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## FOSSIL ARTHROPODS OF CALIFORNIA

### No. 19. THE TENEBRIONIDÆ - SCAURINÆ OF THE ASPHALT DEPOSITS

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This is the second report on the Tenebrionidæ from the asphalt deposits of Rancho La Brea and McKittrick.

In the first report five species of the Tentyriinæ were considered. The present report concerns the identification of four species of Scaurinae, Tribe Eulabini, one of which is new to science, and two have not been previously recorded as fossils.

#### ANATOMICAL CHARACTERS OF THE SCAURINÆ, EULABINI.

The head differs greatly from that of *Nyctoporis*, in having the gula completely defined.

The prothorax is a strong cylinder, and the only sutures are the pleuro-sternal sutures, upon which are located the tentorial pits of the pleural apophyses. The prescutal-presternal ring is unbroken and inwardly perpendicular around the anterior opening. The scutellum is a perpendicular piece at the posterior end.

The mesothoracic sterno-pleural suture is lacking, but there is a metathoracic sterno-pleural and pleural suture, and a small epimeron, but long episternum. The mesosternum has a pocket for the prosternal process. In contrast with *Nyctoporis* (Tentyriinæ) the metasternum is much shorter than the mesosternum. The trochantin is readily seen.

Possibly because of the welding of elytra to sternum, and the consequent rigidity of the elytra, there is no evidence of the sound organ on the under side of the elytra in the genus *Apsena*.

#### RECORD OF SPECIES. SUBFAMILY SCAURINÆ. TRIBE EULABINI.

Dr. Frank E. Blaisdell in 1932 (Trans. Amer. Ent. Soc. 58:35-101, plates 1-6) divided into the old genus *Eulabis* Eschscholtz into three genera: *Eulabis*, *Apsena* LeConte, and *Epantius* LeConte, of which at last the first two are composed of myrmecophilous beetles.

Four species of *Apsena* have been recovered from the asphalt of the La Brea Pits, as follows: the figures representing the maximum number of individuals indicated by the fragments:

Pit	<i>A. laticornis</i>	<i>A. labreæ</i>	<i>A. pubescens</i>	<i>A. rufipes</i>
4	1	0	0	0
9	11	0	8	2
Bliss '29	38	0	40	0
81	1	0	0	0
A	12	0	12	0
B	2	2	4	0
(?)	12	0	4	0
Total	77	2	68	2

It is of interest that the black ant, *Veromessor andrei* Mayr with which *Apsena laticornis* is associated today, has been recovered from Pits A (LACMIP 88), B (LACMIP 285), and (?) (LACMIP 287).

No specimens of *Apsena* have been recovered from the asphalt deposits of McKittrick, Sulphur Mountain or Carpinteria.

In paleontological work we cannot key the entire insect, but must key for each part. The separation of the four species on the basis of the elytra is as follows:

- 1a. Elytra distinctly costate on all interspaces.....2
- b. Elytra not costate on the first four interspaces, except on apical declivity; lateral costæ distinct. *A. labreæ* Pierce.
- 2a. Sutural costæ always present.....3
- b. Sutural costæ absent; paracarinal punctures noticeably distant from the carinal margins; strial punctures small, about 3 times the diameter of the paracarinal. *A. pubescens* (LeConte)
- 3a. Elytral costæ entire; paracarinal punctures against the carinal margins; strial punctures coarse, deep and round.  
.....*A. laticornis* (Casey)
- b. First 3 or 4 elytral costæ feebly elevated, although well developed on apical declivity; paracarinal punctures small, against carinal margins; strial punctures coarse, deep and round.....*A. rufipes* (Eschscholtz)

In this genus the elytra and sternites of meso- and meta-thorax, and the first three abdominal segments, form a cylinder, which in many cases has remained unbroken. The last two abdominal segments only, are free to move, and have hence been lost. The entire body is 7/10 longer than the elytra.

Measurements of the posterior half have been made as follows:

Species	Indiv.	Mean length mm.	Range in length mm.	Mean width mm.	Range in width mm.	Mean depth mm.	Range in depth mm.
<i>laticornis</i>	36	6.76	5.6-7.5	4.27	3.5-6.0	2.63	2.4-3.1
<i>labreæ</i>	2	6.65	6.5-6.8	4.8	4.7-4.9	2.85	2.8-2.9
<i>pubescens</i>	34	5.31	4.7-5.7	3.36	3.0-3.7	2.06	1.5-2.4
<i>rufipes</i>	1	3.6		2.3			

#### 6. *Apsena laticornis* (Casey) (Figures 1-4)

This species was first reported by Essig, and has been recorded from the Pits as follows: Pit 4 (LACMIP 274), — one posterior half; Pit 9 (LACMIP 288), — 2 thoraces, 4 posterior halves, 13 elytra, 2 abdominal sterna; Pit 81 (LACMIP 89), — one posterior half; Pit A (LACMIP 88), — one prothorax, 3 posterior halves, 17 elytra; Pit B (LACMIP 285), — 2 prothoraces, 2 posterior halves; Bliss '29 (LACMIP 277), — 6 prothoraces, 20 posterior halves, 35 elytra, 4 abdominal sterna; Pit(?) (LACMIP 287), one prothorax, 10 posterior halves, 4 elytra, one abdominal sternum. The material is labelled Species C7.

In Figures 3 and 4 the prothorax is sketched to show the difference in form from the other genera to be considered in this family. Prosternum differs slightly from that of *A. pubescens* (Fig. 5) Pretergite a completely infolded vertical ring. Intercostal process continues to posterior margin, but is vertically declivous and laterally pinched at apex. Coxæ narrowly closed behind. Tentorial pits of the pleural apophyses distinct on sterno-pleural suture, which is not clearly defined in its anterior half. Scutellum is a vertical inflexed area well defined.

In Figures 1 and 2, the elytra are depicted dorsally and laterally to illustrate the striation. In a whole insect, the scutellum is completely concealed, and does not lock the elytra. Elytra at base with axillary pieces welded and expanded to the humeri. Elytral areas well defined: Costal-subcostal area basal, sutural, and while triangular at base, is defined by a carina extending to the apex; bases of the other areas sharply defined for pairs of striæ, with carinæ extending from base almost to apex; alternate carinæ do not reach the base. Thus the first two striæ are Radial, the next four Media; from Humerus, the first pair are Cubital, followed by a single Postcubitus; Vannal Suture arises also from side of Humerus and extends to apex; epipleural area thus includes Cubitus, Postcubitus, and Vannus. The carinæ accent the interspaces; the striæ are deeply pitted with distinct punctures; paracarinæ punctures are very fine. In some specimens, the stria punctures on the under side of the elytra are surrounded by black rings making the stria arrangement clear. There is no evidence whatever of a sound organ.

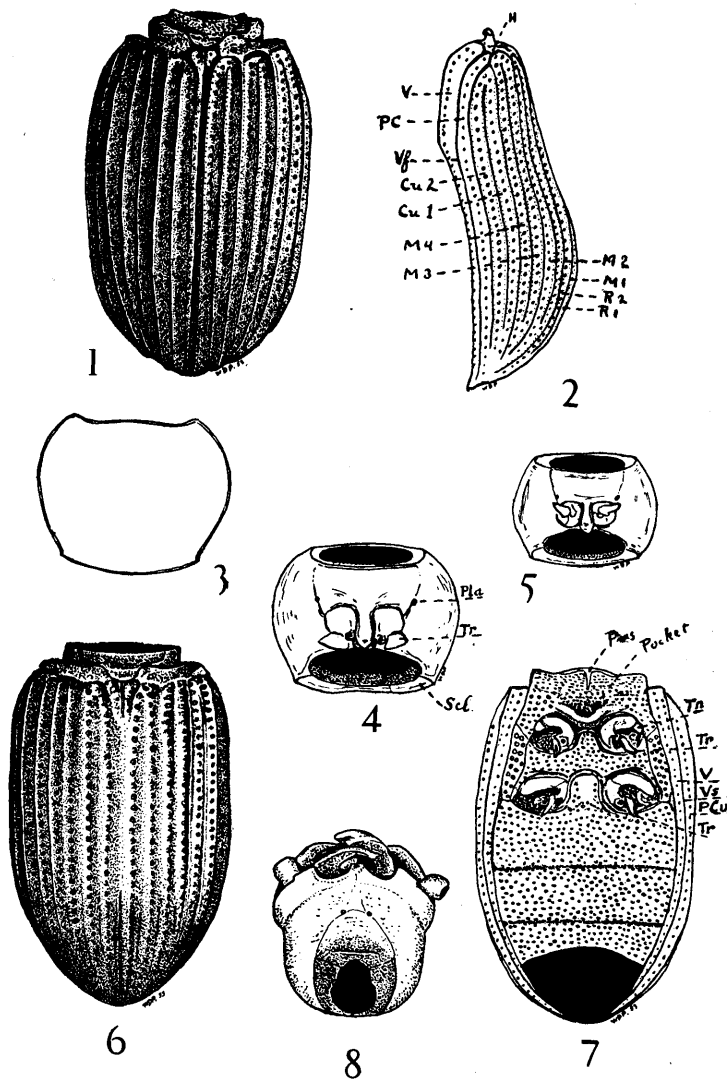


PLATE 23

- Fig. 1. *Apsena laticornis*, dorsum of elytra and scutellum. Length 7.3 mm., width 4.4 mm., thickness of body 2.7 mm.  
 Fig. 2. Same, side view of elytron. *Cu 1, 2*, - Cubitus; *H*, - Humerus; *M 1, 2, 3, 4* - Media; *PC*, - Postcubitus; *R 1, 2*, - Radius; *V*, - Vanus; *Vf*, - Vannal suture.  
 Fig. 3. Same, dorsal outline of pronotum.

(continued on next page)

### 7. *Apsena pubescens* (LeConte) (Figures 5, 8)

This species has been recovered from the Pits as follows: Pit 9 (LACMIP 288), — one prothorax, 6 posterior halves, 3 elytra, one abdominal sternum; Pit A (LACMIP 88), — 4 posterior halves, 2 pairs of elytra, 13 elytra; Pit B (LACMIP 285), — one head, one prothorax, 4 posterior halves; Bliss '29 (LACMIP 277), — one prothorax, 30 posterior halves, 20 elytra, 3 abdominal sterna; Pit (?) (LACMIP 287), — two posterior halves, 3 elytra, one abdominal sternum. The single head was washed out of a body capsule of a *Coniontis*. The material is labelled Species C 8.

In addition to the measurements given in the table, and the elytral characters in the key the following points are to be noted.

Head 1.6 mm. wide, dorsally with no sutures whatever, except at posterior margin, where the more or less vertical postocciput makes two indentations into occiput. Eyes occupy a narrow slit on dorsum and curve around parietal margin in a narrow curved strip, as much dorsal as lateral. Otherwise, vertex and frons are undifferentiated, and only a slightly denser punctation differentiates occiput from vertex. In the living insect occiput, gena, and gula are concealed by the prothorax. In the specimen at hand, mentum, labium, and maxillæ are missing, but the mandibles are present and the lacinial lobe can be seen on the right mandible. Submentum is insignificant. Gula is well marked out as a broadly curving sclerite with the tentorial pits on its anterior margin; from these pits there extends forward to submentum a faintly outlined gular peduncle. At base the gula is inflexed in conjunction with the postocciput, and between the inflexion and foramen there is a sharp transverse ridge. The postocciput is separated from gula by lateral sutures.

Prothorax widest at middle; sterno-pleural suture more distinct than in preceding species. Intercostal process abruptly bends downward to the apex of the segment, with the declivous portion

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Fig. 4. Same, sternum of prothorax. *Pla*, — tentorial pit of pleural apophyses; *Scl*, — Scutellum; *Tr*, — Trochanter.

Fig. 5. *Apsena pubescens*, sternum of prothorax. Length 2.1 mm., width 2.8 mm.

Fig. 6. *Apsena labreæ*, dorsum of elytra and scutellum.

Fig. 7. Same, sternum of meso- and metathorax and abdomen, except last two segments. Length 6.8 mm., width 4.7 mm. *Prs*, — Presternite; *PCu*, — Postcubitus; *Tn*, — Trochantin; *Tr*, — Trochanter; *V*, — Vannus; *VS*, — Vannal suture.

Fig. 8. *Apsena pubescens*, venter of head. Width 1.6 mm.

not vertically carinate, but visible from a ventral view, beginning just beyond the middle of the coxæ.

8. ***Apsena rufipes*** (Eschscholtz)

This species is represented from Pit 9 (LACMIP 288) only, by two pairs of elytra, one with thoracic sternum and abdomen, and another fragment.

For the measurements and elytral characters see table and key.

***Apsena labreæ*, new species** (Figures 6, 7)

TYPE — Posterior half of body, LA Co. Mus. No. S9061 from Rancho La Brea Pleistocene, Pit B (LACMIP 285), collected by Lytle, Wylde and Bliss, labelled Species C 149.

PARATYPE — Posterior half of body, LA Co. Mus. No. S9062, same data.

*Detailed description.* Distinguished from *A. laticornis*, and *A. pubescens* by lacking costæ in the first four interspaces. Scutellum broadly rounded, not extending beyond smooth basal area of elytra. Elytra with sharply defined basal area from which the striæ arise in pairs; striæ as described for *A. laticornis*; Jugum completely infolded at base. Elytra connate, but sutural line is visible at base and on apical declivity; stria punctures large and round, separated by little more than their diameter; first four interspaces slightly convex, but not carinate, except on apical declivity; interspaces separating Media 2 and M3 and all other lateral interspaces carinate; Radius 2 curves in to the base of R 1; Cubitus 1 and 2 are evidently from a single base; on apical declivity all interspaces are carinate, including the Costal margins; carina of Radial interspace is shorter than Radio-medial; Medial interspaces are short, and Medio-cubital surpasses them, almost reaching Radio-medial; the tiny paracarinal punctures do not occur on the first three interspaces.

Mesosternum basally cylindrical, fitting into prothorax, hence in a whole specimen the base is not seen. Basisternite anteriorly smoothly rimmed, from the middle of which the smooth furcal suture extends to the posterior fold which is perpendicularly erected in a broad V-shaped pocket to receive the prosternal process. Coxæ set on each side of this pocket, and the anterior process of metasternum, which is broadly rounded at apex. Trochantin small. Trochanters elongate, acuminate. Metasternum short, being shorter between the two pairs of coxæ than half the length of a coxa. The coxæ slightly more widely separated by broad oblong process of abdomen, reaching in front of the anterior margins of the coxæ, and having anterior margin curved. Episternal plate is the only pleural piece evident. Surface of underside coarsely, closely punctuate, the punctures largest on the metepisternum. There is no trace of the coriaceous margin of the third abdominal segment in these specimens, although it is present in the other species.