THE IDENTITY OF CALOTELLEA OCULARIS ASHMEAD, 1894 (HYMENOPTERA, PROCTOTRupoidea, SCelionidae)

LUBOMIR MASNER
Biosystematics Research Institute, Agriculture Canada, Ottawa K1A 0C6

Abstract

Five syntypes of Calotelea ocularis Ashmead were studied; a lectotype is selected and redescribed. The ocularis-species group of Calotelea is proposed. The history of the type material of Caribbean species of Proctotrupoidea treated by Ashmead (in Riley et al. 1894) is briefly discussed.

The Hymenoptera collected by Herbert H. Smith in the West Indies (St. Vincent, Grenada) some 100 years ago and treated by Ashmead and Howard (in Riley et al. 1894) present an awkward problem of ownership of the types and the syntypic series. According to the original agreement the entire collection was considered the property of the British Museum of Natural History. The specimens of Hymenoptera were loaned for study to Drs. W. H. Ashmead and L. O. Howard in the United States National Museum in Washington (cf. Noyes 1979). However, some material was obviously retained in the USNM and later some specimens were even labelled as “types”. Being aware of this unfortunate situation and anticipating the danger of mixed series in the syntypic material split between BMNH and USNM, Masner (1965) and Masner and Muesebeck (1968) did not deal with Ashmead’s Caribbean types other than those represented by unique specimens. The selection of the lectotypes was deferred to some later date, preferably when individual genera were to be revised.

The present study of the five syntypes (3♂ ♀, 2♀♂) of Calotelea ocularis in the BMNH and USNM proved our anticipations to be correct. The three female syntypes studied represent in fact three very distinct species! Only one specimen corresponds well with Ashmead’s (1894) original description and is selected below as the lectotype. Ashmead’s mistake may perhaps be explained by the similar colour patterns of the three syntypes, and furthermore, by the small size of the species (around 1.7 mm) and relatively poor method of mounting which was used. The striking morphological differences between the species cannot be appreciated without a good stereomicroscope with magnification of around 150×. The above problem, so common with other species described by Ashmead, serves as a good example of potential hazards involved in selecting lectotypes and interpretation of species in general.

The genus Calotelea Westwood is virtually world-wide in distribution (Masner 1976). Its main center of evolution seems to be the tropics of both Old and New worlds; however, a few species occur also in the temperate zones. The New World species3 appear to form a rather cohesive group, different from the groups in the Old World. This New World group is characterized primarily by a peculiar formation of the metanotum. The latter bears a unique, transparent, almost upright lamina in the female (Figs. 1, 2), and a shorter lamina or a mere projection in the male (Fig. 3). The lamina in the female is usually notched medially (Fig. 1), more rarely entire (Fig. 2), or deeply excavate medially with lateral corners transformed into transparent spikes (e.g. in C. puncticeps Ashm.), or the whole lamina may appear as an inconspicuous strip. The posterior margin of the scutellum is never produced into an edge. The above group of New World species is best typified by Calotelea

---

3The five Nearctic species listed in Calotelea by Muesebeck (in Krombein et al. 1979) belong to genera other than Calotelea (cf. Masner 1976).
ocularis Ashm., and I prefer to name this group after Ashmead’s species which is redescribed below. There are at least 10 undescribed Nearctic and about 30 undescribed Neotropical species in this group known so far to me. The only other described Neotropical species assigned at present to this group is Calotelea puncticeps Ashm., from St. Vincent, W.I. (unique holotype in BMNH examined). There seem to be two almost equally large subgroups in the ocularis-group, one with bright xanthic females (and generally darker males) and the other with both sexes melanic. Members of the xanthic group have the eyes often metallic iridescent and the fore wings usually with 1-3 dark transverse bands. The members of the melanic subgroup have non-metallic eyes and the wings usually clear, with no distinct dark bands. The Old World members of Calotelea also seem to be about equally divided between xanthic and melanic subgroups; however, they all belong to species-groups other than the one here designated as the ocularis-group. The numerous undescribed Ethiopian species as well as the only Palearctic species, Calotelea sarrai Msn., have the metanotum unarmed, not produced into a lamina, whereas the posterior margin of the scutellum is usually raised into an edge.

It seems necessary to comment here on some nomenclatural as well as taxonomic problems involving the name Calotelea. Westwood (in Hope 1837) proposed the name Calotelea which was unnecessarily amended by Agassiz (1846) to Callitelea and by Ashmead (1893) to Caloteleia. Ashmead’s (1893, 1894) concept of Calotelea was a very broad one, involving species that belong today to several other genera of Scelioninae. Masner (1976) included eight species of the world fauna in Calotelea. However, as already mentioned above most of the species still remain undescribed.
Calotelea ocularis Ashmead

1894 Caloteleia (!) ocularis Ashmead, J. Linn. Soc. Lond. 25: 218, 220.
1908 Ceratoteleia ocularis: Kieffer, Ann. Soc. sci. Bruxelles 34: 121.
1926 Pegoteleia ocularis: Kieffer, Das Tierreich 48: 513–514.
1976 Calotelea ocularis: Masner, Mem. ent. Soc. Can. 97: 44.

Female (Lectotype, present designation, in BMNH). Length 1.7 mm; xanthic species; predominantly honey-yellow except as follows: antennal club (A8-A12) brown, tips of mandibles brown, minute dark spots behind each ocellus (within ocellar triangle), two brownish parallel streaks in notaular area of mesoscutum, apex of horn of T1 dark honey-yellow, T2-T4 with dark paired markings, those along posterolateral corners of T2 large, almost confluent, those situated in posterolateral corners of T3 and T4 smaller; T5 and T6 with no dark markings; T7 slightly darker honey-coloured; eyes strikingly bluish iridescent; middle and hind coxae and trochanters whitish, femora, tibiae and tarsi whitish yellow; fore wings generally infuscate, with only one distinct darker transverse band in area of basal vein.

Head wider than long (36:23), wider than mesosoma (36:31); in dorsal view vertex (between inner orbits) wider than eye (15:10), shining, with very delicate coriaceous microsculpture (160X); frons highly lustrous, almost smooth medially, with delicate coriaceous microsculpture along inner orbits; eye height greater than interorbital space (20:15); cheeks with only faint striae; mandibles tridentate, teeth almost equal; ocelli in low triangle, POL longer than LOL (11:6), posterior ocelli almost contiguous with inner orbits; temples behind eyes considerably narrow; occipital carina complete, sharp at sides, delicately crenulate at meson; radicle elongate, shorter than scape (7:17); antennal segments A1-A12 in relative proportions (length:width) 17:5, 6:3, 7:3, 5:3, 2:2.5, 1:2, 2:2, 3:6.5, 3:7, 3:7, 3:7, 4:6.

Mesosoma slightly wider than high (31:26); anterior margin of pronotum between fore coxa and cervix with row of foveolae (cf. Fig. 4) progressively diminishing towards cervical part of pronotum; skaphion with delicate but distinct rim posteriorly; mesoscutum highly shining but with delicate coriaceous microsculpture (as on vertex, 160X); netrion narrowly open above fore coxa, with row of large foveolae along anterior margin, foveolae occupying almost entire anterior half of netrion; acutabular carina delicate but sharp, with foveolae; row of large foveolae between acutabular carina and tegula; mesepimeron divided from mesepisternum by row of large foveolae; scutellum almost smooth, with posterior margin moderately concave; metanotal lamina almost upright, transparent, with shallow excavation medially; marginal vein in fore wing distinctly longer than stigmal vein (12:5), postmarginal vein almost as long as marginal vein (11:12).

Metasoma almost twice as long as mesosoma and head combined (120:65); T1 in lateral aspect with horn at angle slightly less than 45°, with apex projecting slightly beyond anterior margin of mid-coxae (imaginary line down from tip of horn); horn perfectly smooth including base, rest of T1 with strong longitudinal costae; T2 transverse (16:24), longitudinally striate; T3 transverse (22:28), evenly net-like reticulate, with no longitudinal elements in sculpture; T4 transverse (16:26), reticulated as T3; T5 transverse (10:20), much finer reticulation than T4; T6 distinctly elongate (18:13), almost triangular, with fine reticulation as T5; T7 narrow, elongate (9:3).

Lectotype (Present designation, in BMNH): ♀ labelled “St. Vincent, W.I. H. H. Smith”; “W. Indies 99-331”; “Caloteleia (!) ocularis Ashm. ♀; Lectotype by L. Masner, 1979”. Specimen glued to tip of minuten pin attached to card point; a small square green label between card point and labels bearing data. Lectotype well preserved except anterior pair of legs missing.

Remarks. Ashmead (in Riley 1894) based this species on four females and two males; i.e. syntypes as he did not designate the holotype. After 1894 this material was subsequently split, with two females and one male returned to the BMNH (Masner 1976) and one female and one male retained in the USNM. One female of the original series therefore remains unaccounted for. I examined both the BMNH and the USNM material and found that the three female syntypes represent three very distinct species! The syntypic female, “No. 72”, in the USNM was long ago.
labelled as a type (USNM No. 2536), probably because it bears Ashmead’s handwritten label ‘Caloteleia ocularis Ash. ♀ Type’. However, this specimen does not agree with the original description in several important characters and was therefore not considered eligible for selection of the lectotype. Furthermore, I tried to honour the original agreement in which all primary types from H. H. Smith’s Caribbean material were supposed to be deposited in the BMNH. The above USNM syntype belongs to an undescribed species known to me in large series from Trinidad, W.I. and also from Yucatan (Cozumel Is., Mexico). The female syntype, ‘‘No. 244’’ (BMNH), represents yet another undescribed species known to me only from St. Vincent. It differs from both ‘‘No. 72’’ and the present designated lectotype in cephalic as well as chromatic characters. The other BMNH syntype female (tagged with the small green square label of unknown significance) seems to correspond perfectly with Ashmead’s original diagnosis and is consequently selected as the lectotype of C. ocularis. The other two undescribed species (females) will be described later. The two male syntypes (BMNH, USNM) may be the opposite sex of the lectotype female. However, because of the difficulties in sex associations in Caloteleia (cf. Masner 1976) I prefer not to assign them for the time being to C. ocularis.

Acknowledgments

Mr. N. D. M. Fergusson (British Museum Natural History, London) and Dr. P. M. Marsh (United States Department of Agriculture, Washington) made type materials of Caloteleia ocularis Ashmead and C. puncticeps Ashmead available for examination. Mr. G. A. P. Gibson (Bioystematics Research Institute, Agriculture Canada, Ottawa) took the SEM photographs. Drs. J. R. Vockeroth and A. Smetana (Bioystematics Research Institute, Agriculture Canada, Ottawa) reviewed the text.

References

Agassiz, L. 1846. Nomenclator zoologicus, ... 1 Vol. & Index universalis. Soloduri. 1846.
Ashmead, W. H. 1893. A monograph of the North American Proctotrypidae. Bull. U.S. natn. Mus. 45. 472 pp.
Ashmead, W. H. in Riley C.V. 1894 — see Riley, C.V. et al. 1894.
Kieffer, J. J. 1926. Scelionidae. Das Tierreich 48. Gruyter, Berlin und Leipzig. 885 pp.
Krombein, K. V. et al. 1979. Catalog of Hymenoptera in America North of Mexico. Vol. 1. Smithsonian Institution Press, Washington, D.C. 1198 pp.
Masner, L. 1965. The types of Proctotrupoidea (Hymenoptera) in the British Museum (Natural History) and in the Hope Department of Entomology, Oxford. Bull. Br. Mus. nat. Hist., Suppl. 1. 154 pp.
— 1976. Revisionary notes and keys to world genera of Scelionidae (Hymenoptera: Proctotrupoidea). Mem. ent. Soc. Can. 97. 87 pp.
Masner, L. and C. F. W. Muesebeck. 1968. The types of Proctotrupoidea (Hymenoptera) in the United States National Museum. Bull. U.S. natn. Mus. 270. 143 pp.
Muesebeck, C. F. W. in Krombein K.V. et al. 1979. See Krombein, K.V. et al. 1979.
Noyes, J. S. 1979. The West Indian species of Encyrtidae described by L. O. Howard, 1894 and 1897 (Hymenoptera, Chalcidoidea). Syst. Ent. 4: 143-169.
Riley, C. V., W. H. Ashmead and L. O. Howard. 1894. Report upon the parasitic Hymenoptera of the Island of St. Vincent. J. Linn. Soc. (Zool.) 25: 56-254.
Westwood, J. O. in Hope, F.W. 1837. Observations on Succinic Insects. Part the Second. Gums and Resins. Trans. R. ent. Soc. Lond. 2: 46-57.

(Received 20 September 1979)