gastral vibrations by queens and workers were observed on 3 separate occasions, twice in V. vulgaris (L.) colonies and once in a V. maculifrons (Buyskem) colony. Each colony contained fewer than 8 workers which had emerged within the previous week. The behavior was identical in most respects to that described by Akre et al. (1981, op cit.) for V. consobrina (Saussure). Queens and workers vibrated the ventral surfaces of their gasters against the combs in periodic bursts lasting ca. 2 sec, interspersed by quiet periods of ca. 3 sec duration. Vibrations occurred at a frequency of 10-20/sec. Often several wasps were observed to vibrate in phase, as has been reported for V. germanica (F.) (Ishay and Brown 1975, op cit.). Workers in laboratory colonies vibrated their gasters on the tops of combs or, less commonly, on the ventral faces. One such bout of this activity lasted over 5 min as a nest box was being transported from one room to another. The gastral vibrations were clearly audible as the workers and queen vibrated in unison.

Gastral vibration appears to be widespread among vespid wasps. This behavior may serve to communicate alarm to the members of small colonies. It is not clear why such a communicatory mode would not be advantageous in larger colonies. Further studies should elucidate the context and significance of this behavior.—Kenneth G. Ross, Department of Entomology, Cornell University, Ithaca, New York 14853 USA.

RED IMPORTED FIRE ANT NOW IN PUERTO RICO—Active nests of the red imported fire ant, Solenopsis invicta Buren, were found by the writer in El Tuque, a sea-side park near Ponce, Puerto Rico, on 28 May 1981. Three mound nests were seen, each about 2 ft. in diameter and 8-10 in tall. One nest had very few ants and probably was being abandoned. Imported fire ants readily shift the locations of their mounds. The other 2 nests were vigorous and populous and the ants rushed out en masse to defend the mounds upon disturbance as is characteristic of this species. Stings on my hands produced pustules which are also characteristic of this species but usually not of Solenopsis geminata (Fabr.), the only Solenopsis (Solenopsis) species previously known to occur in Puerto Rico. One of the 2 active mounds contained many winged sexuals, both males and females but mostly males, and the other nest contained many large sexual-casté larvae.

Collections of workers taken from these mounds have been compared with paratype specimens from Cuiaba, Mato Grosso, Brazil, the type locality of S. invicta, and with specimens of S. invicta from Florida and Georgia. All of these samples appear to be taxonomically identical. Voucher specimens from the Puerto Rico nests have been deposited in the U.S. National Museum, Washington, D.C., in the Florida State Collection of Arthropods, Division of Plant Industry, Gainesville, FL and in my private collection.

Other ant species collected at El Tuque on 28 May were Solenopsis geminata (Fabr.), Conomyrmex antillana (Ferox), Pheidole fallax antillensis Forel and Monomorium destructor (Jerdon). Solenopsis geminata and P. antillensis appear to be the common dominants of open areas in Puerto Rico. Conomyrmex antillana is a subdominant, common in some areas of Puerto Rico, largely in sandy areas near the beaches, but absent in most areas of
the island. *Monomorium destructor* is a tramp species, and from my observations is probably rare in Puerto Rico.

The future progress of the *S. invicta* infestation in Puerto Rico should be observed. If it is decided that the species poses no especial pest problem to the island it will be worth while to follow its progress vis-a-vis the native dominants, *S. feminata* and *P. antillensis*. If a decision to eradicate the imported fire ant from the island is made it will be interesting to follow the progress and success or failure of this eradication attempt. A thorough survey of the island, to determine the extent of the present imported fire ant infestation, would be a prerequisite to any decision-making.

The presence of *S. invicta* in Puerto Rico probably is a case of a species, with its original homeland in the tropics, which has been introduced first to a temperate region, and then introduced from there back to a different tropical area. The manner of importation to the island is not known. Two possible avenues can be suspected. One is by winged sexuals from colonies established on shipboard. Nearly all the major seaports of the southeastern United States, Charleston, Savannah, Jacksonville, Tampa, Pensacola, Mobile, New Orleans, Galveston, and Houston have large populations of imported fire ants nearby. It seems possible that young winged nest founding queens could fly aboard docked ships after a mating flight and attempt to found colonies. If any were successful these shipboard colonies later might release a mating flight while in some other port. Another possible avenue for importation might be by nest founding queens or incipient nests secreted in the soil of nursery stock of various ornamental plants imported to the island. Surveillance for the ant in the immediate vicinity of importers of nursery stock from the southeastern states could perhaps determine if this is a reasonable explanation for importation of the pest.

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