**A REVISION OF THE NEARCTIC SPECIES OF CALOTELEA WESTWOOD
(HYMENOPTERA, PROCTOTRUPOIDEA, SCELIONIDAE)**

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Abstract

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The genus *Calotelea* Westwood of the Nearctic region is revised. Ten species are recognized, all of them new to science, viz.: *C. anthracina* ♀♂ (New Mexico), *C. atra* ♀♂ (Florida), *C. aurulenta* ♀ (Texas, North Carolina), *C. bicolor* ♀♂ (Virginia), *C. cincta* ♂ (New Mexico), *C. flava* ♀ (Florida, North Carolina, Texas), *C. lutea* ♀ (Virginia), *C. mellea* ♀♂ (Georgia), *C. nebulosa* ♀ (Georgia, South Carolina), and *C. pulla* ♀ (Florida). The taxonomic concept of *Calotelea* is reviewed. The taxonomic position of the 10 Nearctic species is discussed and the keys to females and males given.

The genus *Calotelea* was proposed as monobasic in 1837 by Westwood (*in* Hope 1837) for *C. aurantia* Hope, a fossil species found in resin ("gum animé"), supposedly from Natal Province in South Africa (Kieffer 1926). Since then the name *Calotelea* has been applied to a number of species in the subfamily Scelioninae (Ashmead 1893; Ashmead *in* Riley *et al.* 1894; Brues *in* Wytzman 1908; Masner 1965; Muesebeck and Masner 1967; Masner and Muesebeck 1968). Some of the above species were later transferred to genus *Ceratoteleia* Kieffer (Kieffer 1908, 1910). Kieffer (1926) interpreted *Calotelea* as a monobasic fossil genus with no extant species. Instead, he (Kieffer 1910, 1926) proposed two generic names, *Lamproteleia* and *Pegoteleia*, to accommodate a number of extant species some of which are now considered to belong to *Calotelea* (Masner 1976). Masner (1976) presented a restricted interpretation of *Calotelea*, with its synonyms, higher classification, and geographic distribution. No described species were then listed to occur in America north of Mexico (*op. cit.*).¹

Ten Nearctic species of *Calotelea* are currently described and classified into the *ocularis*-species group proposed by Masner (1980). The above group is restricted to the New World, with some 30 Neotropical species of which only two were described, viz. *C. ocularis* Ashm. and *C. puncticeps* Ashm. (St. Vincent, W.I.). The main character of this group is a peculiar transparent process on the metanotum, here termed the "metanotal lamina". The latter is usually better developed in females (Figs. 1, 2, 8) than in males (Figs. 5, 9). For practical purposes two distinct chromatic subgroups within the *ocularis*-group, viz. a xanthic and a melanic one, are recognized. Described below are four xanthic and six melanic species of Nearctic *Calotelea*. The males in the xanthic subgroup tend to be generally darker than conspecific females. On the other hand, the sexes tend to be isochromatic in the melanic subgroup. In light of the high degree of sexual dimorphism and dichromatism in *Calotelea*, separate keys to females and males are provided.

Members of *Calotelea* used to be very rare in collections. However, as a result of pan trapping techniques being applied recently in Trinidad, W.I. numerous specimens were accumulated. The scarcity of *Calotelea* in sweep samples and Malaise traps may indicate that members of this genus are confined predominantly to the ground. Although we have no direct biological data or host records it may be assumed that the members are parasitoids in eggs of various small crickets as inferred from known relationships in the related genera. Dr. P. G. Aguilar (Universidad Nacional Agraria, Lima, Peru) informed me that specimens of the bush cricket genus *Cycloptilum* Scudder (Gryllidae, Mogoplistinae) were the only other

¹Muesebeck (*in* Krombein *et al.* 1979) listed five Nearctic species in *Calotelea*, none of which is now considered to belong here (cf. Masner 1976).

insects caught in pan traps along with specimens of melanic *Calotelea* sp. (det. L. Masner). Since the tiny cricket eggs are usually laid individually in the soil the probability of obtaining definite host records is considerably remote.

Morphology

Morphological terms and their respective abbreviations in the present study follow Masner (1976, 1979a, b). The tilt of the horn of T1 is determined with reference to an imaginary vertical line drawn through the extreme anterior point of the horn; the line usually falls on or behind the anterior margin of the middle coxae (Fig. 14), rarely slightly before the latter.

Calotelea Westwood

Calotelea Westwood, in Hope, 1837, Trans. ent. Soc. Lond. 2: 55.

Callitelea Agassiz, 1846, Nomenclator Zoologicus. Index universalis, pp 60, 61. Emendation.

Caloteleia Ashmead, 1893, Bull. U.S. natn. Mus. 45: 209, 210, 212. Emendation.

Lamproteleia Kieffer, 1910, Bull. Soc. ent. France 1910: 293. Synonymized by Masner (1965).

Pegoteleia Kieffer, 1926, Das Tierreich 48: 272, 510. Synonymized by Masner (1976).

Calotelea: Masner, 1976, Mem. ent. Soc. Can. 97: 43, 44. Type-species: *Calotelea aurantia* Hope, by monotypy.

The following diagnosis will characterize the 10 Nearctic species of *Calotelea* treated in this paper. Only the pertinent specific differences will be mentioned in the descriptions of the species.

DIAGNOSIS. Slender, spindle-like forms, under 2 mm in length, with fine coriaceous sculpturing; head subglobose, usually only slightly transverse; frons without depression, with no transverse wrinkles or ridges; cheeks slightly to distinctly striate; clypeus small, truncate; mandibles short, bidentate, subtridentate, or tridentate; palpal formula 4-2; eyes appearing glabrous (160×), sometimes with minute hairs (160× and up); posterior ocelli contiguous or almost contiguous with inner orbits; occipital carina complete; antennae 12-segmented, clavate in female, thread-like in male; radicle slender and relatively long, at least 1/3 of scape length; netrion well developed, open, foveolate and carinate anteriorly; skaphion present, sometimes with delicate rim posteriorly; notauli absent; mesopleural carina usually not developed or incomplete, rarely present; metanotum in female medially with almost upright transparent lamina, often notched or emarginate at meson or divided into two separate parts, in males with lamina usually not developed, but with opaque, almost horizontal ledge; propodeum unarmed, with plicae diverging posteriorly; fore wings often with dark transverse bands; marginal vein elongate, slightly shorter than or equal to stigmal vein, rarely longer; postmarginal vein longer than marginal vein; metasoma distinctly elongate, spindle-like in females, with 7 visible tergites in female and 8 in male; T3 the largest segment; T1 in female with distinct horn, T7 extruded (or retracted) with ovipositor.

KEY TO NEARCTIC SPECIES OF *Calotelea*

Females

(Antenna with clava, T₁ with a horn)

- (1) Body predominantly xanthic, bright golden yellow; metasoma always with paired dark spots (Xanthic subgroup) 2
- Body predominantly melanic, at least head and mesosoma black or dark brown, metasoma rarely (*C. bicolor*) lighter but with no dark spots (Melanic subgroup) 5

- (2) Anterolateral margin of pronotum (from fore coxa to cervix) with distinct row of foveolae (cf. Fig. 3); T3 distinctly longitudinally striate (Georgia) 1. *C. mellea* n. sp.
- Anterolateral margin of pronotum (from fore coxa to cervix) with no foveolae, evenly coriaceous (cf. Fig. 4); T3 predominantly net-like, coriaceous 3
- (3) Metanotal lamina at meson broadly interrupted, virtually absent, gap as wide as width of horn; T4 with pair of dark spots in posterolateral corners (Texas, North Carolina) 2. *C. aurulenta* n. sp.
- Metanotal lamina uninterrupted; however, excavate and rather narrow at meson; T4 entirely yellow, with no dark spots 4
- (4) Marginal vein shorter than stigmal vein; eyes remarkably bluish iridescent; second dark band in fore wing lighter than in next species (Virginia) 3. *C. lutea* n. sp.
- Marginal vein at least as long as stigmal vein; eyes not iridescent; second dark band in fore wing darker than in previous species (Florida, North Carolina, Texas) 4. *C. flava* n. sp.
- (5) T3 and T6 as long as wide; metasoma generally more slender 6
- T3 and T6 wider than long; metasoma generally stouter 7
- (6) Fore wings with two dark bands; marginal vein as long as stigmal vein; mandibles bidentate (Georgia, South Carolina) 5. *C. nebulosa* n. sp.
- Fore wings clear, with no bands; marginal vein twice as long as stigmal vein; mandibles tridentate (Florida) 6. *C. pulla* n. sp.
- (7) Coriaceous sculpture of frons, mesoscutum and scutellum even, with no finer areas medially (160×); wings clear (Florida) 7. *C. atra* n. sp.
- Coriaceous sculpture of frons, mesoscutum and scutellum uneven, with some smoother areas (160×); wings partly infuscate 8
- (8) Metasoma honey yellow (except for dark horn and darker T5 & T6), lighter than dark brown head and mesosoma; fore wing with slight infuscation at mid-part only; 1.4 mm (Virginia) 8. *C. bicolor* n. sp.
- Metasoma dark brown, almost concolorous with slightly darker head and mesosoma; fore wing with smaller infuscation at mid-part and with larger cloud below postmarginal vein (Fig. 11); 1.6 mm (New Mexico) 9. *C. anthracina* n. sp.

Males

(Antenna thread-like, T₁ without horn)

- (1) Metanotal ledge produced into transparent lamina excavate or notched at meson (e.g. Fig. 9); anterolateral margin of pronotum with at least short row of foveolae (e.g. Fig. 10) 2
- Metanotal ledge not produced into transparent lamina (Fig. 5); anterolateral margin of pronotum with no foveolae (cf. Fig. 4) 3
- (2) Body predominantly golden-yellow; T2-T4 yellow, each with pairs of dark spots posterolaterally; anterolateral margin of pronotum with complete row of foveolae reaching to fore coxa (cf. Fig. 3); metanotal lamina broadly excavate medially; T3 longitudinally striate 2. *C. mellea* n. sp.
- Body predominantly black or dark brown, but segment 1 of metasoma amber yellow; T2-T4 uniformly brown, with no spots; anterolateral margin of pronotum with only short row of foveolae not reaching to fore coxa (Fig. 10); metanotal lamina slightly excavate medially (Fig. 9); T3 reticulate (New Mexico) 10. *C. cincta* n. sp.
- (3) T1 bright golden-yellow in contrast to darker rest of metasoma; all coxae bright yellow 8. *C. bicolor* n. sp.
- T1 brown, concolorous with rest of metasoma; all coxae dark brown 4
- (4) Scutellum and frons evenly coriaceous, with no smoother areas; eyes perfectly glabrous (160×); smaller species, 1.3 mm 7. *C. atra* n. sp.
- Scutellum and frons with uneven coriaceous sculpture, posterior half of scutellum smooth, frons below anterior ocellus almost smooth (160×); eyes with distinct short hairs (160×); larger species, 1.5 mm 9. *C. anthracina* n. sp.

Description of Species

1. *Calotelea mellea* n. sp.

Female. Length 1.4 mm. Light honey yellow, with few darker areas as follows: eyes dark, non-metallic, ocelli backed by minute dark spots inwardly, tips of mandibles darker, A8-A12 dark brown, dark spot on pronotum in front of tegula, anterolateral corners of mesoscutum with minute darker spots, metepisternum above hind coxa with brown spot, horn of T1 dark chestnut brown, posterolateral corners of T2-T4 with pairs of dark brown spots, T7 dark brown, fore wings with one distinct dark band in area of basal vein and a larger but indistinct second band under postmarginal vein, palpi, trochanters coxae and femora whitish yellow.

Head slightly transverse (20:32), interorbital space greater than eye width (15:8), as great as length of eye (15:15); head generally with fine coriaceous sculpture, almost smooth on upper frons below anterior ocellus; cheeks finely striate; mandibles tridentate; ocellar triangle rather low, POL almost twice as long as LOL (11:6); POL longer than temples (11:5); occipital carina complete, not crenulate; antennal clava rather stout, A9-A11 slightly more than twice as wide as long (7:3).

Anterolateral margin of pronotum with distinct row of foveolae extending from above fore coxa to cervix (cf. Fig. 3); anterior margin of netrion with large foveolae occupying almost half of the sclerite; skaphion with delicate rim posteriorly; mesoscutum and anterior part of scutellum with fine coriaceous sculpture; mesopleural carina incomplete; metanotal lamina narrowly interrupted medially, deeply excavate; marginal vein longer than stigmal vein (8:5).

In lateral view apex of horn not exceeding anterior margin of mid-coxa; horn mostly smooth, with longitudinal costae at base; metasomatic tergites T1-T7 of dimensions (length:width) 17:14, 15:26, 22:27, 11:26, 7:18, 7:13, 7:5; T1-T3 with distinct longitudinal striae, T4-T6 with fine reticulation.

Male. Generally darker than female, dark-honey yellow, with paired dark spots on metasoma more blurred, T1 entirely golden-yellow; metanotal lamina less vertical, excavated medially but still present at meson.

TYPE MATERIAL. Holotype: ♀ (CNC No. 15998), Tybee Is., Georgia, August 4, 1974, pan trap, J. R. Vockeroth. Allotype: 2♂♂, with same data as in holotype (CNC). Paratype: ♂, same data as in holotype (CNC).

DISTRIBUTION. U.S.A. (Georgia).

REMARKS. Specimens of *C. mellea* are unique among the Nearctic species of *Calotelea* in having a complete row of foveolae along the anterolateral margin of the pronotum and T3 distinctly striate longitudinally.

2. *Calotelea aurulenta* n. sp.

Female. Length 1.5 mm. Golden-yellow with darker areas as follows: eyes silvery, non-metallic, ocelli backed by minute darker spots inwardly, A8-A12 dark brown, horn dark brown, T2-T4 each with pair of dark spots in posterolateral corners, T7 dark brown, fore wing with two distinct dark bands, first in area of basal vein, second under postmarginal vein, apex of wing also infusate, coxae and trochanters light yellow.

Head slightly transverse (22:32); interorbital space greater than eye width (14:9), less than eye length (14:17); head generally with coriaceous sculpture, with no smoother areas; cheeks finely striate; mandibles subtridentate; ocellar triangle low, POL longer than LOL (9:5); longer than temples (9:5); occipital carina complete, with delicate crenulae; antennal clava slender, A9-A11 transverse (3.5:6).

Anterolateral margin of pronotum not foveolate; skaphion with delicate rim posteriorly; mesoscutum and scutellum shining, with fine coriaceous sculpture; mesopleural carina weakly indicated; metanotal lamina widely interrupted medially into two parts, gap at meson as wide as horn; marginal vein about twice as long as stigmal vein (11:6).

Horn of T1 relatively longest and highest among all species in the xanthic subgroup; in lateral view apex of horn exceeds anterior margin of mid-coxa; horn smooth, rest of T1 and T2 with longitudinal costae; T3-T6 with reticulate sculpture.

Male. Unknown.

TYPE MATERIAL. Holotype: ♀ (CNC No. 15999), 3 mi E. Johnson City, Texas, October 17, 1978, sweeping by stream, L. Masner. Paratype: ♀, Carteret Co., N. Carolina, September 14 1959, on *Spartina* (USNM).

DISTRIBUTION. U.S.A. (Texas, N. Carolina).

REMARKS. The females of *C. aurulenta* can be distinguished from all other members of the xanthic subgroup by the long horn and widely interrupted metanotal lamina.

3. *Calotelea lutea* n. sp.

Female. Length 1.5 mm. Light honey yellow, with few darker areas as follows: eyes bluish iridescent, ocelli backed by darker spots inwardly, tips of mandibles darker, A8-A12 brown, posterolateral corners of T2 and T3 with pair of dark spots, T5-T7 brownish, fore wing with narrow dark band in area of basal vein and larger band under postmarginal vein, coxae and trochanters lighter than mesosoma.

Head slightly transverse (21:31); interorbital space greater than eye width (13:9), less than eye length (13:15); head generally with fine coriaceous sculpture, with major part of frons below anterior ocellus almost smooth; cheeks finely striate; mandibles subtridentate; ocellar triangle low, POL longer than LOL (7:4), as long as temples (7:7); occipital carina complete, sharp, with delicate crenulation; antennal clava very slender, A9-A11 only slightly transverse (3.5:5).

Anterolateral margin of pronotum with no foveolae; however, propleura above fore coxa with row of foveolae; foveolae along anterior margin of netrion occupying less than half of the sclerite; skaphion with delicate rim posteriorly; mesoscutum and scutellum with delicate coriaceous sculpture; mesopleural carina absent; metanotal lamina excavate medially but present at meson; marginal vein clearly shorter than stigmal vein (6:9).

In lateral view apex of horn of T1 does not exceed anterior margin of mid-coxa; horn mostly smooth; metasomatic tergites T1-T7 of dimensions (length:width) 17:14, 19:26, 23:30, 13:27, 8:20, 5:11, 3:3; T1 and T2 longitudinally costate, T3-T6 reticulate.

Male. Unknown.

TYPE MATERIAL. Holotype: ♀ (USNM), Brunswick Co., Virginia, June 10 1967, C.W. Berisford, with *Ips grandicollis* on *Pinus taeda*. Paratypes: 2 ♀ ♀, with same data as in holotype (USNM, CNC).

DISTRIBUTION. U.S.A. (Virginia).

REMARKS. This is the only known Nearctic species of the xanthic sub-group with bluish iridescent eyes in female sex. Females of *C. lutea* differ from the Caribbean *C. ocularis* Ashm. in having the horn much shorter, not reaching over the anterior margin of mid-coxa, the fore wing with two dark bands, the marginal vein shorter than the stigmal vein and T4 with no dark spots.

4. *Calotelea flava* n. sp.

Female. Length 1.5 mm. Very similar to *C. lutea* but differs in the following characters: eyes not iridescent, T5 and T6 yellow, with no dark spots; coriaceous sculpture of frons below anterior ocellus distinctly coarser; eyes larger so that temples distinctly shorter than POL (5:8); skaphion with posterior rim very sharp; coriaceous sculpture of mesoscutum and scutellum generally coarser; marginal vein slightly longer than stigmal vein (8:6); second dark band in fore wing darker than in *C. lutea*.

Male. Unknown.

TYPE MATERIAL. Holotype: ♀ (USNM), Miami, Florida, Inspection Station UV light trap (no further data).

DISTRIBUTION. U.S.A. (Florida).

REMARKS. Females of *C. flava* may be distinguished from those of *C. lutea* only by the few characters mentioned both in the description and the key.

5. *Calotelea nebulosa* n. sp.

Female. Length 1.7 mm. Dark brown; radicle and A1-A7 yellowish brown, legs light brown, metasoma brown with lighter areas in middle of T2-T4; fore wings with two conspicuous dark bands, first in area of basal vein, second under postmarginal vein.

Head slightly transverse (22:30), interorbital space greater than eye width (13:8), as great as eye length (13:13); head generally with even coriaceous sculpture, with no smoother areas, cheeks distinctly striate; mandibles bidentate; ocellar triangle low, POL longer than LOL (10:5), as long as temples (10:10); occipital carina complete, distinctly crenulate; antennal clava slender, A9-A11 slightly transverse (3.5:5).

Anterolateral margin of pronotum with no foveolae, but propleura above fore coxa with row of foveolae; anterior margin of netrion with small foveolae; skaphion with distinct rim posteriorly; mesoscutum and scutellum with even coriaceous sculpture; mesopleural carina indistinct; metanotal lamina deeply excavate medially, however, narrow septum still present at meson; marginal vein as long as stigmal vein (8:8).

In lateral view apex of horn not exceeding anterior margin of mid-coxae; metasomatic tergites T1-T7 of dimensions (length:width) 14:15, 18:27, 28:28, 19:27, 11:18, 11:10, 6:3; T1 and T2 longitudinally costate; T3-T6 finely reticulate.

Male. Unknown.

TYPE MATERIAL. Holotype: ♀ (CNC No. 16000), Forsyth, GA, September 23-30 1970, Malaise trap, F. T. Naumann. Paratype: ♀, McClellanville, SC, September 21-28 1972, Malaise trap, R. B. Dominick (CNC).

DISTRIBUTION. U.S.A. (Georgia, South Carolina).

REMARKS. Females of *C. nebulosa* and *C. pulla* can be conveniently distinguished from other members of the melanic subgroup by the very elongate metasoma especially T3 and T6.

6. *Calotelea pulla* n. sp.

Female. Length 1.7 mm. Head and mesosoma black, metasoma dark brown; antennae and legs dark brown, apices of tibiae and tarsi yellowish brown, mandibles and radicle yellowish; wings clear.

Head only very slightly transverse (23:30); interorbital space greater than eye width (13:8), as great as eye length (13:13); head generally with distinct coriaceous sculpture, the latter more coarse on vertex and occiput than on frons, however, with no smoother areas; mandibles tridentate; ocellar triangle low, POL twice as long as LOL (10:5), longer than temples (10:8); occipital carina very sharp, finely crenulate; antennal clava slender, A9-A11 twice as wide as long (6:3).

Anterolateral margin of pronotum with no foveolae; anterior margin of netrion with small foveolae; skaphion with distinct rim posteriorly; mesoscutum and entire scutellum with even coriaceous sculpture, with no smoother areas; mesopleural carina not developed; metanotal lamina generally low, moderately excavate medially, well developed at meson; marginal vein twice as long as stigmal vein (10:5).

In lateral view apex of horn does not exceed anterior margin of middle coxa; metasomatic tergites T1-T6 of dimensions (length:width) 18:17, 15:25, 28:28, 15:25, 10:17, 13:11, T7 not extruded for measurements; T1 longitudinally costate; T2 costate basally, longitudinally reticulate over posterior 2/3; T3-T6 finely reticulate.

Male. Unknown.

TYPE MATERIAL. Holotype: ♀ (CNC No. 16001), Sunshine Key, Florida Keys, Monroe Co., FA, January 8 1975, sweeping shoreline grass, L. Masner.

DISTRIBUTION. U.S.A. (Florida).

REMARKS. *C. pulla* and *C. nebulosa* are the two more slender members of the melanic subgroup. They differ from each other in several characters mentioned in the key.

7. *Calotelea atra* n. sp.

Female. Length 1.5 mm. Head and mesosoma dark brown, metasoma brown; radicle yellowish, A7 yellowish brown; legs brownish yellow, trochanters, apices of tibiae and tarsi yellowish; wings perfectly clear.

Head slightly transverse (21:31); interorbital space greater than eye width (13:8), less than eye length (13:16); head with even coriaceous sculpture, with no smoother areas, less shining than in other melanic species; mandibles subtridentate; ocellar triangle low, POL longer than LOL (10:6), twice as long as temples (10:5); occipital carina complete, finely crenulate; A9-A11 twice as wide as long (6:3).

Anterolateral margin of pronotum with no foveolae; anterior margin of netrion with only minute foveolae; skaphion with distinct rim posteriorly; mesoscutum and entire scutellum with even, rather coarse coriaceous sculpture, with no smoother areas; mesopleural carina almost complete; metanotal lamina not interrupted at meson, moderately excavate medially; marginal vein as long as stigmal vein (8:8).

In lateral view apex of horn not exceeding anterior margin of middle coxa; metasomatic tergites T1-T7 of dimensions (length:width) 15:15, 17:27, 26:31, 14:30, 10:22, 8:12, 5:3.5; T1 and T2 longitudinally costate; T3-T6 net-like reticulate.

Male. Differs from female (apart from secondary sexual characters) in having metanotal process without lamina, similar to male of *C. anthracina* (cf. Fig. 5).

TYPE MATERIAL. Holotype: ♀ (CNC No. 16002), Island E-3, Florida Keys, Monroe Co., FL, Lot # 327, July 7 1970, D. Simberloff. Allotype: ♂, Island E-2, Florida Keys, Monroe Co., FL, August 14 1970, Lot E-234 (CNC); Paratypes: 4 ♀ ♀, Florida Keys, Island E-3, lots #E-327, SQ-63, G-71, from June 19 to August 7 1969-70, D. Simberloff (CNC).

DISTRIBUTION. U.S.A. (Florida).

REMARKS. Specimens of *C. atra* can be conveniently distinguished from those of both *C. bicolor* and *C. anthracina* in that the coriaceous sculpture on the head and mesonotum is rather mat and even, without smoother spots (160×). The fore wings are clear in specimens of *C. atra* but partly infumate in specimens of both *C. bicolor* and *C. anthracina*.

8. *Calotelea bicolor* n. sp.

Female. Length 1.4 mm. Head, mesosoma and horn of T1 dark brown, rest of T1, T2 and T3 honey yellow, T4 light brown, T5-T7 brown; radicle, A1-A8 and legs yellowish brown, A9-A12 brown; fore wings with slight infuscation in area of basal vein.

Head slightly transverse (21:32); interorbital space greater than eye width (13:10), less than eye length (13:17); head with very fine uneven coriaceous sculpture, frons below anterior ocellus almost smooth (160×); mandibles subtridentate; cheeks with delicate short striae; ocellar triangle slightly higher than in other species, POL only slightly longer than LOL (9:7), distinctly longer than temples (9:4); occipital carina complete, finely crenulate; antennal clava slender, A9-A11 twice as wide as long.

Anterolateral margin of pronotum with no foveolae; anterior margin of netrion with only small foveolae; skaphion with delicate rim posteriorly; mesoscutum shining, with very delicate coriaceous sculpture, almost smooth posteromedially; scutellum almost entirely smooth except for narrow band along anterior margin; mesopleural carina incomplete, indicated only along upper part; metanotal lamina not interrupted, very moderately excavate medially; marginal vein as long as stigmal vein (9:9).

In lateral view apex of horn does not exceed anterior margin of middle coxa; metasomatic tergites T1-T7 of dimensions (length:width) 17:16, 18:27, 23:29, 13:28, 8:17, 5:10, 4:3; T1

(except for smooth horn) and T2 longitudinally costate; T3 with delicate reticulation and some fine longitudinal sculpture; T4-T6 with fine reticulation.

Male. Eyes smaller than in female; POL only slightly longer than temples (9:7); ocellar triangle lower and interorbital space wider than in female; no smoother areas on head and mesonotum; metanotal ledge without lamina; T1 and base of T2 honey yellow, rest of metasoma light brown; fore wings with dark band in area of basal vein darker than in female.

TYPE MATERIAL. Holotype: ♀ (CNC No. 16003), Brunswick Co., VA, June 10 1967, C. W. Berisford, with *Ips grandicollis* on *Pinus taeda*. Allotype: ♂, with same data as in holotype (CNC). Paratypes: 2♂♂, with same data as in holotype (CNC).

DISTRIBUTION. U.S.A. (Virginia).

REMARKS. This is a very distinct species of the melanic subgroup with the metasoma in the female distinctly lighter in colour than the head and mesosoma. The male differs from the female in a number of characters including the sculpture of head and mesonotum.

9. *Calotelea anthracina* n. sp.

Figs. 2, 4-8, 11-14

Female. Length 1.6 mm. Black, metasoma dark brown; palpi yellowish, antennae uniformly brown; legs brown, trochanters, upper apices of tibiae and tarsi yellowish brown; fore wing with slight infuscation in area of basal vein and under postmarginal vein, with small dark sclerotized spot at distal end of frenal gutter.

Head transverse (23:38); interorbital space greater than eye width (16:11), only slightly less than eye length (16:18); head with fine uneven coriaceous sculpture, frons below anterior ocellus appearing almost smooth (160×); mandibles bidentate; cheeks distinctly striate; ocellar triangle low, POL longer than LOL (11:7), distinctly longer than temples (11:5); occipital carina strong, complete, distinctly crenulate; antennal clava very slender, A9-A11 only slightly transverse (4.5:5.5).

Anterolateral margin of pronotum not foveolate; anterior margin of netrion with moderately large foveolae; skaphion with strong rim posteriorly; mesoscutum almost entirely coriaceous, sculpture becoming finer towards posterior margin of the sclerite; scutellum with coriaceous sculpture over anterior half, smooth and shining posteriorly; metanotal lamina not interrupted medially, deeply excavate at meson; marginal vein as long as stigmal vein (9:9).

In lateral view apex of horn of T1 does not exceed anterior margin of middle coxa; metasomatic tergites T1-T7 of dimensions (length:width) 17:18, 18:35, 29:38, 17:35, 11:21, 7:13, 4:5; T1 (except for smooth horn) longitudinally costate; T2 with longitudinal costae distinct only at base of tergite, sculpture otherwise changing gradually from longitudinal to reticulate; T3-T6 with reticulate sculpture.

Male. Differs from female (apart from secondary sexual characters) principally by having fore wings clear and metanotal ledge without lamina.

TYPE MATERIAL. Holotype: ♀ (CNC No. 16004), Carizzo Aroyo, 20 mi W Las Lunas, Valencia Co., NM, August 1-23 1977, Malaise trap, S. & J. Peck. Allotype: ♂, with same data as for holotype (CNC). Paratypes: 5♀♀ 16♂♂, with same data as in holotype (CNC, USNM).

DISTRIBUTION. U.S.A. (New Mexico).

REMARKS. Specimens of *C. anthracina* are the most robust as well as darkest members of the melanic subgroup of Nearctic *Calotelea*. They may be conveniently distinguished from those of *C. bicolor* by the colour of the metasoma, and from those of *C. atra* by the finer sculpture of the scutellum, and more robust body.

FIGS. 1-6. 1, *Calotelea* n. sp. ♀ (undescribed xanthic species from Trinidad, W.I.); metanotal lamina (arrow), 360×, SEM. 2, *Calotelea anthracina* n. sp. ♀, metanotal lamina (arrow), 260×, SEM. 3, *Calotelea* n. sp. ♀ (undescribed xanthic species from Trinidad, W.I.); row of foveolae on pronotum (arrows), 308×, SEM. 4, *Calotelea anthracina* n. sp. ♀, lateral view of mesosoma, 308×, SEM. 5, *Calotelea anthracina* n. sp. ♂, metanotal ledge (arrow), 456×, SEM. 6, *Calotelea anthracina* n. sp. ♂, mouth parts, 404×, SEM.

10. *Calotelea cincta* n. sp.

Figs. 9, 10

Male. Length 1.6 mm. Black, first segment of metasoma and base of T2 amber yellow, rest of metasoma brown; radicle, scape and pedicel bright yellow; legs including coxae dark yellow; fore wings clear, with basal vein indicated partly by dark streak.

Head transverse (23:35); interorbital space considerably greater than eye width (18:8), greater than eye length (18:16); head with even coriaceous sculpture, with no smoother areas; mandibles sub-tridentate; cheeks only finely striate; eyes distinctly smaller than in other species, with minute hairs (160×); ocellar triangle very low, POL longer than LOL (13:6), longer than temples (13:6); occipital carina complete, crenulate; A7-A11 twice as long as wide.

Upper half of anterolateral margin of pronotum with small foveolae; anterior margin of netrion with small foveolae; mesoscutum and entire scutellum with even coriaceous sculpture,

FIGS. 7-10. 7, *Calotelea anthracina* n. sp. ♀, occiput and skaphion (arrow, 260×, SEM. 8, *Calotelea anthracina* n. sp. ♀, dorsal view of scutellum through T1, 304×, SEM. 9, *Calotelea cincta* n. sp. ♂, metanotal lamina (arrow), 528×, SEM. 10, *Calotelea cincta* n. sp. ♂, row of foveolae on pronotum (arrows), 376×, SEM.

with no smoother areas; mesopleural carina weakly indicated along upper 1/4; metanotal ledge with distinct transparent lamina, the latter narrowly excavate at meson; marginal vein as long as stigmal vein (10:10); basal vein partly developed in upper part (right below submarginal vein).

Metasomatic tergites T1-T8 of dimensions (length:width) 14:17, 20:32, 24:34, 13:33, 8:25, 5:18, 2:11, 5:7; T1 longitudinally costate; T2 with longitudinal striae basally, striate-reticulate over posterior half; T3-T8 reticulate.

Female. Unknown.

TYPE MATERIAL. Holotype: ♂ (CNC No. 16005), Carizzo Aroyo, 20 mi W Las Lunas, Valencia Co., NM, August 1-23 1977, Malaise trap, S. & J. Peck. Paratypes: 4♂♂, with same data as in holotype (CNC).

DISTRIBUTION. U.S.A. (New Mexico).

REMARKS. The males of *C. cincta* and *C. mellea* are peculiar among the known Nearctic species of *Calotelea* in having a distinct transparent lamina on the metanotal ledge. The partly developed basal vein, brightly coloured segment 1 of the metasoma, and only partly developed row of foveolae along the anterolateral margin of the pronotum will distinguish males of *C. cincta* from those of *C. mellea*.

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FIGS. 11-14. *Calotelea anthracina* n. sp. ♀, 11, fore wing; 12, antenna; 13, dorsal view (sculpture of metasoma omitted in Figs. 11 and 12); 14, lateral view (dotted line indicating tilt of horn on T1).

Neotropical *Calotelea* now deposited in the Canadian National Collection of Insects and Arachnids (CNC, Ottawa). The latter material was essential for understanding the limits of the genus, individual variability, habits, etc.

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