

Fungus Gnats Associated with Flowers of the Genus *Arisaema* (Araceae)

Part 1. Mycetophilidae (Diptera)¹⁾

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Abstract This is the first in a series of papers on the fungus gnats associated with the flowers of *Arisaema* spp. in Japan. It includes the records of three species of the genera *Mycomya* and *Rymosia*, and description of a new species, *Exechia arisaemae*.

Key words: Mycetophilidae; Diptera; *Arisaema*; new species; Japan.

TANAKA (1990) observed a large number of sciarid-gnats had been dead on both staminate and pistillate flowers of *Arisaema angustatum* FRANCH. et SAVAT. It is stated that their response to flower smell was extremely high as compared with those of other insect groups. But, no species of the Mycetophilidae has hitherto been recorded. I have had a good chance to examine some specimens of the Mycetophilidae and Sciaridae collected from the spadices of *Arisaema* spp. at various localities in Japan. Of the four species of mycetophilid-gnats now reported, *Exechia arisaemae* is new to science. Species of the Sciaridae will be reported in the next part of this series.

The holotype is deposited in the collection of the Entomological Laboratory, Kyoto Prefectural University, Shimogamo, Kyoto.

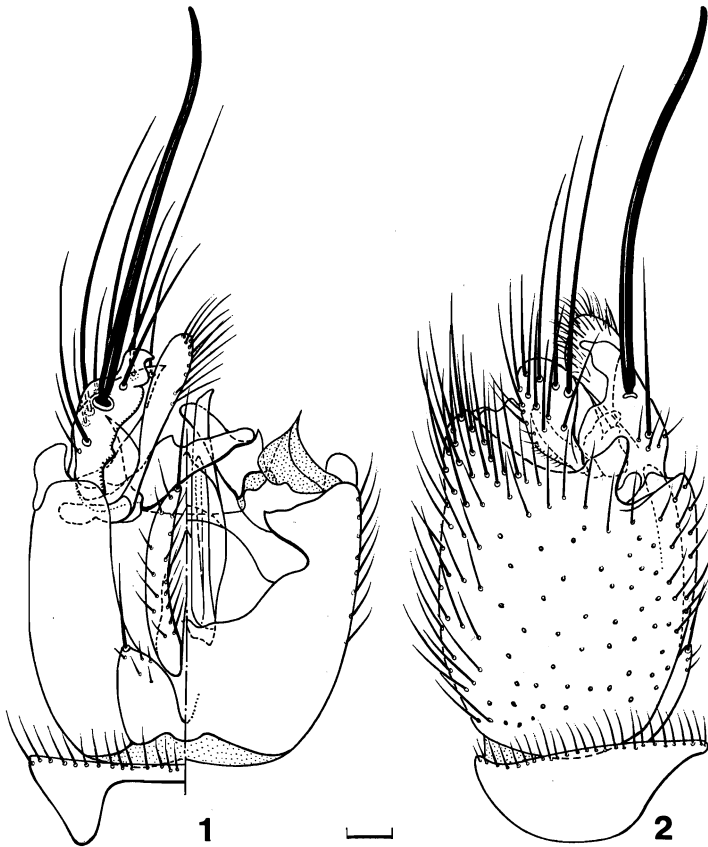
1. Two species of the genus *Mycomya* RONDANI

The following two species were found to respond to the flowers of *Arisaema* spp.

***Mycomya fasciata* (GIMMERTHAL):** Two females on staminate flowers of *Arisaema serratum* (THUNB.), and one male and seven females on the pistillate were collected in Nittyu, Tateyama-machi, Nakaniikawa-gun, Toyama Pref., on 5 May 1991, by M. ODAKI. This fungus gnat is new to the Japanese fauna.

***Mycomya ornata* (MEIGEN):** Only one male on a pistillate flower of *A. serratum* was collected by ODAKI at the same time of collection of the preceding species. Also, six males on pistillate flowers of *Arisaema yamatense* NAKAI were collected in Kyoto, 2 May 1992, by MASUYAMA. It is said that the larvae of this species overwinter within fungi, *Corticium* spp. (Hymenomycetidae) in Europe (PLASSMANN,

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Figs. 1-2. Male genitalia of *Exechia arisaemae* n. sp. — 1, Dorsal (left half) and ventral (right half) views; 2, lateral view. Scale 0.1 mm.

1969) (See SASAKAWA, 1961).

2. Description of a new species of the genus *Exechia* WINNERTZ

Exechia arisaemae n. sp.

(Figs. 1-2)

Female. Head with vertex and frons brown, grayish pruinose and covered with yellow setulae; occiput and orbit yellow; fronto-orbital bristles brown, 4-6 in a row between vertical angle and level of ocellus; frons with a pair of median antero-marginal bristles brown and extremely longer than other marginals; eye microscopically hairy; lateral-ocellus black; face yellow; clypeus yellow, densely setulose; antenna with scape and pedicel yellow, flagellar segments yellowish to pale brown except for basal half of first segment yellow; palpus yellow.

Thorax yellow to testaceous yellow; mesonotum with three brown, sparsely gray-dusted, longitudinal vittae, and a brown transverse band extending from level of prescutellar bristles to anterior margin of scutellum; median vitta separated from lateral ones by yellow lines along rows of dorso-central bristles, distinctly narrowing posteriorly; lateral vitta broadening posteriorly and ending before level of prescutellars; all bristles brown but setulae yellow; prescutellars growing on yellow ground; scutellum dark brown except for antero-lateral corners triangularly and outer margin narrowly yellow, with apical bristles at edge of brown area, accompanying by a pair of setae before those; postnotum dark brown medially; pleura yellow, dorsal parts of meso- and pteropleura, and ventral parts of sterno- and hypopleura brown tinged; pronotum and propleuron each with two long setae.

Wing hyaline, faintly tinged with yellow anteriorly; costa extending to apex of R_s ; Sc free, shorter than $r-m$; R_s almost straight; $r-m$ about twice as long as stem of M ; forking point of Cu distinctly beyond that of M or level of R_s ; halter whitish yellow. Legs yellow; tibiae faintly brown tinged, tarsi and spurs pale brown; fore metatarsus a little longer than tibia; hind coxa with a bristle near lateral base; hind tibia with a row of 6–7 bristles on internal posterior side and of 10–11 bristles on the external; inner spurs on mid and hind tibiae each a little longer than the outer.

Abdominal tergites and ovipositor testaceous; T1 dark brown except for posterior margin narrowly and lateral margin broadly yellow; T2–6 each with brown median vitta extending over the whole length of segment in the form of triangle; sternites yellow; ovipositor sometimes faintly brown tinged on dorsal side.

Length of wing 3.2–4.6 (holotype) mm, of body 3.5–4.5 (holotype).

Male. Similar to female, but T4–5 entirely brown, T6 brown excepting posterior margin; genitalia testaceous yellow, as in Figs. 1–2, stylomere with a long and stout seta-like spine. Length of wing 3.0 mm, of body 3.7.

Holotype: ♀, on pistillate flower of *Arisaema negishii* MAKINO, Sueyoshi, Hachijō Is., Tokyo, 17 Dec. 1989, H. TAKAHASHI (KPU No. 257).

Paratypes: 1 ♂ 2 ♀, same data as for the holotype excepting collecting date, 30 Dec. 1989.

Distribution. Japan (Is. Hachijō).

Remarks. This species is closely related to the European *Exechia nigroscutellata* LANDROCK and *E. spinosa* BUKOVSKI in the coloration, but the male genitalia are entirely distinct (see Taf. VIII, Fig. 3 for *nigroscutellata* by LANDROCK, 1927; Fig. 1 for *spinosa* by MATILE, 1963).

3. An undetermined species of the genus *Rymosia* WINNERTZ

Rymosia sp.: A female on a flower of *Arisaema negishii* was collected in Ohkagou-Eigou, Hachijō Is., on 21 Dec. 1989, by H. TAKAHASHI.

It differs from *R. domestica* (MEIGEN) (*Nami-tomonaga-kinokobae* in Japanese) in the number of apical scutellar bristles (only two as in *macrura*), while from the

European *R. macrura* WINNERTZ in the presence of short but distinct bristles on the mesonotum as in *domestica*. Also, the distinctive coloration clearly indicates that it is an undescribed species, but I think that the formal description should be delayed until the males are available.

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