

In another cage one was deposited two days after external appearance.

In another cage one was retained for six days after external appearance.

Egg masses unfavorably deposited usually are devoured by other cockroaches or even by the mother.

Not one cockroach of this species deposited an oötheca upon thin paper. I have had some imbedded into the larger pores of sponges kept saturated with water as a source of moisture in the cages. Such oöthecae were packed over with bits of sponge torn from the large piece precisely for the purpose of concealing the deposited oöthecae. Often bits of rag or bread are utilized and in several instances I have seen oöthecae of this species completely covered over and concealed by fine bits of dried cockroach dung. When no covering material is available the oöthecae may be dropped at random or simply pasted to articles and not covered.

Notes on American Rhynchophora (Col.).

By J. WAGENER GREEN, Easton, Pennsylvania.

The Texan material cited in the following pages was collected during an expedition to that State in 1911 by Mr. H. A. Wenzel, of Philadelphia, and myself. Several weevils taken at that time have remained unnamed in our cabinets. Descriptions of these are herein presented, together with notices of two other new species and some miscellaneous observations.

Rhynchites tricarinatus new species.

Form of *bicolor*, bluish black, disk of thorax black with aeneous lustre, legs black. Body above with short erect pubescence as in *bicolor*. Head between the eyes coarsely densely punctured and longitudinally rugose; occiput smooth, with few coarse punctures; genae transversely wrinkled. Beak as long as head and thorax; coarsely, densely, rugosely punctured throughout; sulcate at the sides; tricarinate above from base to antennal insertion. Antennae inserted before the middle of beak; as compared with those of *bicolor*, joints three, four and five are more slender and elong.

ate, seven and eight are much wider, the club is shorter, its joints all strongly transverse, the terminal joint being small and triangular in profile.

Prothorax slightly wider than long; shining; coarsely, irregularly and not very closely punctate; widest at basal third; apical constriction not evident; sides straight and oblique from apical angles to middle, then strongly arcuate to base. Proepimera separated by centro-sternal piece.

Elytra with indistinct and confused rows of moderate punctures, the intervals flat and sparsely finely punctate.

Tarsi slender; third joint small, its lobes very narrow, about half as wide as the terminal joint at apex; nodiform enlargement at the base of the terminal joint nearly attaining the apex of the third joint. Length (excluding beak) 4 to 4.8 mm.

Described from a series of nineteen specimens collected by Mr. John Woodgate in the Jemez Mountains, New Mexico, May 20 to June 10. Related to *bicolor* but very distinct in antennal and tarsal structure.

Rhynchites bicolor Fab.

It is my opinion that some of the forms listed as varieties of *bicolor* by Pierce are capable of specific definition by means of constant structural and sculptural differences. An examination of *wickhami* and *bicolor* in my limited material shows the terminal joint of the antennal club to be consistently more elongate in the latter. Also the outer funicular joints exhibit considerable variation, some of which is probably sexual. This I have been unable to determine. In addition to the differences pointed out by Cockerell, *wickhami* has the sides of the thorax more strongly rounded and converging toward base and apex, and the femora smooth, shining and more sparsely punctate. There is room for further investigation in this group by those possessing sufficient material, and especial attention should be given the secondary sexual modifications of the antennae and rostrum.

LeConte states that the beak of the female of *bicolor* is shorter than that of the male. I have noticed that specimens with the longer beaks always have a more convex abdomen, and if these are males it is certainly contrary to the usual rule in the Rhynchophorous series.

Minyomeres conicollis new species.

Elongate, convex, densely covered with gray and darker scales which

completely conceal the surface sculpture, scales white on the declivous sides of the pronotum. Head and beak very broad, convex; surface apparently smooth; sparsely clothed with minute, suberect, squamiform setae; eyes small, rounded, rather prominent, coarsely granulated. Beak with an inverted V-shaped impression, the branches directed toward the apical angles; apex trisinate; scrobes long and well-defined, somewhat S-shaped, becoming shallower posteriorly, terminating below the front margin of the eyes. Mentum large, transverse, completely filling the gular cavity, a small punctiform impression each side. Antennae dark, sparsely setose; scape abruptly clavate, reaching nearly to middle of eyes; funicle seven-jointed, first joint elongate, feebly clavate, equal in length to the two following joints, second joint longer than third, last four subequal, as wide as long; club elongate-oval, pubescent.

Thorax slightly wider than long; without ocular lobes, vibrissae not prominent; sides feebly arcuate, widest just before middle, thence straight to base; apex arcuate-truncate, base squarely truncate, distinctly narrower than apex. Disk of thorax vaguely rugulose, a transverse impression faintly indicated at apical fourth; suberect scales very small and inconspicuous except a basal and apical fringe.

Elytra elongate, oval, as wide as the thorax at base; widest at middle where they are nearly one-half wider than the thorax; humeri broadly rounded, angles absent; sides regularly arcuate; striae indicated by a feeble convexity of the intervals, these each bearing a single row of distant, semi-erect, setiform scales; stria punctures scarcely evident; elytral declivity oblique. There is a small shallow pit near the side margin of the elytra in front of the hind coxae which appears to be for the reception of the middle knees.

Legs and abdomen with semi-erect scales similar to those of the upper surface. Legs short; basal joints of tarsi subequal, second shortest, third broader and bilobed, fourth nearly as long as the others together. Length 2.9 to 3.2 mm.

Described from three specimens taken in the arid region south of Alpine, Texas, toward the Chisos Mountains, July 15. This species has the appearance of a small *Elissa*. The shorter basal joint of the tarsi and less prominent vibrissae, however, indicate its position in *Minyomerus*. The two genera are very feebly differentiated by the published characters. *Conicollis* may be distinguished from our other two species of *Minyomerus* by the shape of the thorax. There are undoubtedly a number of still undescribed species in this genus.

***Pandeleteius spatulatus* new species.**

Form nearly as in *robustus*. Upper surface with pale gray and darker scales intermixed, the gray usually predominating, the elytra sometimes

show a pale transverse fascia each side just before the middle; setae exceedingly minute and inconspicuous. Beak triangularly emarginate at apex, with distinct nasal plate which is asymmetrically emarginate apically; beak feebly concave above and with median impressed line; scrobes short, directed at lower edge of eyes but not attaining them. Funicle seven-jointed, first joint slightly longer than the two following joints.

Thorax convex, as long as wide, with feeble basal and apical constrictions; sides strongly arcuate.

Elytra one-fifth wider than the thorax at base, gradually increasing in width to just beyond middle, thence narrowing to apex; humeri not at all prominent.

Fore coxae separated by about twice the distance between the middle coxae, more distant in the female. Fore femora very stout, the tibiae bent inwardly at apex, their inner margins denticulate and not appreciably sinuate. Scales of under surface mostly gray. Length 4 to 5.3 mm.

♂. Hind tibiae clavate, widest at apical third; lower surface of tibia convex and normally clothed with scales, basal half of upper surface squamose, the apical half with a large smooth concavity bearing a few scattered hairs. First ventral suture nearly straight, last segment normal.

♀. Hind tibiae unmodified. First ventral suture angulate at middle, last segment strongly convex in transverse section.

Eleven specimens taken in the Chisos Mountains, Texas, July 19. There are two males in the collection of the Philadelphia Academy of Natural Sciences donated by Mr. Wenzel. Very distinct by the secondary sexual characters from anything heretofore described. It belongs near *robustus*, which is a larger, more mottled species and has the pronotum bisinuate in longitudinal profile, while in *spatulatus* this is evenly arcuate.

Pandeteius defectus new species.

Much like *hilaris* in size and general appearance, mottled with gray and brown scales, darker each side of the scutellum and on an indistinct fascia beyond middle of elytra. Upper surface with inconspicuous recumbent setae, more noticeable on elytral apex. Beak very feebly concave, with median impressed line; apex slightly emarginate, the nasal plate prolonged forward between the mandibles as in *hilaris*, but larger and more obtuse; scrobes arcuate, passing beneath the eyes. Antennae with six-jointed funicle, the joints all elongate, first subequal to next two, last nearly as wide as long; club as long as five preceding joints.

Thorax longer than wide, with distinct subapical and basal constrictions; sides moderately rounded.

Elytra much wider at base than the thorax, humeri prominent. Fore coxae separated by a distance which is somewhat less than twice the dis-

tance between the middle coxae. Fore tibiae denticulate within, not sinuate, slightly bent at apex, the femora only moderately enlarged. Length 4.8 mm.

One specimen, Chisos Mountains, Texas, July 22. According to the latest synoptic table of *Pandeleiteius*, *defectus* would be placed near *rotundicollis* Fall, on account of the six-jointed funicle. Otherwise the two species have nothing in common. In *rotundicollis* the anterior femora are much more strongly dilated, the corresponding tibiae longer and more slender, the head more concave, and the outer funicular joints transverse and moniliform. In habitus the two species are altogether dissimilar. It would seem a better plan to subdivide the genus primarily on the form of the nasal plate, thus establishing a number of groups and giving a more natural arrangement of the species. By this method such aberrant forms as *submetallicus* would be isolated and the species described above would be associated with *hilaris*, which it closely resembles.

Isodrusus debilis Sharp.

This species was described from San Geronimo, Guatemala. I have eight specimens of an *Isodrusus* from the Davis Mountains, Texas, July 9, which agree in every particular with the description of *debilis* in the "Biologia." *Debilis* has the appearance of a small *Pandeleiteius* with the body above and the legs sparsely clothed throughout with short recurved setae. The legs are short, the fore tibiae normal and not denticulate within, and the claws are connate at base.

Otidocephalus ruficornis Casey.

Three specimens apparently belonging here were taken in the Chisos Mountains, Brewster County, Texas, July 18. They fit Col. Casey's description completely as to size, vestiture and sculpture but are differently colored. The body is black; the head, beak, antennae and prothorax dark rufous; the legs very dark ferruginous with the femora, especially the first two pairs, paler on basal two-thirds. I can find no tangible difference between this series and authentic speci-

mens of *ruficornis*, so conclude that they are only entitled to varietal rank. I propose the name **semirufus** for this form.

Tychius armatus new species.

Elongate-oval, convex, robust, black, moderately densely clothed with narrow grayish scales not concealing the surface sculpture above, the scales of elytra being longer and more slender, those of the striae very fine and setiform; erect setae absent. Beak stout, one-fifth shorter than prothorax; feebly arcuate, slightly tapering and flattened towards apex; densely squamulose below antennal insertion, glabrous at tip; punctures confluent longitudinally; apex smooth at middle. Antennae inserted at apical two-fifths of beak; color dark, scape reddish, not attaining the eyes; funicle seven-jointed, second joint two-fifths shorter than first, longer than third, outer joints subequal, last two slightly transverse; club elongate-oval, scarcely pointed, nearly as long as five preceding joints.

Prothorax slightly wider than long; sides nearly straight and subparallel from base to beyond middle, thence strongly converging to apex; apical constriction indicated by a feeble sinuation; base twice as wide as apex; disk with large, circular, moderately dense punctures.

Elytra nearly one-half longer than wide, more than twice as long as the pronotum and one-third wider at the humeri; sides parallel, broadly rounded behind; tip of pygidium visible, the elytral apices being very feebly separately rounded; disk striate, the intervals finely irregularly punctured; vestiture nearly uniform in distribution, a little denser on the sutural interval.

Femora strongly clavate, deeply notched within at apex, the middle and hind pairs distinctly toothed, the fore pair feebly so. Length 3.8 mm., width 2 mm.

Six specimens from Graybeard Mountain, North Carolina, June 19 to 25, in the cabinet of Mr. Wenzel, who has kindly permitted me to retain a pair in my own collection. They were collected by Mr. Wm. Beutenmuller. *Armatus* belongs to Casey's Group I and is easily distinguished from the other species assigned thereto by all the femora being toothed. It should follow *sordidus* in a cabinet arrangement. The type described above is a male. The rostrum of the female is as long as the prothorax, more slender, nearly cylindrical, very feebly tapering at apex, and the point of antennal insertion is a little less apical.

Tychius suturalis Schaeffer.

Specimens collected in the Davis Mountains, Texas, July 9, were identified as *T. suturalis* for Mr. Wenzel by Col. Casey.

They correspond closely with Mr. Schaeffer's description with one exception: the antennal funicle has six instead of seven joints. A single example from the Huachucha Mountains, Arizona, shows the same structure.

Aulobaris elongatus new species.

Elongate-oval, shining, black throughout. Head finely punctulate. Beak a little shorter than head and thorax, regularly arcuate, finely punctured, coarsely at the sides below antennal insertion. Second joint of funicle one-half as long as the first, scarcely as long as the two following joints together; joints three and four, slightly longer than wide, five and six shorter and quadrate, seven transverse; club as long as four preceding joints.

Prothorax one-sixth wider than long, the apical constriction almost obsolete; apex one-half the basal width; sides nearly straight and feebly converging from basal angles to middle, thence strongly arcuate to apex. Disk of thorax with coarse, deep, rounded punctures separated by their own diameters or less and becoming obliquely confluent at the sides; median impunctate line not distinct; basal lobe very small. Scutellum coarsely punctured. Prosternal groove normal, the sides not produced inwardly before the coxae.

Elytra three-fourths longer than thorax, widest at the humeri where they are slightly wider than the thorax; sides straight and feebly converging two-thirds to apex; disk moderately striate, intervals three to five times as wide as the grooves, each with a single fairly regular series of coarse rounded punctures but little smaller than those of the thorax. Length 3.5 to 4.1 mm.

Three specimens, Macdona, Texas, July 29. *Elongatus* would be placed near *ibis* in a synoptic arrangement of our species. The latter is easily separated by the distinct sub-apical constriction and the much finer elytral punctures.

Centrinus falsus Lec.

I have taken two specimens of this species at Mauch Chunk, Pennsylvania, August 10, which agree in every respect with the form so named in the Horn collection. My specimens are both males and have the antennal formation of *Odontocorynus*, namely the enlarged and concave apical funicular joints and the polished basal area of the club provided with a dentiform process. On each side of the prothorax immediately behind the apical margin there is a small polished tubercle. This character is unique among our species of

Odontocorynus, although it occurs in the Mexican *creperus* Boh. and *laticapus* Champ. Blatchley and Leng accord *Odontocorynus* generic rank and separate it from *Centrinus* by the exposed pygidium and the modified male antennae. The pygidium in *C. falsus* is as completely hidden as in any true *Centrinus*, hence *Odontocorynus* must be considered merely a subdivision of *Centrinus*, as treated by Casey in his revision of the Barini, unless a third genus be erected for *C. falsus* based on the tuberculate thorax. This, of course, is not advisable.

Zygobaris centrinoidea new species.

Body entirely black, shining, subrhomboidal. Head finely, sparsely punctulate, beneath with a punctiform fovea near base. Beak long and slender, regularly arcuate, nearly cylindrical; very little enlarged at base and less so at apex; finely and sparsely punctured, more coarsely and densely behind antennal insertion, an impunctate median line on basal half, a small longitudinal impression above the base of each mandible. Beak equal in length to the head and prothorax, separated from the head by an abrupt bisinuate declivity. Mandibles stout, curved, notched within. Antennae inserted just behind middle of beak; scape almost attaining the eyes; first joint of funicle a little longer than the next two joints combined, second joint one-half longer than the third, three to seven subequal, the outer joints transverse; club elongate-oval, pubescent throughout, more sparsely so at base, as long as the preceding five joints, first joint comprising much less than half of mass.

Pronotum wider than long, as wide as the elytra at base; sides regularly arcuate; subapical constriction feeble; apex much less than half as wide as base, the latter nearly straight and with a small ante-scutellar lobe; disk glabrous at middle, sparsely punctured, more densely toward base, median line smooth; pronotum at the sides coarsely closely punctate, each puncture bearing an elongate, white, decumbent, hair-like squamule arranged transversely; a few small scattered scales along the middle of the basal thoracic margin. Scutellum quadrate, glabrous.

Elytra more than twice as long as the pronotum; widest at basal tenth, thence straight to beyond middle, then evenly rounded to apex; apices conjointly rounded, completely concealing the pygidium; striae regular, entire, moderately deeply impressed, very minutely and distantly punctulate; intervals flat, much wider than the striae, each with a single irregular series of shallow punctures, becoming confused and somewhat biseriate toward base; each puncture of the intervals bears an elongate white scale similar to those at the sides of the prothorax.

Body beneath sparsely squamose, scales smaller and more slender than those of the upper surface, condensed on the prosternum before and be-

tween the coxae. Prosternum abruptly deeply sulcate on the apical constriction, with distinct delimiting lateral ridges; convexly prominent each side before the coxae; the median sulcus becoming gradually evanescent posteriorly so that the prosternum is only very slightly concave between the coxae. Ventral segments 2, 3 and 4 abruptly declivous on hind margin, the segment following each commencing on a lower plane.

Fore coxae separated by about half their width, the others more widely distant. Tibiae carinate externally; middle and hind tibiae slightly expanded at tip, the latter pair with a small tooth on the inner side at apex, the others strongly mucronate. Tarsi long and slender, densely pubescent beneath; subequal to the tibiae; third joint bilobed; last joint elongate, nearly as long as the remainder, bearing two claws which are connate at basal third, the suture evident. Length 3 mm., width 1.8 mm.

The specimen described above is a female taken at Marfa, Texas, July 12. Mr. Wenzel has a male from Davis Mountains, Texas, which differs in the shorter, stouter, more coarsely punctured beak, the antennae inserted at the middle, where there is a very slight lateral enlargement; the front coxae more widely separated; the first ventral segment somewhat concave at middle; and the pronotum more coarsely punctured.

Centrinoides is a more squamose species than any previously described *Zygobaris* and may possibly not be congeneric with *nitens* Lec. and *xanthoxyli* Pierce, which I have not seen.

The type of this species as well as the types of the other new species described in this paper are in my cabinet.

An Appreciation (Diptera).

The work of Dr. Alvah Peterson on *The Headcapsule and Mouth-parts of Diptera*, in the Illinois Biological Monographs, vol. iii, No. 2, has received an appreciative notice from Dr. A. D. Imms in the *Entomologist's Monthly Magazine* (London) for May, 1920.

Sad but Familiar.

A recent number of the Bulletin of the Entomological Society of France (1920, No. 4) announces that, as a measure of economy, it has been decided to reduce the covers to four pages and to replace the table of contents with advertisements; that in the future the Society can only accept line drawings; photographs and drawings necessitating half-tones will be reproduced only at the expense of the authors.



Green, John Wagener. 1920. "Notes on American Rhynchophora."
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Academy of Natural Sciences of Philadelphia* 31, 193–201.

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