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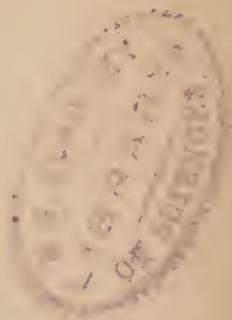
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## SOME INTERESTING COLOUR-VARIETIES IN THE GENUS CROSSIDIUS.

BY H. F. WICKHAM, IOWA CITY, IOWA.

While engaged in the re-arrangement of some boxes of Cerambycidae recently, the peculiar modifications of the ordinarily very simple pattern of coloration in the genus *Crossidius* brought about the desire to see to what extent and under what circumstances certain of these modifications were carried on or existent. The results of the studies ensuing thereupon are presented in the present paper.

The pattern which may be regarded as the typical one, and upon which all the others are built, either by simple addition or subtraction, is as follows:—Head black, thorax black with yellow side margins, elytra yellow with the humeri and a large elongate common sutural spot black. I do not wish it understood, however, that this is to be regarded as the original pattern from which the others have been evolved through the processes of natural or sexual selection—only as a common plan of coloration, and one which forms a convenient standard of comparison.

In habit the beetles are diurnal, frequenting flowers of golden-rod and other yellow-flowered Compositae, more especially in the arid regions of the United States and southward. In our faunal limits the genus is found from Montana and Oregon to Texas and Southern California, spreading over a vast extent of territory, and one of great differences in climatic and atmospheric, as well as of geologic characters. Under these circumstances we might well expect to find the genus composed of either many more or less closely allied species, or one or few very variable ones. My own experience goes to show that, in this group, those species of wide distribution offer many interesting variations, and to bring some of these before the reader I have prepared the accompanying plate, wherein the body and antennae of the insects are represented in a conventional manner, and all accuracy of delineation confined to the points under discussion—the elytral pattern.



THE PHALANGINÆ OF THE UNITED STATES.

BY NATHAN BANKS, SEA CLIFF, N. Y.

The family Phalangidæ is readily separable from the other families of Phalangida by having but one simple (not compound) claw at the end of each tarsus and having a claw at the end of palpus. The last (fifth) joint of palpus is nearly always longer than the next to last; an exception is the male of *Protolophus*. Our species have been described by Say (Complete Writings), Wood (Bull. Essex Inst., 1868), Weed (Bull. Ill. State Lab. Nat. Hist., 1889, and various articles in Am. Nat., 1887-1893), and Banks (Trans. Ent. Soc., Wash., 1891). The genera known to me may be separated by the following key:—

- 1 { Body with two rows of large tubercles, male with fifth palpal joint shorter than fourth, female with third palpal joint forked..... *Protolophus*.
- 1 { Body without large tubercles, fifth palpal joint always longer than the fourth..... 2
- 2 { A group of spines on the front margin of the cephalothorax, eye-tubercle with two rows of prominent spines..... 7
- 2 { Not with both of above characters..... 3
- 3 { Three large spines on the second joint of palpus, eyes exceedingly large..... *Caddo*.
- 3 { Without such spines, eyes normal..... 4
- 4 { Femur I., much shorter than body, in the females not as long as width of body..... 5
- 4 { Femur I., longer, or in some females but little shorter than body..... *Liobunum*.
- 5 { Metatarsus I., without false articulations, femora and tibiæ I. and III. much thickened..... 6
- 5 { At least one false articulation in metatarsus I., femora and tibiæ normal..... *Leptobunus*.
- 6 { Eye tubercle spinose..... *Globipes*.
- 6 { Eye tubercle smooth..... *Eurybunus*.
- 7 { Second joint of palpus with prominent spines..... 8
- 7 { Second joint of palpus without prominent spines..... 9
- 8 { No false articulation in metatarsus I., eye tubercle more remote from the anterior margin. .... *Lacinius*.
- 8 { At least one false articulation in metatarsus I., eye tubercle farther forward..... *Oligolophus*.
- 9 { Femora as narrow as, or narrower than eye-tubercle, fifth joint of palpus longer than the third and fourth together..... 10
- 9 { Femora wider than eye-tubercle, fifth joint of palpus not longer than the third and fourth together..... *Homolophus*

- 10 { Femur I. longer than width of body. . . . . *Phalangium*  
 { Femur I. not longer than width of body. . . . . *Mitopus*

Trachyrhinus, Weed [Am. Nat., 1892], is unknown to me; it appears to be near Homolophus, but with more slender legs, more spinose palpi, with a different patella, and larger eye-tubercle. Wood's description of *P. favosum*, however, reads much like *Mitopus biceps*, Thorell.

These genera I arrange in four tribes.

#### PROTOLOPHINI.

This embraces the single genus *Protolophus*, remarkable for the structure of the male palpi.

*Protolophus*, gen. nov.

In the male the second, third and fourth palpal joints are greatly enlarged, and the fifth joint is a little shorter than the fourth; the claw at the end of the fifth is, however, distinct. The female has the palpi more normal, the fifth joint longer than the fourth, the third joint is prolonged on the inner side, as in *Prosalpia*, and the fourth has a small projection at tip on the inner side. The eye-tubercle is low, with two rows of small spines. The legs are short, femur II. being shorter than the body; tibiæ without false articulations. The dorsal parts of the first five abdominal segments are more united than those beyond, each of these five segments having a median pair of large tubercles. Two species are known to me.

Abdominal tubercles unarmed. . . . . *tuberculatus*.

Abdominal tubercles with a few apical spines. . . . . *singularis*.

*Protolophus tuberculatus*, n. sp.

Length, 8 mm.; femur I., 2.3 mm.

Colour—Gray to brownish, the cephalothorax gray, the dorsum of abdomen darker, somewhat reddish-brown. Body with a broad, darker, median stripe, beginning at the anterior margin of the cephalothorax and extending to the sixth abdominal segment, narrower and darker on the abdomen than on the cephalothorax. Just below the front margin of the cephalothorax are two small median spines. The venter is pale grayish with a few brown spots near the sutures, the tips of the mandibles black, the coxæ brownish, the trochanters yellowish, the femora, patellæ and tibiæ reddish-brown, the metatarsi yellowish, the tarsi gradually becoming darker, the abdominal tubercles black. The legs are covered with small spines, on each side of the coxæ there are rows of small black plates.

The female is similar, but the dorsum is more reddish, the venter more

mottled than in the male, and there are some brown spots on the basal joint of the mandibles above.

Southern California. Not uncommon.

*Protolophus singularis*, n. sp.

Similar to *tuberculatus*, but the abdominal tubercles bear from two to four spines. The anterior margin of the cephalothorax is more spinose; and the second and fourth joints of the palpi are much more enlarged than in that species; the eye-tubercle is also more spinose. The legs are more slender, especially the second pair. The body and legs are more brownish, and the palpi are mottled, the second joint of the mandibles very dark.

Southern California. Collection of Dr. Geo. Marx. One male.

#### CADDINI.

This tribe embraces only *Caddo agilis*, remarkable for its large eyes. It shows its relation to certain genera of the next tribe in having spines on the second palpal joint. One young specimen has a white band above. I have it from N. Y. and D. C.

#### OLIGOLOPHINI.

The very spinose character of the members of this tribe distinguish them from all their allies.

*Oligolophus pictus*, Wood.

This occurs in the Eastern States.

*Lacinius ohioensis*, Weed.

Ohio, N. Y.

*Lacinius texanus*, Banks. Psyche, 1893.

Texas.

*Mitopus biceps*, Thorell.

Described by Thorell in 1876 from Colorado; I have received specimens from L. M. Cockerell.

*Phalangium cinereum*, Wood.

The northeastern parts of the United States and in Canada. [A. D. MacGillivray].

*Phalangium longipalpis*, Weed.

Arkansas. This would be called *Cerastoma* by some European authorities.

*HOMOLOPHUS*, gen. nov.

Quite prominent spines upon the cephalothorax and eye-tubercle, and with transverse rows on the abdomen. Legs thicker than usual, the anterior femora being much thicker than the eye-tubercle is wide, almost as thick as the basal joint of the mandibles; femur I., is a little longer than the width of the body, tibiæ without false articulations. The fifth joint of palpus is not quite as long as the third and fourth together. This genus is related to *Phalangium*, but the last joint of palpus is shorter, and the legs are shorter and stouter.

*Homolophus arcticus*, n. sp.

Length, 6.4 mm.; femur I., 4.2 mm.

Colour—Cephalothorax yellow-brown, black in the middle behind; dorsum of abdomen black; legs dark red-brown, yellow at extreme base of the femora and on the trochanters; venter brown. Eye-tubercle with two rows of a few spines; cephalothorax with scattered spines, arranged much as in *Phalangium cinereum*; abdomen with six transverse rows of similar spines; posterior angles of the cephalothorax projecting and rounded with a few prominent spines. Legs stout, very spiny, having a few more prominent spines at tips of femora, patellæ and tibiæ; second pair of legs lost.

Commander Island, Siberia. Collection of Dr. Geo. Marx.

## LIOBUNINI.

This tribe includes the more typical and common members of the sub-family.

*GLOBIPES*, gen. nov.

The principal character of this genus is the enlarged femora and tibiæ of legs I. and III., the eye-tubercle is low and with a few spines, legs short, but femur II. is longer than the body and more than twice as long as femur I. Metatarsus I. without false articulations. The palpi are normal.

*Globipes spinulatus*, n. sp.

Length, 3.5 mm.; femur I., 1 mm.

Colour, brown or reddish-brown, tip of abdomen more gray, dorsum somewhat mottled with brown, coxæ yellowish, trochanters and base of femora yellowish, remainder of femora, patellæ and tibiæ reddish, metatarsi yellowish, tarsi a little darker, palpi pale, tips of mandibles black. The female has two median white spots near the tip of the abdomen. The

palpi are very short, the patella and tibia somewhat enlarged, the fifth joint longer than the third and fourth together. The cephalothorax and abdomen are smooth; the legs have many small spines, most prominent on the enlarged parts of legs I. and III.; tibia II. has three false articulations. The legs of the female are longer and more slender than those of the male. The abdomen of the female is larger and pointed behind, while that of the male is somewhat truncate.

Southern California.

#### EURYBUNUS, gen. nov.

Eye-tubercle very low and smooth, cephalothorax with an elevation on the anterior margin bearing a few small spines. The segments of the dorsal shield of the abdomen are so closely united that their sutures are hardly discernible. The femora, patellæ and tibiæ of legs I. and III. are enlarged; femur II. barely twice as long as femur I., and a little longer than the body; metatarsus I. without false articulations.

#### *Eurybunus brunneus*, n. sp.

Length, 9 mm.; femur I., 4 mm.

Colour—Dorsum uniform brown, the margins of the abdomen a little white; venter grayish-white; coxæ, trochanters and part of the femora yellowish, a band near tip of femur brown, the extreme tip whitish; base of patella brown, the tip white; middle of tibia brown, the base and tip white; same with the metatarsus, except that the brown is not as dark; tarsi brownish; palpi and mandibles yellowish. Body very smooth, femora I. and III. with a few short scattered spines, similar spines on the under side of tibiæ and metatarsi I. and III., tibia with three false articulations.

Southern California.

#### LEPTOBUNUS, gen. nov.

Legs short, joints but little thickened, femur I. much shorter than the body; femur II. frequently not as long as the body. Eye-tubercle narrow, usually smooth. *L. californicus* is the type. In this species the palpal claw is smooth, and metatarsus I. has but one false articulation; lateral pore is very large and looks outward. In the two other species the palpal claw is dentate, metatarsus I. has several false articulations, and the lateral pore is like that of *Liobunum*. For these reasons the last two species may form another genus.

|   |   |  |                     |
|---|---|--|---------------------|
| 1 | { | Metatarsus I., with one false articulation . . . . .     | <i>californicus</i> |
|   |   | Metatarsi I., with several false articulations . . . . . | 2                   |
| 2 | { | Dorsum smooth . . . . .                                  | <i>maculosum</i>    |
|   |   | Dorsum granulate . . . . .                               | <i>grande</i>       |

*Leptobunus grande*, Say.

*Liobunum similis*, Weed.

Va, D. C., Ohio, Ill.

*Leptobunus maculosum*, Wood.

Pa., W. Va., Ohio.

*Leptobunus californicus*, n. sp.

Length, 6.6 mm. ; femur I. 2.7 mm.

Colour—white above, mottled with brown and black, the vase mark indefinite; beneath whitish, with a few brown spots; legs yellowish, with an apical brown ring on each joint. Eye-tubercle low and smooth; body smooth; legs smooth, except the tarsi, which have spines at each articulation. Legs quite stout; metatarsus I. with one and tibia II. with two false articulations; palpi with the fourth joint longer than the third; fifth joint about equal to the third and fourth together.

Southern California (Davidson).

LIOBUNUM, Koch.

*Forbesium*, Weed.

The genus *Forbesium* is based on young forms of previously described species. *Liobunum* is very rich in species; many forms remain to be described. I will mention but one, readily recognized by having two large yellow spots.

*Liobunum bimaculatum*, n. sp.

Length, 4.2 mm. ; width of abdomen, 3.5 mm. ; femur I., 11.9 mm. ; femur II., 19.5 mm.

Colour—dark brown, with two large yellow spots over the juncture of the cephalothorax and abdomen; the eye-tubercle black; venter, palpi and legs yellowish; patellæ and tibiæ at tip brownish; metatarsi and tarsi somewhat brownish. Body short and broad; the end of abdomen bent under; the side-pieces of the sternum appear to be completely separated from the sternum proper; coxæ, venter and sternum with a few granules. Eye-tubercle moderately high; more than its length from the anterior margin, and with two rows of spines above. Abdomen with a few transverse rows of small, stiff hairs. Legs extremely long, with some small spines,

and a few larger ones at the tips of the femora and patellæ; tibia I. without false articulations, tibia II. with several. Second joint of palpus with small spines beneath, the third and fourth joints about equal.

Southern California. Kindly loaned to me for description by Dr. Geo. Marx.

The remaining species of this genus are as follows:—*L. vittatum*, Say, *L. dorsatum*, Say, *L. nigropalpi*, Wood, *L. exilipes*, Wood, *L. verrucosum*, Wood, *L. ventricosum*, Wood, *L. calcar*, Wood, *L. bicolor*, Wood, *L. politum*, Weed, *L. elegans*, Weed, *L. longipes*, Weed, *L. nigripes*, Weed. All are from the eastern United States except *L. exilipes*, from California; this also occurs near Olympia, Wash. State (Trevor Kincaid).

#### CORRESPONDENCE.

##### UNIDENTIFIED BOMBYCIDS.

Sir,—In regard to Mr. Smith's note on page 164 in CANADIAN ENTOMOLOGIST for June, I would say that I am the authority for the reference of *Saligena personata* to *Raphia frater*, and for the fact that now a series of specimens of *Sphida obliquata* are in Brit. Mus. Coll. under the label of "Edema obliqua." I have not the Brit. Mus. lists before me, but this series of apparently bred specimens of *Sphida obliquata*, which I found on my second, were not in Brit. Mus. Coll. at my first visit, when I examined the collection, with a specimen of the moth, for the express purpose of identifying the species. They could not have escaped my notice. They must have been added subsequently to my visit and description. On this first occasion I discovered, quite misplaced, the type of the much more obscure species *Arzama densa*, Walk.; without this identification the name *Arzama* would have hardly been placed in our catalogues. I recognized *Sphida obliquata* as allied to the type of *Arzama densa* at a glance. I examined the *Notodontide* carefully, making several identifications, and the specimens now under *Edema obliqua* were not then there. A reference to our original paper in Tr. Am. Ent. Soc. Phil., will show that I examined the *Notodontians* carefully. The probability is, that the species must remain as catalogued by me, viz.: *Sphida obliquata*, G. & R., when the facts are all known. In cases where specimens are simply stuck without type labels under printed labels in Brit. Mus. Coll., they are not to be taken as Walker's type, when in any way disagreeing with Walker's descriptions. A. R. GROTE, Bremen.