

the morning. At first I fed the chicks hard-boiled eggs and breadcrumbs, and bread soaked in milk and squeezed as dry as possible, and rolled oats and rolled wheat. When the chicks were two weeks old I put them in a coop out of doors, in a sheltered corner. When the sun was shining they ran about the dooryard. I lost none from sickness, but five were smothered one night when I trusted the hen with the whole brood, so after that for a time I allowed the hen to have only as many as she could cover at night, and the rest I took in the house and kept them in a basket, with a cloth thrown over to keep them warm, and gave them all to the hen during the day. After they were two weeks old I began gradually to feed them small wheat. I cooked the wheat for a short time to soften it, and I never had chicks grow better than these March chicks did. Some days in April they were running out after a slight snow-fall. Several of these pullets began to lay the first week in September. I had a second incubator hatch out about the first of May, but they did not do as well as the first hatch. I have had a 120-egg incubator for five years, and it did as good work last spring as it did the first season, and it has never cost me sixpence for repairs. I have tried turkey eggs in the incubator, but failed to hatch more than seven turkeys from about seventy eggs. Last April I tried to hatch ducks in the incubator, but failed with those also. I should be quite happy if I could be sure of a good hatch of ducks with the incubator. Perhaps some of your readers who have hatched ducks in an incubator will kindly give me their method. I have heard people say that they did not like pure-bred fowls because they were so delicate. I have not found it so, and have had pure-bred Barred Plymouth Rocks for years, and at one time we had pure Black Minorcas; they were all equally healthy. I think any one who has once kept pure-bred fowls would never care to go back to a mixed breed. The finer your birds are of any pure breed, so much more is your pleasure in looking upon them. I cannot say there is so much more profit in fine birds, when people come to buy and expect to get choice birds at mongrel prices. We who know can only pity them for their ignorance.

WRINKLES.

THE FARM BULLETIN.

Annual Meeting of the Ontario Agricultural and Experimental Union.

The 28th annual meeting of the Ontario Agricultural and Experimental Union was opened at the O. A. C., Guelph, on Monday afternoon, December 10th. In his opening address the President, Mr. Geo. Robertson, of St. Catharines, sketched the growth of the Union from its inception to the present time.

BEE STINGS AND OTHER THINGS.

Mr. R. F. Holtermann was called upon for some remarks upon the production of honey. He had noticed that sometimes bee stings were much more painful than others, and had had a couple of samples of buckwheat and clover honey analyzed, to find that the former contained double the percentage of formic acid as did the latter. From this result Mr. Holtermann thinks it possible to adduce information that would be valuable in the care and management of bees through the winter months. To this end he moved a resolution to appoint a committee, whose duty it would be to have samples of honey collected throughout the season, of different kinds and from different localities, to determine the variation of the product under different conditions and at different times of the year.

A brief discussion was held regarding the advisability of extending the work of the Exp. Union to include tests of the most important vegetables grown in the Province. Professor Hutt thought it would be well to wait a year or so until they would be in a position to start in a proper way, and thus do thorough work. The feeling of the meeting was to begin at once, and the matter was referred to a committee. The report of the Secretary, Mr. Buchanan, showed that the number of experimenters had been ever on the increase, until this year no less than 3,700 were operating, horticultural, chemical and poultry departments being added during the recent years.

In the discussion which followed, Mr. J. M. McCallum touched on the importance of the ex-students of the college meeting together in this way from year to year. He would go a step further, and thought it would be of great benefit if a period of two or three weeks could be arranged for advanced work, instead of as many days. Many problems were confronting the farmer, and only by means of such meetings as these could satisfactory solutions be found.

Mr. Graham submitted a report of his investigations regarding the evaporation of moisture in the incubator as compared with the natural process of hatching, and from what he had been able to gather he would conclude that the evaporation of the moisture within the shell, whether great or small, did not materially effect

the number of chicks produced. He showed, also, that fertile eggs are not necessarily "hatchable" eggs. Often eggs are found of high percentage of fertility, in which the percentage of hatchable eggs is very, very small.

The following results of co-operative experiments with potatoes, field beans, sweet corn, fodder crops, etc., were submitted by Mr. Buchanan:

EXPERIMENTS WITH POTATOES.

	Comparative Value.	Percentage Rotten.	Percentage Small Tubers.	Mealiness.	Bushels Per Acre.
Late Varieties—					
Empire State.....	100	1	11	86	174.7
Dempsey's Seedling.....	100	2	11	100	168.5
American Wonder.....	78	1	11	78	165.8
Medium Varieties—					
Rose of the North.....	100	2	12	100	164.4
Burpee's Ex. Early.....	82	2	12	97	150.2
Seedling No. 230.....	68	2	11	72	147.6
Early Varieties—					
Early Dawn.....	100	1	9	100	173.2
Early Fortune.....	97	1	14	76	168.4
Early Andes.....	97	3	14	79	143.6
Early Pinkeye.....	69	0	15	52	133.9

EXPERIMENTS WITH ROOTS AND FODDER CROPS.

	Comparative value.	Yield per acre.
Mangels—		
Yellow Leviathan.....	100	42.66
Sutton's Mammoth Long Red.....	62	39.97
Steele-Briggs' Giant Yellow Globe.....	69	36.93
Sugar Beets—		
Giant White Feeding.....	100	39.13
Royal Giant.....	62	32.62
Swede Turnips—		
Sutton's Magnum Bonum.....	100	20.83
Hartley's Bronze Top.....	82	19.76
Kangaroo.....	55	18.43
Carrots and Parsnips—		
Mastodon's White Intermediate.....	73	18.26
Bruce's Mammoth Intermediate.....	100	17.30
Buckle's New Sugar Parsnip.....	45	14.79
Fodder Corn—		
Henderson's Eureka.....	51	16.75
Leaming.....	90	14.64
Whitecap Yellow Dent.....	100	14.30
Millet—		
Japanese Barnyard.....	100	12.03
Japanese Panicle.....	85	11.01
Hungarian.....	46	7.87
Sorghum—		
Kafir Corn.....	100	6.80
Early Minnesota Sugar-cane.....	67	9.34
Early Orange Sugar-cane.....	33	6.00
Grass, Peas and Vetches—		
Hairy Vetches.....	86	7.87
Grass Peas.....	100	7.31
Common Vetches.....	100	6.75
Rye—		
Dwarf Bonanza.....	100	25.48
Dwarf Essex.....	50	22.72

GRAIN CROPS.

	Comparative Value.	Straw, tons.	Yield per Acre. Grain, lbs.	Grain, bush.
Oats—				
Siberian.....	100	1.44	1740	51.2
Imported No. 534.....	81	1.41	1716	50.5
Daubeny.....	70	1.39	1605	47.2
Six-rowed Barley—				
Mandscheuri.....	99	1.14	1822	38.0
No. 21.....	100	1.12	1801	37.5
Oderbrucker.....	79	1.14	1733	36.1
Two-rowed Barley—				
Two-rowed Canadian.....	100	1.04	1146	23.9
French Cavalier.....	50	1.20	906	18.9
Hulless Barley—				
Guy Mayle.....	100	1.33	1331	22.2
Black Hulless.....	80	1.25	1320	22.0
Spring Wheat—				
Wild Goose.....	100	1.87	1451	24.2
Red Fife.....	94	1.50	1264	21.1
Emmer and Spelt—				
Common Emmer.....	100	1.23	1578	39.5
Red Spelt.....	59	1.00	1106	27.6
Buckwheat—				
Japanese.....	100	1.71	1334	27.8
Silver Hull.....	50	1.72	934	19.5
Field Peas—				
Early Britain.....	96	1.55	1427	23.8
New Canadian Beauty.....	100	1.74	1422	23.7
Field Beans—				
White Wonder.....	100	.80	1203	20.1
Marrowfat.....	97	.97	1204	20.1
New Prizewinner.....	100	.80	1196	19.9
Soy Beans—				
Early Yellow.....	100	1.27	980	16.3
Medium Green.....	50	1.75	580	9.7
Corn for Grain—				
Compton's Early.....	100	14.26	3369	60.2
Salzer's N. Dakota.....	91	14.32	3278	58.5
King Philip.....	91	13.60	3217	57.4

FARM HOME READING.

Reading in the farm home was the subject of a very interesting and instructive address by Prof. J. B. Reynolds. He discussed the question from the standpoints of the business, political and social interests of the farmer. To the first he attached most importance. The question ever before the farmer was what to read. Books the Professor regarded as not of first importance. Agricultural papers, from a business standpoint, were far more necessary to the farmer than books. They contained information that was up-to-date. Their contributors were usually the best-informed men and men of wide experience, while the text-book is more or less the literature of the past. Agriculture, he said, is a progressive business. The methods of five years ago are not the methods of to-day. Therefore, in order to keep abreast of the times, a farmer must read the periodicals from week to week, and from month to month, and make use of the text-book more as a reference library than as consecutive reading. Then a farmer must not be merely a farmer, he must be a man of public spirit, and must study to become acquainted with public questions. While every farmer should read a couple of newspapers, he should not allow himself to become addicted to the habit of too strongly patronizing the yellow journalism side of newspapers, the sporting columns, the scandals and sensational reports. The editorials were the most valuable part of the paper. They were written, for the most part, by men of sober judgment, of experience and wisdom. Literature for the wives and daughters of the home should also be provided. The child should early be instructed into the use of the proper kinds of reading. The imagination should be first appealed to rather than the intellect, for the development of mind in the child is similar to the development of mind in the race. The child of to-day is the father of the future. What Wordsworth said was wonderfully true, "the child is father of the man."

CONCENTRATED FEEDING STUFFS.

The pernicious practice of vendors engaged in the feed business, of placing adulterated feeds upon the market, was outlined by Mr. W. P. Gamble, who proposed the following resolution:

In view of these facts, and in view of the further fact that the committee appointed to deal with this does not deem it practicable to establish limits of variation, I beg to offer the following resolution:

Whereas, on three previous occasions the subject of commercial feeding stuffs has been before this association, and two separate petitions have been presented to the Government, asking that some means be devised whereby the purchasers of mill by-products might be able to judge of their nutritive value; and whereas the Government has complied with these requests in so far as to order a collection and analysis of most of the by-products of the mill; and whereas the analyses show that the composition of wheat bran, shorts, the whole grains, or meal obtained by grinding any single grain, is fairly constant, but that the composition of other commercial feeds varies widely; and whereas bran and shorts constitute the sole output in the way of by-products of many small mill owners throughout the country, and there being no purpose to be served in requiring these mills either to employ a chemist or to have analyses made of these by-products of constant composition; and whereas the adulteration of these by-products is fully covered by the Adulteration Foods Act, R. S. V., Chapter 24 and 26; and whereas the committee do not deem it practicable to establish standards or limits of variation for by-products; therefore, be it resolved: first, that the term bran should be legally defined; second, that it is not advisable to require any formula for the composition of wheat bran, shorts, the whole grains or meal obtained by grinding any single grain; third, that in the case of other feeding stuffs, each manufacturer or vendor should be required to label each bag or package with the percentage of protein and fat, or, if sold in bulk, that the manufacturer or vendor shall be compelled, on demand, to give a written guarantee of the percentage of protein and fat; fourth, that the Government be urged, in the interests of feeders of live stock, to take such action as indicated in (3); fifth, that a copy of this resolution be submitted at Farmers' Institute meetings for the signatures of members, and when these signatures are secured this resolution be construed to the Government for the action outlined in No. (3); sixth, that a copy of this resolution be forwarded to the Minister of Inland Revenue forthwith, and that the signatures be forwarded as soon as obtained.—Carried.

A very pleasant evening was spent at the home of President and Mrs. Creelman, at which the ex-students of the college were the honored guests.

THE NEW OFFICERS.

The election of officers for the ensuing season took place early Tuesday morning, when the following men were chosen for the coming year's work: President, J. M. McCallum; Vice-President, Dr. A. E. Shuttleworth. Directors—Hon. Nelson Monteith, Pres. G. C. Creelman, G. A. Brodie, G. A. Putnam, J. O. Laird, L. A. Bowes.

PLANT AND ANIMAL IMPROVEMENT.

A very able address was delivered by Professor W. M. Hays, Asst. Secretary of Agriculture for the United States, on the "Improvement of Plants and Animals." Animal breeding, said Professor Hays, had occupied the center of the stage for a century, but in late years the