INTRODUCTION

The populations of honey bees (*Apis mellifera*) found in the tropical and subtropical parts of the New World, and derived at least in part from bees introduced from Africa (*Apis m. scutellata*, formerly called by the name of the West African race *A. m. adansoni* ; Ruttner, 1976) are widely called Africanized honey bees. The name Brazilian honey bees has also been applied to them.

Bees from Africa were introduced into Brazil in 1956 in order to develop a tropical – and subtropical – adapted strain having better honey productivity than the temperate European subspecies previously used in Brazil. Queens that reached Brazil were mostly from Pretoria, South Africa (over 1500 m altitude, 26°S, therefore an area with cool winters), but one was from Tabora, Tanzania. Colonies showing desirable characteristics were to be selected from among hybrids resulting from crosses of European and African bees. However, in 1957, 26 queens mated in Africa escaped with swarms or absconding colonies near Rio Claro, São Paulo, Brazil. The queen from Tanzania was among those that escaped (W.E. Kerr, in letter to O.R. Taylor, June 14, 1974).

The subsequent spread of bees of African origin or of hybrids between European and African races has been described in a review by Michener (1975) and a subsequent report by Taylor (1977). In recent years Africanized bees have rapidly spread across Venezuela and eastern Colombia, and no doubt will cross the Colombia-Panama border in the first half of 1981 and may reach the Panama Canal area in 1982 (O.R. Taylor, personal communication). Thus Africanized honey bees now occur in all parts of South America east of the Andes and north of about latitude 33°S. They do not appear to have extended their range much farther south than indicated by the authors cited above, perhaps because of cold winters, and they have not crossed the Andes into Chile or western Peru and Ecuador. They appear to spread more rapidly and develop larger populations in the savannas, cerrados, caatingas, and llanos, i.e., in relatively dry zones, than in the tropical forests.

There is no need to repeat here the records of mass stingings of animals and people by Africanized bees, with resultant deaths of some people and thousands of domestic animals, especially in Brazil and Venezuela. It is important to note that beekeepers have learned to manage these bees, especially in southern Brazil where hybridization with European bees may have

been significant, that high honey yields are reported, and that stinging incidents at least in the southern part of the range now appear to be uncommon in spite of large feral populations of Africanized bees.

The rapid spread of an aggressive new form is always a subject of interest. In this case it changed the race of *Apis mellifera* in areas where European races were already present, and in the tropics, where European bees were rare or absent, it added a species to an already extremely complex environment. The result has been a series of studies on the behavioral and ecological attributes of Africanized honey bees, comparisons between such attributes and those of European races, and studies of the impact of honey bees on tropical plants and their native pollinators.

This round table was organized to provide for discussion of biological and practical problems associated with the spread of Africanized honey bees, and to present a sample of recent investigations of these bees. The following authors and topics were included :

1. Mark L. Winston – Simon Fraser University, Vancouver, B.C., Canada – Life-history and Demographic Characteristics of the Africanized Honey Bee.
2. Gard W. Otis – University of Kansas, Lawrence, Kansas, U.S.A. – Swarming and Population Dynamics of the Africanized Honey Bee.
3. Orley R. Taylor – University of Kansas, Lawrence, Kansas, U.S.A. – Mating Biology of Africanized Honey Bees.
4. Josué A. Núñez – Instituto Venezolano de Investigaciones Cientificas, Caracas, Venezuela – Foraging Behavior of Africanized vs. European Bees.
5. David W. Roubik – Smithsonian Tropical Research Institute, Balboa, Panama – Competition of the Africanized Honey Bee with other Species.
6. Thomas E. Rinderer – U.S. Department of Agriculture Bee Breeding and Stock Center Laboratory, Baton Rouge, Louisiana, U.S.A. – Genetics of Defense Behavior in Honey Bees. (This paper was not presented orally).
7. Lionel S. Gonçalves – Dept. de Genetica, Faculdade de Medicina, Ribeirao Preto, S.P., Brazil – Effects of Climate on Behavior of Africanized Bees.
8. Antonio Zozaya – Direccion General de Apicultura y Especies Menores, Ciudad de México – Probable Impact of Africanized Bees in Mexico and Central America.

Certain of the papers listed above are printed here. The first is in press elsewhere (Winston et al., 1981) and will not be repeated here. Number 3 and probably number 8 will be presented in reorganized and more detailed form elsewhere.

I wish to thank all the authors for their contributions.

References

MICHENER C.D., 1975. – The Brazilian bee problem. *Ann. Rev. Entom., 20*, 399-416.

RUTTNER F., 1976. – African races of honeybees. *Proc. XXV Internat. Apicultural Congr. APIMONDIA*, pp. 1-22.

TAYLOR O.R., 1977. – The past and possible future spread of Africanized honey bees in the Americas. *Bee World, 58*, 19-30.

WINSTON M.L., DROPKIN J.A., TAYLOR O.R., 1981. – Demography and life history characteristics of two honey bee races. *Oecologia, 48*, 407-413.

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