APIS ANDRENIFORMIS SMITH IN PALAWAN, PHILIPPINES

LILIA I DE GUZMAN[1]; MERLY FORBES[2]; CLEOFAS CERVANCIA[2]; THOMAS E RINDERER[3]; SEVILLO SOMERA JR [4]

[1]Dept of Entomology, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge, LA 7083, USA

[2]Dept of Biology, Insititute of Biological Science, University of the Philippines at Los Baños, College, Laguna, Philippines

[3]USDA-ARS, Honey-Bee Breeding Genetics and Physiology Laboratory, 1157 Ben Hur Road, Baton Rouge, LA 70802, USA

[4]Palawan National Agricultural College, Aborlan, Palawan, Philippines

(Received 30 June 1992,
accepted subject to revision 10 September 1992,
accepted for publication 4 January 1993)

Keywords: *Apis andreniformis*, *Apis florea*, honey bees, morphology, Philippines

Based on our field observation, we confirm the presence of *Apis andreniformis* in the Philippines as indicated by Otis (1991). We found five colonies within the campus of Palawan National Agricultural College, Aborlan, Palawan. Among the five colonies collected, four had adult bees and brood while one colony had few adult bees with no brood.

Morphology of the honey bees from Palawan was compared with *Apis florea* collected from Thailand. Identification was based on colour of the abdomen and hairs on the hind tibia of worker bees (Wu & Kuang, 1986, 1987). Worker bees of *A. andreniformis* are generally black in colour with black hairs on the hind tibia. In contrast, *A. florea* is red-brown with white tibial hairs. The wing venation was also examined. *A. andreniformis* from the Philippines has a much larger cubital index than *A. florea*; the mean values obtained were 6.01 (n = 4 colonies, 10 worker bees each) and 2.8 (n = 27 colonies, 10 worker bees each), respectively. This observation agrees with the findings of Wongsiri *et al*. (1990). Unlike *A. florea*, *A. andreniformis* is: (1) highly defensive of its nest and (2) performs shimmering waves when disturbed. Both species build a single-comb nest hanging on trees or bushes.

We did not observe either colonies or foraging bees of *A. florea*, which has been reported to be the only dwarf bee species found on the island (Gabriel, 1981; Ruttner, 1988). Therefore, the presence of *A. florea* in Palawan is questionable and reports of *A. florea* from the island might have been referring to *A. andreniformis*. Bee samples were deposited at the USDA/ARS, Honey-Bee Breeding, Genetics and Physiology Research Laboratory, Baton Rouge, LA 70820, USA, for further reference.

Approved for publication by the Director of the Louisiana Agricultural Experiment Station as manuscript number 92-17-6248.

References

The numbers given at the end of references denote entries in *Apicultural Abstracts*.

GABRIEL, B P (1981) Prospects for industrial entomology in the Philippines. *Philippine Entomologist* 4(6): 525–534.

OTIS, G W (1991) A review of the diversity of species within *Apis*. *In* Smith, D R (ed) *Diversity in the genus* Apis. Westview Press Inc.; Boulder, WA, USA; pp 29–49.265 pp.

RUTTNER, F (1988) *Biogeography and taxonomy of honeybees*. Springer-Verlag; Berlin, Germany; 284 pp. 1155/88

WONGSIRI, S; LIMBIPICHAI, K; TANGKANASING, P; MARDAN, M; RINDERER, T; SYLVESTER, H A; KOENIGER, G; OTIS, G (1990) Evidence of reproductive isolation confirms that *Apis andreniformis* (Smith, 1858) is a separate species from sympatric *Apis florea* (Fabricius, 1787). *Apidologie* 21: 47–52. 1074/90

WU, Y; KUANG, B (1986) [A study of the genus *Micrapis* (Apidae)]. *Zoological Research* 7: 99–102 (in Chinese). 59/88

WU, Y; KUANG, B (1987) Two species of small honey bee — a study of the genus *Micrapis*. *Bee World* 68: 153–155. 60/88