

**A REVISION OF THE AMERICAN
COMPONENTS OF THE TENEBRIONID
SUBFAMILY TENTYRIINAE;
PROCEEDINGS OF THE WASHINGTON
ACADEMY OF SCIENCES. VOL. IX, PP.
275-522, OCTOBER 18, 1907**

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THOS. L. CASEY

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SEVERAL of the groups reviewed in the following pages have formed the subject of previous study on the part of the writer, either monographically, as in the case of the genera allied to *Eurymetopon*, or as detached new species, and the present opportunity is embraced to give a connected view of the entire series, in that part of the great family Tenebrionidæ having the abdominal segments unmodified by a coriaceous hind margin and the middle coxæ enclosed externally by the sterna alone, without the intervention of a small piece attached to the coxæ and sometimes separating the sterna, known as a trochantin. This is the definition of the subfamily Tentyriinæ as given by LeConte and Horn, and is adopted for the present revision, although reasons will be given further on for a belief that it is not an entirely natural subdivision, there being two great groups included, characterized principally by the development of the mentum, which apparently affords a better line of delimitation for subfamily groups than the presence or absence of a trochantin. However, this is more a matter to be discussed in a general revision of the family than at the present time, and the following work is presented simply with the hope that it may prove useful in giving some slight conception of a problem in classification, the difficulties and uncertainties of which are well known. Perhaps the most perplexing feature pertains to the different-

ation of the genera, and I may have overstepped the limit of prevailing conservatism in proposing so many of them, but it seems certain that the proportion of wholly unnecessary names: that is, titles that are not at any rate subgeneric if not tully generic, will prove to be very small indeed. The limitation or extension in scope of genera and subgenera is, with the discovery of more complete material, becoming increasingly arbitrary and opinionative.

As in all of the more recent investigations of the writer, as much foreign material as possible has been accumulated for study in connection with our own, and this method is recommended to all those who would attempt systematic work upon a restricted fauna, as being more liable to produce results that may be valuable to a general monographer, if, in the future, there may develop anyone willing and able to take up such a life work as a general monograph of the larger families of Coleoptera is rapidly becoming. The foreign groups thus included for comparison are indicated, as formerly, by a prefixed asterisk in the tables of tribes and genera.

WASHINGTON, June 10, 1907.

Order COLEOPTERA; Family TENEBRIONIDÆ.

Subfamily TENTYRIINÆ.

The Tenebrionidæ in general have ever been a stumbling-block to the systematic investigator, for the reason that radical structural divergencies, constant through extended groups, are so few in number and minor group characters, in all manner of unexpected directions, so infinitely varied. In considering the Tenebrionidæ of the world, even so talented a morphologist as Lacordaire found these troubles practically insurmountable, and it is therefore with diffidence that I venture here upon a pronounced departure from the usual succession and arrangement of the numerous tribes of the subfamily Tentyriinæ, as defined by LeConte and Horn.

By studying carefully some of the palæarctic types of the Tenebrionidæ, I find the apparent relationships of some of our more isolated genera, such as *Craniotus*, which is evidently the

American representative of *Adesmia* and *Stenocara*, and further observation shows that in *Adesmia* and *Cranotus* we have the closest approach, among the Tentyriids with large mentum, to our remarkably specialized Zopherini. These facts suggest at once the reversal in order presented by the following rearrangement. The very isolated *Zophosis* of the old world fauna, which has there no close relative, seems to have its nearest neighbor in our Epitragini, which, although a generally winged type, presents many suggestive resemblances, such as the prolonged prosternum and excavated mesosternum, as well as the presence of two metasternal grooves before the posterior coxæ, the significance of which is wholly unknown. In *Zophosis* these lines are very oblique, conforming somewhat to the unusually oblique coxæ, and retreat broadly from the latter outwardly, though having the same point of origin as the transverse grooves of Epitragini and many other of our new world types, principally prevailing in those tribes characterized in general by developed hind wings. The equally isolated Erodini of the old world are passably represented by our *Edrotes*, which should form a tribe of itself and apart from *Epiphysa*, because of its widely different coxæ and tarsi, as well as the unusual epipleuræ. Such aberrant types as *Chilometopon*, which Horn referred quite erroneously to the Epitragini, and *Trimythis*, with some of the Mexican forms recently described by Champion, fall satisfactorily into a special tribe, related very closely to the Eurymetoponini, and *Conarus*, which the systematist mentioned referred with equal error to the Gnathosiini, is very plainly an Epitragid. The singular genus *Auchmobius*, which I regret being unable to observe in nature, appears from the remarks published by Dr. Horn, particularly concerning the aberrant mandibles and antennæ, to necessitate a tribe of its own, perhaps combining some of the characters of the Trimytini and Eurymetoponini.

With these preliminary remarks the arrangement of the tribes represented by material known to me may be presented as follows:—

- Mentum very large, concealing both ligula and maxillæ.....2
- Mentum generally smaller in size, never concealing both the ligula and maxillæ.....14

- 2 — Anterior tibiæ with a single terminal spur and a submedian external tooth; mandibles grooved externally throughout their length; mentum hexagonal, feebly sinuate at tip; intercoxal process of the abdomen narrow, subacute or slightly rounded; scutellum distinct; metasternum with transverse ante-coxal grooves; hind wings well developed..... **Cnemodini** 182
- Anterior tibiæ with two terminal spurs, not toothed externally near the middle in any American genus; mandibles never grooved externally except in *Erodiini*.....3
- 3 — Posterior coxæ more or less narrowly separated, the abdominal process acute to broadly rounded.....4
- Posterior coxæ widely separated, the abdominal process broadly truncate; metasternum without ante-coxal grooves, short, the body wingless; elytra frequently costulate.....11
- 4 — Elytra not embracing the sides of the body, the inflexed parts occupied wholly by the epipleuræ — or epipleural "repli" of Lacordaire.....5
- Elytra embracing the sides of the body, the inflexed parts not wholly occupied by the epipleuræ.....10
- 5 — Mentum hexagonal, with the apex more or less distinctly emarginate or sinuate.....6
- Mentum transversely parallelogramic, the apex very broadly arcuate from side to side and not sinuate at the middle, generally much more transverse.....9
- 6 — Front without a prolonged epistoma clasped by the mandibles, the frontal margin transverse and more or less feebly modified, the right mandible at least generally with a tooth which clasps the labrum only; antennæ slender, with the outer four joints broader; scutellum well developed; metasternum with ante-coxal transverse grooves; body generally winged, though often apterous. **Eurymetoponini** 16
- Front with the epistoma abruptly prolonged.....7
- 7 — Epistomal lobe clasped by the superior external ridge of the mandibles; antennæ filiform, generally with the last four joints larger.8
- Epistomal lobe not clasped by the mandibles, which are folded beneath it out of sight from above; antennæ gradually enlarged and compressed outwardly..... **Auchmobiiini** 303
- 8 — Scutellum well developed as in *Eurymetoponini*; body winged or apterous, the metasternum with or without ante-coxal grooves. **Trimytini** 340
- Scutellum extremely minute or obsolete; body wholly apterous; metasternum always very short, without trace of ante-coxal grooves. **Trientomini** 370
- 9 — Metasternum with transverse grooves parallel to the hind coxæ, the body generally winged, the epistoma lobed and the scutellum well developed..... **Epitragini**

10—Metasternum with oblique grooves homologous with the transverse ante-coxal grooves of preceding tribes: epipleuræ very wide, occupying virtually the entire inflexed sides of the elytra; scutellum wholly invisible; mentum hexagonal, sinuate at tip; antennæ slender; mandibles generally bifid at tip, folding under the labrum, the frontal margin not greatly modified; tibial spurs greatly developed; body oval, apterous.....***Zophosini**

Metasternum with very fine abbreviated transverse grooves, short, the body wingless, oval in form; epipleuræ narrow, entire as usual; eyes not prominent; scutellum invisible; mentum more transverse, sinuate at tip; antennæ slender; mandibles bifid at tip, strongly toothed above and clasping the sides of the prolonged epistoma; tibial spurs short as usual.....***Capnisini**

Metasternum without grooves, short, the body oblong or elongate, wingless; tibial spurs, mentum, eyes, epipleuræ and tip of the mandibles as in Capnisini; antennæ very stout; front variable in form; scutellum visible but small, always strongly angulate; elytra as in Capnisini, without punctured series, though sometimes with impressed lines.....***Gnathosiini**

Metasternum, tibial spurs, mentum, epipleuræ and tip of the mandibles as in Gnathosiini; antennæ very slender; front variable in form; scutellum distinct, always transverse and very obtusely truncate, generally not entering between the elytra behind the invariably pronounced basal margin; eyes coarsely faceted; body elongate, wingless, the elytra oval, with punctured series.

Triorophini

11—Mesosternum elevated, flat, abutting closely and on the same plane against the apex of the flattened prosternal process; hind coxæ transversely oval, only moderately abbreviated transversely.

12

Metasternum not elevated, discontinuous with the prosternum; hind coxæ small, oval, very much abbreviated transversely; eyes finely faceted; legs long and slender.....13

12—Body pilose, with broadly inflated elytra and narrower prorect anterior parts, the front with a strong epistomal projection clasped by the mandibles, which are bifid at tip; antennæ slender; scutellum invisible; epipleuræ obliterated anteriorly from near the base of the abdomen; metasternum longer than the first ventral; intercoxal process of the abdomen only moderately wide and broadly rounded.....**Edrotini**

Body broadly oval, glabrous and compact, the prothorax closely fitted to the elytra throughout the basal width of the latter; epistoma sinuate, not produced; mandibles small, folding beneath the labrum, deeply grooved externally but with the groove not attaining the bifid apex, the lower margin externally very acutely ridged; antennæ very stout; scutellum invisible; epipleuræ entire but very variable in form; metasternum extremely short, much

shorter than the first ventral; middle and hind coxæ extremely widely separated; anterior tibia with the outer angle prolonged into a slender spur, the outer side strongly toothed at the middle.

***Erodiini**

- 13—Epipleuræ more or less narrow but distinct and entire; body narrow anteriorly, with elongate-oval elytra, glabrous; head not lobed at the sides, the epistoma sinuato-truncate, the mandibles folding beneath the labrum; mentum truncate at base, feebly sinuate at apex; antennæ long, slender, with the outer five joints more or less broader; scutellum invisible; middle coxæ moderately, the posterior very widely, separated, the hind coxæ almost attaining the sides of the body and subglobular.....***Adesmiini**

Epipleuræ wholly wanting, except toward the apex of the elytra, where they are very narrow; body formed as in *Adesmiini* but pubescent, the middle and hind coxæ similar, the latter not approaching so closely to the sides of the elytra; head strongly, angularly lobed at the sides, the epistoma and mandibles as in *Adesmiini*, the mentum sinuate and impressed medially at base and deeply sinuate at apex; antennæ filiform, slender, with joints eight to ten gradually larger, the eleventh attached as a terminal process of the tenth; scutellum well developed, acutely triangular.

Craniotini

- 14—Elytra without true epipleuræ; anterior coxæ separated.....15
Elytra with clearly defined entire epipleuræ.....18

- 15—Antennæ very long, slender and filiform; body slender, the eyes on the sides of the head, convex and more or less prominent; maxillary palpi very long, the last joint elongate, arcuately truncate; scutellum well developed, semicircular; elytra costate; mesosternum greatly prolonged before the coxæ; met-episterna clearly delimited; hind coxæ large, widely separated; legs long.

***Leptodini**

Antennæ very small, compact, generally received in fossæ; eyes concealed in repose.....16

Antennæ moderately long, thick, filiform and perfoliate, usually scaly, free; legs short and stout.....17

- 16—Eyes very minutely faceted, flat, transverse, becoming approximate above; antennæ received within deep entire prosternal fossæ, the last three joints fused into an oblong solid club; mentum small, largely concealing the ligula, which is short, broad and densely hairy, the labial palpi wholly invisible without dissection [attached at the sides—*Lacordaire*]; tarsi deeply grooved beneath; mandibles truncate; scutellum invisible or minute; body elongate, suboval, convex, with smooth but tuberculose integuments.....**Zopherini**

Eyes minutely faceted, flat, more widely separated above; antennæ more slender, sometimes received in fossæ, never having the last three joints fused; mentum small, leaving the maxillæ and much