SCIENCE

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Information to Contributors appears on pages 36–38 of the 3 January 1992 issue. Editorial correspondence, including requests for permission to reprint and reprint orders, should be sent to 1333 H Street, NW, Washington, DC 20005. **Science Telephone:** 202-326-6500. London office: 071-435-4291. **Subscription/Member Benefits Questions:** 202-326-6417. **Other AAAS Programs:** 202-326-6400.

LETTERS

The Whitehead Institute and MIT

We are writing to correct misinformation in Michelle Hoffman's 3 April article (News & Comment, p. 25) regarding the relationship between the Whitehead Institute and the Massachusetts Institute of Technology Department of Biology. Although the article mentions many of the extremely positive features of the Whitehead Institute, it also presents comments by a faculty member that suggest incorrectly that the success of the Whitehead has somehow prevented the recruiting of young people in other parts of the Department of Biology, that Whitehead labs attract most of the graduate students, and that the Whitehead faculty do little teaching. Nothing could be further from the truth. In fact, in the past 2 years we have recruited six superb young faculty, who will certainly continue the "stellar" tradition of the department. Moreover, faculty in the Whitehead, who constitute 25% of the department, have attracted 26% (30/115) of the graduate students over the past 4 years and teach in 54% (20/37) of the undergraduate and graduate courses. The Whitehead faculty also serve actively on departmental and MIT committees, participate in all phases of community life, and do wonderful science. The relationship between the Whitehead and MIT has been a great success, the department is lively and vigorous, and we and most other faculty view the Whitehead as a highly valued partner.

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Out of Africa: Honey Bee Hybrids

In their report "Hybridization between European and Africanized honey bees in the neotropical Yucatan peninsula" (19 July 1991, p. 309), Thomas E. Rinderer *et al.* suggest that the population of Africanized bees (*Apis mellifera scutellata*) in Central America will be "Europeanized" before it enters the United States. Three major problems with the study undermine this conclusion.

The most fundamental problem is that only apiary bees, originally derived from European subspecies, were examined by Rinderer *et al.* However, it is feral (wild) bee populations, not those in apiaries, that are expanding their range, moving into new territory, and causing Africanization of European apiaries. Despite hybridization between European and Africanized bees in apiaries, the feral population in neotropical regions of the Americas still retains a high frequency of African genetic markers, including characteristic mitochondrial DNA (mtDNA) haplotypes (*1–3*), allozyme frequencies (*4, 5*), and nuclear restriction fragment length polymorphisms (RFLPs) (6). Recent studies (*7, 8*) conducted in temperate, southern Argentina document a hybrid zone between essentially African populations (as assessed by morphometrics and mitochondrial genetic markers) to the north and European populations to the south.

A second and related problem with the report by Rinderer *et al.* is their interpretation of data about the apiary colonies with "opposite" mtDNA and morphometric characters (as shown in their table 1). The 163 colonies they sampled were classified by mitochondrial genotype (African or European) and by their morphological similarity to reference bee population samples. Their discriminant analysis showed evidence that hybridization, followed by backcrossing to the paternal population, is taking place in both directions: bees of European maternal ancestry are backcrossing to the African paternal population, and bees of African maternal ancestry are backcrossing to the European paternal population.

Rinderer *et al.* conclude that this leads to Europeanization of the expanding feral Africanized bee population as well. However, because no samples were taken from the feral population, this conclusion is unwarranted. Colonies with European mtDNA and African nuclear-encoded characters are the expected outcome when apiary queens of European ancestry mate with African or Africanized drones over several generations. Colonies with African mtDNA and European morphometric