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NEW OR LITTLE KNOWN BEES OF JAPAN (HYMENOPTERA,
APOIDEA). III. PASITES ESAKII, A GENUS
AND SPECIES NEW TO JAPAN*

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Abstract

The bee genus *Pasites* is recorded from Japan for the first time. *Pasites esakii*, which has been treated as one of the subspecies of *P. maculatus* Jurine, is raised to the species rank. *Pasites esakii* is thought to be parasitic on *Pseudapis mandschurica* (Hedicke), formerly included in the genus *Nomia*.

In the early autumn of 1980, one of the authors, Nagase, was lucky enough to collect three female specimens of *Pasites* together with a number of male and female specimens of its probable host bee species *Pseudapis mandschurica* (Hedicke), at Kanoya City, Kagoshima Pref., Kyushu. This is the first discovery of *Pasites* from Japan.

The species was later identified as *Pasites maculatus esakii* Popov et Yasumatsu described from N. E. China (then called Manchuria). However, this is regarded as a distinct species as stated below.

***Pasites esakii* Popov et Yasumatsu, new status**

Pasites maculatus esakii Popov et Yasumatsu, 1935, *Mushi*, 8 : 101.

The original description of *esakii* states that this is based on three *female* specimens collected at Dairen (Dalny), and the male is unknown. However, the holotype deposited in the collection of Kyushu University is a *male*, not female.

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Although the habitus is very similar, the holotype male of *esakii* markedly differs from a male specimen of *Pasites maculatus ashabadensis* (Radoszkowsky) (collected at Dugas near Chami, S. E. of Tian-Shan, determined by Popov, but also determined by Friese as *maculatus* var. *brunneus* Friese before Popov) as

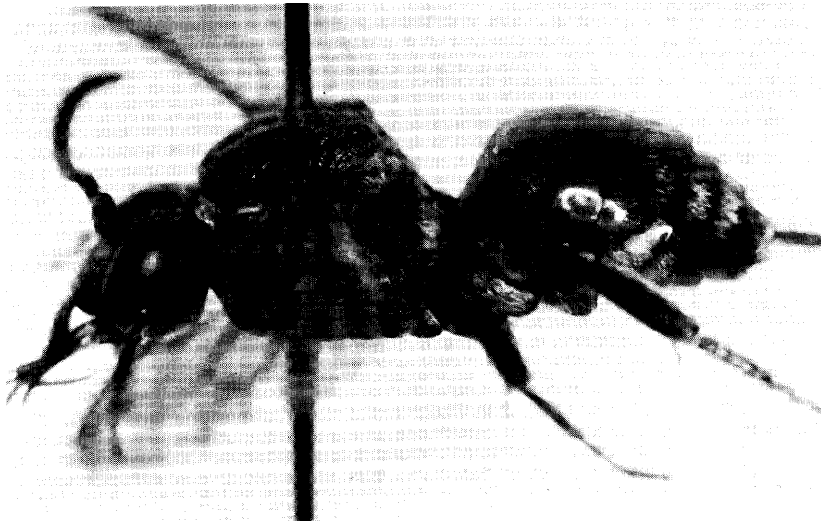


Fig. 1. *Pasites esakii*, ♀, latero-dorsal view.

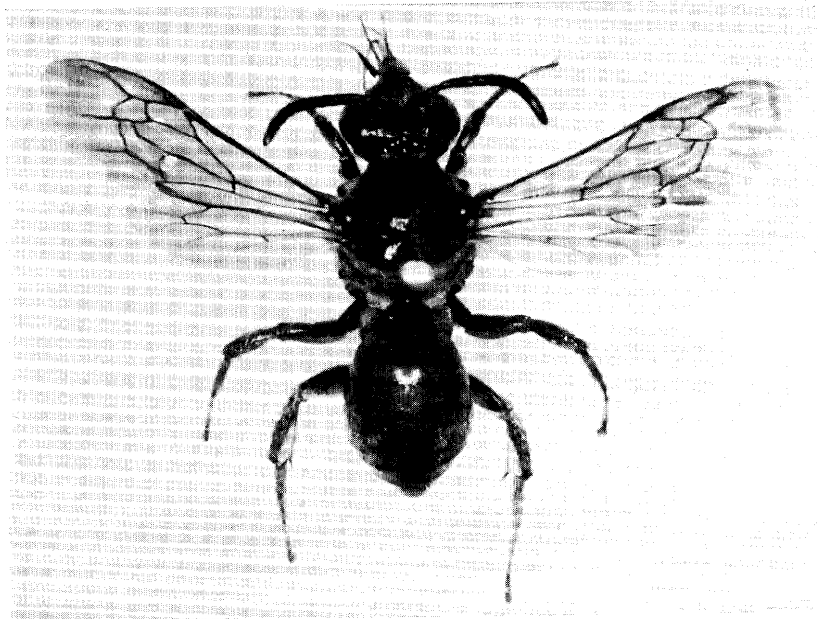


Fig. 2. *Pasites esakii*, ♀, dorsal view.

follows :

Head, including antennae, thorax, legs and metasoma (except two red basal terga) nearly all black (body entirely red with several slightly darkened portions in *ashabadensis*) ; appressed white hairs on head and thorax much sparser and dull (very dense and silvery in *ashabadensis*) ; frons lateral to fronal line more deeply concave; clypeus (especially on apical portion) and face lateral to it more elevated, and more strongly punctate; mesoscutum much less depressed along the median mesoscutal line, especially on apical portion ; punctures on mesoscutum stronger and closer; scutellum much less strongly bigibbous; legs, especially the mid and hind pairs, more robust; 1st tergum large and more convex basally (1st tergum about as long as in *esakii*, but less convex basally in *ashabadensis*), apical margin of 1st tergum notched in the middle, although very slightly so (apical margin entire in *ashabadensis*) ; and apical margins of 2nd to 6th terga emarginate in the middle (entire in *ashabadensis*). Genitalia not examined.

Four female specimens of *esakii*, 3 from Japan (Kyushu) and 1 from N. E. China (no data except "8 viii" which means August 8), differ from a female of *ashabadensis* (the same data as the male mentioned above) as follows:

Body nearly all black except for two basal terga red (entirely red with a transverse dark band on ocellar region only in *ashabadensis*) ; lower half of face (including clypeus) less shining with stronger punctures; frons more deeply depressed in the middle; space between upper portion of eye and lateral ocellus nearly flat or slightly concave (more convex, although slightly so, in *ashabadensis*), with large impunctate space lateral to lateral ocellus ; punctures on mesoscutum weaker and slightly denser; scutellum much less strongly bigibbous; appressed silvery hairs on thorax sparser and less extensive ; legs slightly stouter ; 1st tergum with weaker and sparser punctures on basal portion; apical margin of 2nd tergum slightly emarginate in the middle (entire in *ashabadensis*, although apical margins of 3rd to 5th terga slightly emarginate in the middle as in *esakii*) ; and apical fossa of 5th sternum (a hole for the sting and ovipositor) large and distinctly elongate (the fossa distinctly shorter, therefore more rounded in *ashabadensis*).

Two females from Turkmenia, determined by Popov as *Pasites maculatus ashabadensis*, are much smaller, and also markedly different from our females of *esakii*.

A male of *Pasites maculatus ashabadensis* from Turkestan, also determined by Popov, has the head and thorax more darkened than in the male from Tsian-Shan mentioned above, but is still distinctly different from the holotype male of *esakii*.

A female from Irkutsk, Siberia, determined as *Pasites maculatus* by Popov, has the head and thorax broadly darkened, but not entirely black as in ours, and the apical fossa of 5th sternum also large as in *esakii*, but still differs

from the latter in having the different coloration, different puncturation (for example, punctures on 1st tergum much stronger than in *esakii*) and different other structures (for example, the apical margins of 2nd to 5th terga entire).

In addition to the characters mentioned above, the apical portions of 2nd to 5th terga in female and those of 2nd to 6th terga in male of *esakii* broadly flat or slightly concave (especially on lateral portions), and the apical margins of these terga slightly reflected. This is distinctive for *esakii* and not seen in any of the above mentioned specimens of *maculatus* and *m. ashabadensis*.

Thus, we think *esakii* may be regarded as a good species and it is treated as such in this paper.

It is very interesting to note that the antennae are 12-segmented in both sexes in this genus. This is unusual for the bees. In addition, the sexual difference is also very slight except for the genitalia and the modification of the apical part of metasoma. *Pasites esakii* is not exceptional.

SPECIMENS EXAMINED: 1 female, September 14, and 2 females, September 15, 1980, Kanoya City, Kagoshima Pref., Kyushu (H. Nagase) ; 1 female, August 8, N. E. China (no further data).

DISTRIBUTION: N. E. China and Japan (Kyushu).

HABITAT AND HOST: In Kanoya City, the site of collection was restricted to a small section of flat land mainly cultivated for field crops with some uncultivated area along the margin. It was unique in that a fairly rich population of *Pseudapis mandschurica* (Hedicke) was exclusively found in the section. At the same time, *Tetralonia mitsukurii* Cockerell, *Triepeolus ventralis* (Meade-Waldo) and a few species of small *Lasioglossum* were found in the same section. The mode of occurrence of bee species in Kanoya City strongly suggests that *Pasites esakii* is a parasite of *Pseudapis mandschurica*. In Europe, *Pasites maculatus* is known to be parasitic on *diversipes* and other species of *Pseudapis* (formerly known as *Nomia*).

In mid-September, *Pseudapis* females were in full activity, while the specimens of *Pasites* collected at that time were all worn out to some extent on the wing margins, and no male was found. These facts may suggest that the peak activity period of the two bees do not exactly coincide, as often observed in other parasitic bees such as *Nomada*.

ACTIVITY: A quiet, low, daytime flier, like species of *Epeolus* or *Triepeolus*.

FLOWER RECORD: *Scilla scilloides* (Jap. name, Tsurubo) and *Kalimeris yomena* (Jap. name, Yomena).

Reference

- Popov, V. B. and K. Yasumatsu. 1935. Notes on the bee genus *Pasites* Jurine (Hymenoptera, Nomadidae) with description of a new subspecies of *P. maculatus* Jurine from south Manchuria. *Mushi*, 8: 97-104, 1 pl.