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DISCOVERY OF COSMOPHORUS KLUGI RATZEBURG
IN JAPAN
(HYMENOPTERA, BRACONIDAE)

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In the course of the writer's studies on Hymenopterous parasites of bark beetles an aberrant species of the Braconidae has been discovered. After careful examinations through the literature the writer has arrived at the conclusion that the Braconid should be identified with *Cosmophorus klugi* Ratzeburg which is new to Japan.

Subfamily **Cosmophorinae** Muesebeck and Walkley

Genus ***Cosmophorus*** Ratzeburg

Cosmophorus Ratzeburg, Ichneum. Forstinsect. II: 71, 1848.

Type: *Cosmophorus klugi* Ratzeburg, 1848.

This genus is one of the most peculiar genera of the Braconidae, being distinctive by the following aspects:—

Mandibles strongly developed, projecting forwardly, forming a large semi-circular opening with clypeus; clypeus small, but not emarginate anteriorly; maxillary palpus 4-segmented; labial palpus 1-segmented; eyes small, not prominent; antennal base abnormally developed; fore wing with two cubital cells, the first confluent with first discoidal cell; first abscissa of radius very short; nervus parallelus interstitial; first abdominal segment subsessile or sessile, with spiracles situated near the base.

Most authors in the Braconidae since the publication of Foerster's classification have placed this genus in the subfamily Euphorinae. Recently, Muesebeck and Walkley (1951) have made up a distinct subfamily—Cosmophorinae—for this and the North American genus *Cosmophorinus* Viereck, placing it near the subfamily Doryctinae. This placement is, however, still open to discussion, since it seems that the mouth opening of the Cosmophorinae differs morphologically from that of the Doryctinae and any other subfamilies belonging to the Cyclostomini group.

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Cosmophorus klugi Ratzeburg

Cosmophorus klugi Ratzeburg, Ichneum. Forstinsect. II: 72, Pl. 2, Fig. 37, 1848; Sachtleben, Beitr. Ent. 2: 145 & 159, 1952.

Cosmophorus lapponicus Heqvist, Ent. Tidsk. 76: 87, Fig. 1 c, 1955.

Cosmophorus klugi Čapek, Act. Ent. Mus. Nat. Prag. 32: 157, Figs. 3-5, 1958.

Specimens examined: 2♀♀, Okoppe, Hokkaido, Japan, 8, X, 1958, C. Watanabe leg.

This species is characterized by the following features:—

♀. Head cubical, smooth and shining, with hind margin slightly convex. Front between antennae and anterior ocellus shallowly impressed with a median keel extending to the ocellus; maxillary palpus longer than mandible. Antennae 19-segmented (rarely 16~18-segmented). Propodeum almost smooth, with lateral sides and posterior face weakly reticulate, and with an irregular median longitudinal carina. Radius not extending to wing margin. First abdominal tergite gradually widened towards apex, about 1.5 times as long as wide at apex, wholly reticulate; second tergite smooth with the extreme base striate-rugose; ovipositor rather shorter than abdomen. Length 2.2~2.5 mm.

The present specimens from Japan closely agree with the descriptions of *klugi* given by the European authors stated above, but it would seem from the specimens that *klugi* is somewhat variable in colour and sculpture:—The Japanese specimens are rather black. The face, mandibles, propodeum and first abdominal tergite are more or less brownish, and the palpi, four basal antennal segments, tegulae and legs are yellow. Furthermore, in one specimen the propodeum is almost smooth, while in the other that is mostly weakly reticulate, and the right antenna is 20-segmented and the left 19-segmented.

This species appears to be a solitary endoparasite of the adults of bark beetles. Čapek (1958) gives the following species of Ipidae as its hosts in Europe:—*Polygraphus polygraphus* Linné, *Ips typographus* Linné, *Ips amitinus* Eichhoff, *Hylurgops glabratus* Zetterstedt, *Estenoborus perrisi* Chapuis, *Dryocoetes autographus* Ratzeburg, *Pityogenes bidentatus* Herbst, *Pityokteines vorontzovi* Jacobson and *Pityokteines spinidens* Reitter.

In Japan this species would seem to be parasitic on *Polygraphus proximus* Blandford, since the present specimens were found in the gallery of the beetle.

Distribution: Europe (Germany, Austria, Poland, Sweden, Czechoslovakia and Jugoslavia, after Čapek) and Japan (Hokkaido).