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NOTES ON TWO SPECIES OF JAPANESE BETHYLOIDEA* (Hymenoptera)

By

Keizô **Yasumatsu**

1. A new species of *Anteon*

Professor Teiso Esaki made his last collecting trip to the Hikosan Biological Laboratory, Kyushu University, in May of 1957. Miss Eri, the youngest daughter of Prof. and Mrs. Esaki, and I joined him for two days. On the campus of the laboratory (about 600 meters in altitude) I found a last instar nymph of *Ledra auditura* Walker (Homoptera, Ledridae) which he was anxious to get. To our surprise Professor Esaki noticed that nine larvae of a parasitoid were attached to the ventral side of the nymph. The larvae were allowed to enter the soil where they spun their cocoons. At first we were puzzled as to what group of insects they belonged. It was the opinion of Professor Esaki that the parasitoid was probably a Bethylid. Mr. H. Kuroko, of the Hikosan Biological Laboratory, continued his effort to obtain the adults from them. The mature larvae overwintered in the cocoons and, in the spring of 1958, Mr. Kuroko was successful in rearing a couple of the adults of this parasitoid, which finally proved to belong to the genus *Anteon* of the Bethyloidea. Professor Esaki died before Christmas but it is my sincere belief that he would have wanted this information published, so it seems particularly fitting to make it available for this issue.

It is with pride and deepest sincerity that I dedicate this species to the memory of my esteemed teacher, the late Professor Esaki.

Anteon esakii sp. nov.

Female. Black; palpi pale yellowish ; mandibles (basal third black), antennae (darkened distally) and legs (more or less extensive dorsal part of mid-femora

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Contribution Ser. 2, No. 8, Hikosan Biological Laboratory, Kyushu University, Hikosan.

and hind coxae and femora black), and tegulae bright brownish-orange yellow; distal part of fore and mid-femora and fore tibiae and tarsi paler. Wings hyaline, venation yellow, margins of pterostigma somewhat a little darker.

Surface of body (except abdomen) with moderately numerous, outstanding, silvery hairs which are denser on anterior part of head.

Eyes bare; head, seen from above (including eyes) almost twice as wide as long, vertex between eyes half as long again as wide, sides parallel in front, posteriorly with a rather weakly curved raised margin, the anterior side of which is hardly crenate. Head, seen in front, distinctly wider than long; anterior margin of clypeus roundly produced. Malar space about as long as the width of the anterior margin of clypeus. Ocelli arranged in a somewhat obtuse-angled triangle, POL slightly longer than OOL, lateral margins of head behind eyes as long as OOL, distance between occiput and posterior ocelli as long as POL. Antennae rather long, distinctly thickened distally, segment 1 with distal half a little thicker, slightly but distinctly curved, segment 2 nearly cylindrical; relative lengths and (widths) of the segments of antenna—25(6) : 12(4) : 16(4) : 12 (5) : 12(5.5) : 13(6) : 13(6) : 13(6) : 12(5) : 15(4). Mandibles sharply quadridentate. Vertex moderately to considerably shining, weakly alutaceous. Above antennae rugosely and confluently punctured, the part between this rugose area and ocelli with a number of shallow punctures; lateral keels very distinct, central keel also quite distinct; curved impressions at sides of posterior ocelli obsolete.

Pronotum very short, more than twice as wide as long, moderately shining, rugose, with a narrow, posterior, smooth strip; mesonotum smooth, shining, provided with large punctures which are rather shallow and denser anteriorly; notaulices shallow, extending half-way across ; scutellum nearly flat, smooth,

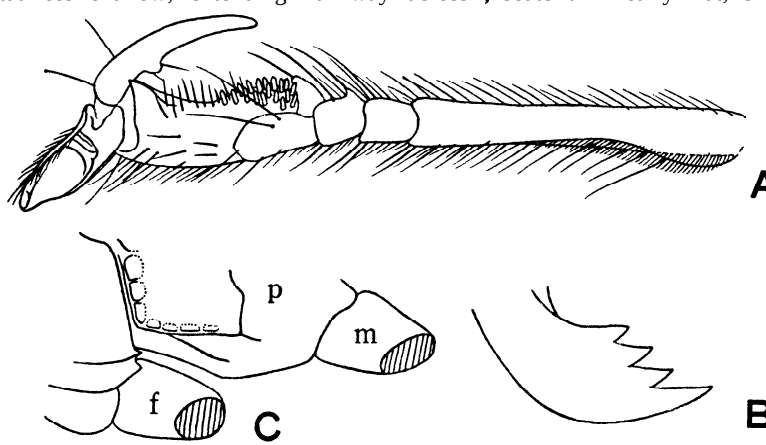


Fig. 1. *Anteon esakii* and *Embolemus walkeri.*

A, Fore tarsus of *A. esakii*, ♀. B, Mandible of *A. esakii*, ♀. C, Mesopleuron of *E. walkeri*, ♂, showing the carina. (f, fore coxa. m, mid-coxa. p, mesopleuron).

shining, with a few punctures, posterior crenate furrow weak; metanotum with a large shining central area; mesopleuron anteriorly closely and rather rugosely punctured, rather dull, the remaining part dull, rugose, postero-ventral portion smooth, shining ; metapleuron dull, with some oblique or longitudinal rugae; propodeum with dorsal and posterior surfaces distinctly separated, former about one-third to one-fourth as long as the latter, surface dull, finely clathrately rugose, posterior surface defined above by a more or less distinctly transverse keel and laterally by two longitudinal keels which are divergent above, centrally with an area twice as long as wide whose surface is provided with several transverse rugae. Fore legs with tarsal segment 1 as long as segments 2-5 combined, 2 somewhat quadrate, 3 laterally produced, 4 laterally produced, slightly longer than wide, shorter than 2-3 combined, articulating part of 5 distinctly shorter than basitarsus, free part about as long as 4, segment 5 with about 17 bristles and a distal group of about 18 small lamellae; enlarged claw thick and curved.

Abdomen smooth and shining.

Body length ca. 5 mm., fore wing length ca. 4 mm.

Male. Antenna1 flagellum much darker, base of fore coxae blackish. Venation much darker, pale brownish.

Head, seen from above (including eyes) twice as wide as long, but vertex between eyes one-third again as wide as long. Ocelli arranged in a distinct obtuse-angled triangle, OOL distinctly longer than POL, lateral margins of head behind eyes as long as POL, posterior ocelli removed from occiput by the length of POL. Antennae long and thin, with dense pubescence about as long as diameter of segments, segment 1 cylindrical, slightly curved, 2 somewhat pyriform ; relative lengths and (widths) of the segments of antennae—21(6) : 12(5) : 13.5(6) : 13.5 : 13 : 13 : 12.5(4) : 12 : 12 : 12 : 16.5(3). Vertex rather dull, shallowly but closely and rather rugosely punctured; lateral and central keels very weak.

Pronotum very short, more than twice as wide as long, weakly rugose; mesonotum smooth and shining, anterior half sparsely and shallowly punctured, posterior half very sparsely and very shallowly punctured; notaulices weak, extending nearly half-way across ; scutellum almost impunctate, posterior furrow rugose ; mesopleuron anteriorly finely rugose, dull, postero-dorsally shining, finely rugose, postero-ventrally smooth and shining; metapleuron dull with some longitudinal carinae or rugae; propodeum as in the female, but area of posterior face smoother and wider, more shining and more strongly defined, dorsal area one-fifth as long as posterior.

Body length ca. 4 mm., fore wing length ca. 3.5 mm.

Type locality.-Hikosan (Mt. Hiko), Kyushu, Japan.

Holotype.-Female, Allotype.-Male. March, 1958, Hikosan, Fukuoka Prefecture, Kyushu, Japan, reared by H. Kuroko.

Host insect.—*Ledra auditura* Walker (Homoptera, Ledridae).

This new species is somewhat allied to *Anteon fuscipes* (Thompson, 1860) and *A. maculipennis* Kieffer, 1860, but differs from them in having much shorter

antennae. The structure of the fore legs of the present species is similar to that of *A. flavicorne* (Dalman, 1818), but this new species is easily separable from it by the relative structure of each segment.

2. Male of *Embolemus walkeri* Richards

Through the kindness of Professor T. Ishihara of the Entomologicol Laboratory, Ehime University, I was able to examine three specimens of the male of *Embolemus walkeri* Richards.

Embolemus walkeri Richards

1951. *Embolemus walkeri* Richards, Ann. Mag. Nat. Hist. ser. 12, 4: 814—815, ♀ (Original description, type localities-China and Japan (Honshu)).
1954. *Embolemus walkeri* Yasumatsu, Gensei 3: l-2, ♀, fig. (Record from Shikoku, Japan).

Male (hitherto unknown). Blackish-brown, with antennae and legs pale brown; palpi much paler; wings a little infuscate, pterostigma and veins brown. Surface with sparse, very short, pale pubescence.

Head subpyriform in shape, the "stalk" of the pear being a short projection to which the antennae are attached; seen from above, transversely subrectangular, three-quarters as long as wide, the sides very slightly converging posteriorly, posterior angles rounded ; distance from eye to posterior margin of antenna1 socket nearly half the minimum diameter of eye; distance from eye to occipital margin shorter than the minimum width of eye, distance from eye to base of mandibles about as great as that from eye to antenna1 socket; eyes bare and oval, ratio of maximum length to minimum length being 8 : 5; ocelli prominent, arranged in an equilateral triangle, median ocellus well in front of a line drawn through hind margin of eyes, posterior ocelli separated from occiput by four to five times distance between them; clypeus moderately transverse, rather strongly convex (not keeled) with a round ventral margin; above clypeus two converging impressed lines extending upwards, defining a narrow, triangular area, its upper portion opened; antennae distinctly longer than whole body, with short pubescence, relative lengths of the segments-6 : 1.5 : 15 : 14: 13 13 : 12 : 12 : 10 : 12, segment 1 three times as long as wide, segment 2 suboval, as long as wide, segment *4* about seven times as long as wide, 3 to 10 gradually decreasing in width, 3 to 9 gradually decreasing in length, 3 to 6 seven times as long as wide and 9 about six times as long as wide ; occiput with a fine completely raised margin. Surface of head smooth and shining.

Pronotum transverse, with posterior margin angulately emarginate, seen from above, widely separated from tegulae, with a well-marked collar at a considerably lower level, surface shining with some rugosities, the sides smoother; mesonotum smooth and shining with a median impressed line on anterior fifth, notaulices present on anterior third, parapsidal furrows distinctly impressed but anterior third obsolete; scutellum feebly convex, smooth and shining, separated from mesonotum by a deep but well-defined depression; metanotum

slightly less than one-third the length of scutellum, rugose; meso- and metapleura smooth and shining, mesopleuron with carinae as shown in Fig. 1; propodeum with dorsal surface ill-defined, as long as wide, covered with irregular fine rugae, moderately shining, posterior and lateral surfaces with irregular stronger sculpture. Legs moderately long, hind femora little thickened, tibiae a little longer than their femora and tarsi than their tibiae, tarsi cylindrical, claws simple, fore tibia with one spur bearing a narrow hyaline cleaning-lamella, mid-tibia with two rather short, narrow spurs, hind tibia with inner spur as long as fourth tarsal segment, outer one two-thirds as long, moderately broad, distally rounded. Fore wings with four closed cells and three others partially closed, pterostigma distally attenuate, hind wings with a well-marked lobe, six straight proximal and four curved distal hamuli.

Abdomen elongate-ovate, truncate posteriorly, almost as long as thorax, petiole very short, seven visible tergites, with the surface smooth, shining and hairless.

Body length ca. 3.5 mm., fore wing length ca. 4 mm.

Distribution.-Japan and China.

Allotype.-Male, 11. xii. 1955, Sugitate, Ehime Prefecture, Shikoku, Japan, M. Okada leg.

Paratypes.—1 ♂, 22. viii. 1954, Saragamine, Ehime Prefecture, M. Miyatake leg., 1 ♂, 23. xi. 1954, Saragamine, M. Okada leg.

This species is very closely related to *Embolemus ruddi* Westwood, but may easily be separated from it in many of the characters given in the description, i.e. the length of antennae, relative lengths of the antenna1 segments, the length of the median impressed line or the parapsidal furrows, etc.

All the specimens treated in this paper are preserved in the collection of the Entomological Laboratory, Kyushu University, Fukuoka.

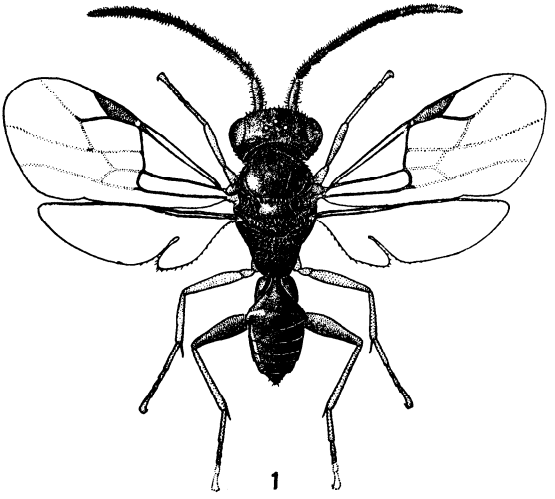
Finally I wish to express my hearty thanks to Mr. Karl V. Krombein of the U. S. National Museum for his kind suggestions in the preparation of the manuscript and to Professor T. Ishihara for the gift of specimens.

Explanation of Plate 6

Fig. 1. *Anteon esakii* Yasumatsu, sp. nov., ♂.

Fig. 2. *Embolemus walkeri* Richards, ♂.

(Mr. Y. Murakami del.)



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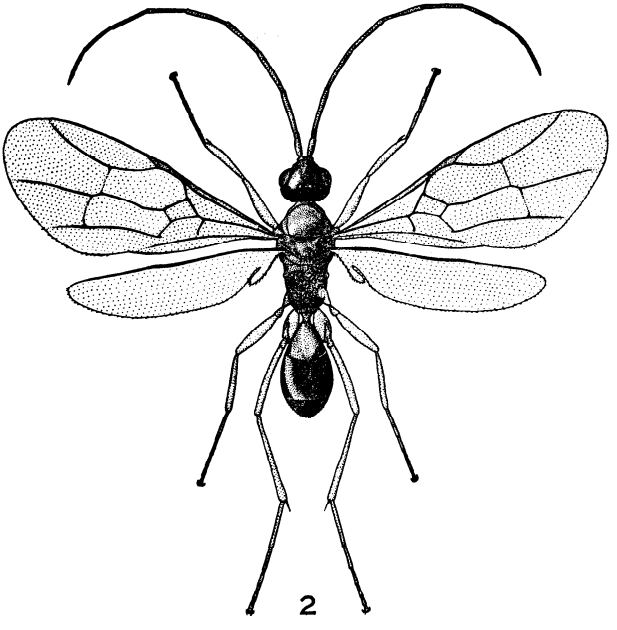

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