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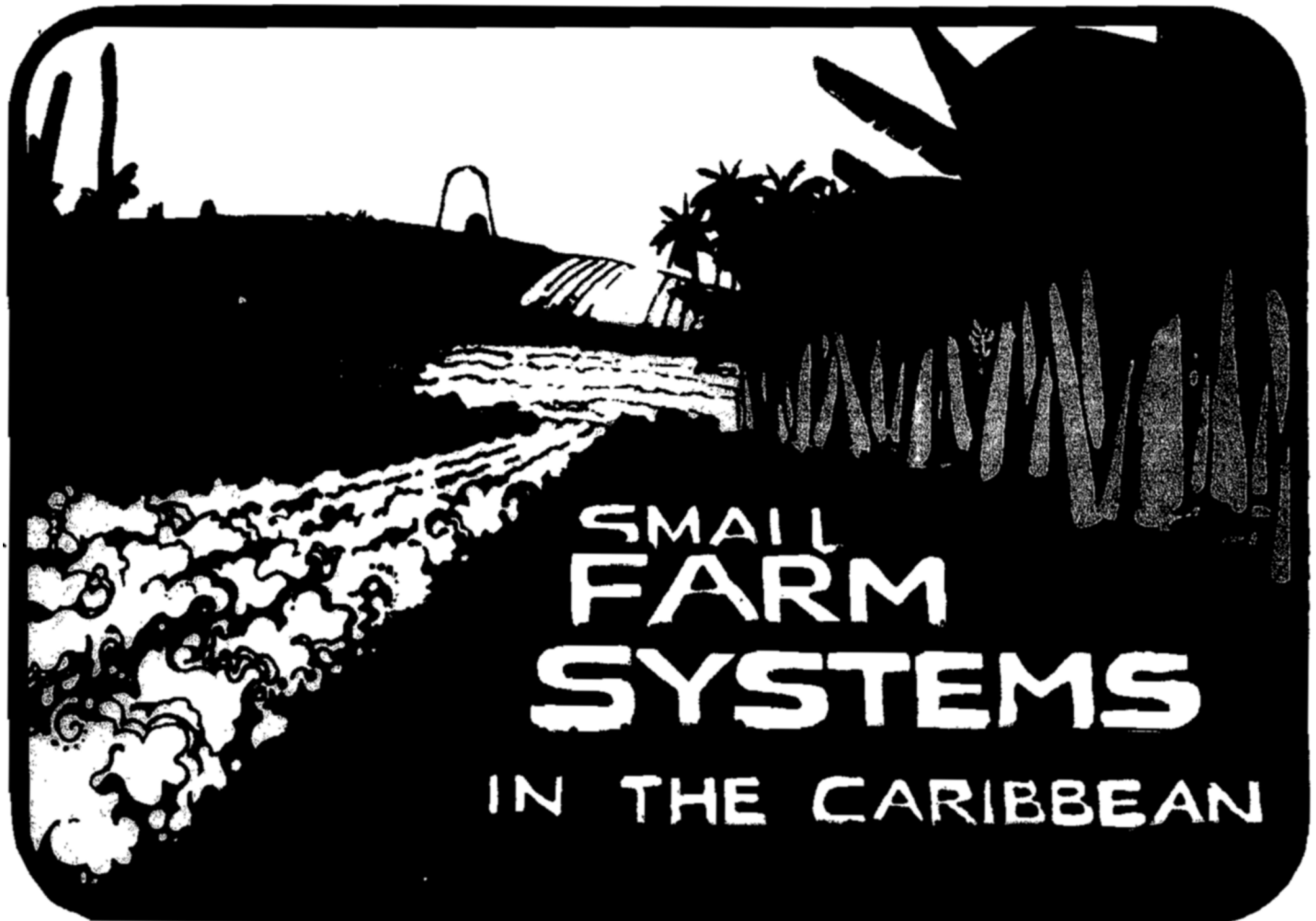
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Beekkeeping in the Caribbean

Richard A. Breyer

Box 157, Stephenson, MI 49887

E. Harris and T. Sorhaindo

Ministry of Agriculture
Roseau, Dominica

The potential for the production of honey and related products for the Caribbean is great. The climate, flora and demand for an economical, locally produced sweetener provide an ideal setting for expanded production. Start-up and ongoing expenses are minimal compared to most agricultural endeavors. Although management is needed, anyone with a desire can learn the necessary skills. Recently, a technical assistance program between Dominica and Michigan State University catalyzed developments for the industry on that

island. Field level Agriculture Extension Agents from the two countries worked together to identify potential producers, provide training, and encourage the development of producer support systems. Such a technical assistance program could be continued with Extension Agents and experienced volunteer beekeepers who would help local beekeepers improve their skills, create new products and reach other beginning beekeepers. A joint program to pool expertise and interests could be developed and is worth exploring.

A sweetener is a universal need. The honey bee is, and will continue to be a source of sweetener. The honey bee has the ability to successfully make a sweetener from the nectar of flowers with but limited expense and guidance from man.

It appears there is room for all Caribbean nations to increase production of honey and bee products. Their setting is great; the opportunity exists that this industry can become an important part of all Caribbean nations' small farming efforts. The Caribbean has the flora, climate, and most important, is virtually a disease-free environment for the honey bee. The Africanized bee has not invaded most of the Caribbean Island nations. These distinct advantages give a solid base upon which to build.

The economics of honey production for family use are favorable. Honey can be used as a sugar substitute. Based on the Dominican honey prices of September 1983, and the potential production from that nation's bee industry, a colony of bees could produce approximately 200 pounds per year with a retail value of over \$1,000 Eastern Caribbean currency (EC). Even at the depressed U.S. prices of honey, the value of one colony in production in Dominica would be approximately \$540 EC.

Typing honey would give these nations the opportunity to increase foreign exports. There is a demand in other nations of the world for tropical honey. Types of honey, or blends of tropical honey could become a novelty produced in the Caribbean and marketed in other nations of the world. Good marketing efforts are necessary and need further development. Becoming a beekeeper is rather inexpensive, especially when we compare it to most other agricultural endeavors. At present in the Caribbean, honey production is the most economical, reliable agricultural enterprise. The basic equipment, a hive tool, smoker and veil, costs about \$65 EC - \$24 U.S. The cost of a complete hive is about \$400 EC, or \$148 U.S. Therefore, the basic equipment necessary for one hive is approximately \$465 EC or \$172 U.S. Production from one hive the first year should range between 6 and 10 gallons. The second year the production should increase to its full potential range of 12 to 20 gallons. At the current price of \$75 EC per gallon, this would indicate a return to a Dominican beekeeper of a range of \$1,400 to \$2,250 EC, or \$521 to \$833 U.S. per hive.

After the basic equipment expenses and extractor rental, the cost of production would be \$467 EC or \$173 U.S. This would give a net over a two-year period of \$348 to \$660 U.S. These figures do not take into consideration any transportation charges, home use of honey, and other miscellaneous costs such as bottles.

Currently, discarded beer and liquor bottles are used. This substantiates the fact that the small farmer, by integrating a colony of bees into his farming system, can increase the well being of his family through the use of honey for his own family diet, by selling it, or a combination of the two.

Beekeeping does not deplete the soil nor reduce the country's resources. It adds to the well being of agriculture by its presence. Trees produce more fruit, plants more flowers, and bees as pollinators increase the success of most agricultural crops.

With a personal desire and persistence, most anyone can learn the basic skills of beekeeping in just a few lessons. These basic skills, along with the guidance of an experienced person such as an Extension Bee Officer, makes success possible.

Early in 1983, Mary Andrews, Michigan State University Director of International Extension Training, was contacted by Errol Harris, Deputy Chief Agriculture Officer, Ministry of Agriculture, Division of Agriculture, Dominica, for assistance to revitalize and further develop the Dominican bee industry. Therefore, my mission to work with existing beekeepers and to train new beekeepers in Dominica developed.

My background is in general agriculture. In Michigan, my responsibility is County Extension Director for Menominee County, Michigan. This is where beekeeping became a hobby for me. The Upper Peninsula has a lot of agriculture and could be classified as a small farm area.

After arriving in Dominica, the local Extension Officers arranged a tour of the entire island so that I would become better acquainted with their bee industry, agriculture and Dominican people. Through these same officers, an awareness program using radio, newspaper and word of mouth was conducted to identify Dominicans that were interested in beekeeping. This was completed during the first week spent in Dominica. During this time existing beekeepers were identified and a personal visit was made to each to become acquainted, answer questions, discuss techniques and their problems. We also talked about markers for honey and determined local beekeepers' needs. A mailing list was developed and an inventory of hives and equipment of each beekeeper was completed. Information was also gathered to determine how large the industry could expand. Based on these visits and the information gathered, three sessions for the experienced beekeepers were scheduled. A general session was held for them to become acquainted and for me to present some techniques that they may consider adopting. It appeared that management should be refined before production would in-

crease. There was a problem with the wax moth that needed to be addressed. Two additional meetings dealt with approved practices, discussed the potential of new marketing methods and explained various honey products and how they were made. A decision was made at one of the meetings to form a steering committee to develop a honey cooperative. Since that time, one has been established by the Dominican beekeepers.

In another series of classes that ran concurrently with experienced beekeeping classes, those interested in becoming beekeepers were given the opportunity to attend two different class sessions. One series of classes was held during the morning for those that were not employed and an identical session was held late in the afternoon and on weekends for those that had conflicting work schedules. All class sessions used slides, equipment displays, demonstrations, and field trips as part of the presentation. Each student had the opportunity to help collect swarms and to work a hive. There were also demonstrations with hands-on opportunity to make all equipment necessary to become a beekeeper. A local beekeeper was trained and engaged to demonstrate how to make a hive body, frames and foundation with class members assisting to learn the skills. Class members did construct their equipment.

Techniques in collecting a colony from a tree were demonstrated and once the colony was collected it was given to the student who found it. Swarms were also collected and became the property of the person(s) who discovered them. All class members attending had the opportunity to learn a wide range of these skills. Each session of the class grew larger in number of participants, indicating a growing interest.

There are a large number of unmanaged wild colonies in Dominica due to the hurricanes that devastated apiaries and the land in 1979 and 1980. Also, because of a lack of management by existing beekeepers, a lot of wild colonies were established from swarms. These, of course, were of no great benefit and in some instances, a nuisance to people.

The beginning beekeeper classes included Dominicans from all walks of life. Bankers, youth, business people, small farmers and even one gentleman 86 years of age enrolled in the beginning course of study and completed it. An indication of the success of this venture can be illustrated by the increase in the number of hives and beekeepers. An example—one person, Charles Stevens, had four hives established from swarms as a result of taking the Beginning Beekeepers Course. He began the course without any hives. A hive and the equipment had the value of approximately \$400 EC. Today the number of colonies found on Dominica has

increased from the original 405 in September of 1983 to over 1,200, according to Tony Sorhaindo who took an actual count in September of 1984.

Prior to leaving Dominica, a curriculum and lesson plan was developed for the Organization of American States (O.A.S.), offering beekeeping training to Dominican 4-H youth. Also, a set of slides was provided through the efforts of Tony Sorhaindo, New Crops Extension Officer, Roger Hoopengartner, Entomology Youth Programs, Apiculture and Crop Pollination Specialist of Michigan State University, and myself, to be used by the instructor. There were 18 4-H youths who completed the more intense three-month session taught by a local beekeeper and Tony Sorhaindo. The Chief Extension Officer, Errol Harris, a beekeeper himself, has offered each student who satisfactorily finished the O.A.S. course assistance to secure his(her) own live.

Most of the Dominican bee industry expansion this past year was from finding and capturing colonies from hollow trees, cliffs, buildings, etc., and by division of existing colonies.

Dominica and most of the Caribbean nations are free of disease and the Africanized bee has not invaded the islands. Every conceivable effort should be made to keep it that way. This is a small farm industry that can develop from within a nation. Additional skills in packaging, typing honey, queen rearing and marketing are major needs. In addition, a package industry could be developed for not only the Caribbean nations, but for export. Central extraction and packaging of honey is important for both domestic and foreign markets. Import constraints should probably be explored to keep the Caribbean nations free of disease and the Africanized bee.

An existing monthly newsletter sent to all youth on the island was expanded to include information on bees to help the youth learn about the importance of bees and how to identify swarms, wild colonies and to whom to report them.

The bee industry of Dominica is on the move. It was fun and rewarding to be a part of what has happened and to assist in guiding future efforts.

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