

**CIHM  
Microfiche  
Series  
(Monographs)**

**ICMH  
Collection de  
microfiches  
(monographies)**



**Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques**

**© 1998**

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

- Coloured covers / Couverture de couleur
- Covers damaged / Couverture endommagée
- Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- Cover title missing / Le titre de couverture manque
- Coloured maps / Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- Bound with other material / Relié avec d'autres documents
- Only edition available / Seule édition disponible
- Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments / Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed / Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies / Qualité inégale de l'impression
- Includes supplementary material / Comprend du matériel supplémentaire
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- Opposing pages with varying colouration or discolourations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

	10x		14x		18x		22x		26x		30x	
									✓			
	12x		16x		20x		24x		28x		32x	

The copy filmed here has been reproduced thanks to the generosity of:

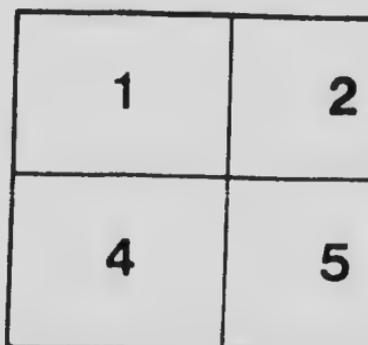
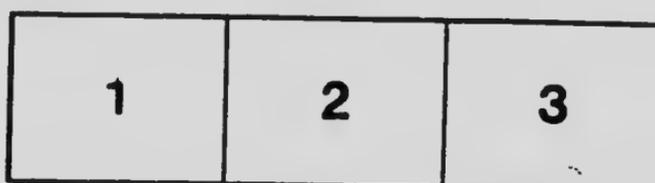
Library  
Agriculture Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol  $\rightarrow$  (meaning "CONTINUED"), or the symbol  $\nabla$  (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



anks

L'exemplaire filmé fut reproduit grâce à la générosité de:

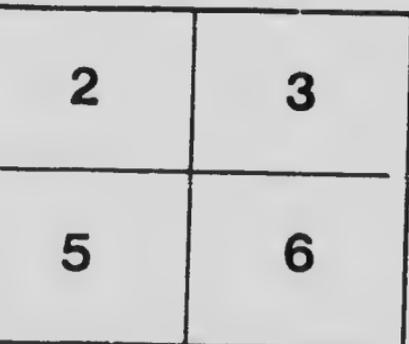
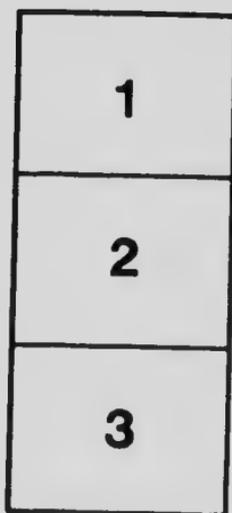
Bibliothèque  
Agriculture Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

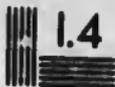
Un des symboles suivants apparaît sur la dernière image de chaque microfiche, selon le cas: le symbole  $\rightarrow$  signifie "A SUIVRE", le symbole  $\nabla$  signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.



# MICROCOPY RESOLUTION TEST CHART

ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

1653 East Main Street  
Rochester, New York 14609 USA  
(716) 482-0300 Phone  
(716) 288-5989 Fax

PROPERTY OF LIBRARY, DEPARTMENT OF  
AGRICULTURE, WEST BLOCK, OTTAWA

Lent to *Mrs. O. Brady* PLEASE RETURN  
Date *2.22.1935*

## BEEKEEPING IN CANADA

BY

F. W. L. SLADEN, *Dominion Apiarist.*

Bees are of value for two purposes: honey and wax production, and the pollination of certain crop producing plants that depend on insects.

Canadian honey is unsurpassed in quality by that of any other country. Owing to the abundance of nectar-producing flowers, the well-distributed rainfall, and the long, warm and sunny days and cool nights of summer, the average yield of honey per colony is high in many places, especially in Eastern Canada. With good management, it varies from about thirty pounds a year in poor regions to over one hundred pounds a year in the best regions, where beekeeping is frequently carried on by



A Canadian Apiary

specialists, who find it as profitable an occupation as mixed farming. These figures take into account partial failures in some seasons due to drought or other causes. Within the borders of Canada are to be found many of the most productive locations for honey production on the North American Continent.

---

### DOMINION EXPERIMENTAL FARMS

E. S. ARCHIBALD, B.A., B.S.A.,  
Director.

F. W. L. SLADEN,  
Dominion Apiarist.

EXHIBITION CIRCULAR No. 18.

(Revised November, 1926)

The production of apples, pears, plums, cherries, gooseberries, cucumbers, alsike clover seed, etc., depends upon the visits of insects to the flowers to distribute the pollen. In many places the wild bees are not sufficiently numerous or active to carry out this work fully, especially when the weather is changeable, and honey bees are needed to insure uniform and abundant crops.

As many as fifty or a hundred colonies may be kept in one place. Large apiaries, however, should be not less than two miles apart.

The most important honey plants of Canada are white Dutch clover (*Trifolium repens*) and alsike clover (*T. hybridum*), which are abundant, wild and cultivated, in many parts of Ontario, Quebec, the Maritime Provinces and some parts of Manitoba and British Columbia. Other valuable sources of honey are buckwheat and basswood (southern Ontario and southern Quebec); and fireweed or willow-herb (*Epilobium angustifolium*) which occurs chiefly in forest clearings, especially after fire and in the north country. Important in some places are alfalfa (southern Alberta), certain prairie flowers, wild raspberry, sweet clover (*Melilotus*), and certain species of golden-rod and aster. Among the many minor sources of honey are such weeds as wild radish (Annapolis Valley, N.S.), dogbane (British Columbia) and Canada thistle. In the spring, willows, dandelion, fruit bloom, blueberries, and other flowers supply pollen and nectar, thus enabling the bees to breed up in preparation for the in-gathering.

A local demand for honey is easily created. In Ontario, at the time of writing, wholesale prices for extracted honey range from fifteen to twenty cents per pound for dark and amber-coloured honey, and from twenty to twenty-five cents per pound for clover honey. Selling direct to customers, twenty to thirty cents per pound may be got for extracted honey, and thirty to fifty cents for sections of comb honey. On the prairie the prices are a little higher.

Honey is deservedly popular, not only on account of its sweetness and delicate flavour, but because it is a valuable natural food, supplying energy and heat to the system. The natural craving of children for something sweet is well and satisfactorily met by giving them honey. Bread, butter and honey make a pleasant and wholesome combination both for children and adults. Used in baking and confectionery, honey has the useful property of keeping cakes and sweetmeats moist and fresh for a considerable time.

The severe cold and length of the Canadian winter are not serious obstacles to the keeping of bees, because the bees can be successfully wintered in the cellars of dwelling houses, or, packed in shavings, dried leaves, etc., in large wintering cases out-of-doors.

However, no one should embark on beekeeping who is not ready to study the bees' requirements and to devote the necessary time to their care, for bees are no more able to take care of themselves than any other kind of live-stock. Indeed, neglect in their case is frequently even more disastrous, for if colonies die as the result of European foul-brood or American foul-brood, two very destructive and infectious diseases of the bee grub or larva, bees from other hives in the apiary and surrounding district will steal the honey and thereby carry the germs of disease to their own hives.

European foul-brood in which the bee larva sinks to the bottom of the cell, a shapeless, melted-looking yellow or grey mass, is spreading in Canada, destroying whole apiaries of black bees. Fortunately the Italian bee is more or less resistant to European foul-brood, and the beekeeper can prevent serious loss by the timely introduction of Italian queens.

In American foul-brood most of the larvae are attacked after they are capped over, and the rotting remains are dark brown and tenacious or viscous, like rubber solution. The treatment for this disease is to shake the bees into a clean hive containing foundation and destroy the combs, taking particular care that no bees can have access to any of the honey.

Ontario, Quebec, Manitoba, British Columbia, and the Maritime Provinces, have passed laws for the control of foul-brood.

The only satisfactory kinds of hives are those fitted with movable frames to contain the combs. The Langstroth frame, 17½ inches long by 9½ inches deep, is the standard in all parts of Canada, and this or the "Jumbo" frame which is two inches deeper should be adopted by beginners.

The keeping of bees in box-hives is unprofitable and a menace to successful bee-keeping, because the combs cannot be lifted out to see in what conditions the bees are, and whether or not the brood is diseased. Bees in box-hives should be transferred to hives fitted with movable frames.

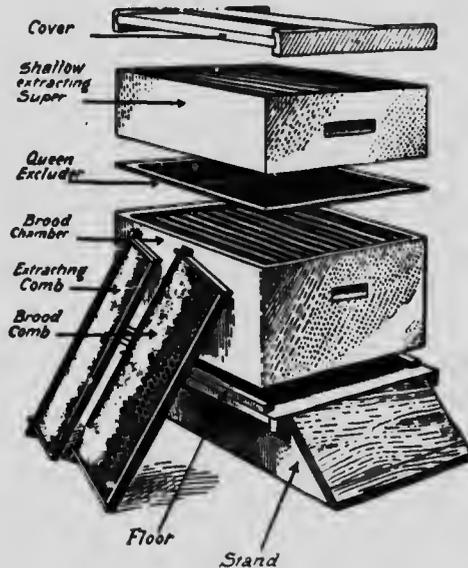
It is wise to keep only a few colonies until experience has been gained.

The following list comprises all that is necessary for making a start in bee-keeping:—

Two or three colonies of bees in 10-frame Langstroth hives.

(The bees may be obtained from a local beekeeper. Ascertain that they more than half fill the hive, that a young fertile queen is present and that the brood is healthy). Cost each, according to locality, condition, and time of year.. . . . .

One pound brood foundation.. . . . .	\$10 00 to \$20
Bee smoker.. . . . .	0 80
Bee veil.. . . . .	1 50
One-quarter pound No. 30 tinned wire.. . . . .	0 60
Spur wire embedder.. . . . .	0 20
Two or three spare 10-frame Langstroth hives with frames, each about.. . . . .	0 40
	3 50



A 10-frame Langstroth Hive with the parts separated.

If comb honey is wanted, substitute for extracting supers, etc., the following:—

Extracting supers fitted with Langstroth frames (shallow supers may be used), one or two for each hive, each about.. . . . .	\$ 1 50
One and one-quarter pound light brood foundation for each super, per pound.. . . . .	1 00
Honey extractor.. . . . .	15 00 to \$20
Queen excluder for each hive.. . . . .	0 75
Comb honey supers fitted with sections, two for each hive, each about.. . . . .	1 50
One-quarter pound thin super foundation for each super, per pound.. . . . .	1 00
250 spars sections, split top.. . . . .	2 50

It is usually more profitable to work for extracted honey than for comb honey because about double the quantity of honey is obtained and swarming is more easily controlled.

The names of manufacturers of and dealers in beekeepers' supplies may be found in the advertising columns of the farm and bee journals published in Canada.

There is no mystery about the successful management of bees. For a large part of Canada, it may be outlined as follows: In September, see that each colony covers at least seven combs (weaker colonies should be united), and has a young fertile queen, and 30 to 40 pounds of wholesome stores. Any deficiency may be made good by feeding about mid-September with sugar syrup made by dissolving two parts by measure of best granulated refined sugar in one part of water, stirred in while water is hot. If the bees are to be wintered outside, use preferably the 4-colony case, pack early and protect the apiary from wind. If the bees are to be wintered inside, bring them into the cellar before cold weather. The bee cellar should be dark, well insulated from the outside, and neither damp nor very dry. There should be a chimney for ventilation, if many hives are to be stored. The temperature of the cellar should keep steady, about 45° F. Take the bees out in spring when the willows are in bloom. Protect them for a few weeks from cold, and see that no colony runs short of food, feeding, if necessary, with syrup composed of equal parts of sugar and water. Give a super as soon as the brood chamber is filled with bees and brood, and honey is coming in freely, and enlarge the entrance. Give an additional super when the first one is half full of honey. Each swarm should be put into a new hive placed on the old stand, the old colony being moved to a new location. By clipping the queen's wings (this should be done at the time of fruit bloom), there is no fear of losing the first swarm, if somebody is present to secure the queen and hive the swarm when it issues.

Special attention is being paid to beekeeping at the Dominion Experimental Farms. At the Central Experimental Farm, Ottawa, there is an experimental apiary where the principal problems connected with the development of beekeeping in Canada are investigated, and breeding work is carried on. Adjoining the apiary there is a bee research laboratory. Apiaries are maintained at sixteen of the Branch Experimental Farms where the possibilities of beekeeping in the region served by the farm are studied, and also where visitors may see the most suitable hives and appliances, and may learn the best methods of bee management and how to prepare honey for market. Inquiries about beekeeping should be addressed to the Dominion Apiarist, at the Central Experimental Farm, Ottawa.

The following bulletins on bee culture have been published by the Dominion Department of Agriculture, and may be obtained on application to the Publications Branch of the Department at Ottawa.

No. 26, Second Series, "Bees and how to keep them".

No. 43, Second Series, "Wintering bees in Canada".



