

Honey Bee Stock Center Progress Report

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Baton Rouge, La. in cooperation with
Louisiana Agricultural Experiment Station¹

THE Honey Bee Stock Investigations area was created in August 1967 by the Director of the Entomology Division, Agricultural Research Service, U.S. Department of Agriculture. A staff of three was assigned to the task of building what has finally become the HONEY BEE STOCK CENTER located on the Agricultural Campus of Louisiana State University. Early efforts were largely confined to building and accumulating bee equipment and genetic stocks. Finally in late 1969 our Bee Stock Center Laboratory-office building was completed. Funds for staffing the Center were made available by Congress in late 1970 and by mid-1971 we were able to add two additional staff members. The Center is now a functional unit of the Apiculture Research Branch, serving both national and foreign bee research agencies as well as the bee breeding industry of our nation.

The Bee Stock Center exists primarily for the purpose of collecting, maintaining, and distributing genetically defined stocks having historic,

¹Entomology Research Division, Agricultural Research Service, United States Department of Agriculture, in cooperation with Louisiana State University.

economic, and scientific usefulness. Secondary objectives are the development and maintenance of a standard strain and of hybrids for research purposes and the development of improved stock maintenance technology. The Stock Center is not engaged in specific bee breeding programs such as developing strains of bees for pollinating alfalfa, etc. The Stock Center maintains such stock as developed by others and supplied to us for maintenance and distribution.

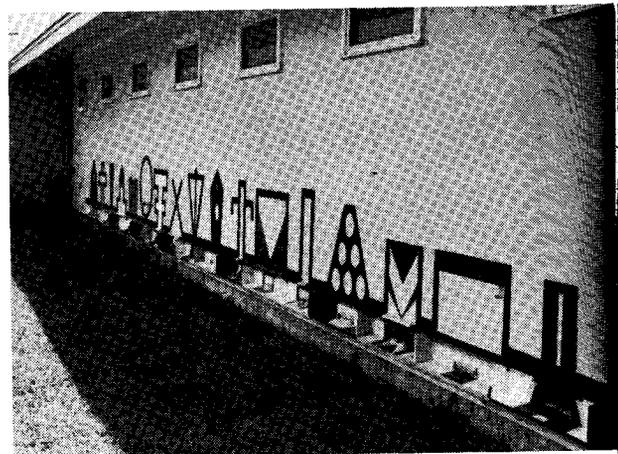
In fulfillment of our first objective, the Honey Bee Stock Center maintains, at present, approximately 25 inbred plus other special lines of bees. Most of these were derived from outstanding or unique stocks obtained in the United States or from foreign sources. Additional genotypes are being added as funds, facilities, and personnel allow. Queens of each of the inbred lines as well as the other specialized lines are reproduced each year for perpetuation and distribution according to the quantities required. In 1971 over 1200 queens were artificially inseminated to accomplish this purpose. Approximately 200 colonies and 800 nuclei are utilized in our program.

In 1968, a breeding system was designed to fulfill the second objective of the Stock Center, the production of a "standard" stock of honey bees. Since this was begun we have devoted a major part of our time and energy to this project. Each year we have produced one or two generations of each of the eight sublimes used in the production and maintenance of this stock. The mating system employed (to be described elsewhere) involves mating queens and drones of each of the sublimes in a prearranged circular system based on minimum relationship of parents in each generation. Approximately 100 colonies of bees headed by the current generation of this stock are wintered each year at Baton Rouge. This stock is also being evaluated at our Madison laboratory. Results to date indicate that the standard stock is becoming less variable within and between sublimes, but large differences between sublimes are expected to exist for several generations. The standard stock is designed to serve exactly as it is named—a standard bee for research purposes or a standard by which beekeepers and other bee breeders may evaluate the stocks which they are using. Although many of our better inbred lines were incorporated into it our standard stock is not designed as a superior stock or a replacement for our selected inbred lines or hybrid combinations.

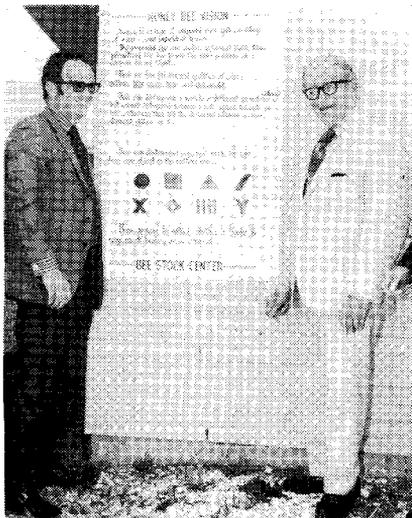
We have also started on our third objective, improving stock maintenance technology. Preliminary studies were begun on the wintering of multiple queens in colonies in our temperature-controlled bee room. Observations to date indicate a greater success in wintering queens by this method than in outside queen-bank colonies. We plan to refine these developments, and also to explore means of utilizing sperm



Front view of the Stock Center Facility in Baton Rouge.



Outside entrances for bees to enter colonies in the bee room in the Stock Center.



Gary Reynolds, technician at the Center, poses with Senator Ellander during the dedication.

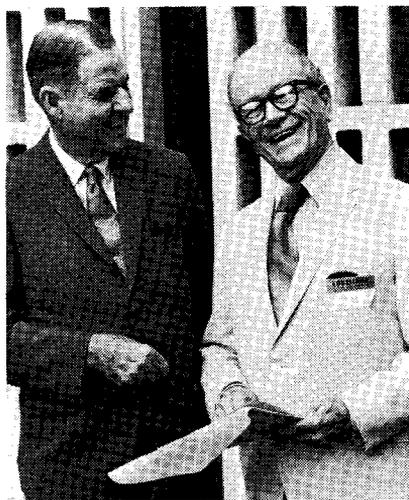
storage and of improving instrumental insemination for greater controlled-mating efficiency.

The framework of the policy which guides our operation of the Bee Stock Center is described in the following basic operational procedures:

1. The Honey Bee Stock Center is a Federal facility, and all stocks accepted become Federal property.
2. Only genetically defined stocks (accompanied by supporting descriptive publications) will be accepted for maintenance. The Stock Center will not be able to verify the genetic composition of new stock since such procedures require facilities beyond its resources. Genetic definition of a stock will, therefore, be the responsibility of the donor. Accepted stocks will be catalogued and maintained in sufficient numbers

to insure their preservations. However, the Stock Center will not assume responsibility for loss of germ plasm.

3. Genetically undefined stocks which have unusual potential breeding value may be accepted and incorporated into specific genetic pools for later use as the program of the Center may dictate and as the resources of the Center may permit. We cannot accept, evaluate or perpetuate "name" lines of bees.
4. Genetic material will be released to research workers and bee breeders on a fee basis. In no case will stocks of bees be distributed if they are available from a commercial source. All requests for stock should be submitted to the Center at least three months in advance of anticipated shipping time. Research workers will be supplied inbred stocks (3 queens of each line requested) free of charge. Additional queens (inbred or hybrid) will cost \$5.00 each. Some cooperating queen breeders are being supplied with hybrid breeding stock on an experimental basis. These queen breeders are paying \$25.00 each for these queens. At present no commercial queen breeders are being supplied with breeder queens and drone mother queens which would enable these producers to control the mating of the queens produced. We anticipate that the Center will eventually serve as the source of some proven test stocks for both research agencies and commercial interests. Commercial beekeepers can be very helpful in the primary evaluation of many of the gross characteristics of selected hybrid tested un-



The late E. C. Bessonnet (left) visits with Senator Ellander, a long-time personal friend. The Senator was largely responsible for congressional allocation of the funds for the Stock Center, as well as many other bee industry projects.

der various climatic and regional conditions.

5. All requests from foreign sources for stock will be referred to the headquarters of the Apiculture Research Branch, Beltsville, Maryland.
6. The Bee Stock Center will maintain a current inventory of the stocks in storage. The list will be available upon request. Although the principal objectives of the Stock Center are the collection, maintenance, and distribution of genetic stocks of bees, research projects related to these objectives will also be carried on at the laboratory. Facilities will be available to visiting research scientists. In addition, short term training in bee breeding and stock maintenance procedures will be available upon request.



Left to right: Eugene Jensen, Technician at the station; Louis Harbin, Secretary of the American Bee Breeders Association; Dr. Otto Machensen, recently retired from the Baton Rouge Station, and Dr. Wm. C. Roberts, Head of the Stock Center Facility.



Dr. Marshall Levin, Apiculture Branch Chief, tours the Stock Center with Dr. C. H. Hoffman and Dr. Ned Bagley, both of the Apiculture Research Service during the Center's dedication.