

Agaonid fig wasp from *Ficus sundaica* (Hymenoptera, Chalcidoidea)

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There is some ambiguity in the name *Ficus indica* as used until recently. According to CORNER (1960: 381—384), *Ficus indica* Linn. is a synonym of *Ficus benghalensis* Linn., the great Indian banyan, while *Ficus indica* sensu King is the same as *Ficus sundaica* Bl.

The host of *Blastophaga* (*Eupristina*) *masoni* (Saunders), recorded by SAUNDERS (1882: 163; 1883: 7) as "*Ficus Indica*", most probably is *Ficus benghalensis* Linn.; cf. GRANDI (1928: 81), who recorded *Eupristina* cf. *grassii* Grandi (probably the same as *B. (E.) masoni*) from "*Ficus bengalensis* (= *F. indica* L.)".

A sample from Sarawak, recently collected by E. J. H. CORNER, contains the Agaonid fig wasp of *Ficus sundaica* Bl. This *Blastophaga* belongs to the subgenus *Waterstoniella* Grandi. It is identical with the wasps recorded by WATERSTON (1921: 35) as *Blastophaga jacobsoni* Grandi, and may be described as follows.

Blastophaga (*Waterstoniella*) *sundaica* spec. nov.

Blastophaga jacobsoni Grandi; WATERSTON, 1921, *Bull. ent. Res.* 12: 35 (4 ♀, "from a fig", Siol, Sarawak, leg. J. HEWITT, VIII.1908).

MATERIAL. — 6 ♀, 31 ♂, coll. Museum Leiden no. 657; Matang Rd., Kuching, Sarawak, 26.XI.1961, ex *Ficus sundaica* Bl. (leg. et det. E. J. H. CORNER); holotype, ♀, slide no. 657a, allotype, ♂, slide no. 657b, paratypes, 1 ♀, ♂, slides nos. 657c—e.

5 ♀ (partly dissected) on 3 slides, coll. British Museum; "from a fig procured at Siol, Aug. 08".

FEMALE. — Head nearly as long as wide across the compound eyes. Compound eyes large, the longitudinal diameter more than twice the length of the cheek. No ocelli could be observed. Face moderately pubescent. Epistomal margin faintly trilobate, the median lobe wide, subequal to the lateral expansions; close to the distal angle of the cheek, above the outer edge of insertion of the mandible, a patch of small, blunt, spine-like hairs is apparent. Antenna (fig. 4) consisting of eleven free segments, the last three of which are shaped so as to form a club; the scape nearly four times as long as the pedicel, expanded ventrad; the pedicel with some long hairs on both the axial and antiaxial surfaces; the third segment and its appendages fused, reaching beyond the proximal third of the fifth segment; the fourth segment short, the fifth almost twice as long, the sixth distinctly smaller than the fifth and subequal in size to the ninth and tenth, the seventh and eighth largest, the eleventh smallest; the fifth to eleventh segments bear very wide sensilla, on some segments placed so as to almost fill the total surface; the distal segments have some sensillar cones in the ventro-distal corners; the pubescence



Figs. 1—15. *Blastophaga (Waterstoniella) sundaica* spec. nov. 1, ♀ hind tibia and metatarsus, anti-axial aspect; 2, ♂ hind tibia and tarsus, anti-axial aspect; 3, ♂ fore tibia and tarsus, axial aspect; 4, ♀ antenna, anti-axial aspect; 5, ♂ mid tibia and tarsus, anti-axial aspect; 6, ♀ mandible, ventral aspect; 7, ♀ fore tibia and metatarsus, anti-axial aspect; 8, ♀ fore tibia and metatarsus, anti-axial aspect; 9, ♂ head, dorsal aspect (pubescence omitted); 10, ♂ mandible, dorsal aspect; 11, ♂ antenna, ventral aspect; 12, ♂ antenna, detail in dorsal aspect (slightly oblique); 13, ♂ thorax, dorsal aspect (pubescence omitted); 14, apex of ♂ fore tibia, and metatarsus, anti-axial aspect; 15, ♀ labium and maxilla, ventral aspect.

Figs. 1—3, 5—8, 10—12, 14, 15, $\times 250$; 4, $\times 160$; 9, 13, $\times 100$.

is very sparse. Mouth-parts, figs. 6, 15; the labium with one apical hair, the maxilla with two subapicals; the mandible of the usual shape, with one gland; the mandibular appendage with ten ventral ridges.

Thorax. Fore wing (5 : 2), 1.6 mm long; the submarginal, marginal, stigmal, and postmarginal veins approximately in ratio 4 : 2 : 1 : 2, the submarginal and stigmal veins both with three pustules. Hind wing (4 : 1), 0.6 mm long. Both wings are heavily though minutely pubescent; the fringe, particularly that of the hind wing, is very long; the fore wing has darker striae. Fore leg (figs. 7—8): the coxa with hyaline, spine-like hairs on the axial disc; the femur with sparse long pubescence; the tibia, not quite half as long as the femur, with dorsal hairs, some longer and stouter hairs on the antiaxial disc close to the distal margin, and spine-like hairs (none of which is particularly long) in the ventral part of the axial disc; the apical armature of the tibia consisting of two large dorsal teeth and a much smaller in between, and one ventral; all tarsal segments with ventral and apical spines, the lengths approximately in ratio 18 : 8 : 9 : 7 : 16. Mid leg slender, moderately pubescent; the tibia straight, almost as long as femur and trochanter combined, with one ventral spur; the lengths of the tarsal segments approximately in ratio 15 : 9 : 8 : 7 : 12. Hind leg (fig. 1): the coxa as large as the femur, with a patch of axial spines; the femur sparsely pubescent, with a row of hyaline spines on the axial disc close to the ventral margin; the tibia almost as long as the femur but narrower, with sparse pubescence, the sculpture longitudinally reticulate; the apical armature of the tibia consisting of two ventral teeth (the antiaxial one robust, deeply bidentate; the axial more slender, spur-like), and a long spine at the dorso-apical angle; the tarsal segments with hairs, ventral and apical spines, the proximal segments provided with a dense plantar fringe, the lengths approximately in ratio 22 : 12 : 12 : 9 : 13.

Gaster. The ovipositor twice as long as the body.

Length (head, thorax, and gaster), 1.4 mm. Colour yellow-brown, the eyes black; the wing-nervures brownish.

MALE. — Head (fig. 9) transverse, approximately one and a half times as wide as long; with scattered, very small hairs. Eyes large. Antenna (figs. 11—12) four-segmented; the scape as long as the other segments combined, stalked, expanded distad; the pedicel short, the funicular segment not much shorter than the pedicel, both segments only partly sclerotized, with some small hairs; the ultimate segment large, globular, with sensilla (most of which are visible in dorsal aspect), sensillar rods, and hairs. Mandible (fig. 10) bidentate, with one gland; other mouth-parts atrophied.

Thorax (fig. 13) minutely pubescent. Pronotum wider than long, with the anterior expansion subhyaline, tapering frontad. Mesonotum, metanotum, and propodeum fused, their lengths, measured along the lateral margins where the segments are separate, subequal; the spiracular peritremata of the propodeum sub-circular, situated close to the antero-lateral margins. In all legs, the tarsi are pentamerous, but some segments are fused or incompletely separate; the measurements recorded below, were taken along the dorsal margins. Fore legs (figs. 3, 14): the coxa large, subquadrate; the femur twice as long as the tibia; the tibia moderately

pubescent, the apical armature consisting of two large dorsal teeth, two smaller ventrals, and an antiaxial ridge of alternating small lobes and stout hairs; the metatarsus with two ventral, conical spines, and one axial, longer spine, the second to fourth segments with pairs of long spines, the tarsal segments approximately in ratio 9 : 4 : 4 : 2 : 10. Mid leg (fig. 5) robust; the coxa subequal to the femur, both segments with scattered short (axial) or moderate (antiaxial) pubescence; the tibia more than half as long as the femur, the apical armature consisting of three dorsal, and three ventral teeth, and some stout hairs; the tarsus more slender than that of the fore leg, otherwise similar, the segments approximately in ratio 8 : 3 : 4 : 2 : 7. Hind leg (fig. 2): the femur subglabrous on the disc, some moderately long hairs occur in the distal quarter and along the dorsal and ventral margins; the tibia more than half as long as the femur, with scattered spine-like hairs, the apical armature consisting of a dorsal tooth accompanied by a subapical, conical spine, ventrally a bilobed antiaxial crest and a bidentate axial tooth are visible; the metatarsus with four ventral, conical spines, and one axial, longer spine, the second segment with two ventral, conical spines, the third and fourth with pairs of long spines, the segments approximately in ratio 8 : 3 : 3 : 4 : 6.

Gaster. The aedeagus is rather long and slender; the genitalia have no parameres, and no claspers.

Length (head and thorax), 0.9 mm. Colour light yellow-brown.

REMARKS. — Some characters by which the female of *Blastophaga* (*Waterstoniella*) *sundaica* spec. nov. may be distinguished from that of *B. (W.) jacobsoni* Grandi (1917: 21—27, figs. VII—VIII) are to be found in the epistomal margin, the median lobe of which is less prominent, and the patch of lateral, spine-like hairs larger; the surfaces of the antennal segments are more closely set with sensilla, and circular sensilla are lacking; the fore tibia lacks the conical spine next to the dorsal-most apical tooth; the metatarsus of the mid leg is not nearly twice as long as the second tarsal segment; the hind tibia bears a row of axial spines along the ventral margin. WATERSTON (1921: 35) noted that in his material the pilosity of the thorax was not quite typical for *B. jacobsoni*; his remark "the first mid-tarsal is not longer than the second", although not correct, draws the attention to a differential character: the length-ratio of the first and second segments of the mid tarsus is approximately 1.5 for *B. sundaica* (also in WATERSTON's specimens), and 2.0 for *B. jacobsoni*.

The male may be compared with the two other males known in the subgenus *Waterstoniella* viz., *B. (W.) jacobsoni* Grandi (1917 : 27—32, figs. IX—X) and *B. (W.) masii* Grandi (WIEBES, 1966). It appears to be close to *B. jacobsoni*, but it is distinct by the following characters. The antennal funicle consists of only one segment, versus three in the other species; the thorax is different, particularly in the shape of the anterior expansion of the pronotum, and in the shape of the metanotum; the tarsi of the legs are partly fused; the fore and mid tibiae lack the dorsal, conical spines (variable, but always present in *B. jacobsoni*, absent in *B. masii*; cf. WIEBES, 1966, figs. 8—9, and 1, respectively); the mid leg is more robust; the hind tibia has only one dorsal, conical spine, versus five in *B. jacobsoni* and *B. masii*, and the antiaxial crest is not motile.

The host, *Ficus sundai* Bl. (subsection *Dictyoneuron* Corner, section *Conosycea* (Miq.) Corner of the subgenus *Urostigma* (Gasp.) Miq.) belongs to another subsection than do the hosts of *B. masii* and *B. jacobsoni* (*Ficus stupenda* Miq. and *F. crassiramea* Miq., respectively; subsection *Conosycea* (Miq.) Corner). As far as known now, the subgenus *Waterstoniella* is restricted to host *Ficus* of the *Conosycea* subseries *Crassirameae* Corner and the *Dictyoneuron* series *Subvalidae* (Miq.) Corner.

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Achteruitgang van de vlinderfauna

door

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In de omgeving van Heerlen en Brunssum mis ik de laatste tien jaren veel soorten vlinders, die daar voordien zeer algemeen waren. De meeste daarvan zijn soorten, die althans vroeger door vrijwel iedereen als gewoon beschouwd werden. De oorzaken van deze achteruitgang laat ik in het midden. Wel zou het interessant zijn de ervaringen van anderen in hun eigen omgeving met de mijne te kunnen vergelijken. Als meest opvallende voorbeelden noem ik de volgende:

Carterocephalus palaemon Pallas. Laatste vangdatum: 30 mei 1955 in het Ruischerveld. Daarna niet meer waargenomen.

Heodes tityrus Poda. Laatste vangjaar 1955. Daarvoor zeer algemeen in de thans in ontginning zijnde kleigroeven in het Ruischerveld.

Plebejus argus L. Tot 1955 zeer algemeen op de Brunssumer Heide, daarna zeldzaam.

Cyaniris semiargus von Rottemburg. Ook voor 1955 was deze soort hier zeldzaam, maar daarna heb ik hem nooit meer gezien.

Araschnia levana L. Het laatst gezien in 1955. Daarvoor zeer gewoon.