

ART. XV.—*New Fossil Coleoptera from Florissant*; by
H. F. WICKHAM.*Calosoma* Web.

C. calvini n. sp. Represented by a well preserved elytron, measuring 16.30^{mm} from the humeral angle to the apex of the specimen, the extreme point and a portion of the scutellar region being lost. Greatest width (about apical two thirds) 5.90^{mm}. The sides are approximately parallel, only slightly broadening from the base to that point, the outer margin thence regularly arcuate to the tip. The margin is quite broadly reflexed at the humerus but becomes narrower posteriorly, and fades out about the broadest part of the elytron. Surface with about eighteen striae, well impressed and sub-equidistant, the two exterior somewhat indistinct for about half their length at base and apex. The fifth stria joins the fourteenth at a point about 2^{mm} from the apex, forming an arc within which all the enclosed striae come to an end, while those outside continue nearly or quite to the tip. Interstices rather faintly but distinctly convex, divided by fine transverse lines into quadrate spaces which are broader than long; striae plainly and fairly deeply punctured, the punctures small and distant, distinct to the extreme apex.

This specimen indicates a species considerably larger than *C. emmonsi* Scudder, which was also described from the Florissant shales, and differs as well in having distinctly punctured elytral striae. The general arrangement of the striae near the tip is less like that of the recent *C. wilcoxi* (with which Scudder compares his *C. emmonsi*) than of our common *C. calidum*, but the foveae, which can be made out on the fourth, eighth and twelfth interspaces, were apparently small as in *C. wilcoxi*.

The type, described above, is without exact indication of locality, being marked simply Florissant, 1908. It was received from Prof. Cockerell. A second specimen, collected by Mrs. Cockerell at Station 13, is also referred to this species. It consists of an elytron in much less perfect preservation than the type and portions of two legs, one of which, though actually smaller, shows the tarsal joints to have been proportioned almost exactly as in *C. scrutator*. The elytron is somewhat smaller than the type, measuring about 14^{mm}, but as far as can be seen is similarly punctured.

I take pleasure in giving to this fine species the name of my honored instructor and colleague, Dr. Samuel Calvin, as a slight recognition of his worth as a man and a geologist.

The holotype is in Peabody Museum of Yale University. Cat. No. 4.

Acilius Leach.

A. florissantensis n. sp. The specimen shows an underside in only fair preservation, the two hind legs in place and what appears to be one of the patellate front tarsi, indicating that the insect was a male. The species is about the size and shape of our common *A. semisulcatus* but apparently with slightly longer tibiae and with the second abdominal segment somewhat shorter in proportion to the third. Length 13^{mm}, width 9.25^{mm}.

Station number 14. Collection number 257. Received from Prof. Cockerell. Holotype in Peabody Museum of Yale University. Cat. No. 5.

No other species of this genus has been reported from the Florissant shales, and while the specimen in hand is not sufficiently perfect to show many truly specific features, it seems worth while to characterize it as well as possible, since the generic facies is quite well marked and so few fossil aquatic adephagous beetles are known. The genus is represented in North America by only three species, two of which are very closely related.

Philydrus Sol.

P. scudderi n. sp. Almost regularly oblong-elliptical, elongate, evenly and slightly narrowed at each end. Head large, 1.35^{mm} wide and .70^{mm} long, eyes not defined, antennae and palpi lacking, except the pseudo-basal joint of one of the latter which is too indistinct for study. Prothorax short, broadest just perceptibly in front of the base, sides regularly and slightly curved to the apex, front angles damaged, apical margin roundly emarginate, base subtruncate at middle, slightly sinuate each side, finely margined, hind angles apparently slightly less than right and somewhat rounded. Sides of elytra nearly straight to about the middle, thence gradually regularly rounded to the apex. Sutural margin with very fine bead. Legs not shown. Scutellum rather small. Length 5.25^{mm}, width 2.65^{mm}.

The surface of this specimen shows a scabrous granulation which is probably due, in part at least, to the decomposition of the exoskeleton. It is, however, sufficiently well preserved to show that the insect was black. On the sides of the prothorax are some coarse punctures recalling the similar group in *Hydrobius fuscipes*.

The specimen almost exactly resembles the description and figure of *Tropisternus limitatus* Scudder, also from the Florissant field. I should have placed it there had not Dr.

Scudder definitely stated that no sculpture whatever (except certain raised lines) was shown in his examples. Further, the entire facies of my specimen and particularly the small size of the scutellum lead me to place it in *Philydrus* rather than in *Tropisternus*. It is, of course, impracticable to carry the identification into the groups (based upon palpal characters) created by the dismemberment of the old genus *Philydrus*.

Station number not given. Collection number 51. Received from Prof. Cockerell. Holotype in Peabody Museum of Yale University. Cat. No. 6.

Podabrus Westw.

P. wheeleri n. sp. The type specimen, consisting of obverse and reverse, shows one elytron entire and a part of the other, the head, thorax and abdomen, one leg of each pair and both antennæ. Parts of the remaining legs are visible through the overlying parts of the body.

Head moderate, eyes small, apparently about as in *Chaubiognathus pennsylvanicus*. Antennæ seemingly eleven-jointed, moderately slender, the first joint larger, second apparently about one half as long as the third, the fourth and following considerably longer, all the joints, especially the proximal ones, noticeably broader at apex. Prothorax apparently not greatly differing in width from the head, broader than long, truncate in front. Elytron subtruncate at tip, the disk finely costulate (probably twice). Abdomen projecting beyond the elytra the length of two visible segments; another may have been broken off. Legs moderately stout for this family, the hind ones much longer than the others. Tarsi all partially mutilated, so that it is impracticable to describe individual joints, but the tarsus of the middle leg seems to be of the type shown in the recent *Podabrus comes*. The basal joint of this tarsus seems to have been displaced. Length of specimen entire 17·25^{mm}, of elytron 11^{mm}, of antenna 7·50^{mm}, of hind femur 5^{mm}, of hind tibia 5^{mm}.

Station number 13. Collection number 165. Received from Prof. Cockerell.

A long study of this insect has resulted in maintaining it in the position given it at first sight. The length of the abdomen is probably due in part to maceration before the embedding was completed. The antennæ are essentially of a Podabroid type, and I think the generic assignment is not far out of place. As will be seen from the measurements, the size is considerably above the average of the American species of *Podabrus*, but this is largely due to what I consider the unnatural extension of the abdomen. Nothing allied is known from the Florissant shales. The fact that the specimen is preserved principally in

side profile accounts for the lack of comparative measurements of the prothoracic proportions in the foregoing description.

Named for Dr. W. M. Wheeler, who has figured the type as an undescribed Meloid in the American Museum Journal, vol. vi, p. 202.

Holotype in Peabody Museum of Yale University. Cat. No. 7.

Trox Fabr.

T. antiquus n. sp. Form oblong, broader behind, widest about one third before the apex of the elytra. Head concealed. Prothorax slightly less than twice as wide as long, broadest at or very close to the base; sides regularly arcuately narrowing to apex, which is much narrower than the base; surface finely, fairly regularly granular, uneven. Base arcuately emarginate each side for the reception of the elytra, each of which is ornamented with about eight rows of small granular tubercles, general surface uneven. There appears to have been a large tubercle on each side of the suture about one fifth from the base, but this may be fortuitous. Length 5.75^{mm}, width 3.25^{mm}.

Station 14, Mrs. Cockerell. Collection number 274, Florissant Expedition 1906.

This species seems to have been about the size of a rather small specimen of the recent *T. aequalis*, but with sculpture more resembling *T. atrox*.

Type in the British Museum of Natural History.

Meracantha Kirby.

M. lacustris n. sp. A profile is shown in fair preservation exhibiting head, thorax, elytra and three legs, apparently the hind pair and one of the middle. Head small, antennæ wanting except what may be the basal joint of one. This joint is quite large and broad, but I believed it to be crushed. The only palpus showing has the last joint distinctly triangular. Prothorax longitudinally very convex, posterior margin straight when viewed from the side. Elytra also strongly longitudinally convex. Legs very long and slender, thighs strongly clavate towards the tip, tarsi obscure. Length 10.50^{mm}, elytron 7.50^{mm}, hind femur 4.75^{mm}, hind tibia 4^{mm}.

Station number 11. Collection number 222. Received from Prof. Cockerell. Holotype in the Peabody Museum of Yale University. Cat. No. 8.

I am not able to decide definitely as to the probable nature of the sculpture in this specimen. So much variation exists in the fineness of the different layers of shale that it is frequently hard to tell characters due to the insect from those dependent

on the matrix. However there is an appearance of distant impressed lines or striæ on the elytra.

The generic reference, naturally, is only provisional; more perfect specimens may throw the insect in some other genus. The outline, however, is strikingly like our recent *Meracantha contracta*, but the fossil is considerably smaller and has more slender femora which are more strongly and suddenly clavate towards the tip.

Mordella Linn.

M. lapidicola n. sp. A species about the size of our recent *M. scutellaris* showing the characteristic wedge-shaped form, long hind legs and anal style of *Mordella* and its allies. The specimen exhibits a side view in obverse and reverse. Three legs are visible, one of them belonging to the posterior pair. Antennæ and mouthparts are obscured, and as the slab of stone in which the specimen is preserved is of coarse texture the sculpture is obliterated. Probably the insect can be distinguished from any others which may be discovered in these shales by the comparative measurements. Length 6.75^{mm}, anal style, beyond elytral tip, 1.75^{mm}, hind femur 1.30^{mm}, hind tibia .90^{mm}, hind tarsus 1.75^{mm}, first joint of this tarsus .75^{mm}.

Station number R. 13 B. 1908. Received from Prof. Cockerell. Holotype in Peabody Museum of Yale University. Cat. No. 9.

Iowa City, Iowa.