

INSECTS IN BURMESE AMBER.

By T. D. A. COCKERELL.

The amber from Burma continues to yield interesting insects, those now reported including the largest and finest yet discovered. Mr. Swinhoe has presented the collection to the British Museum, but for obvious reasons it is retained for the present in this country.

COLEOPTERA.

Acmaeodera burmitina sp. nov. (Buprestidæ).

Length 19 mm., width of thorax posteriorly 6 mm.; length of elytra 15 mm., width of an elytron in middle (viewed from above) 3 mm.; original color uncertain, but apparently not metallic; thorax broader than long, the posterior angles sharp, the lateral margins nearly straight, nodulose, the dorsal surface strongly punctured, the punctures about as far apart as the width of one, no striæ on posterior margin; scutellum not evident; elytra punctured basally, but the sculpture, well developed in middle, consisting essentially of about nine rows of large elongate punctures, with rows of small dot-like punctures alternating with them; margin of elytra finely nodulose, toward apex definitely denticulate; claws simple. The structure of legs, antennæ and palpi, so far as visible, is shown in the figures.

Burmese amber; from Mr. R. C. J. Swinhoe. This is the beetle referred to in *Ann. Ent. Soc. Amer.*, X, (1917) p. 14, as an Elaterid nearly 20 mm. long. Closer examination shows it to be a Buprestid, agreeing with *Acmaeodera* in the sculpture of thorax and elytra, the dentate margin of elytra posteriorly, and the lack of an evident scutellum. The sharp salient posterior angles of thorax are peculiar, and give it an Elateriform appearance. The insect is not evidently hairy. The one antenna visible is incomplete, but what there is agrees fairly well with *Acmaeodera*. Mr. J. A. Hyslop, to whom I sent a rough sketch, suggests that the insect may fall in the common oriental genus *Chrysodema*. I have no *Chrysodema* for comparison, and leave the species in *Acmaeodera*, since it appears to agree sufficiently with that cosmopolitan genus. Two species of *Acmaeodera* occur in the Miocene of Florissant, and two others in the Miocene of Baden, but none in Baltic amber. *A. burmitina* is in the same slab of amber as the types of *Dermestes larvalis* and *Apenesia electriphila*. The same slab also contains two species of Elateridæ.

Eurygenius wickhami sp. nov. (Pedilidæ).

Length about 5.5 mm., entirely rufotestaceous; eyes extremely large, apparently not emarginate; mandibles very large, prominent, the outer margin very convex; maxillary palpi large, the last joint elongate, subtriangular; antennæ 11-jointed, first joint thickened apically, second much shorter than third, fourth longer than third, eleventh longer than tenth, but not so long as ninth and tenth together; thorax subcircular, glabrous, the margin finely ciliate, the sculpture

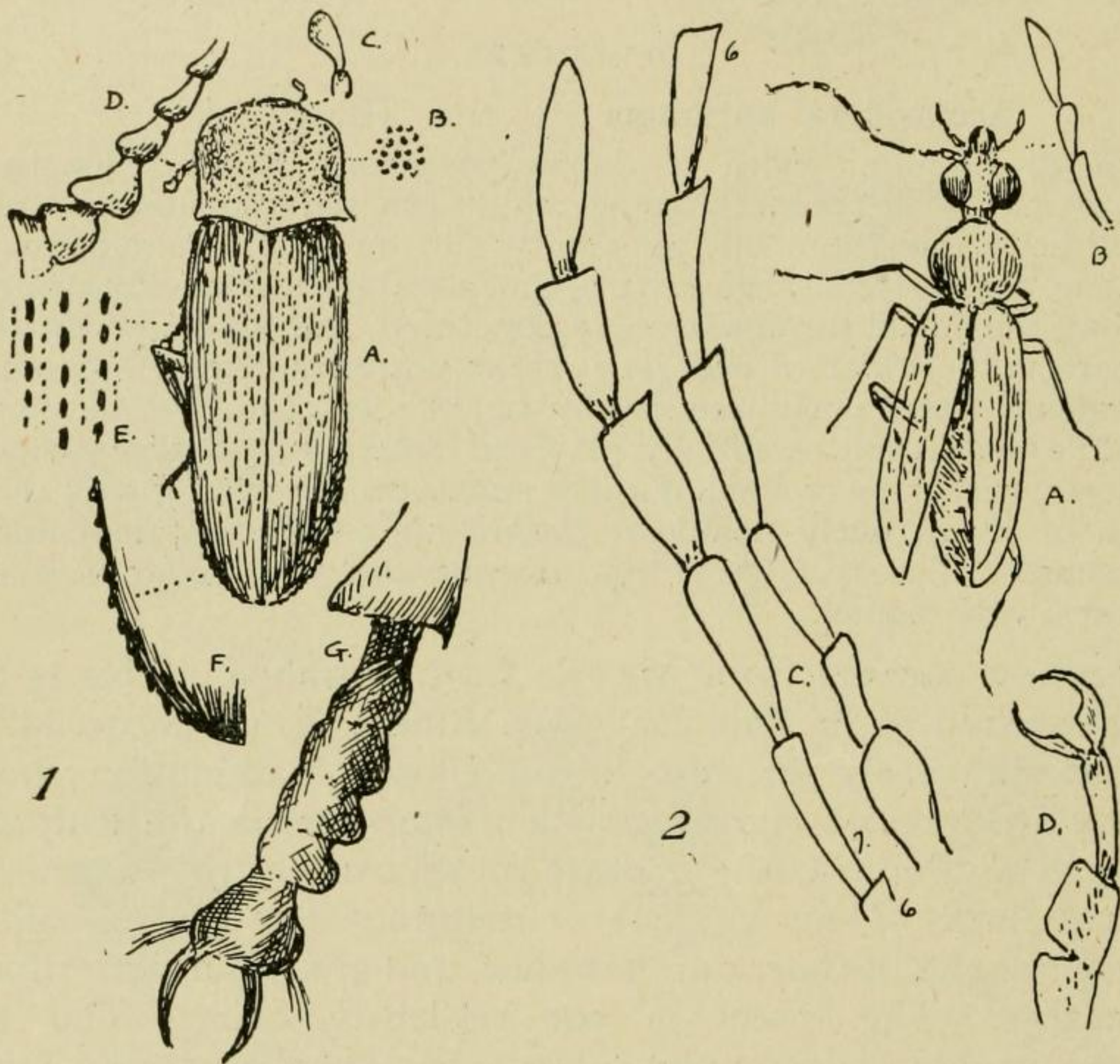


Fig. 1. *Acmaeodera burmitina*. G—middle leg.

Fig. 2. *Eurygenius wickhami*. B—Maxillary palpus; C—Antenna; D—End of anterior leg.

consisting of irregular longitudinal grooves; elytra reaching to end of abdomen, and grooved much as thorax, humeri prominent; legs slender, tibial spurs short, tibiæ with much short hair on apical part; claws simple, but expanded basally, with a distinct inner angle. The following measurements are in microns: length of last joint of maxillary palpus, 270; antennal joints, length, (2) 160, (3) 240, (4) 304, (9) 256, (10) 240, (11) 320; length of anterior tibia, 930; middle tibia, 1200; hind tibia, 1600.

Burmese amber; from Mr. R. C. J. Swinhoe. In the same slab as the type of *Acmaeodera burmitina*, and about 8 mm. from it. It is named after Professor Wickham, who has done so much to elucidate the fossil Coleoptera, and gave me valuable advice concerning this specimen. I at first took this insect for a new genus of Oedemeridæ, not noticing the short but evident neck.* It may go in *Eurygenius* as interpreted in the broader sense, though it may hereafter be treated as the type of a distinct genus. It quite closely resembles *E. fragilicornis* Champion from the Seychelles, differing however by the prominent mandibles, relatively slender last joint of palpus, more globose thorax and sculpture of elytra. When Casey discussed the Eurygeniinae (Eurygeniini, Casey) in 1895, he remarked that they were wholly confined to the new world. Since that time the genus has been found scattered over the eastern hemisphere, *E. niponicus* Lewis coming from Japan, *E. africanus* Kolbe and *E. nigricolor* Pic from the African continent, *E. hovanus* and *E. griseopubens* of Fairmaire, from Madagascar, *E. abdominalis* Pic from Bengal, and *E. fragilicornis* and *E. convexicollis* of Champion from the Seychelles. Reitter recognized a *Pedilus* in Baltic amber.

Elater (sens. latiss.) **burmitinus** sp. n. (Elateridæ).

Length about 11 mm., elytra 7.7 mm.; narrow, width at base of elytra about 3 mm.; thorax finely punctured, the posterior corners sharp, obliquely truncate (see Figure); elytra finely hairy, obtuse at apex, surface with eight simple parallel striæ, between which are numerous very minute piliferous punctures. The color is uniform black.

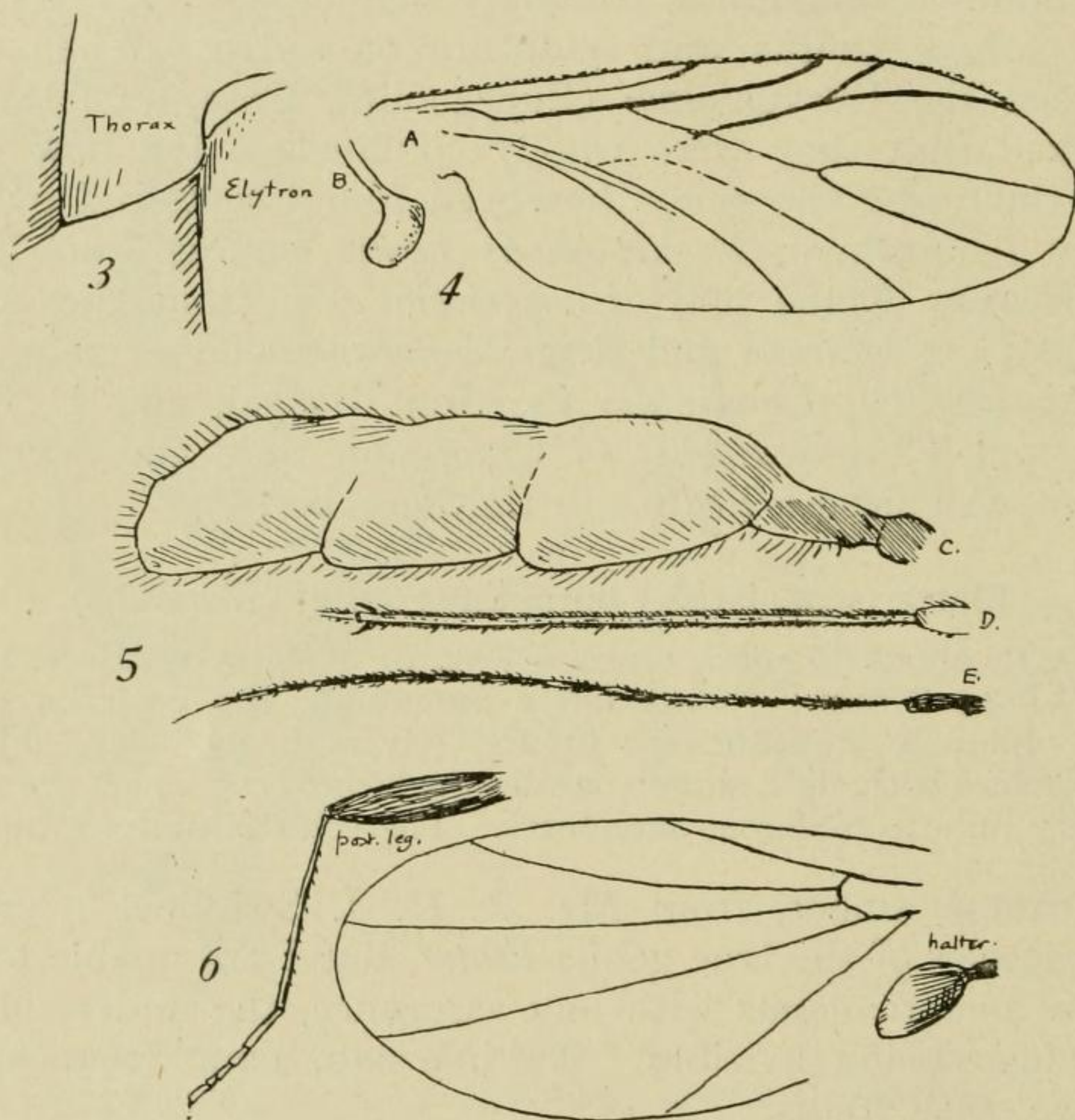
Burmese amber, from Mr. R. C. J. Swinhoe. Certainly not a species of the true genus *Elater*, but I am unable to refer it to a modern genus with any assurance, the under side and appendages being invisible. It is in a slab, 8 mm. from the type of *Hodotermes tristis*.

*Say described a member of this group as *Oedemera vestita*.

DIPTERA.

Burmacrocera new genus (Mycetophilidæ).

Closely allied to *Macrocera*, with which the venation nearly agrees, but there is no cross-vein between subcosta and radius, Cu_2 is not bent, the subcosta is longer, and the anal fails before the margin. Second antennal joint cylindrical, not globose; antennæ 16-jointed, very slender, but not nearly so long as the wings. Legs very long and slender, so far as the fragments preserved indicate; tibial spurs very small, claws minute. Thorax with coarse bristles; abdomen slender, petiolate basally; eyes (male) extremely large, covering most of head, the facets elevated, low-conical. Type the following.



- Fig. 3. *Elater burmitinus*. Posterior angle of thorax.
 Fig. 4. *Burmacrocera petiolata*. Wing. B—Halter.
 Fig. 5. *Burmacrocera petiolata*. C—Abdomen. D—Tibia. E—Antenna.
 Fig. 6. *Burmitempis halteralis*.

Burmacrocera petiolata sp. n.

Male: Black, the wings clear, without spots, veins testaceous; thorax with long hair; abdomen of uncertain length, the apical part lacking in the type; a hind leg (presumably) occurs as a separated fragment, with the apex of the femur, and all the tibia and tarsus; the

tibia and tarsus have short hairs, and short spines at intervals. The following measurements are in microns: Length of wing about 2000; length of cell in fork of media, 800; length of radial sector beyond origin of upper branch, 624; length of antenna, 1200; third antennal joint, 160, sixteenth 80; length of abdomen as far as preserved (see Figure), 1120; hind tibia, 1120; joints of hind tarsus, (1) 608, (2) 224, (3) 160, (4) 88, (5) 96. The thorax is shriveled and distorted in the type.

Burmese amber, from R. C. J. Swinhoe. In outer slab cut from same lump as slab containing the type of *Acmaeodera burmitina* etc., about 10 mm. from the angular corner.

This remarkable fly is evidently allied to *Macrocera*, a genus which occurs in the modern fauna, and also in diverse forms in Baltic amber. The venation is very similar to that of *Palaeoplatyura*, which Johannsen regards as the most primitive in the Mycetophilidæ, but there is absolutely no radio-medial cross vein, and the strongly setose thorax also disagrees with that genus.

TRICHOPTERA.

Plecophlebus new genus. (Odontoceridæ?)

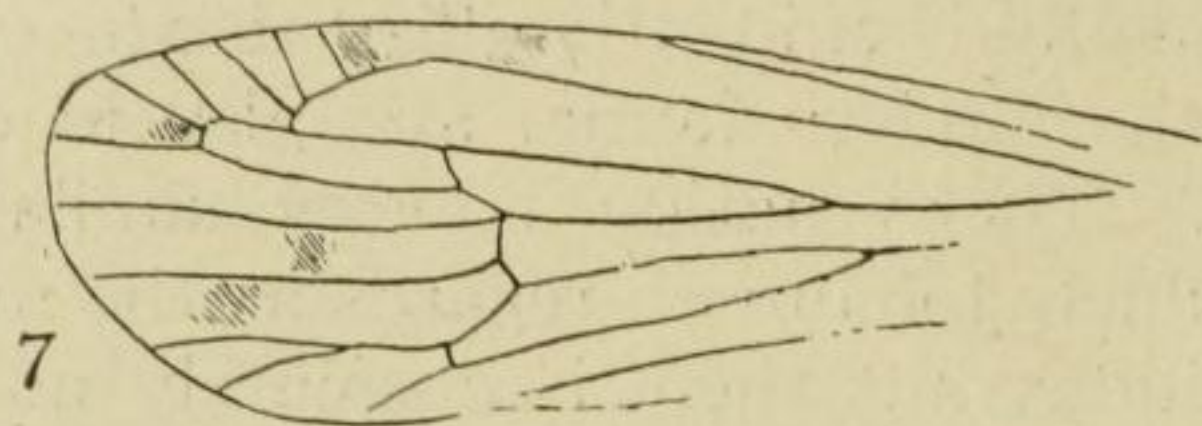
Small species with anterior wings moderately broad, obtuse apically, not densely hairy. Subcosta rather short, not connected with radius; radius deflected downward toward the end, thence curving and eventually meeting the sector at right angles, but before that emitting three branches to costa; sector enclosing a long discoidal cell; upper branch of sector emitting at end two branches directed obliquely upward to apicocostal margin, and also with a cross-vein to second branch, thus enclosing an elongate cell, the base of which rests on the discoidal; third branch of sector (R_5) simple, arising from lower apical corner of discoidal cell; no chitinous dark dot in third apical cell; anterior branch of media not forked; median cell present, elongated; M_3 and M_4 separating beyond end of median cell; structure of cubital and anal veins not ascertainable.

Plecophlebus nebulosus sp. n.

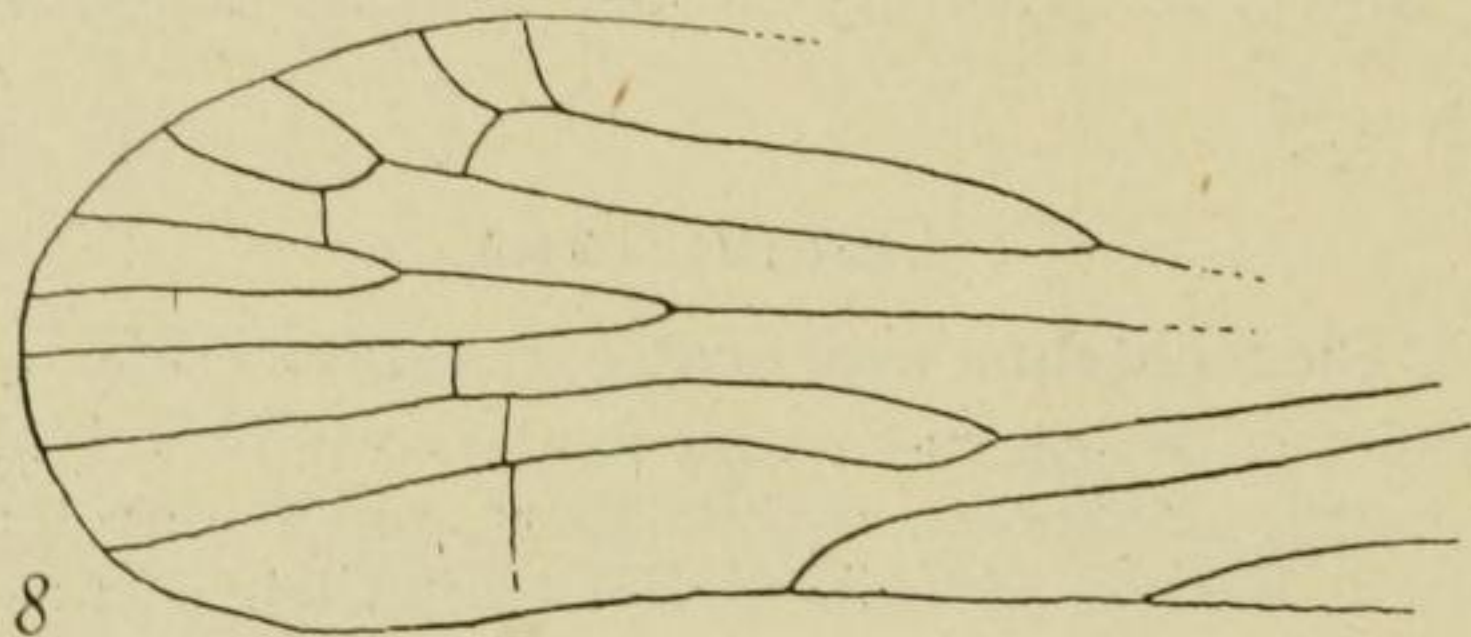
Anterior wing about 6 mm. long, hyaline, with suffused brown spots as shown in Figure.

Burmese amber, from R. C. J. Swinhoe. I had determined this as a new genus, and on submitting a sketch to Dr. N. Banks, he kindly informed me that no genus with such characters was known to him. Dr. Banks pointed out certain resemblances in the upper part of the wing to the Odontoceridæ, and it is to be remarked that the Odontocerid genera *Electrocerum* and *Marilia*, which occur in Baltic amber, have the

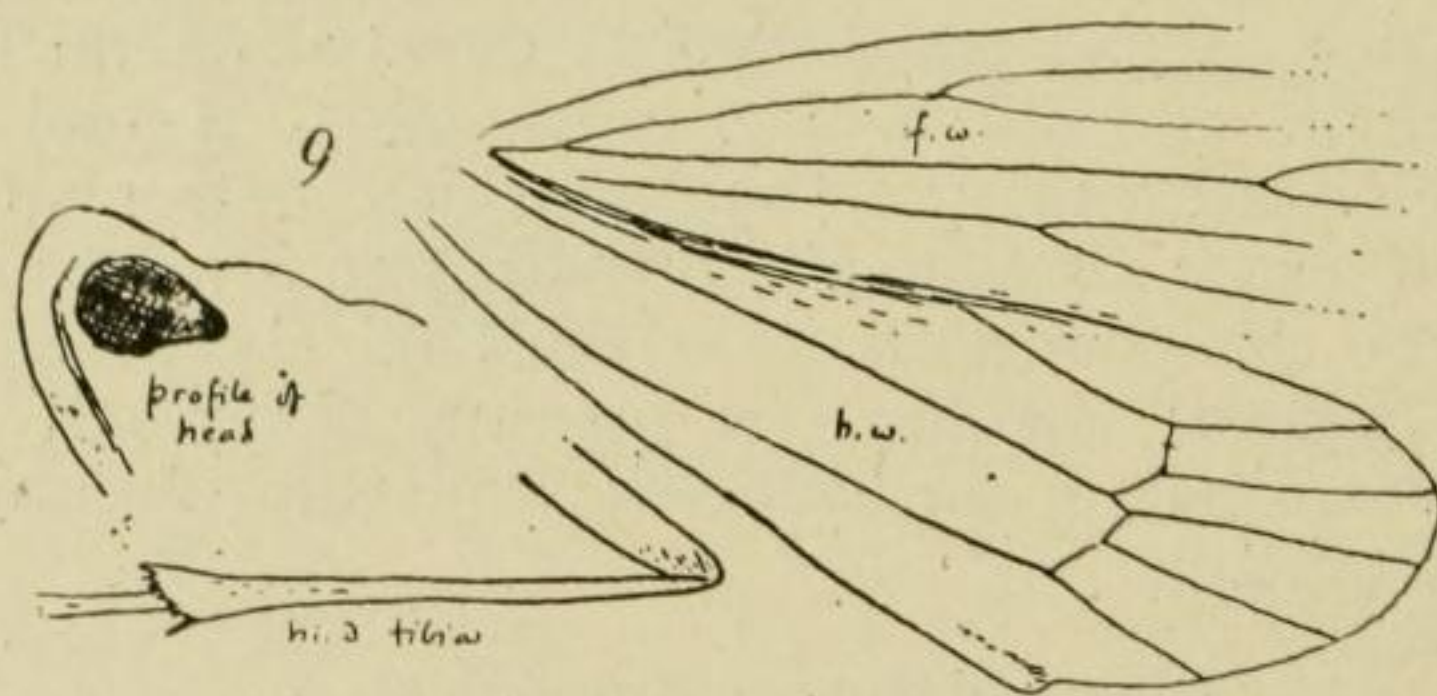
radius ending in the sector. In the case of *Plecophlebus* it is not certain that the apparent end of the radius is not a cross vein, the last branch to costa being the true end of the vein. Unfortunately the head of *Plecophlebus* is lost, and the fragments of legs and other parts appear to present no salient characters. Provisionally the genus is referred to the Odontoceridæ, but Dr. Banks notes also a certain resemblance to the Oestropsychids. The character of the venation of the costoapical field will in any case distinguish it from previously known forms.



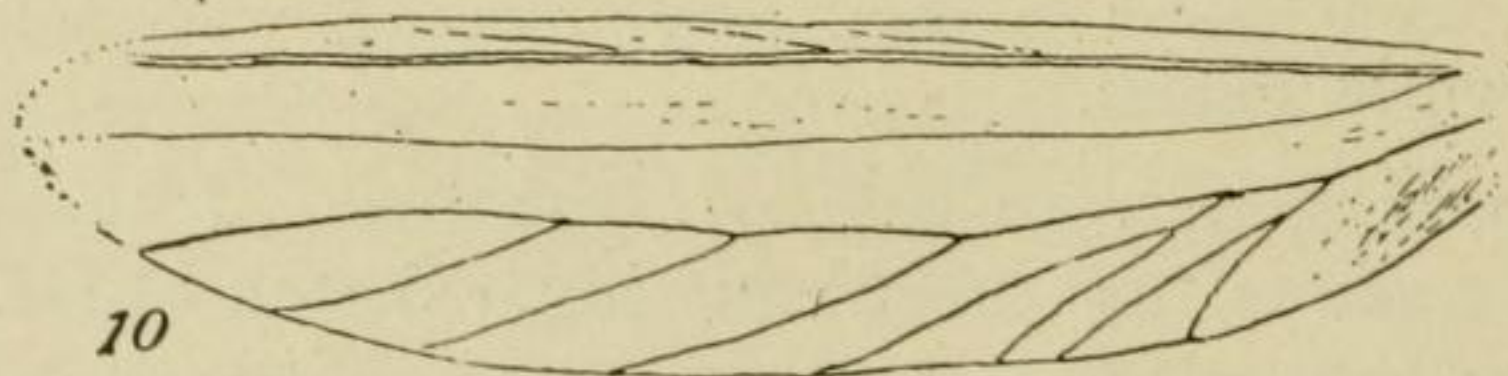
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Fig. 7. *Plecophlebus nebulosus*. Anterior wing.
 Fig. 8. *Liburnia burmitina*. Elytron.
 Fig. 9. *Liburnia burmitina*.
 Fig. 10. *Hodotermes tristis*.

ISOPTERA.

Hodotermes tristis sp. n.

Wing about 4.3 mm. long, dusky grey, the veins distinct. Radius thick (appearing as two fine parallel lines), very close to costa, giving off an uncertain number of delicate branches above; media apparently simple (apex of wing not visible), about midway between radius and cubitus; cubitus with five oblique branches below, the first two soon bifurcating. There is apparently no subcosta.

Burmese amber, from R. C. J. Swinhoe; in a slab cut from the same lump as that containing the type of *Acmaeodera burmitina*, and with the apex of the wing reaching the edge of the slab, where it is 4 mm. thick, about 3 mm. from a broken ferruginous blattid tegmen and 8 mm. from an elaterid beetle. I at first thought this might be a *Termes*, as the superior branches of the radius are delicate and indistinct, but they are certainly present. The remoteness of the media from the radius readily distinguishes it from *Calotermes*. The group Termitinæ doubtless arose through the approximation of the radius to the costa and consequent loss of branches; so the present insect may be considered to represent a development in that direction.

HOMOPTERA.

Liburnia (s. lat.) **burmitina** sp. n.

Length of body about 4.2 mm., to tip of closed elytra probably about 5.7 mm.; dark brown; elytra pale testaceous, without markings; vertex obtuse; frons with very distinct lateral carinæ; tibial spurs very short, about equal (on hind tibia) to width of tibia at apex; apical margin of tibia finely dentate; tarsal joints with apical margins provided with numerous minute straight blunt spines; eyes pyriform, scarcely emarginate below. Venation as shown in Figures. Scutellum not visible.

Burmese amber, from R. C. J. Swinhoe; in a slab cut from the same lump as that containing the type of *Acmaeodera burmitina*, 13 mm. from the margin. The slab is the one having one side rough. Very close to the *Liburnia* is a specimen of *Burmitempis halteralis* Ckll., from which I have made a new figure.

This insect is evidently not a *Liburnia* in the restricted sense. It appears to fall in the vicinity of *Copicerus*, but it has the more primitive, separate anal veins. It should possibly be regarded as the type of an extinct genus, but if so, the separation should be made by one more familiar with Delphacine genera.