Miscellaneous.

On Swedish Butter Factories.

In the last part of *The Journal of the Royal Agricultural Society of England*, there is a report on this subject by M. Juhlin-Dannfelt, Superintendent of the Royal Agricultural College at Stockholm. A condensed statement of some of its facts may not be uninteresting to the readers of THE CANADA FARMER.

The Malar-Lake Dairy Company was the first of its kind, established a few years ago in Sweden. Experiencing many difficulties in purchasing milk for cream-setting at district milk-houses, the Company resolved to confine itself to the purchase and working of cream—not of milk—leaving it to the producer or purchaser of the latter to utilise the skim milk in the manner which, under different local circumstances, he might consider most profitable—a change that has proved advantageous to all parties. As the Company do not receive less than 6 gallons of cream at a time, small farmers sell their milk to parties who take it to milk-houses established by the Company at convenient distances, where the milk is measured and a sample tested before it is left for cream-setting. The butter milk is either sold in the vicinity or made into cheese. The milk-houses are plain buildings, having a room containing two cisterns, one for ice and water, and the other for cooling the milk; a room for receiving the milk, a wash-room, and the dairymaid's room. Such a house, with shed for storing ice, costs about £144 sterling, on which the Company receives six per cent. as rent.

Cisterns made of planks 2 inches thick, 9 feet long, and 3 feet wide, are used for cooling milk; such a cistern is large enough for cooling about 115 imperial gallons. The more speedily the milk is cooled down, the more completely is the cream separated from it; consequently, the coldest water is used, and the pails for setting the cream reduced to a small diameter. Ice water, being of much lower temperature, is used in preference to well water for the purpose of cooling milk. The ice is chopped in pieces of about 3 to 4 inches square, to increase its cooling power. The quantity of ice used is calculated to be equal in measurement to the quantity of milk for the cooling of which it is intended. At the central factory at Stockholm (June to September 1871), 1590 cwts. of ice were used in churning 103,680 imperial gallons of cream, yielding 2500 cwts. of butter.

The milk should be delivered as soon as possible, and carefully transported. To cool the milk during the process of milking has been considered an advantageous practice; but it has of late been contended that the more original heat is retained, the more cream will the milk yield. The cooking room should be kept in summer at as low a temperature as possible, and, if practicable, not below 50° Fahr. in winter. If the cream is not sent to the butter factory at once, it should be put into the ice-water bath without delay, and in summer it should not be kept more than two days before being churned, and in winter three days. It may be considered as a fact, that "*the fresher and absolutely sweeter the cream is, the better will be the butter.*"

The Swedish Government has much increased the quantity and improved the quality of both butter and cheese by the establishment of dairy schools, in which the principles of the manufacture of dairy products are practically taught and applied. It is thought that the supply will shortly exceed the home demand, and competent persons have been sent to open up markets in foreign countries.

Skim milk in some localities can be more profitably employed in the rearing and fattening of calves than in the manufacture of cheese. The color of the veal is said to be darker from skim milk than from new, which can be obviated by giving the animal sweet milk a fortnight immediately before slaughtering. It is also recommended, in order to utilize a portion of the skim milk, to give it more copiously to servants, with a less quantity of new milk. The price of the latter has varied between 3s. 9d. sterling to 4s. 3d. per gallon during summer, and 4s. 3d. to 4s. 5d. per gallon in winter.

Soon after the Malar-Lake Butter Company had got into successful operation in 1870, a number of applications were received from different parts of the country for the Company to extend its operations, and establish churning places in other districts. The directors, with a desire to avoid direct responsibility and at the same time promote the dairying interests of the country, agreed to advance to competent parties the necessary funds for such objects, and to supply qualified persons to conduct the operations—a proceeding that has met with very general approval. Besides, several competing companies have recently arisen, which, if well managed, cannot fail of success.

A temperature of the cream of 57·2° to 60·8° Fahr. is found the most suitable for making butter, but something depends on the quality of the cream, and the natural condition of the atmosphere in relation to moisture, warmth, &c. The churns employed are adapted to steam or water power, and consist of a barrel, somewhat conical at top, resting on a frame, and vertically movable on trunnions. A churnstaff, provided with two wings, rotates at a speed of 120 to 150 revolutions per minute, depending upon the size of the churn, which generally contains from 17 to 60 gallons. The butter is usually obtained in about 45 minutes, and is separated from the butter milk by straining, placed in a tub or tin, and afterwards worked by hand on a board, usually of oval form, to separate the butter milk completely. It is then carefully tasted, and arranged into one of three divisions, according to quality. Before churning, fluid annatto, manufactured by Messrs. N. N. Blumensaat in Odense, Denmark, is added to the cream in quantities suitable to the seasons, giving the butter the color which is required for different markets.

The different assortments are carefully worked separately, with from 2 to 5 per cent. of refined Swedish salt, and ¼ to ½ per cent. of sugar. When the butter has a uniform waxy firmness, it is packed in casks made of beechwood, previously well saturated with brine, containing from 60 lbs. to 100 lbs. of butter each. The casks are branded with the mark of the Company, weight and quality. The best brands, after having been kept in a cool and well ventilated cellar for two months of hottest summer weather, have sold in the London markets for the same price as English fresh butter of the best quality.

What is termed Parisian butter, for Russian and home demand, is manufactured from perfectly sweet cream, heated to from 176° to 194° Fahr., and allowed to cool again to the usual temperature before being churned. The ordinary methods are followed in this case, except that neither annatto nor salt is applied. Heating the cream imparts to the butter a slight almond taste, and seems to promote its keeping quality.

It would appear from this Report that dairy husbandry has been long and much neglected in Sweden, and that its recent revival promises to give a much needed impulse to the national agriculture.

Annual Address of the President of the Entomological society of Ontario, 1872.

To the Members of the Entomological Society of Ontario.

GENTLEMEN,—It is my happy privilege once again to congratulate you upon the completion of another year of progress in the annals of our Society. As you have already learnt from the very satisfactory report of our excellent Secretary-Treasurer, the list of members of the Society has been largely added to during the past twelve months; the library has been increased by the purchase of a number of valuable entomological works; a cabinet and microscope have been bequeathed to us by our late lamented member, the Rev. Professor Hubbert; and our collections have been much improved; a comfortable and commodious suite of rooms has been procured in a central locality in London, Ont.—the present head-quarters of the Society; the *Canadian Entomologist* has been regularly issued with, we trust, no diminution in the value and interesting character of its contents; our Second Annual Report on noxious and beneficial insects, prepared by Messrs. Saunders and Reed, and myself, and containing notices of the insects affecting the apple, grape, plum, currant and gooseberry, wheat crops, potato, cabbage, cucumber, melon, pumpkin and squash, has been duly published by the Legislature of Ontario, and no doubt has long since been in the hands of you all. Such, gentlemen, is our record for the year that is now brought to a close, and, having in addition, a satisfactory balance-sheet from the Treasurer, we feel that mutual congratulations are not out of place, and that we who have been honoured with official positions in the Society, can look back upon our efforts in its behalf with at least the agreeable feeling that they have not been altogether in vain.

If we turn, moreover, from our own special interests to the condition and prospects of American entomology in general, we find much to afford us satisfaction and encouragement. No large work, indeed, on any particular order of insects has appeared during the past year, but many valuable reports of State entomologists and portions of serial publications have been issued from the press,—among the latter, I may be pardoned, I am sure, for especially drawing attention to the exquisite illustrations of North American butterflies contained in Mr. W. H. Edwards' invaluable work, which has now reached its tenth part. It speaks well, too, for the growing popularity of this branch of natural science, that Dr. Packard's useful "Guide to the Study of Insects" has already reached a *third* edition. A pleasing recognition of American entomological work has recently, I may add, been manifested in England by the publication there, in a collected form, of the writings of the late Dr. Brackenridge Clemens, on the *Tineina* of North America, under the editorial supervision of Mr. H. T. Stainton, the well-known authority in that department of lepidopterology.

Apart, however, from the position attained by the growth of of our entomological literature, the science has this year received a recognition that cannot fail to be of great and permanent benefit to it. I allude to the formation of a special sub-section of entomology at the recent meeting of the American Association for the advancement of Science. It will now be practicable for American entomologists—to whatever part of the continent they may belong, whether to a Province of the Dominion, or a State of the Union, from the Atlantic to the Pacific—to meet together for mutual conference on matters entomological. Questions affecting the science in general can hardly fail to arise from time to time, and demand the consideration, and, possibly, the decision of some such united council. Certainly, the proceedings of such a gathering will be of great interest and value to all who take part in them, if not, indeed, to the whole circle of Canadian and American Entomologists.

At the informal meeting at Dubuque, in August last, one subject was specially brought forward for discussion, which I cannot forbear alluding to more particularly here, especially as it may justly be considered the great question of the day in the entomological world. I refer to the subject of the specific and generic nomenclature of insects. For some few years past indications have not been wanting of a growing inclination amongst the mass of entomologists to resist the efforts made by some few able and distinguished writers to impose, year after year, new sets of names upon our common insects. This has been done partly by the revival of the long-forgotten names published at the close of the last century, or the beginning of the present one; and partly by the perpetual formation of new genera, and the re-distribution of species. The ability of the writers and the good work they have done in other respects, have caused these annoying changes to be acquiesced in for the most part, even though the object in view appeared to be rather the exhibition of their powers of research among antiquated tomes, or the supposed immortalization of themselves by the attachment of their own names to those of our familiar insects. I do not say that these men were actuated entirely by such motives, but assuredly one can hardly be accused of ill-natured criticism in ascribing much of the work to such causes. All must admit, I think, the nomenclature is but a means to an end, and that end is surely best attained by the preservation of all names that have been in universal acceptation for a period of years, and that cannot be set aside without disturbing the cabinets of every entomologist in the land.

Matters in this respect have been brought to a climax by the recent publication of Mr. Scudder's "Systematic Revision of some of the North American Butterflies." I esteem Mr. Scudder so highly as a friend, and value so greatly the good scientific work that he has done, that it pains me exceedingly to say a single word against anything that he may put forth. His projected "revision," however, is so sweeping and so revolutionary, that I cannot forbear to make some remarks upon it. I know that his scientific labors are perfectly unselfish, and that he is entirely destitute of any of the conceit that I have just now referred to; I feel sure, too, that he is actuated only by the desire to benefit the science; yet I do deeply deplore the mode that he has adopted, and am convinced that if his views are pressed, a very great obstacle will be thrown in the way of the advancement and popularization of this department of natural history. We all, I am sure, look forward with eager anticipation to the publication of his great work upon North American butterflies, and have no doubt that it will be the most complete, the most scientific, and the most conscientious work of the kind in America, but assuredly its value will be very greatly marred and its general ac-