: 1, Thos. Cosh, Bobcaygeon, Yellow Russian; 2, Geo. J. McBride, Kinburn, Banner; 3, D. D. Rogers, Kingston, R. R. 1, Yellow Russian; 4, Duncan McCuaig, Woodville, Sensation. Division three: 1, Robt. McCowan, Scarboro, Yellow Russian; 2, And. Schmidt, Mildmay, Abundance; 3, Jno. A. Cockburn, Puslinch, R. R. 1, O. A. C. 72; 4, Jno. McDiarmid, Lucknow, Abundance. Barley.—Division three: 1, Alex. Morrison, Creemore, R. R. 3, O. A. C. 21; 2, Howard McCort, Bolton, O. A. C. 21; 3, F. E. Wickham, Walters Falls, O. A. C. 21; 4, Geo. Simpson, Cainsville, R. R. 1, O. A. C. 21. Spring Wheat.—Division two: 1, Lewis Galbraith, Renfrew, Marquis. Division three: 1, R. S. Frisby, Victoria Square, Goose. Fall Wheat.—Division two: 1, R. E. Thurston, Bobcaygeon, Sleep and I'll pay the rent. Division three: 1, Wm. Edgar, Ayr, R. R. 3, Dawson's Golden Chaff; 2, R. & A. Oliver, Galt, R. R. 4, Dawson's Golden Chaff; 3, Alex. Hall, Ayr, R. R. 3, Dawson's Golden Chaff; 4, Wm. Johnston, Galt, R. R. 7, Dawson's Golden Chaff.

SHEAVES.

Barley.—Division three: 1, Geo. Simpson, Cainsville, R. R. 1, O. A. C. 21; 2, S. W. Bingham, Brisbane, O. A. C. 21; 3, Fred A. Clarke, Headford; 4, Fred Wickham, Walters Falls, O. A. C. 21; 5, J. W. Burt, Hillsburg, R. R. 1, O. A. C. 21. Spring Wheat.—Division one: 1, Dan. MacKay, New Liskeard, Fife. Division two: 1, Lewis Galbraith, Renfrew, Marquis; 2, H. J. Comrie, Beachburg, R. R. 1, Red Fife. Division three: 1, R. S. Frisby, Victoria Square, Goose; 2, Geo. B. Little, Agincourt, R. R. 1, Goose; 3, Howard Malcolm, Brougham, Goose. Fall Wheat.—Division two: 1, R. E. Thurston, Bobcaygeon, Sleep and I'll pay the rent. Division three: 1, Wm. Edgar, Ayr, R. R. 3, Dawson's Golden Chaff; 2, Geo. R. Barrie, Galt, R. R. 7, Dawson's Golden Chaff; 3, Wm. Johnstone, Galt, R. R. 7, Dawson's Golden Chaff; 4, R. & A. Oliver, Galt, R. R. 4, Dawson's Golden Chaff. Oats.—Division one: 1, Fletcher Walker, Royston, Reg. Banner; 2, H. L. Goltz, Bardsville, Imp. Scotch; 3, Wm. Naismith, Falkenburg, O. A. C. 72; 4, E. H. Boadway, Emsdale, Reg. Banner; 5, Archie Mitchell, Bardsville, Banner. Division two: 1, Thos. Cosh, Bobcaygeon, Yellow Russian; 2, S. J. Woods, Metcalfe, Banner; 3, A. H. Foster & Son, Richmond, Banner; 4, Urias Nelson, Demorestville, Banner; 5, D. D. Rogers, Kingston, R. R. 1, Yellow Russian. Division three: 1, Robt. McCowan, Scarboro, Yellow Russian; 2, R. M. Mortimer & Son, Honeywood, Abundance; 3, Jno. A. Cockburn, Puslinch, R. R. 1, O. A. C. 72; 4, Sam. Carr, Paris, R. R. 2, O. A. C. 72; 5, Hy. Harding, Milliken, Irish White.

How to Plow.

The art of ploughing, if not lost, has certainly been much neglected during recent years, and very few of the younger generation of farmers have really acquired it. In travelling through the country one sees repeated evidences of the lack of interest in this very important branch of tillage operations. Ploughing, as the first and heaviest operation in preparing the soil to receive the seed, should receive particular attention.

Many attribute the present-day lack of interest in ploughing to the advent of the two-furrow and machine plough. In using two-furrow or machine ploughs, it is necessary first to acquaint oneself with the workings and mechanism of the plough, to be thoroughly familiar with it when in operation; little or no difficulty will then be experienced in obtaining satisfactory results. A plough suitable to the soil should be chosen. If the soil is loamy, and requires to be turned flat, choose a plough with sufficient width of share, a board with ample turning capacity, a beam high enough to permit the use of the jointer when turning under green or coarse manure, and sufficient length of handles to enable the ploughman to control it with ease. If the soil is heavy and inclined to cement, use a narrow plough—one that will set the soil up, give a good harrow edge, and have sufficient press to the board to place the furrow over so that it will not fall back. In using either a single or two-furrow plough, care should be taken to turn over the

whole furrow and to leave no part unploughed. Get away from the cut-and-cover plan. Teach the boys that anything worth doing is worth doing well, especially ploughing. The old adage that more grain grows on crooked furrows than on straight ones is a poor incentive, and is not helpful in building up a reputation as a model farmer. Plough the back field as carefully as the field adjoining the road, and see that all fields are ploughed in such a way as to attract attention by their neatness. It is cheap and efficient advertising. Good ploughing pays; if a fair crop can be grown on a field which has been poorly ploughed, a better crop can be grown on a well-ploughed field.—F. C. Nunnick, in "Conservation."

THE DAIRY.

A Great Show of Dairy Products at Toronto.

If the exhibit of dairy products is any criterion of the advances of the dairy industry in this country our dairymen are certainly making great forward strides, for in butter there were more than double the number of entries ever before shown at the Canadian National Exhibition. Cheese in the entry list was a little ahead of last year, and the quality of both butter and cheese was excellent. The most significant feature of the dairy show was the fact that the Province of Ontario, the real centre of dairying in Canada, did not get a single prize in the creamery classes for butter, everything going to Quebec and Western Canada. This success upon the part of the outlying districts is attributed to the fact that in the sections from which the winning butter came a thorough system of grading cream is practiced, while in Ontario there is no systematic method of grading.

Makers will surely remember this year's exhibit, and we look forward to the time when grading of cream will be the general practice in Ontario as well as in the West and in other provinces of the Dominion. The following is the list of the prize winners with their scores:

CHEESE.

Factory colored, June: 1, J. G. Henderson, Smithfield, 96.66; 2, C. J. Donnelly, Scotsville, 96.49; 3, W. Morse, Trowbridge, 95.82; 4, E. Carter, Corbyville, 95.66; 5, G. Empey, Atwood, 95.49; 6, N. H. Purdy, Belleville, 95.32; 7, J. A. Ferguson, Mallorytown, 95; 8, B. F. Howes, Atwood, 94.99. Factory colored, July: 1, J. K. Brown, Brussels, 95.83; 2, J. A. Cuthbertson, Stratford, 95.49, (won on flavor); 3, G. Empey, 95.49; 4, C. J. Donnelly, 95.48; 5, J. D. Henderson, 95.32; 6, D. Menzies, Listowel, 96.15; 7, H. Hammond, Moorefield, 94.82; 8, B. F. Howes, 94.66. Factory white, June: 1, G. Empey, 96.82; 2, B. F. Howes, 96.49, (won on flavor); 3, J. Cuthbertson, 96.49; 4, W. Morse, 95.82; 5, H. Yuhm, Listowel, 95.66; 6, A. J. Muxworthy, Woodstock, 95.65, (won on flavor); 7, C. J. Donnelly, 95.65; 8, Peter Callan, Woodstock, 95.49. Factory white, July: 1, B. F. Howes, 96.66; 2, G. Empey, 96.16; 3, N. H. Purdy, 96.16; 4, H. Yuhm, 96; 5, J. M. Koch, Gowanstown, 95.99; 6, J. Cuthbertson, 95.99; 7, R. E. Hastings, Atwood, 95.82; 8, C. J. Donnelly, 95.66. Single cheese, colored, August: 1, W. Morse, 96.66; 2, Arthur White, Cherry Valley, 96.16, (won on flavor); 3, J. W. Fretwell, Oxford Mills, 96.16; 4, N. H. Purdy, 95.48; 5, G. Empey, 95.33; 6, D. Menzies, 95.31; 7, T. W. Simpson, Eardley, Que., 9.16; 8, O. K. Francis, Cassel, 95.15. Single cheese, factory, white: 1, H. J. Need, Tavistock, 96.50; 2, B. F. Howes, 96.33; 3, S. D. Eggleton, Conn., 95.98; 4, J. D. Henderson, 95.66; 5, H. Yuhm, 95.50; 6, H. Hammond, 95.49, (won on flavor); 7, A. Bergeron, St. Felicien, Que., 95.49; 8, C. J. Donnelly, 95.33. Three Canadian, fancy: 1, H. Yuhm, Listowel, 96.49, (won on flavor); 2, C. J. Donnelly, 96.49; 3, R. E. Hastings, 95.49; 4, G. Empey, 95.32; 5, P. Callan, 95.15. Two Canadian flats: 1, W. Morse, 95.33; 2, P. Callan, 95.16; 3, J. D. Henderson, 95.15; 4, H. J. Need, 94.99, (won on flavor); 5, G. Empey, 94.99.

Special.—Silver cup, George Empey. Highest average score: 1, George Empey; 2, B. F. Howes; 3, C. J. Donnelly.

BUTTER.

Salted, factory, box: 1, Albert Houle, St. Simon, Que., 97.25; 2, A. Bourbonnais, St. Polycarpe, 97; 3, A. Fournier, Gentilly, Que., 96.75; 4, C. Collette, Vercheres, 96.50; 5, E. Tessiers, St. Brigid, Que., 96.25. Unsalted tub: 1, A. Fournier, 97.50; 2, E. Tessier, 97.25; 3, Henri Bergeron, Deschailons, 96.75; 4, Matthew Wier, Winnipeg, Man., 96.50; 5, C. Collette, 96.25. Fifty pounds creamery prints: 1, A. Brault, St. Sabine, Que., 96.50; 2, A. Houle, 96.50; 3, W. H. Jackson, Markerville, Alta., 96.25; 4, E. Trechette, St. Felix de Valois, 95.75; 5, E. Tessiers, St. Brigid, 95.50. Creamery packages: 1, A. Houle, 96; 2, E. Desreches, St. Beatrix, 95; 3, E. Trechette, 94.75; 4, A. Lussiers, St. Helen de Bagot, 94.50; 5, P. Palleson, Calgary,