

# Article

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## TWO SPECIES OF SMALL HONEYBEE—A STUDY OF THE GENUS *MICRAPIS*

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### Foreword

The small or dwarf honeybee is usually called *Apis florea*. A recent paper<sup>3</sup> in Chinese, with English summary, by Wu and Kuang<sup>3</sup> shows that two species of small honeybee occur sympatrically in southern China. They were also considered as distinct species by Maa in 1953<sup>1</sup> but he recognized so many 'species' of honeybees that most authors have discounted the characteristics that he listed for the two species of small honeybees. Wu and Kuang, who for the first time report on all three castes of both species, find them not to constitute the single species *Apis florea* but rather two distinct species in the genus *Micrapis* (Ashmead). Ms Wu has kindly provided an English version of the paper, which seems important to publish (below) because most Western bee specialists will neither see, nor be able to read, the original.

Charles D Michener

### Introduction

*Micrapis florea* (Fabricius) and *Micrapis andreniformis* (Smith) are both names for small honeybees. Smith in 1858<sup>2</sup> described *M. andreniformis* on the basis of workers only and it has usually been regarded as a synonym of *M. florea*. Each caste of both species was collected from Yunnan Province, China, and they prove to be specifically distinct. The present paper deals with their diagnostic characters together with their nesting habits and distributions.

### Diagnostic characters

#### Queens

- First and second abdominal terga, basal part of third, and apical margins of third to fifth red-brown, otherwise black; malar space as wide as long; posterior interocellar distance : ocellular distance = 9:5; third antennal segment a little longer than fourth; tarsi brown; body length 13-15 mm. -----*Micrapis florea* (Fabricius)
- Abdomen black (apical margin of first tergum or basal parts of second and third of some specimens red-brown); malar space wider than long (9:7); posterior interocellar distance : ocellular distance = 7:5; third antennal segment twice as long as fourth; tarsi black (inner side of hind tarsus of some specimens brown); body length 12-14 mm. -----*Micrapis andreniformis* (Smith)

#### Males

- Inner lobe of hind tibia long (Fig. 1.), more than  $\frac{2}{3}$  length of tibia; body length 11-13 mm. -----*Micrapis florea* (Fabricius)

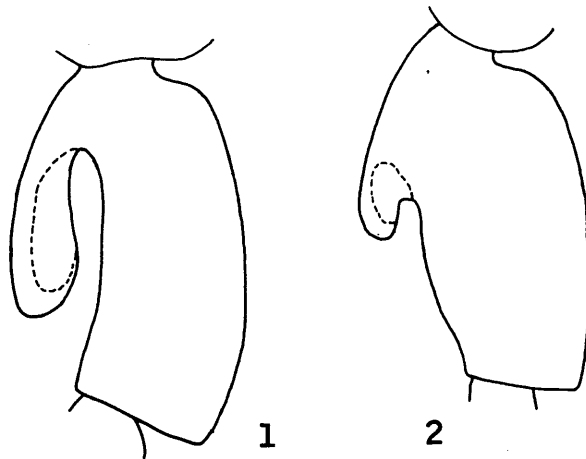


FIG. 1. Hind tibia of male *Micrapis florea*. FIG. 2. Hind tibia of male *Micrapis andreniformis*.

- Inner lobe of hind tibia short (Fig.2.), no more than half length of tibia; body length 10-11 mm. -----*Micrapis andreniformis* (Smith)

#### Workers

- Hind tibia and dorsolateral surface of hind basitarsus with white hairs; malar space not as wide as long (6:7); first and second abdominal terga and basal part of third red-brown; scutellum black; body length 7-10 mm. -----*Micrapis florea* (Fabricius)

- Hind tibia and dorsolateral surface of hind basitarsus with black hairs; malar space wider than long (9:7); abdomen chestnut-black (apical margin of first tergum and basal part of second or parts of these areas deep-brown); scutellum black or deep red-brown; body length 8-9 mm. -----*Micrapis andreniformis* (Smith)

#### Biological observations

The colonies of *Micrapis florea* (Fabricius) in Yunnan inhabit the weeds and secondary bushes which grow on slopes, tilled areas and around villages at the edges of valleys and basins below 1900 m altitude. They make their nests on the stems of trees or in weedy bushes. The nests are 0.2-3.0 m above ground, the majority in shaded places. The nest is a single comb with an area of 200-500 cm<sup>2</sup>. The upper part of the comb is the honey-storage area (20-35% of the whole area), and the lower part is the reproductive area (65-80% of the whole area). Generally speaking, *Micrapis florea* has a mild temper, but it may become rather aggressive when the nectar resources are nearly exhausted. It is an important pollinating bee in the tropical areas.

The colonies of *Micrapis andreniformis* (Smith) inhabit the secondary forest or trees around villages below 1000 m altitude. The nests are on trees or bushes and are located in open places 3-5 m above the ground. The nest is a single comb with an area of 150-250

cm<sup>2</sup>. The comb is wide above, narrow below, and there is obvious diversity within the comb; the honey storage region is in the upper part (about 20% of the whole area), the worker cells are in the middle (50 – 60% of the whole area), and the drone cells are built in the lower part (about 20% of the whole area). At the lower tip of the comb are the queen cells. This species is very aggressive. It will attack *en masse* and chase the enemy 30 – 40 m when irritated. It is an important pollinating bee in tropical areas.

### Distribution

Both species occur in the tropical regions of China, but the distribution of *Micrapis florea* is wider than that of *M. andreniformis*. The former extends to Lushui (26° N) in Yunnan Province, but *M. andreniformis* is limited to the area south of the tropic of Cancer.

### References

1. MAA, T (1953) An inquiry into the systematics of the tribus Apidini or honeybees (Hym.). *Treubia* 21: 525-640
2. SMITH, F (1858) Catalogue of the Hymenopterous insects collected at Sarawak, Borneo; Mount Ophir, Malacca; and at Singapore. ed. A R Wallace *Journal of Proceedings of the Linnean Society, London (Zool)* 2: 42-130
3. WU, YAN-RU; KUANG, BANGYU (1986) [A study of the genus *Micrapis* (Apidae)] *Zoological Research* 7: 99-102  
*In Chinese*

# Library Acquisitions

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This list of books received is intended to give speedy information as to what is available in the IBRA library and is not annotated. The more technical and specialized books here, together with other scientific publications, are covered in *Apicultural Abstracts*. Those marked (IBRA) are obtainable from International Bee Research Association, and the current price, including postage, is indicated.

### In English:

- FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, AGRICULTURAL INDUSTRIES DIVISION. Tropical and sub-tropical apiculture. FAO Agricultural Services Bulletin Rome, Italy; *Food and Agriculture Organization of the United Nations* (1986) xiii + 283 pp. (IBRA £14.40 or US\$22.50)
- GAYRE, R; PAPAIZIAN, C. Brewing mead—wassail! In mazers of mead. Boulder, CO, USA; *Brewers Publications* (1986) ii + 199 pp.
- HEPBURN, H R. Honeybees and wax. Berlin, German Federal Republic; Springer Verlag (1986) xii + 205 pp. (IBRA £40.00 or US\$62.00)