

Improvement of Bee Stocks in New Zealand

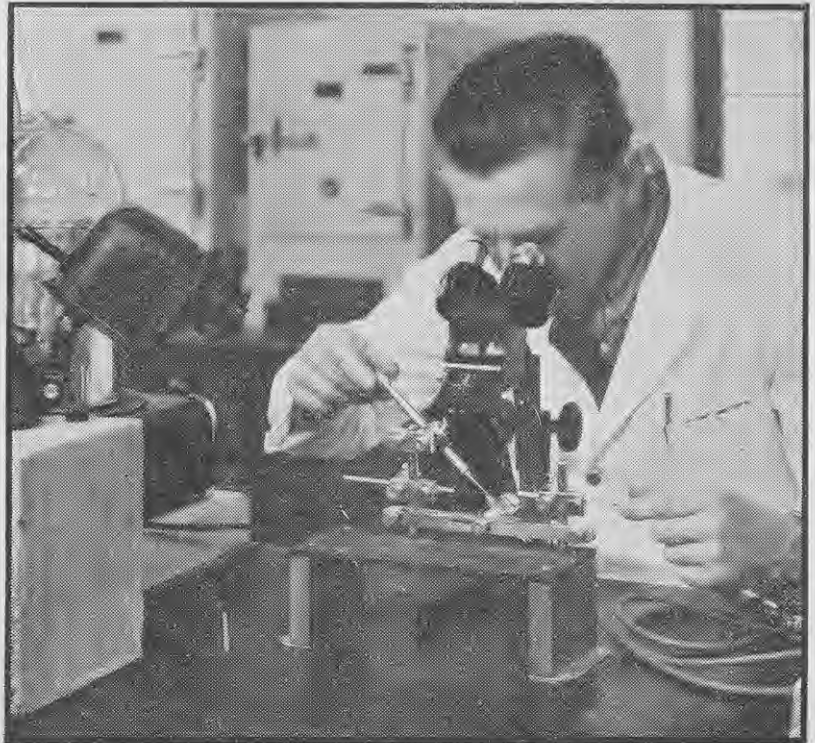
THE business of honey production depends largely on the beekeeper's ability to produce good young queens or to procure them from reliable queen breeders, and to place them safely in the hives at the right time. In this article T. S. Winter, Superintendent of the Beekeeping Industry, Department of Agriculture, Wellington, describes how the Department at its research station at Wallaceville has begun testing the possibilities of instrumental insemination of queen bees to improve bee stocks in New Zealand.

IT has long been recognised that the race of bees most suitable for New Zealand conditions in pastoral areas is the Italian. Not only are the best strains of this race good honey gatherers but they have other desirable traits, including quiet action on the combs when handled by the beekeeper, hive cleanliness, and, generally, a reduced swarming tendency. They are also noted for good temperament, and the queens are easy to find because of their light colour and steady movements. These qualities make the work of the beekeeper more pleasant and speedy, but it is not always possible to develop and maintain the best strains of bees under ordinary beekeeping conditions, due to their mating habits.

Scientific Breeding

It is recognised that others engaged in the livestock industry have benefited more through the application of principles of scientific breeding than have beekeepers because they can practice controlled mating whereas the average beekeeper has no control over individual males and females at mating time. The best he can do is to assemble bees of good type to assist nature to produce desirable strains suitable for commercial beekeeping purposes. Furthermore, not only the average beekeeper but the experienced commercial breeder must be continually on the alert to check results of chance matings to eliminate undesirable strains of bees from their apiaries.

Much valuable time is lost by the beekeeper in selecting and testing the qualities of queens to be used ultimately for breeding purposes, and though some commercial beekeepers whose queen-rearing hives are favourably situated in regard to distance from neighbouring apiaries where less care is taken in regard to quality of stocks, have done excellent work in supplying young queens to the industry where required, there is no certainty of continuity of desirable qualities in succeeding generations of young queens bred under present conditions.



Operator at the Wallaceville laboratory using equipment for the artificial insemination of a queen bee.

Controlled Mating

During the last 20 years research in America has resulted in the development of equipment and technique for artificial insemination of queen bees. Standard equipment for this work was installed at the Animal Research Station, Wallaceville, last year and instrumental insemination of a number of queens successfully accomplished by T. Palmer-Jones, Research Officer. These queens were laying and doing well at the close of last season.

The development and maintenance of good strains of bees best suited to New Zealand conditions would be of great benefit to the beekeeping industry in this country, and now that complete control of breeding is possible the Department of Agriculture has commenced a project to test thoroughly the possibilities of instrumental insemination of queen bees to improve bee stocks in New Zealand.

Supply of Breeder Queens to the Industry

Though it would not be practicable for the Department to supply all the young queens required for use generally in honey-producing hives, it is hoped eventually to be able to supply a limited number of breeder queens of specially developed strains to beekeepers who breed bees for sale to the industry in large numbers each year or for their own use.

The Department will work in close co-operation with beekeepers who have developed good strains of Italian bees as far as possible under uncon-

trolled conditions and who are willing to supply foundation stocks for this work the first year. An excellent response has been received from beekeepers throughout New Zealand and sufficient breeder queens selected by them from their own stocks have now been received at Wallaceville to enable the work to begin.

The queens received will be used to raise males and females for selection and controlled mating. Young queens raised in this way will be forwarded in batches, beginning next season, to each beekeeper concerned for testing in honey hives in his own apiary under local conditions, and for a detailed report on their performance. Similar trials will be carried out at Wallaceville.

Selection mating and trials will be continued each season until a satisfactory strain or strains of bees have been obtained. When this objective has been reached breeder queens will be made available to commercial queen breeders each year and to other commercial beekeepers as far as possible as indicated above.

T. Palmer-Jones, Research Officer, is in charge of the work at Wallaceville and Apiary Instructors will co-operate by assisting in the field, where necessary, and by keeping a watch on subsequent trials of young queens under local conditions.

Improvement of bee stocks and of hive management in many apiaries is necessary to improve beekeeping economy in New Zealand.