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**Description of a New Subterranean Species
including a Male and Female of *Eustochus* HAL.**
(Hym., Mymaridae)

by

O. BAKKENDORF

The writer has received material of a new species of *Eustochus* HALIDAY from Dr. C. Besuchet, of which the type species, *atripennis* HAL. was described in 1833 and redescribed by Debauche, 1948; however no males have hitherto been found. In the new species the single male found is apterous and has 7 funicle joints and a 2-jointed club, a formula not found in any other mymarid genus. The female has the antennal joints shorter and thicker than in *atripennis* HAL. The new species is named in honour of its finder. It was taken by the seaving method, which seems to have been successful in procuring a new ecological section of Mymarids with apterous or otherwise reduced forms, living a subterranean life, and hitherto only found in the Alps of Switzerland and France, e.g. *Stenopteromymar* FERR. 1952, *Anagrella* BKDF. 1961 and *Cleruchus detritus* BKDF. 1964. Description of the species follows below.

***Eustochus Besucheti* n. sp.**

Figs. 1-12

Female, body length 0.74 mm. The whole body coloured brown, scape, pedicel, base of funicle and whole thorax light brown, funicle gradually becoming darker distally, club of antennae, head and gaster dark brown, petiole, legs and ovipositor sheaths, light brownish. Venation and some arch-shape shading crossing the fore wing from near the base of venation and bending outwards at the posterior border, brown, the disc shaded slightly brown, and the anterior border tinged with brown. Both sides of the broad parapsidal depressions and the inner borders of the scutellar pits brown, and the normal sutures also finely marked with brown. Some parts of the gaster and the head carinae almost black, ocelli light, eyes with a slight reddish tinge.

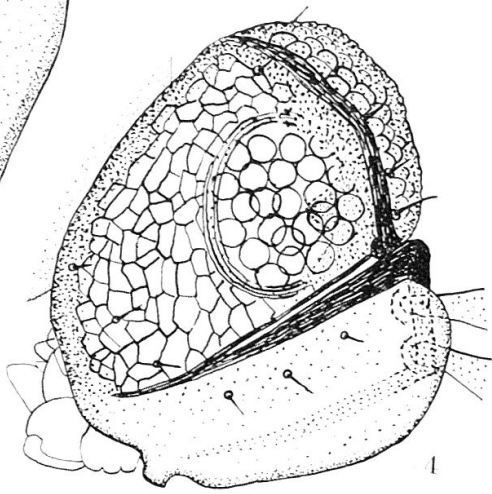
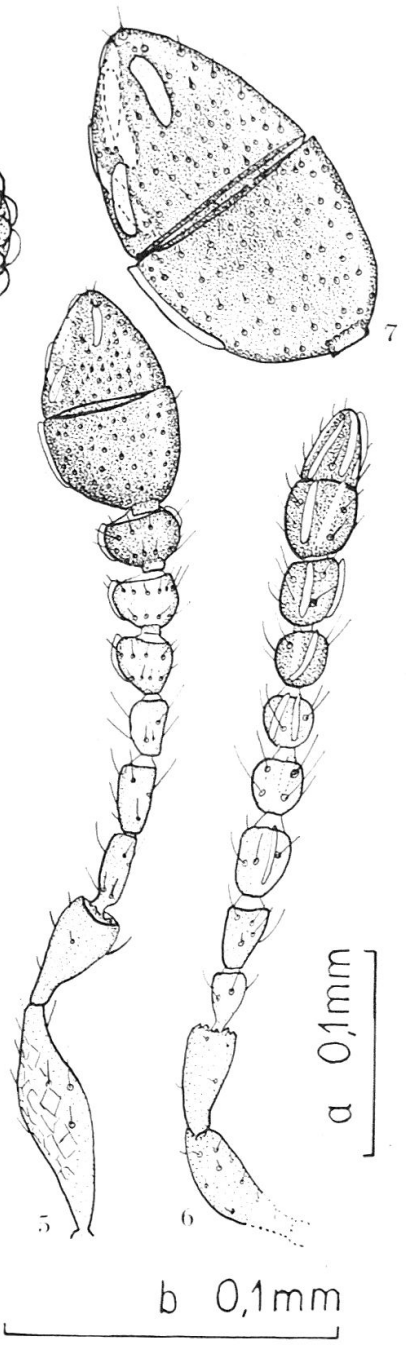
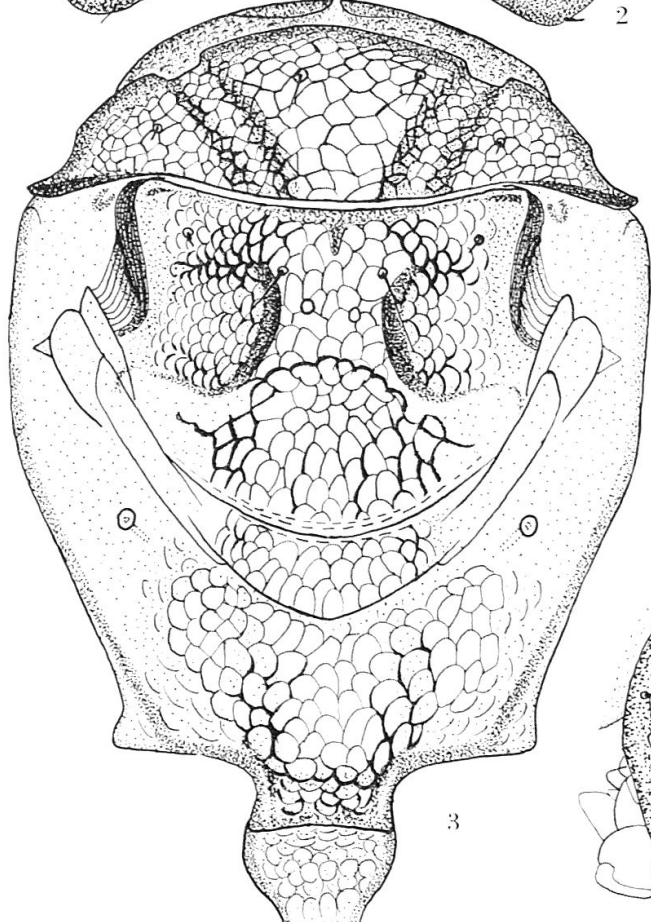
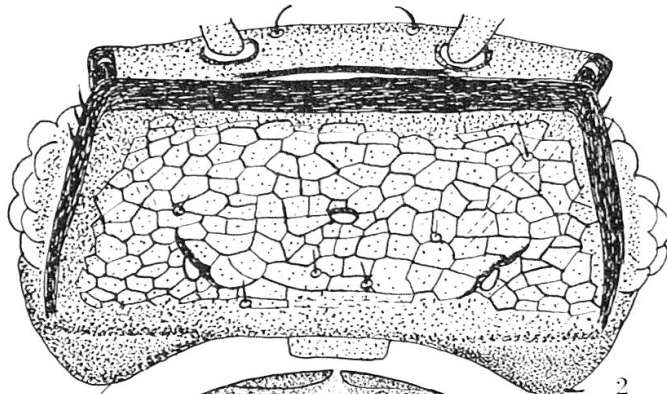
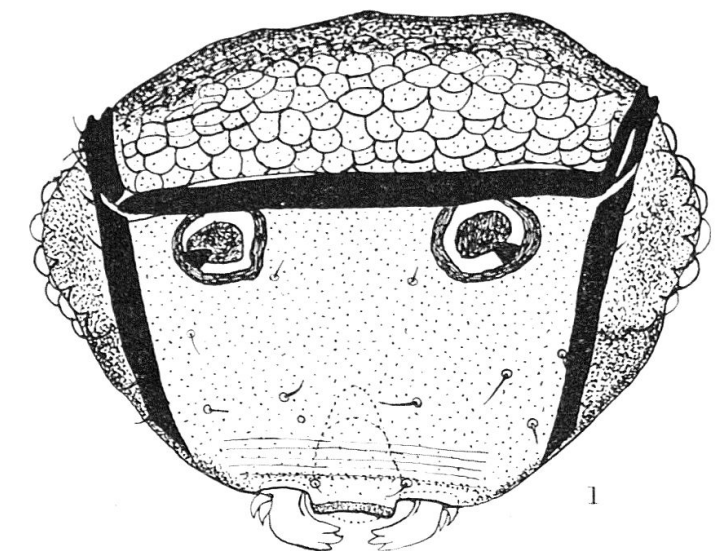
Head in dorsal view rectangular, twice as broad as long (55, 28), reticulate, eyes small (15) with 5-6 facets running across. Ocelli small, in a flat arch, hind ones placed vertically on a fold at the occiput midway between the anterior ocellus and the eye border, hardly visible from above. Occiput straight at the middle, but produced backwards at the sides due to the suborbital carinae. Frons strongly emphasized by the cross carina. Head in frontal view broader than high (53, 41), above the cross carina reticulate-chagrinate, below the carina smooth. Toruli closely situated below the carina, widely separated, the distance between almost twice that to the eyes. Lower face with 6 + 6 setae and some stronger bristles along the carinae, clypeus border slightly concave, labral tubercle produced, its border concave. Labrum represented by a feeble membrane in front of the tubercle. Mandibles slightly yellowish, distinctly 3-dentate. Palpi very small, 1-jointed, hardly longer than broad, with one apical cilium, galea greatly surpassing the maxillary palpus. Head in lateral view somewhat triangularly-rounded, face strongly convex.

Antennae longer than head + thorax (31, 22), about as long as fore body with petiole and a quarter of gaster. Scape inflated at the middle with reticulation lengthened towards apex, pedicel pear-shaped, almost half as long as scape, twice as long as broad, first funicle joint considerably shorter than pedicel (12, 17), second funicle joint shorter and broader than first, third joint shorter but of same breadth, following joints gradually a little shorter and considerably broader, joints 5 and 6 transverse, club as long as four preceding joints together and much broader than funicle, about twice the breadth of last funicle joint, the club broad oval, distinctly divided by a suture in two equal joints. Funicle joint 4 with one, 5 and 6 with two (or one) rhinarium, proximal club joint with one, distal joint with five rhinaria. Length ratio of antennal joints, 35, 16, 11, 10, 8, 8, 8, 8, 32, breadths, 10, 9, 4, 5, 5 1/2, 8, 10, 11, 19.

Head and thorax with propodeum, petiole and coxae roughly reticulate-chagrinate, femora with slight traces of reticulation.

Pronotum narrow, hardly visible from above, divided at meson by a light suture, mesoscutum transverse with broad, deep, channel-like parapsidal depressions without any sutures, the reticulation continuing across the bottom, and interesting in so far as they show an early stage in their development. Scutum with 2 + 2 setae, one at each side of the depressions, tegulae apparently absent, scutellum large, almost twice as long as scutum, rounded behind, with 2 deep lateral pits, the saddle between hardly depressed, 2 setae and 2 placoid

Figs. 1-7. *Eustochus besucheti* n. sp. — 1. ♀, head in frontal view. — 2. same in dorsal view. — 3. body and part of petiole in dorsal view. — 4. head in sublateral view. — 5. antenna. — 6. ♂, antenna. — 7. ♀, club of antenna, — a, scale of figs. 5-6. — b, scale of figs. 1-4, 7.



sensillae near the middle and 1 + 1 seta anterior-laterally. Behind the middle with a forwardly arched frenal line formed by a row of cells. Axillae forming a lateral longitudinally striate band which turns vertically at the anterior position, seen from above as a thick, dark line. Postscutellum linear. Metanotum half as long as frenum, narrowed laterally. Propodeum long, narrowed behind, the corners slightly produced, the middle well produced in a nucha for receiving the petiole. No carina present but the middle is highly elevated, spiracles small, roundish, more than their width from metanotum. Mesophragma almost reaching the nucha.

Fore wings narrow at base, the disc almost elliptical, wing ratio 4 (50, 13), longest fringe 8, the fringes consisting of 66 cilia, anteriorly short, gradually lengthening up to the posterior margin distally, ending with 8 short cilia, without the retinacular fold which is short and stunted at the cross band. The disc densely haired with strong, daggerlike cilia as described in *atripennis* HAL. by KRYGER (1950: 64), base within the cross band with about ten cilia tending to form a line, subcosta with a row of 20 placoid sensillae and one at the middle of venation which has 3 macrochaetae, the middle one proximal to the sensillum. The hypochaeta placed close below the basal macrochaeta, marginal vein long, stigmal vein represented only by a row of 4 placoid sensillae, postmarginal vein absent.

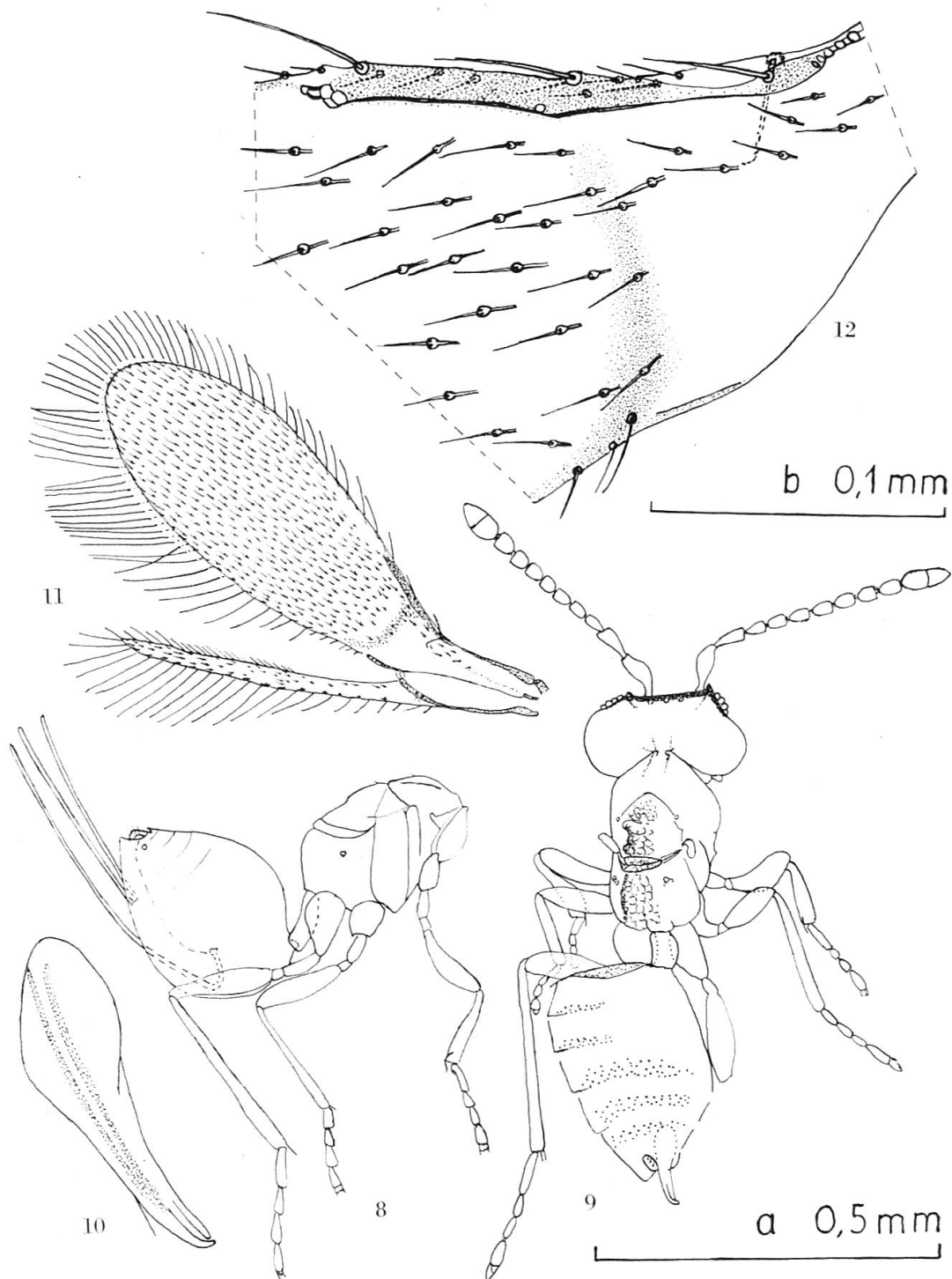
Hind wings slender, parallel-sided, ratio 2, 41, longest fringe 6, anterior border with fringe of 20 cilia longer than wing breadth, hind border with 24 cilia which on outer half are 3 times as long as wing breadth, a submarginal row of cilia present and about 20 cilia spread on the wing disc.

Legs long and slender, fore and hind femora a little thickened, their metatarsus slightly longer than each of the following tarsal joints, except the last, fore tarsi almost as long as tibiae (40, 42), middle tarsi shorter (37, 58), hind tarsi much shorter than their tibiae (55, 92).

Petiole long, somewhat hourglass-shaped. Gaster high, smooth, compressed from the sides, last segment ploughshare-shaped with large pygostyle plates, reminiscent of *Eurytoma* ILL. Ovipositor issuing from near the base, exerted part almost $\frac{1}{2}$ the length of gaster (14, 20).

Apterous male, 0.7 mm. Light yellow brown, the head, club with 2 preceding joints of funicle, and gaster slightly darker, carinae of head almost black.

Antennae composed of scape, pedicel, 7 funicle joints and 2-jointed club; scape slightly fusiform, pedicel twice as long as broad, and twice the length of first funicle joint which is 1.5 times as long as broad, funicle joints broader towards apex, last joint roundish, club ovate, as long as 2 preceding joints together and slightly broader, the cross suture distinct, funicle joints 3-4 with one, 5-7 with two rhinaria, first club joint with 2(3), second with 4 rhinaria. All flagellar joints



Figs. 8-12. *Eustochus besucheti* n. sp. — 8. ♀, body in lateral view, head, left legs and wings omitted. — 9. ♂, in subdorsal view, right tibia and tarsus missing. — 10. phallus. — 11. ♀, wings. — 12. venation of fore wing. — a, scale of figs. 8-9, 11. — b, scale of figs. 10, 12.

with fine hairs in 2 more or less distinct series. Eyes very small with 5 facets running across, cheeks very inflated, seen from above twice as long as diameter of eyes and more backward protruding than in female, thus forming a more angular-concave occiput. Three ocelli present. Thorax much narrower than head and gaster, slenderer than in female, sculpture feeble, pronotum rather large, conical, almost as long as mesonotum, its hind border indistinct. Mesoscutum small, without parapsical grooves, anterior border angularly intruding into pronotum, between scutum and scutellum a distinct suture and likewise a frenal border indicated. Scutellum with lateral pits, metanotum and propodeum as in female. Wing remnants negligible, as also the placoid sensillae of scutellum. Petiole as long as hind coxae. Gaster oblong, longer than thorax, 15, 20. Phallus dilated near the rounded base and thereafter tapering with a downwardbent aedeagus; digits and parameres apparently absent. Length ratio of antennal joints, 26?, 16, 9, 9, 8, 7, 8, 8, 9, 19, breadths, 8, 8, 5, 6, 7, 8, 8, 8, 9, 12. Otherwise as in female.

Material

Switzerland, Valais: 1.VII.1962, Laquintal, 1400–1500 m, moss, 14 ♀♀, 1 ♂ and 1 ♂ *Anaphes* sp. (BESUCHET). 6 slides, each with ♀, 1 with a ♂, the type marked as such, the rest in alcohol. Type and allotype in the Museum of Natural History, Geneva, paratype ♀ in the Zoological Museum of Copenhagen.

Switzerland, Vaud: Taveyannaz, 3.VIII.1962, 1700–1800 m, 1 ♀ (BESUCHET).

Key to the species of *Eustochus* HAL.

- 1(2) Female, body length about 1.1 mm, funicle relatively slender, 4th funicle joint almost twice as long as broad, 6th slightly transverse, club almost twice as long as broad, male unknown **atripennis** HAL.
 2(1) Female smaller, about 0.7 mm, 4th funicle joint transverse, 6th strongly transverse, club thicker, about 1.5 times as long as broad, male with 7 funicle joints and 2-jointed club . . **besucheti** n. sp.

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