

(4.) The attention paid to preservation of timber, and shelter by planting of trees.

(5.) The condition of any private roads.

(6.) The character, sufficiency and condition of fences, and the manner in which the farm is subdivided into fields.

(7.) Improvements by removal of obstacles to cultivation, including drainage.

(8.) General condition of buildings, including dwelling house, and their adaptability to the wants of the farm and family.

(9.) The management, character, suitability, condition, and number of live stock kept.

(10.) The number, condition, and suitability of implements and machinery.

(11.) State of the garden and orchard.

(12.) Management of farm yard manure.

(13.) The cultivation of crops, to embrace manuring, clearing, produce per acre in relation to management, and character of soil and climate.

(14.) General order, economy and water supply.

(15.) Cost of production and relative profits.

7. The examination by the judges to be not later than 25th of May, and to be finished in September.

8. The report of the judges to be submitted to the Board, and forwarded to the Commissioner of Agriculture.

We notice that no provision has been made in the regulations guiding this second tour of inspection, for debarring those from competing who won the gold medal in the former competition. We do not know whether this is an oversight on the part of the Council, or if it is intentional. Although good reasons may be assigned for either view, it seems to us that allowing the gold medal farms to compete again in anything but a sweepstakes contest will have the effect of lessening the number of entries.

Agricultural Education.

FOURTH ANNUAL EXAMINATION.

The Council of the Agriculture and Arts Association of Ontario, in accordance with the scheme of annual examination in subjects having a direct bearing upon practical agriculture, already inaugurated, have to announce that the fourth of these examinations will be held at the same time, at the same places, and subject to the same rules, regulations and supervision as the High School intermediate examinations of July, 1887, and of the place and date of which notice will be given through the local press.

The examination papers therefore will be prepared by persons appointed by the Council, subject to revision by a special committee appointed for that purpose. Every precaution will be taken during their preparation, printing and distribution to keep a knowledge of their contents from intending candidates until they are placed before them by those in whose presence the examination is conducted, and the candidates' answers returned to the examiners appointed by the Council of the Association, who will be kept in ignorance of the names of the candidates whose papers they are examining.

Intending candidates are required to send in their names, with a statement as to whether they have ever attended any agricultural school or college in Canada or elsewhere, and also of the place at which they desire to present themselves for examination, to the Secretary of the Association at Toronto, before the 1st of May, 1887.

Only second and third class certificates will be issued, and for these the following course of reading is required:

COURSE OF READING FOR THIRD CLASS CERTIFICATES.

1. Different kinds of soils; their properties; variations in their composition, texture, and condition; essential differences between good and poor soils. Substances found in plants; and sources whence they are obtained. Exhaustion of land; causes; how prevented; best modes of restoring exhausted lands. Necessity for manure; production and waste of farm yard manure; use of artificial manures; lime, salt, gypsum, bone dust, and mineral superphosphates as manures.

2. Tillage Operations.—Ploughing, harrowing, rolling, etc.; respective advantages and disadvantages of deep and shallow, fall and spring ploughing; subsoiling; fallowing; drainage, where necessary and

how done; effects of thorough tillage on lands; times and methods of sowing; after cultivation; harvesting.

3. The crops which each kind of soil is best adapted to produce; succession or rotation of crops; importance and necessity of rotation; rotation suitable to different soils and climates in Ontario; good courses of cropping; bad courses of cropping.

4. Live Stock.—Best kinds of stock for various farms and localities; summer and winter management; economy of good management; general rules for guidance in breeding; conditions and circumstances favorable to cattle farming, sheep farming, dairy farming, and mixed husbandry.

5. Food.—Chemical elements and compounds found in the most important kinds of feed and fodder which can be successfully grown in Ontario; different materials necessary for growth, maintenance of heat, and laying on flesh; feeding and fattening of animals.

COURSE OF READING FOR SECOND CLASS CERTIFICATES.

1. The Plant.—Relations of the mineral, vegetable and animal kingdoms to each other; nature and sources of plant food; composition of the most important crops grown in Ontario; period of highest nutritive value; chemical changes in the ripening of fruit, grain and fodder crops; influence of climate on perfection of growth.

2. The Soil.—Physical and chemical properties of soils; classification of soils as determined by these properties; comparative fertility of different varieties of soil; active and dormant ingredients of soils; best means of converting dormant into active.

Chemical and physical conditions affecting the barrenness and fertility of soils; causes of unproductiveness; power of different soils to hold manure; influence of frost, aspect, elevation and climate on the productiveness of soils.

3. Manures.—Production, management and application of farm yard manure; conditions which influence its quality; comparative values of cattle, sheep and horse manures; green crop manuring; composts.

Properties and uses of artificial manure; plaster, salt, bone dust, and mineral superphosphates as manures; circumstances under which each should and should not be used; times and modes of application; how to avoid the waste of such manures in the soil; their action on seeds and young plants; favorable and unfavorable action of different stages in the growth of crops; action of nitrates and ammoniacal manures on cereals, roots, and grasses; special action of salt when used alone, and also in connection with other manures.

Night soil and animal manures; combinations of manures for certain purposes; manures which impoverish the soil; quantities of manures to be used on various soils with different crops; general principles regulating the selection of manures.

4. Tillage Operations.—Deep and shallow ploughing, fall and spring ploughing, subsoiling, rolling, fallowing, etc.; advantages and disadvantages of each; preparation of land for different crops, as fall wheat, spring wheat, barley, oats, peas and maize; differences in cultivation of light and heavy soils.

5. Seed and Sowing.—Quality of seed; importance of using clean and pure seed; effect of age on the character of the crop; its rapidity of growth and liability to disease; quantity of seed per acre; methods and depth of sowing; change of seed, why necessary.

6. Roots.—Cultivation of roots and tubers—turnips, mangolds, carrots, beets and potatoes.

7. Green Fodders.—Oats and peas, tares, lucerne, sainfoin, prickly comfrey, clover, etc.; their comparative values; the management most appropriate for each; management of pastures.

8. Rotation of Crops.—Crops which each kind of soil is adapted to produce; succession or rotation of crops; importance and necessity of rotation; principles underlying it; rotations suitable to different soils, climates and systems of farming in Ontario; their effects on the land.

9. Drainage.—Principles of drainage; effects on soil and subsoil; laying out and construction of drains.

10. Exhausted Lands.—Causes of exhaustion; how avoided; best means of restoring and enriching impoverished lands.

11. Breeding of Animals.—Principles for guidance in stock breeding; reproductive powers; how strengthened or weakened; pedigree influence—how intensified or reduced; loss of size in pedigree stock; how to control good or bad qualities; maintenance of constitutional vigor; common causes of barrenness in

male and female; special aptitude of certain breeds for different conditions of soil and climate; principles which regulate special peculiarities, such as early maturity, rapid production of flesh, production of milk, growth of wool, etc.

Horses.—Most valuable breeds of horses for this Province; the leading characteristics of each; type of horse required for farm work; breeding, feeding and general management; common diseases and their treatment.

Cattle.—Characteristic points—merits and demerits of Shorthorns, Herefords, Polled Angus, Ayrshires, Jerseys, Devons, Galloways and Holsteins; in-and-in breeding; cross breeding; breeding in the line; results of each system; grade cattle; milch cows—points of a good milk cow; general management; economy of good management; conditions affecting quantity and quality of milk. Common diseases and remedies.

Sheep.—Characteristics of different breeds; long woolled, medium-wooled, and short-wooled sheep; crosses between different breeds compared; influence of breed, climate, food, soil, and shelter on the quantity and quality of wool—evenness, lustre, yield, fineness of fibre, felting power, etc.; feeding; winter and summer management; management of ewes, before during and after lambing season; rearing of lambs.

Swine.—Characteristics of the most important breeds of pigs; management of sows and stores.

12. Food and Feeding.—Composition and properties of the most important varieties of feed and fodder available to the Ontario farmer; classification of foods; chemical results in the use of different foods; "heat-producing" and "flesh-forming" ingredients in food; best methods of combining these in feeding, so as to secure desired results; points to be observed in order to obtain the full value of natural and artificial foods; increase of value by preparation of food; shelter and warmth as a means of economising food; "good and bad systems of feeding."

13. Diseases of Crops.—When plants are most liable to disease; causes of diseases; chlorosis; fungoid diseases, as bunt, rust, and mildew; remedies.

14. Orchards.—Planting, cultivation, pruning, grafting, etc.; best varieties of fruit trees for different soils and climates of Ontario; diseases and insect pests.

15. Forestry.—Planting and cultivation of forest trees, shades and ornamental trees, etc.

16. Entomology.—Common insects injurious to vegetation, their habits, and the best means of checking and preventing their ravages.

Besides the certificates already mentioned, the following money prizes will be paid by the Association, viz.,

1st. To the three candidates for second class certificates obtaining the greatest number of marks, \$25, \$20, and \$15, respectively.

2nd. To the three candidates for second class certificates who have never attended any agricultural school or college in Canada or elsewhere, obtaining the highest number of marks, \$25, \$20, and \$15, respectively.

3rd. To the four candidates for third class certificates who have never attended any agricultural school or college in Canada or elsewhere, obtaining the highest number of marks, \$30, \$25, \$20, and \$15, respectively.

As the object of the Association is to promote the development of a taste for reading and the acquisition of valuable information on the subjects mentioned in the syllabus, the examination papers will not be based on any particular book or books, nor are text books on any of the subjects prescribed. They, however, for the convenience of candidates, subjoin the following lists of books of reference which contain a few of the works that may be studied with advantage, and from which a selection can easily be made which will meet their present requirements, List No. 1 is for all candidates, and No. 2 for those intending to write for second class certificates.

1. *First Principles of Agriculture* (Tanner); *Hand-book of Agriculture*, embracing soils, manures, rotation of crops and live stock (Wrightson); *Canadian Farmer's Manual of Agriculture* (Whitcomb); *Soil of the Farm* (Sir J. B. Lawes and others); *Catechism of Agricultural Chemistry and Geology* (Johnston)—new edition, by Cameron.

2. *New American Farm Book* (Allen); *Talks on Manures* (Harris); *Chemistry of the Farm* (Warington); *Elements of Agricultural Chemistry and Geology* (Johnston and Cameron); *Stock Breeding* (Miles)