

# NEW FOSSIL FULGOROID HOMOPTERA FROM THE AMBER OF CHIAPAS, MEXICO

BY

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THE FOSSIL HOMOPTEROUS MATERIAL on which this report is based consists of fragments preserved in amber obtained by the University of California from two localities in the vicinity of Simojovel, Chiapas, Mexico (see Hurd, Smith, and Durham, 1962). Out of a total of eight items, five were positively identifiable at least to family level, and are described below.

## Family CIXIIDAE

### Genus *Oeclixius* Fennah, new

Vertex very narrow, produced before eyes for less than length of an eye, lateral margins contiguous between eyes anteriorly, slightly separated posteriorly, foliately elevated, in profile distinctly convex, meeting frons acutely; frons elongate, narrow, medially carinate, lateral margins strongly foliately produced; clypeus shorter than frons, in profile strongly convex, disc narrowly triangular, median carina obscure, lateral margins basally foliate and confluent with those of frons; rostrum attaining postcoxae, apical segment more than half as long as subapical; antennae with second segment distinctly longer than broad and apparently cylindrical and distally truncate. Pronotum with discal area short, carinae not evident, ventrolateral lobes rather broad, tapering laterocaudad to acute lateroventral angle; mesonotum with five carinae. Legs with femora relatively short and tibiae slender, posttibiae much exceeding length of postfemora, laterally unarmed, apically with six spines, in two sets of three, basal and second metatarsal segments each with eight teeth on margin. Tegmina moderately elongate, obliquely rounded apically, clavus extending to a little beyond middle, veins rather narrow, beset with minute setiferous granules; Sc + R + M forming a long stalk, Sc rather narrowly embracing a distinct lenticular stigma, R with three branches at margin, M with three branches, Cu 1 with three or four short branches; claval veins uniting near middle of clavus. Wings of normal cixiine pattern.

Anal segment of female subtubular, flattened below and distally truncate, anal style long, porrect caudad, slender and gradually tapering distad. Ovipositor with third valvulae stout, laterally compressed, shallowly curved upward distad, a rounded or obovate ceriferous disc between base of ovipositor and base of anal segment.

Type species: *Oeclixius amphion*.

### *Oeclixius amphion* Fennah, new

(Fig. 132; pl. 3, lower left)

Frons more than three times as long as broad (including foliate margins). Anal segment of female about twice as long as broad at apex.

Testaceous; lower surface of abdomen, and third valvulae of ovipositor, except for a darker spot, pallid ochraceous. Tegmina hyaline, with veins almost concolorous, or dilute testaceous, two linear spots on hind margin of clavus, a suffusion rather narrowly overlying transverse veinlets, and a suffusion overlying each vein at lateral margin, dilute fuscous or piceous. Wings hyaline, with venation dark distally.

Female. Length, 3.5 mm; tegmen, 4.0 mm.

*Holotype* ♀.—U. C. Mus. Paleo. No. 13057, loc. B-7461. Locality B-7461 amber was purchased in Simojovel as coming from Pa-buchil (Rancho Alegre), Chiapas, Mexico. The Pa-buchil (or Rancho Alegre) locality is nearly 3 kms N 70° W of

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the town of Simojovel, Chiapas, Mexico. The marine invertebrate fauna from this locality indicates an age in the range of late Oligocene to early Miocene.

This specimen can be referred without hesitation to the *Oecleus* complex, which, in addition to *Oecleus*, includes *Antillixius* and *Rhamphixius*, but it cannot be

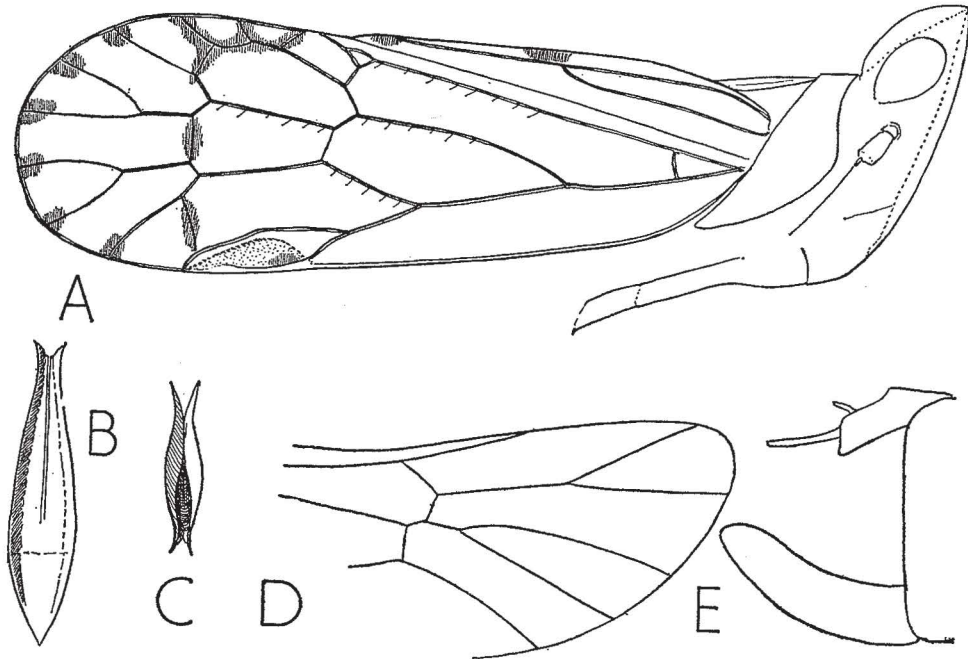


Fig. 132. A, Head, thorax and tegmen, right side; B, frons and clypeus (freehand sketch); C, vertex, with anterior margin uppermost (freehand sketch); D, apical portion of wing; E, female genitalia, right side.

placed in any of these without violating their current interpretation. In Muir's key (Pan-Pacific Ent., 1: 104) it would run to *Oecleus*, but can be separated as follows:

1. Mesonotum with five carinae, frons medially carinate .....2  
    Mesonotum with three carinae, frons not medially carinate .....*Rhamphixius* Fowler
2. Posttibiae relatively short, stout, not greatly exceeding femora; vein Sc in tegmen strongly angulate behind stigma, which is well developed .....*Oecleus* Stål  
    Tibiae long, slender, much exceeding femora; vein Sc in tegmen not angulate behind stigma, or only weakly so; stigma moderately or feebly developed .....3
3. Vertex strongly produced before eyes, subapical segment of rostrum more than twice as long as apical; tegminal veins obscurely and finely granulate, stigma feebly developed

*Antillixius* Myers

Vertex only little produced before eyes; subapical segment of rostrum not twice as long as apical; tegminal veins distinctly granulate, stigma moderately developed. *Oeclixius* Fennah

Some characters of the fossil cannot be seen or interpreted with confidence. It is likely that lateral ocelli were present, but the median ocellus, if present, would seem to have been small. It would seem that the basal portion of the costal margin is not expanded, as in *Oecleus*, but narrow, as in *Antillixius*. How far the form of the antennae is attributable to post-mortem change is uncertain; the cylindrical

form of the second segment is very appreciably different from the globular or subglobular shape found in the other genera.

? *Mnemosyne* sp.

(Fig. 133)

Frons about as wide at widest part as long in middle line, distinctly narrower at base than width of an eye, lateral margins sinuate, ampliate distally and produced laterad before antennae, disc moderately convex transversely, medially carinate, with median carina simple almost to base, median ocellus obsolete, clypeus deeply inserted into frons, medially carinate, lateral margins carinate, disc transversely convex, eyes rounded, antennae subglobose. Vertex apically narrow, lateroapical areolets narrow, moderately elongate, meeting at middle just basad of apical margin.

Tegmina with Sc + R forked slightly distad, and Cu 1 slightly basad, of union of claval veins, M arising separately from basal cell; claval veins uniting remotely from base, apparently at or distad of middle of clavus; veins sparsely setose. Wing with costa at margin, a little thickened near base, Sc + R, M, Cu 1, Cu 2, postcubital and two, perhaps three anal veins present.

Head fuscous or dark ferruginous; tegmina hyaline or yellowish hyaline with fuscous or reddish-brown veins.

Tegmen, length (actual) 3.5 mm, (probable when complete) 5.0 mm; width 1.2 mm.

*Specimen*.—U. C. Mus. Paleo. No. 12858, loc. B-5104 (1957). The B-5104 amber is from the Las Cruces landslide, Chiapas, Mexico. This locality is about 23 kms (airline) east-southeast of the town of Simojovel, about 6.8 kms southeast of the headquarters of the Rancho Santo Domingo, about 1.4 kms northwest of Rancho San José de Buenavista. The landslide is on the south slope, near the southeast end of the major ridge known locally as Nichcalan (also as Cerro Balumtun). The amber was found in a dense blue limestone near the base of the slide. The marine invertebrate fauna from the adjacent beds indicates an age in the range from late Oligocene to early Miocene.

The material comprises the anterior sclerites of the head, with part of the eyes, a procoxa, protrochanter and part of a profemur, two tegulae, the costa and costal cell of one tegmen and the basal two-thirds of the other tegmen, and of a wing.

The narrow vertex, not or scarcely projecting before the eyes, its narrow lateroapical areolets, the median frontal carina simple almost to its base, the relatively narrow tegmina, the union of the claval veins comparatively far from the base, and the straight Sc + R in the wing present a combination of characters that can be readily matched in the genus *Mnemosyne* and, less commonly, in *Oliarus*. The comparative delicacy of the venation and the form of the vertex as it curves into the frons is more common in *Oliarus* than in *Mnemosyne*, where a narrow vertex tends to widen apically. Modern species of both genera show a wide range of variation, and in the absence of the differentiating character of the distal venation of M in the tegmen, the present material cannot positively be referred to either one of the two genera.

Family FLATIDAE

Genus and species

(Fig. 134)

Head with eyes narrower than pronotum; vertex extensively overlapped by pronotum, frons longer than broad (about 1.2 : 1) medially carinate except near apex, sublateral carinae convex, diverging in basal third, converging in distal two-thirds, attaining frontoclypeal suture; lateral margins shallowly sinuate, incurved to suture below level of eyes; area between sub-

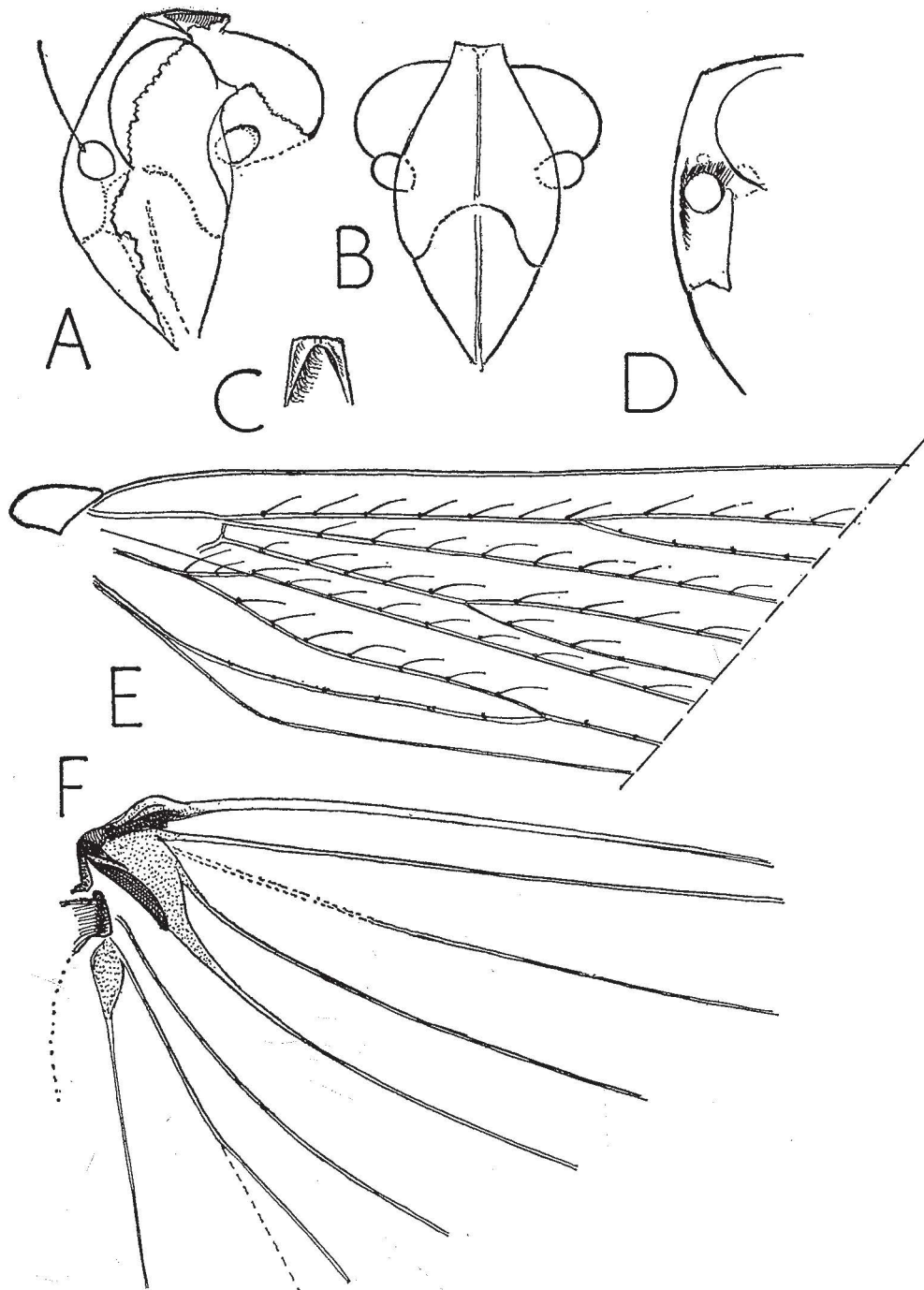


Fig. 133. A, Head of fossil, posterolateral view from left; B, frons and clypeus, restored from a corresponding modern specimen; C, apex of vertex, dorsal view, slightly schematic; D, frons and clypeus in profile, slightly schematic; E, tegula and basal half of tegmen; F, basal part of wing.



lateral and lateral carinae with pits; antennae cylindrical, basal segment subequal to second segment, extending laterad almost for width of an eye; clypeus much longer than broad, laterally ecarinate, medially ecarinate at least in basal half; rostrum laterally compressed as figured.

Thorax and abdomen of normal proportions as figured. Legs of normal structure proportionate to body, posttibiae laterally unarmed, apically with four spines, basal metatarsal segment with four spines.

Apparently uniformly of a light color in life, apex of spines on posttibiae and tarsi piceous. Length, 1.0 mm.

*Specimens.*—Two second or third instar nymphs, U. C. Mus. Paleo. Nos. 12742 and 12743, loc. B-1402. The B-1402 amber was purchased by Frans Blom in 1953

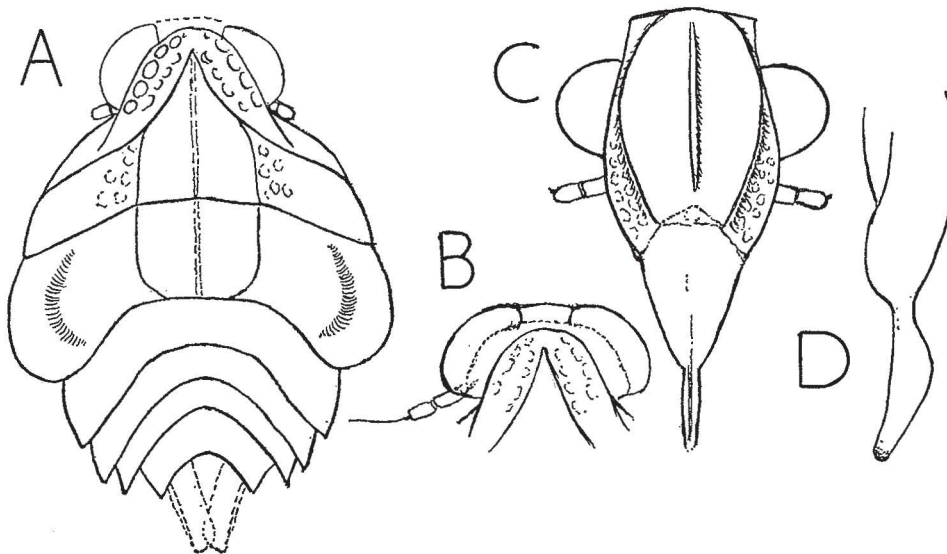


Fig. 134. A, Dorsal view, with head restored to normal position; B, dorsal view of head drawn forward as it appears in the fossil specimen; C, frons and clypeus, slightly schematic; D, sub-apical and apical segments of rostrum, side view (probably compressed as a result of post-mortem change).

as coming from the Simojovel area, Chiapas, Mexico. The precise locality is unknown. According to J. Wyatt Durham, it is probable that the amber is of late Oligocene to early Miocene age inasmuch as all known localities in this area where amber is mined are in rocks of this age.

In the specimen in which it was visible, the lateral compression of the rostrum is undoubtedly in large part due to collapse. The body color, a light tint, can be interpreted with fair confidence as having been creamy or greenish white in life.

The relatively elongate form of the frons, though narrowing the range of modern genera with which comparison can be made, is not sufficient to indicate any particular generic affinity; but even on the basis of present limited knowledge of early instar nymphs of Flatidae, it is evident that this species can be closely approached, if not matched, in species living today.

The collection also includes a slide, No. 13025, from locality B-7460, containing the claval portion of the tegmen of an adult flatid, possibly congeneric with the above nymphs.

Locality B-7460 consists of amber purchased in 1958 at Simojovel as coming from Pa-buchil (Rancho Alegre), Chiapas, Mexico. The Pa-buchil (or Rancho Alegre) locality is discussed under *Oeclixius amphion*, on page 43.

#### SUMMARY

*Oeclixius amphion*, a new genus and species of cixiid allied to *Oecleus*, is formally described, and descriptive notes are given on fragments of a cixiine cixiid and of a flatid.

#### LITERATURE CITED

HURD, PAUL D., JR., RAY F. SMITH, and J. WYATT DURHAM

1962. The fossiliferous amber of Chiapas, Mexico. (El ámbar fosilífero de Chiapas, Mexico.) *Ciencia, Méx.* 21 (3):107-118 + pl. I-II.