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CONTRIBUTIONS TO A KNOWLEDGE OF THE CURCULIONIDÆ OF THE UNITED STATES.

BY GEORGE H. HORN, M. D.

(Read before the American Philosophical Society, September 19, 1873.)

The following pages have been prepared as a beginning of the systematic study of the *species* of Curculionidæ inhabiting our country. It is to be regretted that this family has been almost entirely neglected by our students, so much so, in fact, that the large majority of the species have been described abroad, and, with the exception of several genera revised by Dr. Leconte, no genus has ever been studied as a whole by American students. It is hoped that the present essay may show that the study of this family is by no means as difficult as has been supposed. The field being almost entirely new, numerous opportunities are afforded for research, and without doubt characters remain to be developed having an important bearing in the systematic arrangement of the family.

One character is mentioned in the following pages that appears to have escaped notice. In most if not all the genera of *Mecorhynques*, the males have eight and the females seven dorsal abdominal segments. The *Calandrides* and *Cossonides* appear not to possess this character, as also all the *Brachyrhynques* which I have had time to examine.

The synonymy of our *Curculionidæ* is at times troublesome to unravel, and many species have been described from slight varieties. On the other hand, many are unnamed, and it is probable that number of species at present given in catalogues is not far behind the total, as the unnamed species will about fill the blanks caused by the correction of synonymy.

All of the genera in the following pages have become familiar to students in an empirical manner, consequently little is said concerning the genera themselves, this work being left to the continuation of the "Classification of the Coleoptera of North America," which will doubtless soon appear, from the hands of Dr. Leconte.

The first part of the present essay contains the *Calandrides* and *Cossonides* forming the entire representation of the genera and species of Phalanx 11, Cohort II., Legion II., according to the system of Lacordaire, which occur in our fauna. The remaining pages are devoted to such isolated genera as appear to stand in need of elucidation.

CALANDRIDES.

The tribe CALANDRIDES is divided by Lacordaire into six groups, of which three only have representatives within our faunal limits.

Metathoracic episterna very broad, epimera

large..... RHYNCHOPHORIDES.

Mesothoracic epimera acute above, ascend-

ing..... RHYNCHOPHORUS.

Metathoracic episterna moderate.

Mesothoracic epimera truncate above.	SPHENOPHORIDES.
Spongy portion of antennal club retracted, that is, visible at the tip only. Prosternum narrow.	SCYPHOPHORUS.
Spongy portion of club large, occupying at least a third of the tip.	
Anterior coxæ widely separated, prosternum between the coxæ as wide as the diameter of a coxal cavity. .	METAMASIVS.
Anterior coxæ approximate, prosternum linear.	RHYNCHOPHORUS.
Mesothoracic epimera acute above.	CALANDRIDES.
Prosternum widely separating the coxæ	CALANDRA.

RHYNCHOPHORUS Herbst.

R. cruentatus Fab. Syst. Ent., p. 128; Herbst, Coleop. 6, pl. 61, fig. 2; Oliv. Ent. V., 83, p. 82, pl. 12, fig. 147; *Zimmermanni* Fahrs. Schönh. Gen. Curc. viii., pt. 2, p. 219.

Above sub-depressed, sub-opaque, velvety, color variable. Rostrum longer than half the thorax, apical portion sparsely punctured, at base roughly punctured. Thorax one-fourth longer than wide, elliptical, apex suddenly constricted, sides feebly, base more decidedly arcuate, surface sparsely and minutely punctulate. Scutellum elongate, feebly elevated along the middle, attenuate at apex. Elytra conjointly emarginate, humeral angles broadly rounded, sides feebly convergent behind, apices truncate, surface nine striate, outer four striæ feebly impressed, inner five deep, at bottom punctured, inner intervals feebly convex, outer flat. Pygidium sparsely and coarsely punctured, more densely at apex. Body beneath shining, sparsely and very minutely punctulate. Last ventral segment at the latero-dorsal region, coarsely punctured and with a line of yellowish hairs. Anterior tibiæ densely fimbriate with long yellowish hairs, middle and hind tibiæ less fimbriate, femora beneath fimbriate. Anterior tibiæ within mucronate at apex, externally bidentate, middle and hind tibiæ broadly rounded at tip, mucronate within. Tarsi with the third joint moderately dilated and densely pilose along the anterior margin. Length .8-1.0 inch; 20-25 mm.

Var. *Zimmermanni*, Fah. Body above and beneath totally black.

Var. *cruentatus*, Fab. Thorax red, sides broadly margined with black, and a median black stripe, elytra black with red spots. Body beneath piceous, legs and abdomen paler.

Var. ———. Body above in great part red, lateral black spaces of thorax wanting, median stripe more or less divided, elytra in great part red with black spots of varying number and size. Pectus black, abdomen and legs red.

The above varieties run together by very gradual changes of color. Although the term "red" is used, the color is not properly red, but a dark velvety crimson, which, however, also varies in shade.

Fabricius' name appears to have been lost sight of entirely by the authors of Gen. Curc., notwithstanding the very fair figures (exaggerated in color) given by both Herbst and Olivier.

Occurs from South Carolina to Louisiana.

SCYPHOPHORUS Schönh.

Antennal club with spongy space retracted, visible only at the tip. Anterior tibæ bidentate externally at tip, middle and hind tibæ with the outer angle bispinuous. Third joint of all the base broadly dilated fimbriate beneath along the anterior margin.

The species in our fauna are as follows:

Thorax sparsely punctured, punctures of the disc much finer.

Elytral intervals feebly convex, irregularly biserially punctulate..... *acupunctatus*.

Thorax very coarsely and deeply punctured.

Elytral intervals flat, irregularly biserially punctulate..... *robustior*.

Elytral intervals flat, with a single series of coarse punctures..... *Yuccæ*.

S. acupunctatus Gyll. Schön. Gen. Curc. IV., p. 857; *asperulus* Lec. Pacif. R. Rep. 1857, p. 58.

Black, shining, feebly convex above. Rostrum three-fourths the length of thorax, sparsely and finely punctured at the sides, more coarsely punctured at base. Thorax longer than wide, anteriorly moderately constricted, base broadly arcuate, sides in front strongly arcuate and rapidly widening, at middle feebly arcuate and very slightly narrowing to base; surface sparsely and finely punctured, punctures at sides coarser and sub-muricate. Scutellum slightly impressed. Elytra not wider than thorax and but one-fourth longer, surface striate, striæ coarsely but not closely punctured, intervals moderately convex, finely biserially irregularly punctulate. Pygidium sparsely punctured at base, more densely and very coarsely at base. Body beneath coarsely punctured. Tibiæ sparsely fimbriate within, femora coarsely punctured beneath, each puncture bearing a tuft of short, yellow, stiff hairs. Length .40-.50 inch; 10-13 mm.

Occurs from Mexico to California.

S. interstitialis Gyll., Cuba, is very closely allied to the preceding.

S. robustior n. sp.

Black, sub-opaque, Rostrum three-fourths the length of thorax, at sides minutely punctulate, at sides of base coarsely punctured. Thorax moderately convex, apex constricted, sides arcuate in front, becoming gradually broader, at middle and to base sub-parallel, base feebly arcuate, disc coarsely but sparsely punctured, punctures denser, coarser, and deeper at the sides. Scutellum sulcate. Elytra convex, opaque, striate, striæ coarsely and rather closely punctured, intervals feebly convex,

finely and irregularly biserially punctulate. Pygidium sparsely punctured, at base finely, at apex coarsely and deeply. Body beneath coarsely foveato-punctate. Legs as in *acupunctatus*. Length .50 inch ; 13 mm.

Closely allied to *acupunctatus*, but opaque, and with the thorax very much more coarsely punctured. Its form is also more robust.

One specimen in Cab. Leconte, from.

S. Yuccæ, n. sp.

Black, sub-opaque, depressed. Rostrum nearly as long as thorax, coarsely and deeply punctured at base and gradually more finely to apex. Thorax nearly as broad as long, apex constricted, thence becoming rapidly broader, sides feebly arcuate, at base slightly broader, surface very coarsely punctured, punctures slightly more dense at the sides. Elytra deeply striate, striæ not conspicuously punctured, intervals flat with a single series of moderately coarse, rather closely placed punctures. Scutellum not channelled. Pygidium at basal fourth finely punctured, the remainder coarsely and very deeply punctured. Body beneath more shining than above, coarsely, deeply, and rather closely punctured. Femora coarsely and submuricately punctured. Length .40-.64 inch ; 10-16 mm.

Male. Anterior tibia sub-dentate at basal fourth, densely pubescent on inner side, middle and hind tibiæ sparsely pubescent, and at basal fourth a short, broad, obtuse tooth.

Female. Tibiæ not dentate within, sparsely fimbriate.

Differs abundantly from any described species by its more depressed form and the interstitial punctuation.

Occurs in the southern portion of California, and feeds on the *Yucca gloriosa*, on which plant it is found in the spring, at the base of the flower stalk. Specimens were collected by Mr. Wm. M. Gabb, others have been sent by Mr. Jas. Behrens, collected at San Diego.

METAMASIUS, n. g.

The above name is suggested for various species at present retained in *Sphenophorus*, differing only in the very widely separated anterior coxæ. The prosternum is as wide, or nearly so, as the diameter of one of the coxal cavities. The third tarsal joint is broad and densely pubescent beneath as in the first group of the following genus.

One species occurs in our fauna, although many others probably belong to the genus, among them *Sphen. carbonarius*, Chev., from Mexico.

M. sericeus Latr. Humb. et Bonp. Voy. I., p. 206, pl. 22, fig. 4 ; Oliv. Ent. V., 83, p. 84, pl. 28, fig. 409 ; Gyll. Schön. Gen. Curc. IV., p. 896.

Elongate, feebly convex, opaque. Rostrum rufous, longer than half the thorax, finely punctured at the sides, more evidently punctured at base ; above finely channeled at base and a puncture between the eyes. Thorax red, subopaque, at sides a short black stripe ; at middle an entire broad line, and at base, on each side of middle, a triangular spot black,

surface sparsely punctured at the sides ; one-fourth longer than wide, apex moderately constricted, base feebly arcuate, sides in front gradually arcuate to middle, and then nearly parallel to base. Scutellum not sulcate. Elytra at base as wide as thorax, at humeral protuberance broader, thence gradually narrower, apices rounded, surface striate, striæ punctured, intervals flat, impunctured. Pygidium at base finely punctured, surface sericeous, sparsely pubescent, at apex opaque, sparsely punctured, each puncture bearing a spiniform yellowish hair, and on each side of the tip a tuft of yellowish hairs. Body beneath shining, sparsely and finely punctured, red variegated with black. Legs red, knees tipped with black. Length .44 inch ; 11 mm.

The elytra are in great part black, the base being occupied by a broad red space, broader at middle ; the sutural interspace is black. The apical black space may also become spotted with red.

The description of this species by Gyllenhal is very characteristic, and corresponds exactly with a specimen in my cabinet from California ; another in the cabinet of Dr. Leconte, from an unknown locality, reproduces the figure of Olivier, and, although differing in details of color, is undoubtedly identical.

One specimen from the Southern Coast Range of California, collected by Mr. Wm. M. Gabb.

SPHENOPHORUS Schönh.

This genus contains many species in our fauna which have been unnecessarily multiplied by the failure of the older authors to recognize the extent of specific variation. The characters given in the generic table are sufficient to make the genus readily known. The tibiæ vary in form, and the tarsi in form and vestiture, and afford the readiest as well as most natural method of dividing the genus into groups. Many of the species have their surface coated so that the sculpture is partially concealed. The coating appears to be of two kinds ; first a *natural coat*, equally distributed above and beneath, of dense structure, and of smooth shining surface, always allowing the punctures, even the most minute to be visible ; second, an *accidental coat*, which covers, usually, only the upper surface of the body and the legs, composed of argillaceous material hardened, probably, by mixture with some exudation from the surface, and which almost entirely obliterates all sculpture excepting prominent elevations. The following are the groups into which it is proposed to divide the genus :

- Anterior tibiæ with the outer apical angle prolonged, middle
and hind tibiæ truncate. Tarsi slender..... GROUP I.
Tibiæ all broadly rounded at outer apical angle.
Third joint of all the tarsi broadly dilated,
Spongy pubescent over its entire surface beneath..... GROUP II.
Broadly glabrous at middle..... GROUP III.
Third joint of hind tarsi conical. (In some species slightly
dilated, but then simply fimbriate at the sides, and
not spongy pubescent.)

Third joint of anterior and middle tarsi feebly dilated
and spongy pubescent at the sides..... GROUP IV.

Third joint of anterior and middle tarsi not dilated, and
simply pilose at the sides or entirely glabrous..... GROUP V.

Group III. contains all the species in our fauna with the natural glabrous coat, in the other groups (except Group I.) there are species with the accidental coat or entirely glabrous.

Group I.

Anterior tibiae with the outer angle prolonged, middle and hind tibiae truncate at tip. Tarsi slender, third joint fimbriate at margin.

The following species form this group :

Thorax without well-defined callosities, surface punctured.

Discal striae of elytra not distinctly punctured, intervals
very minutely punctulate..... simplex.

Discal striae punctured, intervals very conspicuously
punctured.

Intervals unequal, alternately uni- and bi-seriately
punctured..... vomerinus.

Intervals equal uniseriately punctured.....var. *baridioides*.

Striae fine, impunctured, interrupted by large shallow
foveae..... Ulkei.

Thorax with distinct elevated smooth spaces, intervals
very coarsely punctured or eroded.

Striae with moderately coarse punctures distantly placed inaequalis.

S. simplex Lec. Proc. Acad., 1859, p. 70.

Moderately elongate, black, feebly shining. Rostrum three-fourths as long as thorax, filiform, sparsely punctured, at base feebly sulcate, and between the eyes slightly transversely impressed. Thorax oblong, suddenly constricted at apex, sides feebly arcuate, surface moderately convex, sparsely punctured over the entire surface, punctures coarser behind, especially in a very feeble impression in front of scutellum. Scutellum broadly grooved. Elytra slightly narrower behind, sub-opaque, deeply striate, inner six striae impunctured, outer three coarsely punctured except at apical fourth, intervals flat subequal, alternate bi- and uni-seriately finely punctulate. Pygidium moderately coarsely punctured, each puncture with a short seta and with a tuft of hairs on each side, tip strongly inflexed and smoother. Body beneath sparsely punctured. Length .28-.32 inch ; 7-8 mm.

Male. Tibiae fimbriate with long yellowish hairs within, anterior and middle with the inner edge strongly sinuous, hind tibiae strongly sub-angulate.

Female. Tibiae less fimbriate and feebly sinuous within. The hairs of the tibiae are especially long at the sub-angulation. The sub-apical spur is very small.

Occurs in California at Tejon and Fort Yuma.

S. vomerinus Lec. Proc. Acad., 1858, p. 81.

Black, sub-opaque or very feebly shining. Rostrum slightly longer than half the thorax, moderately robust, compressed, upper edge sparsely punctured at base, very finely grooved and with an impressed puncture between the eyes. Thorax longer than wide, somewhat variable in form, usually oblong rarely sub-quadrate, sides very feebly, base less arcuate, surface equally punctured over the entire surface, rarely with an obsolete smooth median space, punctures coarser at the sides and base, and also more dense before the scutellum. Scutellum smooth, not channeled. Elytra broadest slightly behind the base, and gradually narrower to apex, surface deeply striate, striæ distantly punctured, intervals flat, sub-equal, sometimes alternating and coarsely uni- or bi-seriately punctured. Pygidium coarsely and at apex sub-confluently punctured. Body beneath sparsely punctured. Length .24-.36 inch ; 6-9 mm.

Var *baridioides*. Elytral intervals sub-equal, uni-seriately punctured. The sexes do not differ remarkably. The tibiae are very sparsely fimbriate within and the anterior are feebly sinuate. The sub-apical spur is moderate.

The elytral intervals vary in the degree of punctuation and also in width. In the typical form the intervals are slightly alternately broader, and the narrower space distinctly uni-seriately punctulate, and the broader intervals bi-seriately or even confusedly punctured. In the variety *baridioides* the intervals are equal and uni-seriately punctulate with coarser punctures than in the preceding variety. These latter seem almost entitled to rank as distinct species, but every necessary link between the two forms exists. The legs are sometimes rufous.

Colorado, Arizona, and California east of the Sierras.

S. Ulkei, n. sp.

Black, shining, form and aspect of *placidus*. Rostrum longer than half the thorax, moderately arcuate, compressed, surface moderately punctured, at base a fine channel terminating in a moderately deep foveæ between the eyes. Thorax longer than wide, anteriorly moderately constricted, sides in front rather strongly arcuate, behind the middle feebly arcuate and narrowed to base, surface moderately convex, without vittæ but with a slight impression at middle, behind the anterior constriction (as in *placidus*), and a V-shaped impression behind, more coarsely punctured, the remainder of the surface sparsely and finely punctured becoming more dense toward the sides and coarse at the basal angles. Scutellum feebly concave. Elytra oval, sides feebly arcuate and slightly narrowed toward the tip, surface finely striate, striæ not punctured but interrupted by large shallow foveæ moderately approximated ; intervals slightly unequal, the sutural, 2-4-6-8 bi-seriately finely punctulate at base, gradually becoming uni-seriate at apex, narrower intervals uni-seriately punctulate. Pygidium coarsely and deeply punctured, apex and base more finely and the former more densely punctulate.

Body beneath sparsely and moderately finely punctured. Last ventral segment with a small fovea made up of coarse confluent punctures. Anterior tibiae with the outer apical angle prolonged, middle and hind tibiae truncate. Length .32 inch ; 8 mm.

Occurs in Nebraska, Colorado, New Mexico, Wyoming.

S. inæqualis Say. Curc. p. 23 ; Am. Ent. edit. Lec. I., p. 291 ; *contractus* Gyll., Schönh., Curc. IV., p. 953.

Form robust, color black, upper surface with luteous acquired coat. Rostrum three-fourths as long as thorax, slightly compressed, sparsely punctured at base, finely canaliculate and with a slight fovea between the eyes. Thorax constricted in front, longer than wide, oval, base less arcuate, surface coarsely foveato-punctate with normally five smoother spaces, one median entire line dilated in front of middle to a rhomboid spot, two irregular sub-basal and two sub-apical spaces which may unite in a sinuous line. Scutellum broadly channeled. Elytra scarcely longer than the head and thorax, widest behind the base, rapidly narrowing to apex, surface striate, striae with coarse, very distant punctures, intervals flat, undulating, closely and coarsely punctured ; humeral prominence and a slight tuberosity at the apex of the intervals 5-6-7 more shining. Pygidium coarsely and densely punctured at apex. Body beneath black, shining, coarsely but sparsely punctate. Tarsi piceous. Length .24 inch ; 6 mm.

Occurs in the Gulf States.

Group II.

The species of this group are few in number in our fauna, and are thus distinguished :

Body above red, with black spots varying in size and color... 13-punctatus
 Body above brownish, or piceous, irrorate..... pustulosus
 Body above entirely black, sub-opaque..... validus

S. tredecimpunctatus Illig. Schneid. Magaz. V., p. 613 ; Hbst. Käf. VI., p. 10, pl. 60, fig. 5 ; Gyll. Schönh. IV., p. 898 ; *cribarius*, Fab. Oliv. Ent., V. 83, p. 88, pl. 28, fig. 112, b ; *quinquepunctatus*, Say. Am. Ent., edit. Lec., p. 19, pl. 9 ; *variabilis*, Gyll. loc. cit., p. 899 ; *anceps*, Gyll. loc. cit., p. 894.

Many other synonyms are recognized in the catalogues, and many more will doubtless be added after a little examination, but these are all which have been made upon specimens from our fauna, and it is unnecessary to mention others from Mexico southward.

Body beneath black, pruinose, above red with black spots, five on the thorax, and four on each elytron, arranged as follows : thorax with a median elongate oval spot, two at the base, touching the margin or distant from it, two spots anteriorly forming a quadrangle with the basal spots, elytral spots four on each, one behind the humeral prominence, two median arranged transversely, one sub-apical, more or less trans-

verse. The elytral spots have a tendency to become confluent, and specimens occur with the entire surface black, margined at the sides with red. Rostrum black, longer than half the thorax, sparsely punctured, and finely grooved at base. Thorax longer than wide, apex constricted, sides in front strongly arcuate, behind sub-parallel, surface sparsely punctured. Scutellum feebly grooved. Elytra finely striate, striæ finely and distantly punctured, intervals flat, impunctured. Pygidium perforato-punctate at apex, more finely and densely punctured at base. Body beneath sparsely punctured. Length .28-.40 inch; 7-10 mm.

In well preserved specimens the upper surface is slightly pruinose.

Occurs over our entire country, from the Atlantic to the Pacific, and southward through Mexico.

S. pustulosus Gyll. Schönh. Curc. IV., p. 923.

Body beneath black with luteous, sub-sericeous efflorescence. Rostrum three-fourths the length of thorax, sparsely punctulate at base, slightly canaliculate, punctured, each puncture surrounded with luteous efflorescence. Thorax longer than wide, anteriorly slightly constricted, sides feebly arcuate, gradually divergent to base; surface brownish, at sides darker, opaque, surface sparsely punctured, each puncture with luteous area. Elytra slightly narrower to apex, surface brownish, opaque finely striate, striæ distantly punctured, intervals flat, distantly uni-seriately punctulate, punctures of striæ and intervals with luteous area. Scutellum luteous. Pygidium very coarsely perforato-punctate at sides and apex. Body beneath sparsely punctate. Length .40-.44 inch; 10-11 mm.

The punctures of the surface being surrounded by a round luteous area, gives the aspect of a very coarse punctuation.

Occurs in Arizona.

S. validus Lec. Proc. Acad. 1858, p. 80; *procerus*, Lec. loc. cit.

Black, sub-opaque, or with a slight velutinous aspect. Rostrum nearly as long as thorax, strongly arcuate at tip, finely punctured, a puncture at base between the eyes. Thorax sub-depressed, apex feebly constricted, sides moderately arcuate, gradually diverging and at basal fourth, sub-parallel; surface very sparsely and finely punctulate. Elytra rapidly broader behind the base, then gradually narrowed to tip, basal margin slightly reflexed, surface finely striate, striæ distantly and obsoletely punctulate, intervals flat, very minutely punctulate. Pygidium coarsely perforato-punctate and slightly more convex along the median line. Body beneath black, sub-opaque, sparsely punctured, abdomen more coarsely punctured. Length .60-.90 inch; 15-23 mm.

Male.—Anterior tibiæ densely fimbriate within with long-yellowish hairs, middle tibiæ fimbriate with shorter hairs, hind tibiæ with very short black hairs.

Female.—Tibiæ within fimbriate, with short hairs.

This species is the largest Sphenophoride in our fauna. I find specimens from Mexico labelled *fuliginosus* Chev., but no such species is

known to me, nor do I find any description of a similar species. It may however be described, and I quote the name that the synonymy may be determined.*

Occurs in Sonora, southern California and Mexico.

Group III.

This group contains species of moderately large size, all characterized by the presence of a *natural* glabrous coating, which may be more or less removed by abrasion, and is sometimes almost entirely lost on the upper surface, but always exists beneath. The third tarsal joint, of all the feet, is dilated and densely pubescent beneath, excepting a median space.

The species are as follows :

Body above densely clothed with a glabrous *natural* coat, disc of thorax flattened, three vittæ distinctly indicated. Abdomen

♂ sparsely hairy along the middle..... ochreus.

Body above almost entirely denuded. Abdomen ♂ glabrous....

Striæ of elytra coarsely punctured.....discolor.

Striæ finely and distantly punctured..... pictus.

These species are exactly similar in form, and very closely allied.

S. ochreus Lec. Proc. Acad. 1858, p. 89 ; ? *æqualis*, Gyll. Schönh. Curc. IV., p. 941.

Body black, entirely covered with a *natural* glabrous coat, varying in color from pale ochreous to plumbeous. Rostrum as long as three-fourths of the thorax, compressed, slightly broader at tip, sparsely punctured, at base very finely grooved, between the eyes a moderately deep impression. Thorax longer than wide, apex slightly constricted, anteriorly rapidly broader to apical fourth, sides thence sub-parallel, base feebly bisinuate ; disc sub-depressed, with three entire vittæ indicated, surface sparsely and coarsely punctured between the vittæ, punctures coarser at base, vittæ minutely punctulate very rarely denuded. Scutellum sub-sulcate. Elytra slightly broader behind the base gradually narrowed to tip, surface finely striate, striæ moderately, coarsely punctured, intervals flat, alternately broader, the broader intervals bi- or tri-seriately punctulate, the narrow uniseriately, and with coarser punctures, the broader intervals frequently darker in color. Pygidium coarsely punctured and with a slight tuft of hairs at each side of the tip. Body beneath and legs sparsely punctured and coated. Length .44-.68 inch ; 11-17 mm.

Male.—Metasternum and abdomen broadly concave, the latter sparsely villous along the middle. Femora beneath, and tibiæ within sparsely fimbriate with yellowish hairs.

Female.—Abdomen convex, not villous, legs less fimbriate.

This species varies as above indicated in the color of its glabrous coat, from pale ochreous to plumbeous and cinereous. The type specimen does

* I have since been informed by M. Aug. Salle, that this is merely a Catalogue name.

not differ notably from the specimens from this side of the Mississippi, except that the summits of the thoracic vittæ have become denuded.

Occurs from Canada to Arizona. It is possible that this is the species described by Gyllenhal as *æqualis*, and if so it has evidently been placed in the wrong *Strips*, and should my surmise prove correct, this name has priority, and must be used in place of *ochreus*.

S. discolor Mann. Bull. Mosc. 1843, II., p. 293; Schönh. Gen. Curc. VIII., 2, p. 246.

Closely allied to *ochreus*, differing as follows :

Thorax regularly convex, vittæ scarcely indicated, surface denuded, except a narrow space at the sides, sparsely punctured, punctures at the median basal region coarser and denser. Elytra almost entirely denuded, rarely with the narrower intervals coated, striæ moderately deep, coarsely and rather closely punctured. Body beneath entirely coated. Length .48-.64 inch ; 12-16 mm.

Male.—Abdomen longitudinally concave, not villous.

Female.—As in *ochreus*.

S. pictus Lec. Proc. Acad. 1858, p. 80.

Thorax coated, vittæ distinctly limited by punctures, and deprived of coat, surface sparsely punctured, over the entire surface, and not denser at base. Elytra entirely denuded except the entire second, the fourth and sixth at base and the lateral region. Pygidium sparsely and less coarsely punctured than in the two preceding species. Length .64 inch ; .16 mm.

Sexual characters as in *ochreus*. The elytral striæ are fine, finely and distantly punctured, the intervals flat, punctulate with the tendency to alternation of puncturing almost obliterated.

One specimen, Vallecito, California.

One other character may be noted as separating these species from those of the next group, with which I suspect *ochreus*, has been confounded. The thoracic vittæ are entire, and the lateral does not send a branch from the outer side to the base.

Group IV.

The third joint of the anterior and middle tarsi are dilated and pubescent at the sides, the hind third tarsal joint is usually conical, very rarely feebly dilated, and at the sides sparsely fimbriate.

From the characters of the table, this group can only be confounded with the preceding, in the former, however, the natural glabrous coat is always present, here never. The lateral carina of the thorax at basal half is here always bifid, that is, sends a branch from its middle which attains the hind angle of the thorax. In the next group the tarsi are slender, and sparsely fimbriate, never pubescent at the sides.

Elytral intervals, either flat or alternately elevated, in their entire length; striæ moderately finely punctured.

Thoracic smooth lines unequal among themselves, and of varying width, sometimes obliterated.

Elytral intervals more or less convex, always alternating, striæ moderately deep..... *pertinax*.

Elytral intervals flat, equal, striæ fine..... *robustus*.

Thoracic smooth lines equal, parallel entire, strongly elevated.

Elytral intervals alternately sub-costiform..... *costipennis*.

Third interval strongly elevated at basal half, striæ coarsely punctate.

Rostrum normal at tip, median thoracic smooth space dilated in rhomboid at middle *cariosus*.

Rostrum suddenly dilated at tip and obliquely truncate, median thoracic line entire and not dilated..... *latinasus*.

S. pertinax Oliv. V., 83, p. 90, pl. 28, fig. 417; Gyll. Schönh. Gen. Curc. IV., p. 938; Say. Am. Ent. edit. Lec. I., p. 288; *interstitialis*, *truncatus* Say. loc. cit; ? *canaliculatus* Boh. Sch. Gen. Curc. VIII. 2, p. 253.

This species is extremely variable in form and sculpture, but does not admit of further division than merely into varieties, which pass from one to another through every conceivable grade. The following is the description of the typical form.

Black, moderately shining beneath, sub-opaque above. Rostrum three-fourths the length of thorax, moderately compressed, scarcely broader at tip, surface very minutely, at base more evidently punctulate and above at base, with a slight channel, slightly broader and deeper posteriorly. Thorax longer than wide, apex constricted, base feebly bisinuate, sides strongly arcuate in front, sub-parallel at basal half; surface with three entire elevated smooth lines, the middle nearly entire, beginning at apex in a moderately fine line, rapidly widening; at a point in front of middle suddenly narrowed, and from thence to apex continued by a line broadest in front, gradually narrowing to base, and at tip confused by the basal punctures; lateral vittæ entire, beginning at the apical constriction and ending at the basal margin, inner edge sinuous opposite the dilatation of the median vitta, at which point a lateral branch is given off, usually slender and attaining the basal angle, the portion of the lateral vitta posterior to this branch is always broader; space between the vittæ and to the sides, coarsely punctured and more or less filled with luteous coating. Scutellum not sulcate. Elytra at base conjointly feebly emarginate, broader at humeri and arcuately narrower towards apex, which is feebly rounded or subtruncate, surface striate, striæ inconspicuously punctate, intervals feebly alternating in width and convexity, the broader and more convex denuded, the others with luteous coating, surface (when denuded) very minutely punctulate. Pygidium sparsely and

rather coarsely punctured, near apex sparsely clothed with short bristly hairs forming a tuft on each side of apex. Body beneath coarsely but sparsely punctate at the sides, at middle comparatively smooth. Legs black, finely punctulate. Length .48-.56 inch ; 12-14 mm.

Var. *interstitialis* Say. Form more robust. Thoracic vittæ scarcely elevated, the median gradually broader to middle, then gradually tapering to base, forming an elongate fusiform space, the intervals between the vittæ more densely punctured. Striæ of elytra distinctly punctured, intervals feebly alternating in width but scarcely in convexity, the broader biseriately, the narrower uniseriately punctured. Body beneath very coarsely punctured, the middle as coarsely punctured as the sides. Length .48-.56 inch ; 12-14 mm.

The punctures of the elytral striæ being more evident in this variety than in any other, together with the slight alternation of the intervals, gives the aspect of a double series of punctures of which Say speaks.

Occurs in the Southern States, and is injurious to the corn.

Var. *pertinax* Oliv. ; *truncatus* Say, is the form described as typical.

Occurs from the Middle States north and west.

Var. ——— ; *pertinax* ‡ Say. Thoracic vittæ less prominent than in *pertinax* Oliv. Elytral intervals sub-equal in width and convexity, and very minutely obsoletely punctulate ; striæ scarcely punctured.

Var. ——— ; the narrower intervals of the elytra are slightly irregular or eroded, so that an aspect of catenulation is produced.

Occurs in California.

Many other varieties might be enumerated, but these are deemed sufficient to cover the entire ground, so that any form differing from the typical descriptions may not be considered specifically distinct.

Occurs from Canada to Louisiana and from the Atlantic to the Pacific, and, unfortunately for farmers, not rare.

S. robustus n. sp.

Closely allied to *pertinax*, and differs as follows :

Median thoracic vitta feebly dilated at middle, posterior portion broad and attaining the base, lateral vittæ slightly sinuous internally, gradually wider from apex to base, lateral branch feeble. Elytra finely striate, outer three striæ distinctly, inner obsoletely and distantly punctured, intervals flat, sub-equal, alternately bi- and uni-seriately finely punctulate ; surface evenly clothed with ochreous or plumbeous sub-sericeous exudation. Length .48-.56 inch ; 12-14 mm.

After the numerous variations of the preceding species which have been mentioned, it is with considerable diffidence that I venture to name the present form, but the aspect of the species is so distinct from that seen in any of the varieties of the preceding, and moreover I find no intermediate forms.

Occurs as widely as the preceding, but less common. A variety of this

form occurs with the thoracic vittæ almost entirely obliterated, the punctuation finer, and the elytra glabrous.

S. costipennis n. sp.

Black, shining, form similar to *pertinax* but more slender. Rostrum three-fourths as long as the thorax, strongly compressed and slightly broader at tip, at base slightly canaliculate and moderately punctured. Thorax with three rather strongly elevated entire parallel vittæ, the lateral with a branch from middle to basal angle, intervals coarsely punctured and with luteous coating. Elytra finely striate, striæ with distant, moderately coarse punctures, intervals alternately slightly broader, the broader intervals strongly convex, in their entire length minutely and irregularly biseriately punctate, narrower intervals usually with luteous coating, uniseriately punctate. Pygidium sparsely punctate, punctures near apex submuricate and bearing a short hair, a tuft of hair on each side of apex. Body beneath sparsely punctate. Length .40 inch ; 10 mm.

A variety occurs with the upper surface red, with the sutural interval and the median thoracic vitta black. The under surface is red varied with black, and the legs also red with the knees black.

Georgia, Illinois. Wisconsin, Nevada.

S. cariosus Oliv. Ent. V. 83, p. 91, pl. 28, fig. 415 ; *larvæis* Germ. Ins. Spec. nov. p. 301; *ciatricosus* Say Curc. p. 22 ; Am. Ent. edit. Lec. I., p. 289 ; *flexuosus* Gyll. Schönh. Gen. Curc. IV., p. 940.

Black, shining, usually more attenuate behind. Rostrum nearly as long as thorax, moderately compressed, sparsely and at base more coarsely punctate, above slightly grooved at base, groove broader and deeper behind. Thorax broader than long, apex moderately constricted, gradually wider, ♂, rapidly broader ♀, and sub-parallel to base, the latter feebly bisinuate ; surface with three vittæ, the median attaining the apical margin, rapidly dilating to a rhomboid form, and very rarely prolonged by a very fine line to base, but usually ending abruptly at middle ; lateral vittæ sinuous, slightly broader at basal end, and emitting a lateral branch from the middle towards the basal angle, a small smooth callus near the anterior portion of the sides ; spaces between, and to the sides of the vittæ coarsely punctured and clothed with a feeble luteous coating. Scutellum longitudinally broadly grooved. Elytra conjointly emarginate, broader behind the base and arcuately narrowing to apex ; surface finely striate, striæ with rather deeply impressed, coarse, distant punctures, each surrounded with a luteous area, intervals flat, slightly irregular, third strongly elevated, cariniform at basal half, and with the humeral callus smooth, shining. Pygidium coarsely punctured, with short setæ along the middle and a tuft of hairs on each side of apex. Body beneath black, shining, coarsely punctured, mesosternum at sides coarsely foveate. Length .32-.44 inch ; 8-11 mm.

This species is one of the most readily recognized species in our fauna. Occurs in the Middle States, rarely ; Gulf States, abundantly.

S. latinasus, n. sp.

Moderately elongate, black, shining. Rostrum slightly longer than half the thorax, moderately compressed, rather suddenly dilated at apex, sparsely punctured, base rather suddenly dilated, above channelled. Thorax longer than wide, constricted in front, rather rapidly dilated to apical third, thence sub-parallel to base, above with three elevated, polished, entire vittæ, the median broadest at apex, then slightly narrower and elongate fusiform to base, lateral vittæ parallel, with a lateral branch toward the basal angle. Scutellum very feebly grooved. Elytra similar in form to *cariosus*, surface finely striate, striæ moderately coarsely punctured, punctures of the striæ opposite, regularly placed, intervals flat, sutural interval shining, sparsely punctulate, third cariniform for half its length and with the humeral callus smooth, the other intervals clothed with luteous coating. Pygidium scarcely narrower to apex, sub-quadrate coarsely punctured, with short setæ and a short tuft of hairs on each side of apex. Body beneath coarsely and sparsely punctured. Length .40 inch ; 10 mm.

This species appears to combine the thoracic sculpture of *costipennis* with the elytral sculpture of *cariosus*, but differs from any species known to me by the curious form of the tip of the rostrum. The rostrum is rather suddenly dilated at tip and apparently slightly obliquely truncate, so that when the rostrum is examined at its end, there is seen above the mandibles an oval space, so that the parts of the mouth are more inferior than usual. The third joint of the hind tarsi is fully as dilated as those of the middle and anterior, and is also spongy pubescent at the sides, so that in this respect it has the character of the preceding group, and would have been placed there except that it lacks the glabrous natural coating, and the lateral vittæ have the external branch.

One specimen, Georgia.

Group V.

The third joint of all the tarsi in this group is of a sub-conical form, scarcely at all flattened, and beneath sparsely fimbriate at the antero-lateral margin.

The species are exceedingly troublesome to define, and tabulate in a satisfactory manner.

A. Rostrum arcuate, usually slender. Tibiæ simple.

Thorax more or less distinctly vittate.

1.

Thorax punctured nearly equally over the entire surface, rarely with a smooth, median, not elevated line or space, but never with any traces of lateral vittæ.

2.

1. Median vitta entire in front.

3.

Median vitta bifurcate in front, enclosing a slight fovea immediately behind the apical constriction.

4.

3. Median vitta more or less dilated at middle.
 Median vitta broadly dilated at middle.
 Surface glabrous.
 Hind tibiæ ♂ simple..... zeæ.
 Hind tibiæ ♂ subangulate with dense brush of
 long hairs..... scoparius.
 Surface densely clothed with an argillaceous coat-
 ing.
 Third elytral interval sub-cariniform at basal
 half..... callosus.
 Elytral intervals flat..... sculptilis.
 Median vitta reduced to a slender apical carina,
 slightly dilated at the middle of thorax. Surface
 with argillaceous coating melanocephalus.
 Median vitta fusiform, entire, lateral vittæ short,
 represented by an oblique basal line on each
 side of base..... Sayi.
4. Lateral thoracic striæ reduced to short oblique lines at
 base..... placidus.
2. Elytra rather deeply striate, striæ scarcely punctured,
 intervals coarsely, uniseriately punctured. Thorax
 coarsely, sub-confluently punctured, and with fine,
 smooth, median line ; femora sparsely punctate.... gentilis.
 Elytra moderately finely striate, striæ more coarsely
 punctured than the intervals and usually foveato-
 punctate.
 Femora very coarsely foveato-punctate, with argil-
 laceous coating parvulus.
 Femora sparsely punctate, glabrous.
 Thorax very coarsely punctate, a median fusiform
 impunctured space. Thorax large..... retusus.
 Thorax not coarsely punctate.
 Thorax sub-opaque, evenly punctate, elytra feebly
 attenuate behind..... arizonensis.
 Thorax shining, unevenly punctate, elytra strongly
 narrowed at tip..... gagatinus.
- B. Rostrum not arcuate, rather short, very strongly com-
 pressed. Anterior tibiæ at least very strongly toothed,
 or angulate at middle.
 Anterior tibiæ without sub-apical mucro, median tooth
 strong.
 Rostrum beneath with a laminiform carina termina-
 ting abruptly near the base. Thorax beneath
 coarsely punctate, opaque..... cultellatus.
 Rostrum beneath not carinate, lower edge obtuse.
 Thorax beneath sparsely punctate, shining.... compressirostris.
 Anterior tibiæ strongly angulate at middle, sub-apical
 mucro moderately long..... Germari.

The last three species need no special comment, their characters being abundantly sufficient to distinguish them from any in the genus. The species in Section A are arranged as nearly as may be in such a sequence that the gradual obliteration of the thoracic vittæ may be shown. *S. zææ* imitates the markings of *cicatricosus* of the preceding group, but the vittæ are much less elevated; *scoparius* is also similar, but the markings still more reduced. The next three species are always densely clothed with the argillaceous indument which almost entirely obliterates all sculpture. *S. callosus* has the thoracic punctures very large, being really erosions which are more or less confluent; *sculptilis* is punctured and not eroded, and has the elytral intervals flat. *S. melanocephalus* may readily be known by the median vitta being reduced to a narrow carina slightly dilated at tip, and which is situated at the anterior half of the median line, and on each side of which is a small callus. *S. Sayi* has the median vitta feeble but entire, and differs but slightly from the next species. The specific name *placidus* is chosen for an abundant and very variable form which has received many names, as it is the name by which it has come to be known to most of our entomologists. It may at all times be known by the median vitta of the thorax being bifurcate in front and between the two branches, immediately behind the apical constriction is a shallow fossa more or less marked, in which the punctures are denser and deeper. Among the species without the usual thoracic vittæ, *gentilis* is known by the deep elytral striæ which are as wide at bottom as at top, punctures not very evident, thorax coarsely and densely punctured, median fine line smooth; *parvulus* recalls *placidus*, and has the femora very coarsely foveato-punctate; *retusus* is a robust form with indistinctly defined, fusiform, impunctured thoracic space; *arizonensis* has the thorax comparatively finely punctured and all the elytral sculpture neatly defined; *gagatinus* is more attenuate posteriorly than any of the preceding, and the thorax shining with the punctures unevenly distributed.

S. zææ Walsh, Practical Entomologist, II., p. 117; Riley, Third Annual Report, 1871, p. 59, fig 22.

Black, shining. Rostrum three-fourths the length of thorax, slender, slightly compressed, finely, at base more coarsely punctured, not canaliculate, and with a moderate puncture between the eyes. Thorax longer than wide, anteriorly constricted, sides gradually arcuate in front, at middle sub-parallel, base slightly narrower; surface with three elevated vittæ, as follows: median entire, very slender at each end, broadly dilated in front of middle, lateral vitta sinuous, interrupted opposite the broad portion of the median vitta, and with an oblique broad branch from the posterior portion extending toward the basal angle; spaces between the vittæ very coarsely, sub-confluently punctured. Scutellum slightly concave. Elytra oval, emarginate at base, surface finely striate, and with large foveæ rather irregularly placed along the striæ, becoming reduced to punctures toward the apex; intervals flat, very nearly equal, uni-seriately punctured, a slight callosity at humerus and tip of

seventh interval. Pygidium coarsely but sparsely punctured, with an oblique line of short yellowish hairs on each side. Body beneath very coarsely and densely punctured. Length .30-.36 inch ; 7.5-9 mm.

The tibiae of both sexes are simple.

Occurs in Middle States, Georgia and Kansas.

***S. scoparius*, n. sp.**

Agrees with the preceding in form, and differs as follows :

Thoracic vittæ, sub-obsolete, sparsely punctulate, intervals coarsely punctured. Elytra finely striate and with coarse foveate punctures becoming finer toward apex, intervals slightly alternating the wider bi-seriately, the narrower uni-seriately punctulate. Pygidium coarsely punctured, and with a slight tuft of hairs at apex on each side. Body beneath coarsely punctured. Length .36 inch ; 9 mm.

Male. Hind tibiae stout, strongly angulate at middle of inner margin, and with a long dense brush of hairs at angulation and less densely pubescent from thence to apex.

Female. Tibiæ normal.

Two specimens, Wisconsin and Kansas.

Resembles also superficially some of the smaller varieties of *S. pertinax*, but the tarsal and sexual characters at once serve to distinguish it.

***S. callosus* Oliv.** Ent. V., 83, p. 92, pl. 28, fig. 416 ; Gyll., Schönh., Curc. IV., p. 942.

Black, body above and beneath at sides, densely clothed with brownish argillaceous coating. Rostrum two-thirds the length of thorax, moderately compressed, above punctured, at base sub-canaliculate and more coarsely punctured. Thorax similar in form to that of *zeæ*, base much more distinctly lobed at middle, vittæ very indistinctly limited, their position indicated by very coarse variolate punctures, the median vitta incomplete posteriorly. Scutellum broadly transversely concave. Elytra oval gradually narrowed to apex, base feebly emarginate ; surface irregular, finely striate, striæ coarsely foveato-punctate, third interval at base obtusely elevated, callus at tip of seventh interval moderately elevated. Pygidium coarsely punctured, apex on each side with slight tuft of hairs. Body beneath coarsely but very sparsely foveato-punctate. Length .48 inch ; 12 mm.

This species resembles a *cicatricosus* which has become coated with mud, but the well-marked thoracic vittæ and the absence of variolate punctures in the latter at once distinguish it.

Occurs in the Gulf and Western States.

***S. sculptilis* Uhler.** Proc. Acad., 1855, p. 416.

Body black, above entirely covered with dense argillaceous coating ochreous or pale brownish in color. Rostrum naked at tip, coated at base, two-thirds the length of thorax, sparsely and at base more densely and coarsely punctured. Thorax similar in form to *zeæ*, densely coated and with the vittæ moderately well marked ; median broadly dilated at

middle, separated from the lateral by a sinuous row of very coarse punctures, lateral vittæ very broad at base and with an oblique branch. Scutellum shining broadly concave. Elytra oval, moderately narrowed to tip, surface finely striate, striæ with very coarse punctures distantly placed, forming irregular transverse series, intervals sub-equal, surface irregular and evidently punctate, sub-apical callus feeble. Pygidium coarsely and sparsely punctured and slightly pubescent at tip. Body beneath glabrous at middle, coated at the sides, coarsely but very sparsely punctate. Legs coated. Length .28-.36 inch ; 7-9 mm.

Closely allied to the preceding species, and has also the base of thorax moderately lobed at middle, it differs especially in its thoracic and elytral sculpture and smaller size.

Middle, Western and Southern States.

S. melanocephalus Fab. Syst. El. II., p. 435 ; Oliv. Ent. V., 83, p. 93, pl. 28, fig. 419 ; *nubilus*, Gyll., Schönh., Gen. Curc., IV., p. 938.

Body black, densely clothed above with pale ochreous or cinereous argillaceous coating. Rostrum two-thirds the length of thorax, compressed, tip slightly dilated, base rather suddenly wider over the insertion of the antennæ, sparsely punctured, at base much more coarsely and deeply. Thorax longer than wide, apex strongly constricted, in front suddenly broader, thence sub-parallel, base moderately lobed at middle, surface sparsely and coarsely punctured, vittæ short, median represented by a short apical carina slightly dilated posteriorly, lateral by an indistinct line ; on each side near the front angles a small round callosity. Scutellum glabrous, slightly concave. Elytra moderately robust, oval, gradually narrowed behind, surface finely striate, striæ with coarse punctures moderately distantly placed, intervals flat slightly alternating, the seventh at tip slightly elevated in callus. Pygidium coarsely and sparsely punctured, a slight tuft of hairs on each side of tip. Body beneath very coarsely but sparsely punctured. Length .30-.38 inch ; 7.5-9.5 mm.

When the surface coating is removed the intervals are seen to be uniseriately punctate.

Occurs from Georgia to Kansas.

S. Sayi Gyll. Schönh., Gen. Curc. IV., p. 943 ; *subcarinatus*, Mann. Bull. Mosc., 1843, II., p. 294 ; Schönh., Gen. Curc. VIII., 2, 255.

Piceous, frequently rufous, shining. Rostrum slender, three-fourths the length of thorax, suddenly dilated over the antennal scrobes, sparsely, at base coarsely and densely punctured, finely canaliculate and between the eyes transversely impressed. Thorax longer than wide, constricted in front, sides anteriorly rapidly broader, thence sub-parallel to base ; above truncate, median vitta slightly abbreviated in front, at middle moderately dilated, thence finely prolonged to base, lateral vittæ sinuous, approximating in front, slender and without lateral process ; surface coarsely punctured, on each side of median vitta variolate. Scutellum feebly longitudinally concave. Elytra elongate oval, slightly narrowed

to apex, surface striate, striæ coarsely punctured, punctures gradually finer to tip, intervals nearly equal, feebly convex, sparsely punctulate. Pygidium coarsely and sparsely punctured. Body beneath moderately and sparsely punctate. Length .26-.28 inch ; 6.5-7 mm.

Closely allied to the following species but differs especially in the absence of anterior fovea of thorax, the greater dilatation of the rostrum at base, and the absence of any evident alternation of the intervals.

Specimens are before me from Pennsylvania, Georgia, and Oregon.

S. placidus Say. Curc. N. A., p. 23 ; Am. Ent. edit. Lec. I., p. 290 ; *venatus*, Say, l. c., p. 22 ; l. c., p. 289 ; *rectus*, *immunis*, Say, l. c., p. 22-23 ; l. c., p. 290 ; *confusus*, Gyll., Schönh., Gen. Curc. IV., p. 944 ; *fallax*, Boh., l. c. VIII., 2, p. 256 ; *reticulaticollis*, Boh., l. c., p. 257.

As all of Say's descriptions were published at the same time, I have chosen that under which the species has been most widely distributed. Strictly speaking *venatus* is the first, and on the other hand *immunis* is described in a more recognizable manner than any of the others. The *reticulaticollis*, Boh., is scarcely worthy of being called a variety, and was probably described as distinct because it was Californian.

Black, feebly shining. Rostrum slender, three-fourths as long as the thorax, sparsely punctured and feebly canaliculate at base. Thorax longer than wide, anteriorly moderately constricted, sides moderately arcuate at apical third and sub-parallel to base ; above feebly trivittate, median vitta broadly dilated in front (inclosing an impression which is more coarsely and densely punctured), prolonged to a fine line at basal half ; lateral vittæ sinuate, joining the median in front, rarely with traces of oblique branch ; surface coarsely punctate, variolate on each side of median vitta at base. Scutellum smooth, very feebly concave. Elytra oval, moderately attenuate behind, surface finely striate, striæ coarsely punctured, punctures gradually finer to apex, intervals flat, slightly alternating in width and convexity, the narrower uni-seriately punctulate ; the broader bi-seriately. Pygidium coarsely punctured, at apex sparsely pilose. Body beneath coarsely and moderately closely punctate. Length .24-.40 inch ; 6-10 mm.

This species is very variable. The form above described, is that in which the sculpture is most developed, but many varieties occur, in which the lateral vittæ are reduced to oblique lines at base. The special character present in all the varieties, and which distinguishes the species from all others in our fauna, is the slight fossa at the anterior median portion of the thorax immediately behind the apical constriction.

Specimens occur in every part of our fauna, Pacific and Atlantic.

S. gentilis Lec. Pacif. R. R. Rep., 1857, p. 58.

Piceous or pale castaneous shining. Rostrum slender, three-fourths as long as thorax, sparsely, at base more coarsely punctured and finely canaliculate, and with an impressed point between the eyes. Thorax longer than wide, moderately constricted in front, sides anteriorly mod-

erately arcuate, sub-parallel or feebly arcuate to base; surface coarsely punctured, somewhat more densely in front, and with a fine, smooth median line. Scutellum not canaliculate, elytra oblong, slightly attenuate posteriorly, deeply striate, striæ not distinctly punctured, intervals flat, equal, very finely alutaceous, and with a single row of very coarse sub-quadrate punctures closely placed. Pygidium coarsely and equally punctured, sparsely pubescent at tip. Body beneath black, coarsely and sparsely punctured, legs piceous or rufous. Length .30-.34 inch; 75-8.5 mm.

The color is sometimes piceous, frequently castaneous, and in some specimens the thorax is piceous, and has on each side of the median smooth line a linear rufous space, and a similar space adjacent to the lateral margin.

Occurs in California.

S. parvulus Gyll. Schönh. Gen. Curc. IV., p. 961.

Black, with cinereous coating of argillaceous material. Rostrum three-fourths as long as thorax, sparsely punctate, base dilated over the scrobes, coarsely punctured, and moderately deeply canaliculate. Thorax moderately constricted at apex, sides in front strongly, thence moderately arcuate to base, surface densely and coarsely punctured, rarely with trace of median line, and at base a slight trace of oblique impression on each side of middle. Scutellum not channelled. Elytra oval, moderately narrowed to tip, surface finely striate, striæ with coarse punctures moderately distantly placed, gradually finer to tip, intervals slightly alternating in width and convexity, uni-seriately and rather coarsely punctate. Pygidium coarsely punctate, slightly fimbriate at apex. Body beneath coarsely, but not densely punctured. Legs coarsely punctate. Length .24 inch; 6 mm.

The smallest species in our fauna, easily known by the above characters.

Occurs in Pennsylvania, Georgia and Kansas.

S. pumilus Gyll. Schönh. Gen. Curc. IV., p. 960.

"Oblongo-ellipticus, parum convexus, niger, opacus, sparsim cinereopulverulentus; thorace dense varioloso-punctato, in medio subcarinato; elytris obsolete, remote punctato-striatis; interstitiis planis, vix punctulatis, guttulis cinereis irroratis."

Similar to *S. parvulus*, but twice as large.

This species is unknown to me. It is placed next to *parvulus* by Gyllenhal.

S. retusus Gyll, Schönh. Gen. Curc. IV., p. 949.

Body robust, black, sub-opaque. Rostrum half the length of thorax, slightly arcuate, moderately compressed, and gradually broader to tip, sparsely punctulate between the eyes, flattened and deeply canaliculate. Thorax robust, slightly longer than wide, feebly constricted at apex, sides gradually arcuate, base slightly narrower, surface coarsely variolato-

punctate with median fusiform smooth space. Scutellum not canaliculate. Elytra oval gradually attenuate to tip, scarcely larger than the thorax and head, surface striate, striae with very coarse punctures at basal half, rapidly finer to tip, intervals equal, slightly irregular, and indistinctly uni-seriately punctate. Pygidium very feebly exposed, coarsely punctate. Body beneath coarsely but sparsely punctate. Legs finely punctured. Length .32-.40 inch ; 8-10 mm.

Occurs in the Southern States.

***S. arizonensis*, n. sp.**

Black, feebly shining. Rostrum longer than half the thorax, moderately stout, slightly wider at tip, moderately compressed, sparsely punctulate, at base slightly dilated, more distinctly punctate, and finely grooved. Thorax longer than wide, apex moderately constricted, sides in front strongly arcuate, thence feebly arcuate to base, surface sparsely punctate, punctures coarser toward the middle, and denser at base, a faint trace of smooth median line. Scutellum slightly grooved. Elytra oval, arcuately narrowing to tip, surface finely striate, striae with very coarse punctures in their entire length, intervals flat, equal, finely uni-seriately punctulate. Pygidium moderately strongly elevated along the median line, coarsely sub-muricately punctured, at tip smoother. Body beneath sparsely and finely punctulate, femora very finely punctured. Length .36 inch ; 9 mm.

A species with very neat appearance, easily known by the above characters.

Occurs in Arizona.

S. gagatinus Gyll. Schönh. Gen. Curc. IV., p. 952 ; ? *necydaloides*, Fab. Syst. El. II., p. 435 ; Oliv. Ent. V., 83, p. 94, pl. 28, fig. 420.

I am not quite certain that these two species are synonymous, as the latter is so briefly described as to be very unsatisfactory. The latter is the older name should they prove identical.

Black, shining. Rostrum three-fourths the length of thorax, feebly compressed, scarcely dilated at base, minutely punctulate, at base finely grooved, groove more deeply impressed between the eyes. Thorax longer than wide, anteriorly constricted, sides moderately arcuate from that to base, surface shining, unequally punctured, punctures sparse and fine over the greater part of the surface, coarser and denser along the base and from the latter coarse punctures extend forwards on each side of the median line, and also slightly within the hind angles, punctures coarse at the apical constriction. Scutellum feebly concave. Elytra oval, scarcely larger than the head and thorax, rapidly narrowed to apex, surface striate, striae moderately deep, and with coarse punctures gradually evanescent toward the apex, intervals flat, equal, finely punctulate. Pygidium narrow, coarsely punctured, at tip slightly pubescent. Body beneath coarsely and closely punctured, femora minutely punctulate. Length .30 inch ; 7.5 mm.

Easily known by the shining thorax and rapidly narrowed elytra.

One specimen from Georgia.

S. cultellatus, n. sp.

Body robust, black, opaque. Rostrum longer than half the thorax, straight, strongly compressed, above acutely carinate, especially near the tip, beneath with acute laminiform carina, terminating opposite the scrobes by an abrupt sinuation, surface above coarsely at base densely punctured and slightly canaliculate. Front coarsely punctured. Thorax robust, longer than wide, anteriorly scarcely constricted, sides moderately arcuate in front and slightly narrowing to base, surface varolato-punctate, median line slightly elevated. Scutellum not grooved. Elytra scarcely longer than head and thorax, oval, arcuately, and feebly narrowed to tip, surface deeply and broadly striate, striæ catenulate, intervals narrower than the striæ, alternately broader, the narrower cariniform the broader bi-seriately punctulate. Pygidium coarsely, muricately punctate. Body beneath coarsely but sparsely punctured. Anterior tibiæ with strong obtuse spur above the middle, sub-apical mucro wanting, apical slender and longer than usual; middle and hind tibiæ with the spur sub-median. Length .30-.34 inch; 7.5-8.5 mm.

The femora are very robust, the under side of thorax coarsely punctured. The form of rostrum will easily distinguish the species.

Occurs in Kansas and Texas.

S. compressirostris Say. Journ. Acad., 1823, III., p. 319; Am. Ent. edit. Lec. I., p. 20; *cultrirostris*, Gyll. Schöb. Gen. Curc. IV., p. 951.

Black, feebly shining. Rostrum longer than half the thorax, straight, strongly compressed, above acutely carinate, especially at tip, moderately coarsely punctured, base dilated and with a strong puncture between the eyes. Thorax longer than wide, apex moderately constricted, sides moderately strongly arcuate to base, surface irregularly punctured, at middle sparsely, coarsely variolato-punctate at the sides and on a line each side of middle converging at base. Scutellum moderately convex. Elytra oval, gradually narrowed to apex, surface striate, striæ not deep, coarsely and rather distantly punctured in their entire length; intervals equal, at middle more elevated and uni-seriately punctulate. Pygidium cribrate. Body beneath with prothorax and middle nearly smooth, sides and last ventral segment coarsely punctured. Anterior tibiæ with strong median oblique tooth, middle and hind tibiæ less strongly toothed, tooth sub-median. Length .28-.34 inch; 7-8.5 mm.

Say and Germar used the name *compressirostris* for two distinct species at nearly the same time, and it is difficult to decide, if date of publication is considered, which should be suppressed. I follow the catalogue of Gemminger and Harold, although they incorrectly place the two names as equivalent. Gyllenhal's *cultrirostris* is, however, a synonym under any circumstances.

Occurs from Kansas to Texas.

S. Germari Horn; *compressirostris* † Germ. Ins. Spec. Nov. p. 300, 1824; Boh. Schön. Gen. Curc. VIII., 2, p. 258.

Black, sub-opaque, form robust. Rostrum three-fourths the length of thorax, strongly compressed, very slightly arcuate, upper edge not carinate, base moderately dilated, very coarsely punctured, and concave between the eyes. Thorax longer than wide, anteriorly moderately constricted, sides in front strongly, thence gradually arcuate to base, surface coarsely variolato-punctate, with large eroded spaces. Scutellum with faint median line. Elytra robust, oval, moderately attenuate to tip, surface striate, striæ not punctured, intervals alternating in width, bi- and uni-seriately coarsely punctate and with large shallow foveæ very irregularly disposed over the entire surface. Pygidium cribrate. Body beneath coarsely variolato-punctate. Anterior tibiæ strongly angulate at middle, sub-apical mucro distinct, middle tibiæ subangulate below the middle, hind tibiæ slightly sinuous. Length .38-.40 inch; 9.5-10 mm.

This species forms a link between the sections A and B, by the anterior tibiæ being only angulate and the sub-apical mucro present on all the tibiæ.

Occurs in Kansas and Texas.

CALANDRA Clairv.

Sitophilus Schönh.

Metasternal side pieces narrow, mesosternal epimera ascending, acute above. Anterior coxæ widely distant.

Two species occur in our fauna.

Surface opaque, thorax very densely punctured. *oryzæ*.

Surface feebly shining, thorax sparsely punctured. . . . remotepunctatus.

C. oryzæ Linn. Amoen. Ac. VI., 1763, p. 395; Oliv. Ent. V. 83, p. 97, pl. 7, fig. 81 *a, b*; Schönh. Gen. Curc. IV., p. 981.

Color variable from ferruginous to piceous, elytra frequently with four rufous spots, surface opaque. Rostrum slender cylindrical, three-fourths as long as the thorax, at base slightly dilated, surface above with moderately coarse punctures arranged in four series and with a slight fossa between the eyes. Thorax longer than wide, anteriorly constricted, sides feebly arcuate and gradually divergent to base, surface densely and coarsely punctured, punctures with very short setæ. Elytra oblong, slightly narrowed at tip, surface deeply striate, striæ very coarsely and closely punctured, intervals slightly convex, narrow, the sutural with a row of coarse punctures, punctures with very short setæ. Pygidium rugosely cribrate and with short setæ. Body beneath very densely and coarsely punctured. Legs coarsely punctured and with short setæ. Length .12-.14 inch; 3-3.5 mm.

This species occurs in every portion of our fauna, and, in fact, of the world, and is only too well known.

C. remotepunctatus Gyll. Schönh. Gen. Curc. IV., p. 979.

Piceous, moderately shining, similar in form to the preceding, but more convex, thorax sparsely punctate, punctures coarse and on the disc more or less fusiform. Elytra deeply striate, striæ punctured at bottom, not serrate, intervals subequal convex, the sutural with a row of elongate punctures. Pygidium coarsely cribrate. Body beneath coarsely but less densely punctured than *oryzæ*. Length .12-.14 inch ; 3-3.5 mm.

In well preserved specimens the surface has fine, short setæ as in the preceding, but they are much more apt to be lost.

Occurs from Canada to Arizona.

Other species of *Calandra* have been from time to time introduced into our country by ships from tropical ports, although none have found permanent lodgment, as far as I am aware.

COSSONIDES.

This tribe as restricted by Lacordaire (Genera vii, 319), appears to be entitled to higher rank than is assigned it by that author, but a discussion of the merits of this view would require a revision of the entire family and is not pertinent to the objects of the present essay.

The groups as established by Lacordaire appear hardly to be of equal value, and some are composed of rather heterogeneous material. The small number of genera represented in our fauna renders it impossible for me to suggest any change in their arrangement that would be at all applicable to the larger number of exotic genera.

Funicle of antennæ 4-jointed, tarsi 5-jointed.....**DRYOPHTHORIDES.**

“ “ “ 5-jointed.....**PENTARTHIDES.**

“ “ “ 7-rarely 6-jointed.

Metasternum very short, eyes placed on the rostrum...**LYMANTIDES.**

Metasternum elongate, eyes placed normally.....**COSSONIDES.**

DRYOPHTHORIDES.

This group contains in our fauna, but one genus, remarkable for being the only exception in the entire family in which the tarsi are five-jointed.

DRYOPHTHORUS, Schönh.

The antennal insertion is nearer the base than the middle ; Lacordaire calls it submedian. The mesosternum in our species is not narrow, but much more widely separates the coxæ than the anterior coxæ are separated by the prosternum. Lacordaire says, “*mesosternum étroit*” and “*pattes antérieures assez largement séparées,*” and these characters may really exist in *D. lymexylon*, from which the generic description was probably drawn.

D. corticalis Say, Descr. Curc. N. A. p. 24 ; Am. Ent. edit. Lec. 1, p. 292 ; Boh. Schönh. Gen. Curc. IV, p. 1089.

Brownish or piceous, opaque. Rostrum longer than half the thorax, sub-cylindrical, slightly dilated at tip, above slightly sulcate at base, sur-

face coarsely punctured. Head coarsely but sparsely punctured. Eyes oval, transverse coarsely granulated, situated at base of rostrum. Thorax longer than wide, strongly constricted in front, sides behind the constriction moderately arcuate, thence sub-parallel to base which is slightly narrower; surface coarsely variolato-punctate. Scutellum invisible. Elytra elongate oval, at base broader than thorax; sides arcuate, feebly converging to apex; surface deeply and broadly striate, striæ coarsely punctured at bottom, intervals narrow, cariniform but obtuse at summit. Body beneath coarsely but sparsely punctured. Suture between the first two abdominal segments deeply impressed. Anterior coxæ moderately distant, middle coxæ nearly three times as widely separated, hind coxæ very distant, closely approximating the margin of the elytra. Inter-coxal process broad, short, truncate in front. Tarsi five jointed. Length .10 inch; 2.5 mm.

The funicle of the antennæ is composed of four joints only, the club rather suddenly formed and oval. This species from the tarsal and antennal characters, is one of the most easily known Rhynchophor in our fauna.

Occurs over our entire fauna east of the Mississippi, under bark.

Dryophthorus bituberculatus Fab. is said by Boheman to occur in California.

PENTARTHRIDES.

This group is characterized by the funicle of the antennæ having five joints. Two genera occur in our fauna which possess otherwise rather diverse characters, one being of the general aspect of *Dryophthorus*, the other of the commoner *Rhyncolus* type.

Eyes small, rounded, very coarsely granulated, situated on the rostrum. Elytra oval..... Dryotribus.

Eyes moderate, oval, not very coarsely granulated, situated on the head.

Elytra oval, scape of antennæ long, scrobes encroaching on the eyes beneath..... Amaurorhinus.

Elytra cylindrical, scape short, scrobes beneath the eyes posteriorly..... Wollastonia.

DRYOTRIBUS, n. g.

Habitus of *Dryophthorus corticalis*. Rostrum moderately elongate, arcuate, slightly flattened, at base constricted. Head suddenly broader than the rostrum, globular. Eyes small, very coarsely granulated, composed of about twenty facets, round, situated at the side of rostrum one-fifth from base. Antennæ inserted midway between the eyes and tip of rostrum, scrobes moderately deep in front, lateral, gradually becoming inferior, not confluent posteriorly and not encroaching upon the eyes. Scape of antennæ elongate, feebly clavate at tip, as long as the remaining joints together; funicle five-jointed, first joint obconical, stouter and longer than the following, second obconical slightly longer than the third,

joints 3-4-5 subequal gradually broader, club oval slightly flattened, pubescent at tip. Thorax longer than wide. Scutellum invisible. Elytra elongate oval, narrowed at base and apex. Anterior coxæ moderately distant, middle nearly twice as widely separated, hind coxæ very distant, intercoxal process short truncate in front. First ventral suture entirely obliterated at middle. Tarsi moderately stout, slightly pubescent beneath, the third joint feebly emarginate. Metasternum moderately long.

The above characters will serve to distinguish this genus from any other hitherto described. It is represented by one species.

D. mimeticus, n. sp.

Brownish or piceous, opaque. Rostrum three-fourths the length of thorax, coarsely variolato-punctate. Thorax one-fourth longer than wide, moderately convex, at anterior fourth constricted, sides moderately arcuate, base as narrow as the constriction, surface densely variolato-punctate. Elytra elongate oval, broader than the thorax, humeri broadly rounded, sides moderately arcuate, at apical third gradually narrower to tip; surface broadly striate, striæ coarsely punctured, intervals narrow, at summit with a series of moderately coarse, submuricate punctures. Body beneath very coarsely but sparsely punctured, legs coarsely punctured, and with a few short yellow hairs. Length .10 inch; 2.5 mm.

This insect closely resembles *Dryophthorus corticalis*, and might readily be mistaken for it on a hasty examination.

Two specimens collected at Key West, Florida, by Mr. Edward Norton.

WOLLASTONIA, n. g.

Head stout, obconical. Eyes round, feebly convex, moderately coarsely granulated. Rostrum slightly longer than the head, robust, sub-cylindrical, not arcuate. Scrobes commencing at middle, deep, rapidly becoming inferior and distant from the eyes posteriorly. Antennæ robust, scape short robust not longer than half the length of the remaining joints; funicle five-jointed, first joint stout, longer than the others, 2-5 sub-equal broader than long; club round, sub-truncate at tip, glabrous, pubescent at tip, composed almost entirely of the first joint. Thorax longer than wide, cylindrical, but slightly narrowed in front. Scutellum small, rounded at tip. Elytra cylindrical very slightly broader than the thorax. Legs short, robust, tarsi nearly as long as the tibiæ, first and second joints slender, subequal third slightly broader but not bilobed, fourth as long as the preceding together, slender. Anterior and middle coxæ feebly separated, hind coxæ distant, intercoxal process short, sub-truncate in front. Metasternum moderately long.

Closely allied to *Pentarthrum*, but differs by the position of the antennal scrobes, and the more narrowly separated anterior and middle coxæ. In the present genus the scrobes pass entirely beneath the eyes, and are distant from their lower edge. In *Pentarthrum* the scrobes attain the eyes.

Dedicated to Mr. T. V. Wollaston, who has increased our knowledge of the *Cossonides* by his valuable essay on the genera and species of the Canary and adjacent islands.

W. quercicola. (? *Rhyncolus quercicolus* Boh. Schönh. Gen. Curc. VIII., 2, p. 281.)

Black, feebly shining. Rostrum finely punctured at tip, more coarsely, but much less densely at base. Thorax longer than wide, nearly cylindrical, very slightly narrowed in front, surface coarsely but not densely punctured. Elytra cylindrical scarcely wider than the thorax, humeri moderately prominent, surface finely striate at base, striae much deeper at apex, with very coarse and deep punctures moderately closely placed; intervals feebly convex, uni-seriately punctulate, tip of elytra with margin slightly prolonged and feebly reflexed. Body beneath black, feebly shining, coarsely variolato-punctate. Legs piceous sparsely punctured. Length .12 inch; 3 mm.

South Carolina, Louisiana, Georgia. I quote the synonym with some doubt, although the specific description agrees very well.

AMAUORHINUS Fairm.

A ? nitens, n. sp.

Black, shining. Rostrum half as long as thorax, finely punctured, and with an impressed puncture between the eyes. Thorax as wide as long, oval, base slightly wider than apex, sides moderately arcuate, surface moderately convex, coarsely and regularly, but not densely punctured. Scutellum small, smooth. Elytra oblong, humeri moderately prominent, sides feebly arcuate, slightly broader behind the middle, margin slightly prolonged at tip, and somewhat reflexed, surface finely striate, striae moderately punctured, intervals (slightly convex at base) flat, finely uni-seriately punctured. Body beneath shining, coarsely and sparsely punctured, abdomen more finely punctured. Length .10 inch; 2.5 mm.

I refer this species with doubt to the above genus, as the characters have never been exposed at sufficient length to determine the point definitely. It corresponds with the description as far as it goes. The following characters are added for the present species, that its position may be determined.

Rostrum slightly longer than the head, slightly arcuate. Scrobes deep, beginning at the middle of the rostrum, encroaching on the eyes behind. Eyes oval, slightly transverse, moderately convex, not coarsely granulated. Anterior coxæ very closely approximated, middle moderately distant, hind coxæ distant, intercoxal process short, slightly arcuate in front. Third tarsal joint moderately emarginate.

Occurs abundantly in Florida.

LYMANTIDES.

The distinction between this group and the next is not very well marked in the genus, which we have in our fauna, the only difference being in the short mesosternum of the former, and the longer mesoster-

num of the Cossonides. *Lymanthes* has the eyes placed on the rostrum, and as far as our fauna is concerned, is the point of greatest difference, but *Catoletthus* of the next group has a similar structure.

LYMANTHES Schönh.

Head globular, rostrum separated from it by a deep constriction, moderate, robust, subquadrangular, rounded at the angles, arcuate; scrobes commencing a short distance from the tip, oblique, visible only in front. Antennæ anterior, moderately robust, scape gradually clavate, nearly attaining the eyes; funicle seven-jointed; 1-2 elongate, obconic, the former longer, 3-7 transverse, closely placed, increasing gradually in width; mass moderately large, subglobular, compact. Eyes situated on the rostrum, lateral, small, depressed, narrow, obliquely transverse. Thorax oblong quadrate, depressed, suddenly and for a short distance narrowed in front, truncate at apex and base. Scutellum invisible. Elytra moderately convex, gradually declivous behind, narrower at posterior third, not larger at base than thorax and feebly emarginate. Legs moderate, anterior coxæ feebly separated, thighs gradually in mass, the anterior more strongly than the others; tibiæ narrow, a little compressed, slightly arcuate at the extremity, which is mucronate. Tarsi short filiform, fourth joint long, claws slender parallel. Mesosternum narrow, linear. Form oblong, elongate, unequal.

The above description of the genus is copied from Lacordaire as the species is unknown to me in nature.

L. scrobicollis Gyll. Schönh. Gen. Curc. IV., p. 1086.

"Elongatus, angustus, subdepressus, nigropiceus, nitidus, parce cinereo-setulosus, antennis pedibusque dilutius ferrugineis; rostro porrecto, seriatim rude punctato; thorace oblongo, disperse varioloso-punctato; elytris remote punctato-striatis, interstitiis angustis, punctulis valde remotis adpersis, setulis parvis cinereis, præsertim versus apicem adpersa. Corpus subtus profunde disperse punctatum, nigro piceum."

Of the size and facies of *Dryophthorus*.

For a time I supposed the insect, which has been described on a previous page as *Dryotribus mimeticus*, to be *Lymanthes*, of which it has many of the characters; but their identity cannot be for a moment suspected without admitting inaccuracies on the part of Schönherr and Lacordaire which are almost inconceivable, although the latter author states in the table (Genera, VII., p. 328) of genera that *Lymanthes* is eyeless, and on a subsequent page (p. 332) the eyes and their position are carefully described.

COSSONIDES.

Funicle of the antennæ seven jointed. Eyes normally placed. Metasternum at least moderately long.

The above is all that can be said in general of the genera which compose this group. Many of the genera are extremely closely allied, and as but few are known to me in nature, I have been compelled to rely entirely on the books.

Our genera are as follows :

Rostrum always longer than the head.

Elytra narrowed at base and apex, form oval. Anterior coxæ narrowly separated.

Eyes distinct, scape resting at a distance from them. *Elassoptes*.

Elytra parallel, cylindrical, or slightly depressed.

Scape of antennæ impinging on the eyes when at rest.

Anterior coxæ distant. *Cossonus*.

Anterior coxæ very narrowly separated. *Phlæophagus*.

Scape resting at a distance from the eyes.

Funicle seven jointed. *Rhyncolus*.

“ six “ *Hexarthrum*.

Rostrum shorter than the head and very stout.

Lateral lobes of submentum prominent anteriorly. *Stenoscelis*.

Cossonus and *Rhyncolus* are especially difficult to separate, as the fact of the scape impinging on the eyes when at rest appears to depend in great part to the length of the scape itself, and also on the size of the eyes. *Rhyncolus* has, however, the rostrum more robust, and in our species not much longer than the head and feebly narrower.

ELASSOPTES, n. g.

Rostrum stout, feebly arcuate. Antennæ median, scape rather slender feebly clavate to tip, funicle seven-jointed, first joint short, stouter than the following, joints 2-7 gradually and very feebly broader, mass oval rather abruptly formed, truncate at apex. Eyes small, oval, flat, coarsely granulated, and distant from the scape when the latter is at rest. Thorax slightly wider than long, sides strongly arcuate, apex and base truncate. Scutellum invisible between the elytra. Elytra convex, oblong oval. Legs moderate, anterior and middle coxæ extremely narrowly separated, hind coxæ moderately distant, intercoxal process rounded in front. Femora feebly clavate, slightly compressed, tibiæ moderately compressed with strong falcate process at outer angle, inner angle with short spine. Tarsi slender, nearly as long as the tibiæ, first joint nearly equal to the fourth and longer than 2 and 3 together, the latter subequal, the third being slightly shorter, not bilobed, fourth slightly longer than the first, and with small claws.

This genus is closely allied to *Lipommata*, Woll., and differs in the presence of eyes, the more slender antennæ and tarsi. Other differences probably exist which might be determined on comparison. The anterior coxæ are more prominent than is usual among our *Cossonides*.

E. marinus, n. sp.

Form moderately robust, color ferruginous or brownish, shining. Rostrum longer than the head, stout, feebly arcuate, slightly elliptical in transverse section, coarsely and densely punctured at tip, median line smoother, head sparsely punctate. Thorax slightly broader than long, anteriorly narrower, sides rather strongly arcuate, basal angles rounded. Elytra oblong oval, convex, posteriorly rapidly declivous, sides clasping

the body, surface with striæ of coarse punctures at base, punctures replaced gradually toward apex by rounded tubercles. Body beneath finely alutaceous and obsoletely sparsely punctate. Length .12 inch ; 3 mm.

This species is totally unlike anything in our fauna, and bears considerable resemblance to the figure of *Mesoxenus Bewickianus*, Woll., Trans. Ent. Soc. Lond., n. s. Vol. V., pl. 19, fig. 6.

Occurs on the sea beach near San Francisco. Specimens have been sent me by Messrs. Edwards and Behrens.

COSSONUS Clairv.

The species of *Cossonus* may be divided into three groups which may have generic value :

- | | |
|--|----|
| Rostrum dilated at tip. Body more or less depressed..... | A. |
| Rostrum not dilated at tip. | |
| Body linear, strongly depressed. Scape of antennæ barely at- | |
| taining the eyes. Rostrum porrected..... | B. |
| Body convex. Scape of antennæ impinging on the eyes when | |
| at rest..... | C. |

A.

This group may be considered to represent the typical *Cossonus*. The rostrum is always distinctly dilated at tip, the antennal scorbes deep and the ridge forming their lower boundary always visible from the front. The species all resemble each other very closely and are difficult to separate :

Thorax truncate at base. Antennæ post-median Bohemanni.

Thorax bi-sinuate at base. Antennæ median.

Thorax broader than long, sides arcuate, surface very un-

 equally punctured..... platalea.

Thorax longer than wide, sides very feebly arcuate or

 straight.

Base of thorax with slight tuberosity opposite the scu-

 tellum.

Basal portion of rostrum longer than the dilated por-

 tion. subareatus.

Basal portion equal to the dilated portion.

Thorax narrower than the elytra, with coarse dis-

 tant punctures, elytral punctures coarse.

Thorax sub-depressed without concavity..... piniphilus.

Thorax longitudinally convex, median line slightly

 concave behind..... concinnus.

Thorax as wide as the elytra, punctures coarse but

 not distant, elytral punctures finer, serrate.

Color black, striæ deeper and broader at base.... crenatus.

Color piceous, striæ scarcely deeper and broader

 at base..... corticola.

Thorax with median line at base sub-cariniform.

Basal portion of rostrum scarcely equal to the apical. impressifrons.

C. Bohemanni *platalea*, ‡ Boh. Sch. Gen. Curc. IV., p. 998.

"Nigro-piceus, nitidus, glaber, supra deplanatus, antennis, tibiis, tarsisque ferrugineis; rostro capite duplo longiori, tenuiori, apice minus sensim dilatato; thorace latiori subquadrato, antice evidententer coarctato, supra in ipsa basi obsolete bis impresso, dorso remote lateribus crebre punctato; elytris profunde punctato-striatis, interstitiis latioribus majis convexis."

This species is unknown to me in nature. The antennæ are said to be post-median (?) and the sides of the thorax nearly straight, the base of the thorax is also truncate. It is certainly not the species described by Say, as the elytra are distinctly wider than the thorax in the latter. I have copied Boheman's diagnosis with the change of name rendered necessary by the erroneous identification.

C. platalea Say. Descr. Curc. N. A., p. 24; Am. Ent. edit. Lec. 1, p. 292.

Black, shining. Rostrum longer than half the thorax, moderately arcuate, apex quadrangularly dilated, basal portion longer than the apical, cylindrical, slightly compressed, surface sparsely punctured, at base not sulcate. Thorax as wide as long, apex rather suddenly narrowed, base feebly bi-sinuate and on each side of middle slightly impressed, sides strongly and regularly arcuate, surface flattened, unequally punctured, punctures at the sides denser and finer, at middle coarser and more sparsely placed. Elytra broader than the thorax, flattened, striate, striæ coarsely and serrately punctured, intervals flat, very minutely uniseriately punctulate. Body beneath sparsely punctured. Length .24 inch; 6 mm.

This is the only species in our fauna in this group in which the sides of the thorax are regularly arcuate.

Occurs in the Middle States, under bark.

C. subareatus Boh. Schönh., Gen. Curc. VIII., 2, p. 266.

Differs from *platalea* as follows:

Rostrum at base with a distinctly impressed puncture. Thorax longer than wide, apex moderately constricted, sides in front arcuate, at middle parallel; basal angles rounded. Elytra scarcely wider than thorax, striate, striæ coarsely and serrately punctured, intervals convex punctulate as in *platalea*. Body beneath sparsely and rather finely punctured. Length .20 inch; 5 mm.

The sides of the thorax are more densely punctured than the rest of the surface, within this the punctures are fine and much sparser, and along the middle the punctures are coarser and rather deeply impressed, especially near the base. This and the preceding species have the club of the antennæ much more suddenly formed and the funicle more slender than in any of the species which follow.

Occurs from the Middle States to Kansas.

C. piniphilus Boh. Schönh. Gen. Curc. IV, p. 1002; Mann. Bull.

Mosc. 1843, II, p. 295 ; *scrobiculatus* Lec. Proc. Acad. 1859, p. 285 ; Col. Kansas, p. 18 ; ? *californicus* Motsch. Bull. Mosc. 1845, 1, p. 99.

Black, shining. Rostrum scarcely longer than half the thorax, apical portion quadrangularly dilated and longer than the basal portion, surface sparsely punctured, feebly canaliculate. Thorax oblong, narrower in front, sides feebly arcuate and gradually divergent to base, apex truncate, base feebly bi-sinuate and on each side feebly impressed, median line impunctured, surface feebly depressed, coarsely and deeply but sparsely punctured. Elytra slightly wider than the thorax, surface feebly depressed, deeply striate, striæ wider and deeper at base, coarsely punctured, intervals moderately convex, very minutely sparsely punctulate. Body beneath black, shining, sparsely punctured. Length .14-.18 inch ; 3.5-4.5 mm.

This species resembles *crenatus*, but may be readily known from all the species which follow, by the punctures of the striæ being coarse and each one distinct, all the others having the punctures finer and very closely placed. I have before me a typical specimen sent by Mannerheim and also the type of *scrobiculatus*, and the only observable difference being in the better developed form of the latter, the former being smaller and piceo-rufous.

Occurs in California and Oregon.

C. concinnus Boh. Schön. Gen. Curc. IV, p. 1006.

Moderately convex, black, shining. Rostrum not as long as half the thorax, quadrangularly dilated at apical portion which is longer than the basal, surface sparsely punctured, base canaliculate, thorax moderately convex, longer than wide, median line slightly depressed, sides moderately strongly arcuate, base feebly bi-sinuate, surface coarsely and deeply punctured over the entire surface and in the basal impressions cribrate. Elytra not wider than the thorax, moderately convex, deeply striate, striæ coarsely and serrately punctured, intervals moderately convex, at apex flatter. Body beneath moderately punctured. Length .18-.22 inch ; 4.5-5.5 mm.

Boheman says the antennæ are post-median and the third and fourth abdominal segment smooth, neither of which can I detect. This species may be known by its much more convex thorax than any other in the present group.

Occurs from Canada to Georgia and Missouri.

It is possible that the species so well described by Boheman (and to which the above is equivalent) as *concinnus* is really the true *corticola* Say, but as Say's types are not extant and the description may be construed to fit either the present or the next, I do not deem it advisable to complicate the synonymy by any change based on mere opinion.

C. corticola Say, Curc. N. A., p. 24 ; Boh. Schön. Gen. Curc. IV, p. 1005.

Piceous, elongate, sub-depressed. Rostrum not as long as half the

thorax, moderately punctured, at base an impressed puncture sometimes prolonged into a short groove, at apex feebly dilated, basal portion shorter than the apical. Thorax oblong, feebly constricted at apex, sides in front feebly arcuate, at middle nearly straight and slightly divergent, base slightly narrowed and bi-sinuate, surface depressed at sides moderately closely punctured, disc at centre frequently impunctured, toward the base coarsely punctured. Elytra elongate, parallel, sometimes narrower than the thorax, surface deeply striate, striæ seriatly punctured, intervals narrow, at apex flat, finely uni-seriatly punctulate, body beneath piceous, shining, coarsely and on the thorax densely punctured. Length .16-.20 inch ; 4-5 mm.

This species has the facies of being the most elongate of the section. The thorax is more sparsely and irregularly punctured, the coarser punctures at base being so arranged as to give the ante-scutellar tuberosity the appearance of being prolonged into a carina. The elytra are also less deeply and broadly striate than in the preceding species.

Occurs more abundantly in the Gulf States.

C. crenatus, n. sp.

Black, shining. Rostrum shorter than half the thorax, moderately coarsely and deeply punctured, at base feebly canaliculate, apex feebly quadrangulately dilated and longer than the basal portion. Thorax oblong, anteriorly feebly constricted, sides in front moderately arcuate, at middle feebly arcuate or nearly straight, at base narrower, base bi-sinuate, surface feebly depressed, coarsely deeply and moderately closely punctured. Elytra not wider than the thorax and twice as long, surface deeply striate, striæ deeper and broader at base, moderately coarsely and serrately punctured, intervals convex, narrow, with a single series of very minute punctures. Body beneath black, shining, coarsely and moderately densely punctured. Legs piceo-rufous. Length .16-.20 inch ; 4-5 mm.

This species resembles *piniphilus*, but the latter has the thorax very evidently narrower than the elytra and the punctures moderately distantly placed.

Occurs in Northern California and Oregon, under pine bark.

C. impressifrons Boh. Schön. Gen. Curc. IV, p. 1001.

Black or piceous, shining. Rostrum scarcely as long as half the thorax, sparsely punctured, apical portion very feebly quadrangulately dilated and distinctly longer than the basal portion, vertex with a deeply impressed, puncture slightly above the eyes. Thorax oblong, narrower in front, sides feebly arcuate from apex to base, the latter slightly narrower, bi-sinuate, surface coarsely punctured, at sides slightly more densely, median line at base distinctly cariniform. Elytra not wider than the thorax, moderately convex, deeply striate, striæ moderately coarsely and serrately punctured, intervals narrower at base, acute, at apex broader and flat, indistinctly uni-seriatly punctulate. Body beneath sparsely punctured. Length .12-.14 inch ; 3-3.5 mm.

This species is the smallest of the present section and is readily known by the sub-carinate median line at base.

Pennsylvania (Boheman) and Florida.

B.

This group contains one very small species of elongate form, rufous color, and with the rostrum porrected. The scape of the antennæ barely attains the eyes, the scrobes deep, very gradually becoming inferior and more widely separated than usual in the genus. The anterior coxæ are widely separated.

The unique species is referred with doubt to *Phlæophagus* by Boheman, but the distant anterior coxæ forbids such a reference.

C. pallidus Boh. Schönh, Gen. Curc. VIII., 2, p. 279.

Linear, rufo-testaceous, depressed, shining. Rostrum cylindrical, feebly arcuate, slightly longer than half the thorax, sparsely punctured, and with an impressed point between the eyes. Thorax oblong, sides gradually divergent from apex, base slightly narrower and feebly arcuate, surface depressed, sparsely punctured, punctures finer in front. Elytra slightly wider than the base of thorax, depressed, striate, striæ deeper at apex, moderately punctured, intervals moderately convex, very minutely uni-seriately punctulate. Body beneath sparsely punctured. Length .06 inch ; 1.5 mm.

This is the smallest Cossonide in our fauna, and is probably the smallest Curculionide.

Occurs from the District of Columbia southward.

C.

The rostrum is cylindrical, slightly arcuate. Scape of antennæ impinging on the eyes, scrobes moderately deep, rather widely separated at their termination beneath.

The species of this group appear to approach closely to *Phlæophagus*, from which they differ in the widely separated anterior coxæ. From all the Cossonus which precede, they differ in their more convex form and more robust facies. I can find no character worthy of being made use of to separate the species generically.

Three species form this group, two of small size and a third is the largest in the entire genus in our fauna.

Thorax oblong, sides arcuate.

Color black, species large (.26 inch)..... subcylindricus.

Thorax wider than long, sides strongly arcuate.

Color rufo-piceous, species small (.12 inch)..... pinguis.

Thorax conical, sides very feebly arcuate.

Color piceous, species small (.07 inch)..... dubius.

C. subcylindricus, n. sp.

Black, shining, form subcylindrical. Rostrum slightly longer than half the thorax, very feebly arcuate, terete, surface moderately punctate.

tured, finely canaliculate and with an impressed puncture between the eyes. Antennæ stout, slightly post-median, club scarcely broader than the funicle. Thorax longer than wide, apex feebly constricted, sides arcuate, base slightly narrower and feebly bi-sinuate, surface convex, coarsely punctured, median line and an oval space on each side in front of middle smooth. Elytra not wider than the thorax, nearly cylindrical, surface striate, striæ moderately deep, moderately coarsely but not serrately punctured, intervals feebly convex, irregularly bi-seriately punctured, at apex more rugulose. Body beneath moderately punctured. Length .26 inch ; 6.5 mm.

This species is the largest of the tribe in our fauna, and besides the characters above given, differs from every other *Cossonus* in having the inner angle of the tibiæ spiniform. The male before me has the tibiæ sparsely fimbriate within.

One specimen, Delaware.

C. pinguis, n. sp.

Reddish brown or piceous, feebly shining, form moderately robust. Rostrum longer than half the thorax, cylindrical, feebly arcuate, sparsely punctured, between the eyes an elongate impressed point. Thorax as broad as long, anteriorly moderately constricted, sides strongly arcuate, base slightly narrowed, feebly bi-sinuate and with an obsolete impression in front of the scutellum, surface moderately and evenly punctured. Elytra not wider than the thorax, moderately convex, striæ moderately deep, at base punctured but neither coarsely nor closely, punctures at apex obsolete, intervals moderately convex, indistinctly punctulate. Body beneath sparsely punctured. Anterior tibiæ sinuate within. Length .12 inch ; 3 mm.

The eighth stria is slightly oblique and joins the seventh slightly behind the humerus, the interval between the ninth and marginal striæ is reduced to an extremely narrow carina. The union of the striæ 7-8 is an unusual character in *Cossonus*, but is the usual form in *Rhyncolus*.

Occurs in Georgia and Florida.

C. dubius, n. sp.

Reddish brown, feebly shining. Rostrum as long as half the thorax, slightly broader at tip, sparsely and at base more coarsely punctured. Antennæ median, club oval sub-acute at tip. Thorax slightly longer than wide at base, sides very feebly arcuate and gradually divergent posteriorly, base feebly bi-sinuate, surface moderately convex, coarsely but not densely punctured. Elytra at base slightly wider than the thorax and slightly wider behind, sides straight at apical fourth obliquely narrowed, apex apparently slightly prolonged and obtusely rounded, surface striate, striæ moderately deep and coarsely and sub-seriately punctured, intervals moderately convex, finely uni-seriately punctulate ; outer striæ as in the preceding species. Body beneath coarsely punctured. Length .07 inch ; 1.75 mm.

The third joint of the tarsi is slightly more dilated than the second.

One specimen from Illinois or Missouri.

From the descriptions and remarks on the four last species, it will be seen that each possesses characters more or less at variance with true *Cossonus*, and it is possible that some might be referred to genera already known, or to new genera. At present I am totally dependant on the books for my knowledge of the *Cossonides*, and prefer placing these species as at present, until an opportunity is afforded for a direct examination of representatives of genera unknown to me in nature.

PHLÆOPHAGUS Schönh.

Scape of antennæ impinging more or less on the eyes. Rostrum moderately long. Anterior coxæ narrowly separated, prosternum linear. Third tarsal joint moderately dilated and slightly emarginate at tip.

The species representing this genus in our fauna, are closely related in form to the section *Caulotrupsis* Woll.

Two species occur.

Body black, thorax densely punctured.

Elytral striæ deep, coarsely serrately punctured.....*apionides*.

Body reddish-brown, thorax sparsely punctured.

Elytral striæ broad, not deep, punctures coarse not serrate. *minor*.

Ph. apionides, n. sp.

Black, moderately shining, form recalling *Apion*. Rostrum as long as half the thorax, very feebly arcuate, cylindrical, slightly flattened at apex, moderately punctured. Thorax very little longer than wide, very slightly narrowed at apex, sides moderately arcuate, base very feebly bi-sinuate, disc convex, coarsely and closely punctured. Elytra broader than the thorax, sides feebly arcuate, apex slightly prolonged and obtusely rounded, surface convex, deeply and rather broadly striate, striæ as deep at apex as at base, coarsely and serrately punctured, intervals narrower than the striæ, convex and slightly irregular on their summits. Body beneath coarsely and densely punctured. Length .12 inch ; 3 mm.

The aspect of this species is that of an *Apion*. The lateral striæ are entire, and not abbreviated behind the humeral prominence.

One specimen in the cabinet of Mr. H. Ulke, collected in Pennsylvania.

Ph. minor, n. sp.

Reddish-brown or somewhat paler, shining. Rostrum half the length of the thorax, stout, not arcuate, sparsely punctured. Thorax slightly longer than wide, sides moderately arcuate, and gradually broader behind the middle, base narrower and very feebly bi-sinuate, disc convex, coarsely and evenly, but not densely punctured. Elytra wider than the thorax, sides parallel, apex broadly rounded, surface convex, striate, striæ not deep and gradually feebler to apex, coarsely but not serrately punctured, becoming obsolete toward apex, intervals feebly convex, uniseriately punctulate. Body beneath sparsely punctured. Length .08 inch ; 2 mm.

The eighth stria is slightly oblique, and joins the seventh behind the humerus.

Widely distributed but not common, occurs in Pennsylvania, District of Columbia and Nebraska (Ulke).

RHYNCOLUS Germ.

Rostrum slightly longer than the head, robust, not or very feebly arcuate. Antennæ robust, scape unusually short, not impinging on the eyes, joints of funicle transverse, club not very abruptly formed. Anterior coxæ distant.

Our species are all of moderately elongate, sub-cylindrical form, and are distinguished in the following manner :

Anterior coxæ distant, as widely separated as the diameter of the coxal cavity.

Form linear, body beneath sparsely punctured ; lateral striæ entire..... protractus.

Anterior coxæ not widely separated, prosternum frequently linear.

Funicle of antennæ very stout, second joint very short, joints 2-7 very transverse.

Elytra deeply striate, punctures coarse and serrate..... oregonensis.

Funicle moderately stout, second joint at least as long as the third, joints 2-7 moderately transverse ; elytra feebly striate.

Rostrum slightly flattened, more or less sulcate.

Species .14 inch ; first two ventral segments very densely and coarsely punctured..... brunneus.

Species .10 inch ; first ventral very sparsely punctured, second nearly smooth..... dorsalis.

Rostrum convex, not sulcate.

Species .08-.10 ; first two ventral segments with coarse sparse punctures..... angularis.

R. protractus, n. sp.

Form slender elongate, piceous, moderately shining. Rostrum narrower than the head, and slightly longer, surface moderately punctured, feebly convex, not sulcate. Eyes moderately prominent. Funicle of antennæ moderately stout, second joint equal to the third. Thorax slightly longer than wide, narrower in front than behind, sides very feebly arcuate, base slightly narrowed and feebly arcuate, surface moderately convex, sparsely and not coarsely punctured. Elytra broader than the thorax, and more than twice as long, sides parallel, slightly narrowed to apex, surface moderately convex, discal striæ nearly obsolete, lateral striæ more distinct and entire, striæ moderately punctured, discal intervals flat, transversely wrinkled, lateral intervals slightly convex. Body beneath sparsely punctured. Anterior coxæ distant. Legs rufous. Length .10 inch ; 2.5 mm.

Easily known by its more slender form, distant front coxæ and the entire lateral striæ.

Occurs at Fort Tejon, California, under oak bark.

R. oregonensis, n. sp.

Sub-cylindrical, piceous black, feebly shining. Rostrum slightly longer than the head, moderately convex, coarsely punctured with short median smooth space. Eyes moderately prominent. Funicle of antennæ stout, joints short transverse, second joint shorter than the third. Thorax slightly longer than wide, slightly narrower in front, apex feebly constricted, sides feebly arcuate, base slightly narrower and sub-truncate, disc moderately convex, coarsely and evenly but not very closely punctured. Elytra scarcely wider than the thorax, sides parallel, apex obtusely rounded, surface convex, deeply striate, 7 and 8 confluent behind the humerus, striæ coarsely and serrately punctured, intervals narrow moderately convex, at summit slightly crenulate. Body beneath coarsely and moderately densely punctured, first ventral segment at middle densely and moderately finely punctured. Anterior coxæ approximated. Legs rufous. Length .12 inch ; 3 mm.

Occurs in Oregon. The second joint of the funicle is so short and difficult to see that I was at first inclined to place the species in *Hexarthrum*.

There are some specimens in the cabinet of Mr. Ulke, collected in North Carolina and District of Columbia, differing in having a slight transverse impression of the rostrum and an obsolete fovea between the eyes. They do not appear to differ otherwise, and I cannot feel warranted in assigning them specific rank.

R. brunneus Mann. Bull., Mosc., 1843, II., p. 295 ; Schönh., Gen. Curc. VIII., 2, p. 280.

Sub-cylindrical, piceous or black, feebly shining. Rostrum, slightly narrower than the head and scarcely longer, moderately densely punctured, at middle slightly canaliculate and near the tip a feeble triangular impression. Eyes feebly prominent. Second joint of funicle as long as the third. Thorax longer than wide, slightly narrower in front, with a very feeble constriction, sides moderately arcuate, base slightly narrower and sub-truncate, disc moderately convex, coarsely and deeply but not densely punctured. Elytra slightly wider than the thorax, moderately convex, parallel, apex gradually narrowed, surface striate, lateral striæ feebler, 7-8 confluent, striæ coarsely but not serrately punctured, intervals slightly transversely wrinkled, finely and distantly uni-seriately punctulate. Body beneath coarsely punctured, first ventral segment at middle very densely. Legs rufo-piceous. Length .14 inch ; 3.5 mm.

I have before me typical specimens from Mannerheim. A Vancouver specimen differs from the above description in having the thorax densely punctured and the sulcus of the rostrum reduced to a slight fovea near the tip.

Occurs at Sitka, Vancouver, Canada, Vermont.

R. dorsalis Lec. Proc. Acad., 1858, p. 81.

Piceous, shining, sub-cylindrical. Rostrum scarcely narrower than the head and not longer, surface moderately convex, not densely punctured.

tured, along the middle feebly canaliculate. Eyes feebly prominent. Thorax slightly longer than wide, sides nearly straight, feebly divergent behind, base slightly narrower, sub-truncate, disc moderately convex, not densely and moderately finely punctured. Elytra slightly wider than the thorax, parallel, apex broadly rounded, surface moderately convex feebly striate, striæ with moderately coarse but not serrate punctures, intervals nearly flat, the sutural with a single row of fine punctures. Body beneath sparsely punctured, first abdominal segment very sparsely punctured, second with a fine row of punctures at both margins. Legs rufo-piceous. Length .10 inch; 2.5 mm.

One specimen, San Diego, California.

R. angularis Lec. Proc. Acad., 1858, p. 81.

This species reproduces the preceding in form and sculpture and differs as follow :

Rostrum not canaliculate, near apex a very slight fovea. Elytra slightly more robust, punctures coarser. Body beneath more closely punctured. Length .08-.10 inch; 2-2.5 mm.

Occurs on the Colorado Desert, under willow bark.

R. corticalis Boh. Schönh., Gen. Curc. VIII., 2, p. 284.

"Elongatus sub-depressus, rufo-ferrugineus, nitidus, glaber; antennis pedibusque dilutioribus, oculis nigris; rostro capite nonnihil longiori, valido, parum arcuato; thorace oblongo, anterieus angustato, sat crebre evidenter punctulato, dorso obsolete longitudinaliter impresso; elytris mediocriter punctato striatis, interstitiis subconvexis lævibus."

Form and appearance of (*Cossonus*) *pallidus*, but one-half longer.

Carolina. Unknown to me. The longitudinal impression of the thorax is a character unknown to me in any of our species.

HEXARTHURUM Woll.

Funicle of the antennæ with six joints.

H. Ulkei, n. sp.

Piceous, moderately shining, subcylindrical. Rostrum narrower and longer than the head, moderately densely punctured. Eyes flat. Thorax as wide as long, slightly narrower in front, sides feebly arcuate, base slightly narrower and sub-truncate, disc moderately convex, coarsely and sparsely punctured. Elytra slightly wider than the thorax, cylindrical, surface feebly striate, striæ with coarse punctures, closely placed but not serrate, intervals flat, each with a single series of fine punctures. Body beneath coarsely but sparsely punctured. Anterior coxæ closely approximated. Length .10 inch; 2.5 mm.

The antennæ are more slender than in *Rhyncolus*, and reproduce exactly the figure given by Wollaston. Trans. Ent. Soc. Lond. n. s. V., pl. 18, fig. 2.

One specimen, District Columbia (Ulke).

STENOSCELIS Woll.

I refer with doubt the following species to this genus. The rostrum is very short, narrower than the head. Club of antennæ round, flattened slightly. The lateral processes of the submentum are more prominent than usual in the preceding genera, and are distinctly visible from above.

S. brevis Boh. Schön. Gen. Curc. VIII., 2, p. 282.

Robust, cylindrical, brownish or black, feebly shining. Rostrum short, narrower than the head, moderately coarsely and densely punctured. Thorax broader than long, broadly constricted in front, sides feebly arcuate, base slightly narrower, disc convex, coarsely and densely punctured. Elytra cylindrical, parallel, obtusely rounded at apex, surface striate, striæ broad, coarsely and serrately punctured, intervals narrower, feebly convex at summit, uneven and with a series of fine punctures distantly placed. Body beneath coarsely and sparsely punctured. Length .12 inch ; 3 mm.

Described by Boheman as *Rhyncolus*. Resembles *Hylastes* in form, and also, from the figure, *Stenoscelis hylastoides* Woll. (Journ. Ent. Vol. I., pl. XI., fig. 1), except that the sides of the thorax are more nearly parallel at middle, and the basal angles rounded.

Occurs from New York to Florida.

To this genus the following probably belongs :

Rhyncolus latinasus Say. Desc. Curc. N. A. p. 30 ; Am. Ent. edit. Lec. I., p. 299 ; Boh. Schönh. Gen. Curc. IV., p. 1068.

"Subdepressus, niger, glaber, antennarum clava pedibusque rufo-ferrugineis ; rostro brevi latitudine fere capitis, sublineari, thorace oblongo profunde sub-disperse punctato, obsoletissime carinato ; elytris rufo-castaneis, confertim punctato-striatis, interstitiis angustis, convexis."

Front with slight fovea. Apical margin of thorax slightly elevated at middle. Length .10 inch (Say).

Occurs in Florida. Unknown to me.

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ITHYCERUS Schön.

I. noveboracensis Forst. Nov. Spec. Ins. 1771, p. 35 ; *curculionoides* Herbst, Käfer VII, p. 136, pl. 105, fig 1 ; Gyll. Schön. Gen. Curc. 1, p. 246 : *punctulatus* Fab. Ent. Syst. 1, 2, p. 461 ; *Schönherri* Kby. Fauna Bor. Am. IV, p. 271.

Male. Abdomen apparently with six segments.

The sixth segment is really the pygidium which projects beyond the corresponding ventral segment, its lower margin being thickened and simulating in its construction a true ventral segment. The anal opening may be seen in the suture between it and the fifth ventral. The latter segment is shorter than those which precede and its posterior margin straight. The dorsal segments of the abdomen are eight in number.

Female. Abdomen with five segments.

The terminal ventral segment is longer than either of the two preceding and oval at tip. The dorsum of the abdomen has seven segments only.

Lacordaire (Genera VI, p. 12) mentions the occurrence of six ventral segments in the specimen before him but failed to recognize the nature of the terminal segment, and having probably only males before him failed to recognize its sexual nature. The projection of the pygidium in the manner indicated is by no means rare in its occurrence, and I have seen it in *Balaninus*, *Orchestes* and many *Centorhynchidæ* but in a much less marked degree than we see it in *Ithycerus*. The apparent reduction of the number of the segments by the entire obliteration of a suture, usually the first, has also been noticed.

Ithycerus occurs from Canada to Texas. The southern specimens are less densely pubescent in the spaces between the short lines of white pubescence, so that the latter are more strongly marked by contrast. Its habits have been fully elucidated by Mr. C. V. Riley in the "Third Annual Report on the Noxious, Beneficial and other Insects of Missouri," 1871, p. 57.

OTIDOCEPHALUS Chev.

The peculiar Ant-like form of the species of this genus renders it easily known. All our species except one, have the femora toothed and are known as follows:

Femora toothed.

Thorax cylindrical, not constricted at base.

Elytra densely clothed with white pubescence with four glabrous lines on each..... vittatus.

Elytra moderately densely clothed, pubescence in tufts, surface faintly bronzed..... Ulkei.

Thorax anteriorly broader and more convex, at base constricted.

Femora very strongly toothed; elytra with moderately coarse punctures..... myrmex.

Femora with a small very acute tooth.

Elytra striate, striæ coarsely punctured; thorax densely and coarsely punctured..... scrobicollis.

Elytra with rows of moderately fine punctures.

Thorax sparsely punctured, elytra broadly oval, gibbous..... Chevrolatii.

Thorax smooth, elytra oblong oval, moderately convex..... lævicollis.

Femora not toothed and more slender.

Thorax coarsely, deeply and evenly punctured, hairs white..... perforatus.

O. vittatus n. sp.

Form moderately elongate. Rostrum vertical, nearly cylindrical, slightly broader towards the tip, moderately punctured, at apex sparsely, at base

more densely clothed with white pubescence. Head moderately densely punctured, densely clothed with white pubescence except on the occiput. Eyes moderately distant. Thorax cylindrical, one-fourth longer than wide, sides very feebly arcuate, at base scarcely sinuate, convex, moderately coarsely and densely punctured and clothed with white pubescence, median line slightly elevated, smooth and shining. Scutellum densely clothed with white. Elytra broader at base than thorax, oblong, sub-cylindrical scarcely broader behind, surface densely clothed with white recumbent pubescence (sparsely along the suture) and with four narrow glabrous lines on each elytron, the pubescent spaces moderately densely and finely punctured, the glabrous lines with a row of moderately fine and distant punctures each bearing an erect black hair. Body beneath moderately densely punctured, sparsely pubescent and with a dense narrow line of white pubescence along the side of the body extending to the tip of the abdomen. Legs sparsely pubescent with recumbent hairs with erect hairs intermixed. Length .26-.30 inch ; 6.5-7.5 mm.

Beneath the pubescence the entire body is black and shining. The femora have a minute tooth. Evidently allied to *O. pelliceus* Rosen.

Three specimens from Owen's Valley, California.

O. Ulkei n. sp.

Body black with very faint tinge of bronze. Rostrum vertical, sparsely punctured at tip, obtusely carinate, on each side bisulcate, sulci coarsely punctured and nearly confluent opposite the scrobe, surface sparsely pubescent. Head very coarsely and deeply and moderately densely punctured, sparsely cinereo-pubescent. Thorax cylindrical, at basal third moderately sinuate, surface convex, very coarsely and deeply and sub-confluent punctured on the disc, less densely on the sides, moderately densely pubescent, a narrow line along the middle and sides paler, pubescence arranged in small tufts and composed of dark cinereous and white hairs intermixed and with erect white hairs very sparsely placed, directed anteriorly. Scutellum pubescent with white. Elytra oblong oval, sides slightly compressed, surface with rows of moderate punctures replacing the striæ, two lateral rows striate, intervals sparsely punctured, each puncture with a tuft of recumbent hairs as on the thorax and with short erect white hairs sparsely placed, pubescence along the suture paler. Body beneath and legs black, shining, sparsely punctured and pubescent similarly to the upper surface but paler. Femora with a minute tooth. Length .26 inch ; 6.5 mm.

This species is so distinct from any other in our fauna that it is hardly necessary to add to the above description. The general aspect of the species is that of being moderately densely pubescent. The pubescence arises from the sparse punctures of the intervals and forms fan-like tufts, always recumbent composed of darker cinereous hairs intermixed with a few white ones.

One specimen in the cabinet of Mr. H. Ulke, by whom it was obtained from Lower California.

O. myrmex Hbst. Käfer, VII, p. 56, pl. 99, fig. 7; *myrmecodes* Say, Curc. N. A. p. 15; Ann. Ent. ed. Lec. I, p. 278; *americanus* Chev. Ann. Ent. Soc. N. 1832, p. 105, pl. 3, fig. 3; Gyll. Schön, Gen. Curc. III, p. 366; Rosensch. loc. cit. VII, 2, p. 205.

Body oblong, slightly compressed, black, shining. Rostrum cylindrical, at base moderately punctured, sulcate, two sulci on the upper surface short, basal, between them a slight carina, on each side a longer sulcus extending from opposite the insertion of the antennæ to base. Head very coarsely but sparsely punctured. Thorax obovate, strongly convex, sides arcuate, base narrowed, surface smooth at the sides, coarsely punctured along the middle especially toward the apex and base, and with sparsely placed black, suberect hairs, pointing anteriorly. Scutellum small with white pubescence. Elytra oblong, broader at apical fourth, convex, slightly compressed, humeri slightly oblique, surface shining with rows of moderate punctures replacing the striæ, intervals with a series of finer, distant punctures each bearing a short erect hair. Body beneath black shining, with a narrow line at the sides of moderately dense cinereous pubescence extending to the tip of the abdomen, pectus smooth, abdomen sparsely punctured. Legs black, sparsely pubescent with cinereous. Femora with a large, triangular, acute tooth, tibiæ slightly broader below the middle. Length .16-.18 inch; 4-4.5 mm.

This species is known in all collections as *scrobicollis*, and while it is undoubtedly the *americanus* it is none the less *myrmex*, and it is remarkable that no author, Say excepted, has recognized this fact. The large tooth of the femora at once fixes this as the insect intended by all the authors above cited.

Occurs from Pennsylvania westward and to Georgia.

O. scrobicollis Boh. Schön. Gen. Curc. VII, 2, p. 205.

Similar in form and appearance to the preceding. Rostrum similar. Head densely and coarsely punctured. Thorax obovate; convex pilose as in *myrmex*, sides arcuate, base strongly narrowed, surface coarsely, deeply and densely punctured on the disc, more sparsely at the sides. Scutellum cinereo-pubescent. Elytra oblong-ovate, strongly convex, striate, striæ moderately coarsely and sub-serrately punctured, intervals slightly convex, with a single row of fine punctures each bearing an erect hair, either cinereous or black. Body beneath black, shining, sparsely punctured and with a cinereo-pubescent line at the sides. Legs sparsely punctured, black, with erect hairs either cinereous or black. Femora with a minute, acute tooth, tibiæ as in *myrmex*. Length .16 inch; 4 mm.

I have seen but one specimen of this species, captured by Dr. John W. Eckfeldt in Delaware County, Pennsylvania. By a casual examination it might be confounded with *myrmex*, but the very densely punctured thorax and small femoral tooth at once distinguish it.

O. Chevrolatii Horn; *myrmecodes* || Chev. Ann. Ent. Soc. Fr. 1832 p. 445.

Black, shining. Rostrum smooth shining, above very slightly canali-

culate near the tip, obtusely carinate to base, on each side two coarsely punctured sulci which coalesce opposite the scrobes and continue nearly to tip. Head sparsely and moderately coarsely punctured, between the eyes a deep fovea. Thorax obovate, convex, sides arcuate base narrower, surface very sparsely and moderately coarsely punctured over the entire surface. Scutellum densely cinereo-pubescent. Elytra broadly oval, very convex, humeri obliquely rounded, surface smooth, shining, with rows of moderately fine punctures, the outer two rows striate, intervals flat with a single row of very minute distantly placed punctures each bearing a short erect hair. Body beneath black, shining, sides of pectus with a narrow cinereo-pubescent line. Legs as in the preceding. Femora with a very minute acute tooth. Length .16 inch ; 4 mm.

The sparsely punctured thorax, strongly arched elytra, deeply foveate front and more sparsely pilose surface, at once distinguish this species.

Rare in the Middle States.

This species is not the *myrmecodes* Say as the Catalogus of Gemminger and Harold would seem to indicate. The name given by Chevrolat being preoccupied, it gives me pleasure to dedicate it to the latter author.

O. laevicollis n. sp.

Black, shining. Rostrum sulcate at the sides in front above the scrobes, above not carinate. Front moderately prominent, between the eyes narrow. Head sparsely punctured. Thorax obovate, convex, sides arcuate base narrower, surface smooth shining, impunctured, or with a very few punctures near the apex at the sides. Scutellum cinereo-pubescent. Elytra oblong oval, moderately convex, smooth shining, with rows of fine moderately distant punctures, the outer two rows slightly striate, intervals flat with a single series of very distant, minute piliferous punctures. Body beneath and legs as in the preceding species. Length .16 inch ; 4 mm.

By its comparatively smooth elytra, this species resembles the preceding but differs greatly in the form of that part. The thorax is very smooth above and very sparsely pilose. The rostrum is apparently broader (in a vertical direction) and the sides at base much flatter and the scrobes therefore more oblique. The front between the eyes is narrow and the latter more prominent than usual, and the head therefore more convex than any other species.

One specimen Georgia and two from unknown localities.

O. perforatus n. sp.

Piceous, shining. Rostrum moderately stout, coarsely but irregularly punctured, grooves obsolete, above subcarinate. Eyes moderately prominent. Head coarsely and deeply but sparsely punctured and between the eyes a more distinctly impressed puncture. Thorax obovate, moderately convex, sides moderately arcuate and in front of base slightly sinuate, surface coarsely, very deeply, evenly but not densely punctured over the entire disc and sides, and with a very few short, slender, white, recumbent

hairs. Scutellum minute. Elytra elongate oval, broadest at middle, moderately convex and with rows of feeble distantly placed punctures becoming obsolete towards the apex, intervals with very minute distant punctures, each bearing a slender white recumbent hair. Pectus beneath with a cinereo-pubescent line near the elytral edge, surface nearly impunctured, smooth shining. Femora slender mutic. Length .14 inch ; 3.5 mm.

The femora of this species are much more slender than is usual and absolutely devoid of any tooth, and the anterior pair merely very feebly sinuate. One of the most distinct species in our fauna.

One specimen in the cabinet of Mr. H. Ulke, collected in Maryland.

I have not been able to determine, with the specimens at my disposal, whether the sexes are distinguished by the presence of the additional dorsal segment in the male. It is however probable that as in the greater number of *Mecorhynques* which I have examined, the males have 8 and the females 7 dorsal ventral segments.

MAGDALIS Germ.

Our species are few in number and represent all the groups into which the genus has been divided. Four species have simple unguis and two of these have unarmed femora, and all have the thorax without anterior serrature or spines.

The sexual characters are remarkable. The males have the dorsum of the abdomen with eight segments, the females have one less. This results from the union of the last two dorsal segments so that the female has apparently a much larger pygidium than the male. The pygidium of the male is short, twice broader than long. The antennæ of the males are inserted near the tip of the rostrum and in the females very slightly in front of the middle, the rostrum in the males being slightly dilated at tip. Both these latter characters suffer an exception in *M. Lecontei*, as in both sexes the rostrum is similar and the antennæ inserted slightly behind the middle. This might constitute a distinct genus.

As far as known our species are as follows :

Claws simple. Thorax in front not serrate.

Femora mutic.

Body black, elytra with very coarse punctures..... perforata.

Body blue, elytra with moderately fine punctures..... cuneiformis.

Femora dentate.

Body blue, thorax widest at base..... Lecontei.

Body brown, thorax not wider at base than at middle. imbellis.

Claws toothed at base. Thorax serrulate or dentate.

Mesosternum protuberant. Head elongate conical.

Scape of antennæ not attaining the eyes..... barbata.

Mesosternum not protuberant, scape of antennæ passing the eyes.

Body above totally black.

Hind angles of thorax feebly laminiform, disc densely punctured.

Elytra deeply striate, intervals convex.	
Tibiæ, tarsi and antennæ pale piceo-testaceous..	elytra.
Tibiæ black, antennæ and tarsi piceous.	
Head broadly conical, eyes moderately convex, scutellum densely clothed with white pubescence.....	gracilis.
Head elongate conical, eyes flat, scutellum feebly pubescent.....	salicis.
Elytra feebly striate, intervals flat.....	inconspicua.
Hind angles broadly laminiform, covering the entire base of the elytra, disc sparsely punctured, opaque,	pandura.
Body above and beneath ferruginous.....	armicollis.
Body piceous or nearly black, elytra pale ferruginous.....	pallida.

The species of this genus have been for the most part described under the generic names *Thamnophilus* and *Magdalinus*.

M. perforata n. sp.

Black shining. *Female*. Rostrum cylindrical arcuate, moderately punctured, median line at base smoother. Antennæ median, piceous, scape attaining the eyes. Head broadly conical, moderately punctured, eyes flat. Thorax longer than wide, sides in front gradually arcuate, posteriorly nearly parallel, not sinuate, base strongly bisinuate, disc moderately coarse and shining, coarsely, densely and deeply cribratopunctate. Scutellum small, smooth. Elytra gradually wider behind, at basal margin slightly impressed, surface with striæ of large deep quadrate punctures separated by extremely narrow spaces, intervals narrow, uniseriately punctate. Pygidium coarsely and deeply punctate. Body beneath black, coarsely and densely punctured, abdomen more sparsely punctured. Legs black, femora mutic, the anterior femur impressed near the base. Length .20 inch ; 5 mm.

Has somewhat the aspect of a *Cossonus*. Tarsal claws simple. Occurs in Georgia.

M. cuneiformis n. sp.

Elongate, cuneiform, surface blue, shining. Rostrum moderately arcuate, sparsely punctured, more densely near the base. Head broadly conical, sparsely punctured, slightly impressed between the eyes. Thorax longer than wide at base, anteriorly broadly but feebly constricted, sides straight divergent, hind angles moderately prominent and (viewed from above) truncate at tip, base deeply bisinuate, surface moderately convex, deeply and densely punctured. Elytra scarcely wider at base than the thorax, sides gradually divergent, at apical third arcuately narrowing, surface moderately convex, base slightly impressed, and with rows of moderate punctures in obsolete striæ, intervals flat, biseriately punctate. Pygidium black, shining, coarsely punctured. Body beneath blue, shining, moderately coarsely and densely punctured. Legs sparsely

punctured, bluish. Femora mutic, the anterior stouter, compressed at base and with a deep oblique impression. Length .28 inch ; 7 mm.

This species resembles the following, but differ in its mutic femora, more slender form and elytral sculpture. The anterior femora are stouter than the others and more decidedly compressed, and with a deep oblique groove near the base forming an equilateral triangle with the suture between the femur and trochanter and the upper edge of the femur, and causing the appearance of there being two trochanters.

One specimen from Nebraska in the cabinet of Mr. H. Ulke.

M. Lecontei, n. sp.

Bluish green, varying to bronze, thorax somewhat darker. Rostrum black, cylindrical, sparsely punctulate, between the eyes slightly impressed. Antennæ slightly post-median. Head oval, eyes moderately prominent. Thorax broader than long, sides moderately arcuate, near the base slightly sinuate, hind angles moderately produced, acute, base bisinuate, disc convex, densely punctured, median line smoother and a slight impression in front of the scutellum. Elytra slightly broader behind, at base slightly impressed, surface with striæ of moderate punctures, intervals flat, finely transversely strigose and a single row of moderate punctures. Pygidium moderately coarsely punctured. Body beneath slightly darker in color than above, sides piceous cinereo-pubescent, surface moderately densely, the abdomen more finely, punctured. Legs black, femora dentate. Length .20-.26 inch ; 5-6.2 mm.

The rostrum of the male is slightly shorter and less arcuate than the female. Tarsal claws simple.

Occurs from Kansas to Oregon and California. I have also a specimen from South Carolina, smaller and more blue than the Western forms, which I cannot at present separate.

M. imbellis Lec. Pacif. R. R. Rep. 1857, App. I, p. 57.

Reddish brown, sub-opaque, metathorax and abdomen piceous. Rostrum sparsely punctured, antennæ slightly ante-median, ferruginous. Head oval densely punctured, eyes moderately prominent. Thorax broader than long, scarcely constricted in front, sides strongly arcuate, at base sinuate, hind angles moderately prominent, base bisinuate, surface moderately convex, very densely and rather coarsely punctured, narrow median line smooth. Elytra slightly broader behind, base feebly impressed, surface deeply striate, striæ coarsely punctured, intervals flat, moderately coarsely rugulose. Pygidium moderately coarsely punctured. Body beneath coarsely sub-obsolete punctured, abdomen finely and sparsely punctured. Legs reddish brown, femora dentate, tarsal claws simple. Length .20 inch ; 5 mm.

Easily known by its color, simple claws and not denticulate thorax.

One specimen ♀ Oregon.

M. barbata Say. Curc. N. A. 1831, p. 6 ; Am. Ent. ed. Lec. I, p. 265 ; Gyll. Schön. Gen. Curc. III, p. 271.

Black, subopaque. Rostrum nearly as long as head and thorax, sparsely punctured. Antennæ piceous. Head elongate conical, moderately densely punctured, eyes feebly prominent. Thorax longer than wide, anteriorly feebly constricted, sides feebly arcuate, base narrower, at middle broadly arcuate, on each side very slightly sinuate, hind angles not laminiform, disc moderately convex, near the anterior angles a short spine and several serrations, surface densely punctured with median line smoother. Scutellum densely clothed with white pubescence. Elytra slightly broader behind, base scarcely impressed, surface deeply striate, striæ coarsely punctured, intervals convex, transversely wrinkled. Pygidium densely punctured and opaque. Body beneath densely, abdomen more sparsely and finely punctured. Mesosternum protuberant in front. Legs black. Length .14-.24 inch ; 3.5-6 mm.

Male. Rostrum shorter, less arcuate, slightly dilated at tip. Antennæ inserted near the tip of rostrum, scape (♂ ♀) not attaining the eyes.

The males are smaller than the opposite sex. Resembles *olyra* in appearance, but differs in form of head, length of scape and protuberant mesosternum.

Occurs in Canada, Pennsylvania, Georgia, Dakota.

M. olyra Herbst. Käfer. VII, p. 6, pl. 99, fig. 1 ; Boh. Schönh. Gen. Curc. VII, 2, p. 140 ; *brunnipes* Gyll. Schönh. Gen. Curc. III, p. 270.

Closely resembles the preceding. Differs as follows: Hind angles of thorax feebly laminiform. Mesosternum not protuberant. Head very broadly conical. Antennæ, tibiæ and tarsi pale piceo-testaceous. Length .16-.24 inch ; 4-6 mm.

Antennæ inserted as in *barbita*, the scape barely attaining the eyes in ♀ but passing them ♂.

Occurs with the preceding, but rarely in the Southern States.

M. gracilis Lec. Pacif. R. R. Rep. 1857, App. 1, p. 57.

Black, subopaque. Head rather broadly conical, eyes convex. Thorax slightly wider than long, hind angles not prominent, disc densely punctured, punctures shining at bottom. Scutellum densely clothed with white pubescence. Elytra scarcely wider behind, base feebly impressed, deeply striate, striæ coarsely punctured, intervals narrower than the striæ, convex, rather coarsely transversely strigose. Pygidium coarsely granulato-punctate. Body beneath coarsely punctate, abdomen shining, very sparsely and finely punctulate. Antennæ piceous, legs black. Length .14 inch ; 3.5 mm.

The characters otherwise are as in *barbita* without the prominent mesosternum. The head is more conical than in *olyra* without being of the form of *barbita* and *salicis*.

Occurs in California.

M. salicis n. sp.

Differs from *olyra* as follows: Head elongate conical. Thorax more coarsely and equally densely punctured. Scutellum without white pubes-

cence. Antennæ dark piceous or black, tibiæ and tarsi black. Length .12-.16 inch ; 3-4 mm.

The form of the head and the coarser punctuation of the thorax distinguish this species from both those which precede.

Occurs in the Middle States.

M. inconspicua n. sp.

Similar in form to *olyra* but smaller. Head broadly oval. Thorax as broad as long less densely punctured anteriorly. Scutellum small, black. Elytral striæ feebly impressed, punctures moderate, not serrate, intervals flat and finely transversely strigose. Pygidium rufo-piceous, punctato-granulate. Body beneath coarsely but not densely punctured, abdomen more shining, sparsely and finely punctulate. Length .14 inch ; 3.5 mm.

Easily known from every other species with dentate claws by the flat interstices and feebly impressed striæ. The three outer striæ are deeper.

One specimen, Pennsylvania.

M. pandura Say. Curc. N. A. p. 7 ; Am. Ent. ed. Lec. I, p. 265 ; Gyll. Schönh. Gen. Curc. III, p. 268.

Black, opaque. Rostrum sparsely punctulate and finely alutaceous. Head sparsely punctulate, finely alutaceous and slightly grooved between the eyes. Thorax slightly broader than long, anteriorly rather suddenly narrowed, spine and denticulations nearer the middle than the apex, sides feebly arcuate, base not narrower, hind angles laminiform, covering the entire elytral base, surface sparsely and moderately coarsely punctured, intervals opaque, alutaceous. Scutellum black. Elytra moderately robust, moderately deeply striate, striæ coarsely punctured, intervals feebly convex, finely transversely wrinkled. Pygidium coarsely punctato-granulate. Body beneath black, moderately coarsely punctate, abdomen finely alutaceous, subopaque, sparsely punctate. Legs black. Length .10 inch ; 2-5 mm.

Differs from all the species by its small size, more robust form, sparsely punctured thorax and the broadly dilated laminiform hind angles of thorax. The thoracic serrate space is nearer the middle than in any species.

Occurs in Pennsylvania, Georgia, Missouri.

M. armicollis Say. Journ. Acad. III, 1823, p. 312 ; Boh. Schönh. Gen. Curc. VII, 2, p. 141.

Form of *olyra*. Color pale reddish-brown. Head coarsely and densely punctured. Thorax granulato-punctate, serrations feeble, form subquadrate, sides feebly arcuate not sinuate posteriorly, hind angles scarcely prominent. Elytra deeply striate, striæ very coarsely punctured, intervals narrower, feebly convex, granulate at summit. Pygidium granulate. Body beneath, legs and antennæ pale reddish-brown, punctured as in *barbita*. Length .14-.24 inch ; 3.5-6 mm.

Occurs with *barbita*.

M. pallida Say. Curc. N. A. p. 7; Am. Ent. ed. Lec. I, p. 266.

Body beneath and legs piceous or black, elytra luteous or pale reddish-brown. Thorax coarsely and moderately densely punctured, a fine slightly elevated median line, serratures feeble, sides feebly arcuate at base slightly sinuate, hind angles distinct but not very prominent. Elytra parallel, base feebly impressed, sutural interval slightly elevated at base, surface moderately striate, striæ with coarse but not close punctures, intervals feebly convex, finely alutaceous. Pygidium coarsely punctured. Body beneath and legs black, tarsi piceous, body punctured as in *barbita*. Length .12-.16 inch; 3-4 mm.

Easily known by its coloration.

Occurs in New York, Pennsylvania, Illinois.

The species of *Magdalis* are all more or less pubescent when recently captured, and the pubescence is so easily removed that but few cabinet specimens retain it, therefore no mention has been made of it in the above descriptions.

BALANINUS Germ.

The marked uniformity of vestiture of many of the species renders it extremely difficult to separate them. Fortunately other more prominent characters exist as will be seen in the table given below. As in *Magdalis* the sexes are known by the longer rostrum of the female, which is more slender and less arcuate than in the male. In the latter sex the dorsum of the abdomen has eight segments and in the female seven.

The mandibles of *Balaninus* are incapable of motion laterally, being restricted to a motion in a vertical plane, acting like scissors in which both edges are acute.

In the American Journal of Science and Arts, Vol. XLIV, July, 1867, Dr. Leconte writes as follows, after mentioning the existence in some genera of Coleoptera of corneous exerted ovipositors, "But it was reserved for the Rhynchophora to exhibit a degradation of type, by which a function, peculiarly appropriate to the posterior extremity of the body, is performed by the head; the elongated beak becoming in fact the ovipositor." This appears to me true only so far as the perforation is concerned into which the egg is to be deposited. The beak really perforates the exterior of the acorn or other fruit and the act of oviposition is done by a long ovipositor of slender form and half the length of the body. I have before me a specimen with the ovipositor protuded and an egg seized by its tip.

Our species of *Balaninus* are as follows:

First joint of funicle shorter than the second.

Each elytron rounded at tip, pygidium in great part

visible; caryatrypes.

First joint of funicle longer than the second. Elytra sub-acute at tip, pygidium feebly exposed.

Pygidium ♂ concave at tip and glabrous, the depression surrounded by moderately long silken hairs	quercûs.
Pygidium ♂ convex, punctured, hairy.	
Thorax longer than wide ; tooth of femur small.....	rectus.
Thorax wider than long.	
Tooth of hind femur small, free edge sinuate.....	uniformis.
Tooth of hind femur large, triangular, free edge straight.	
Body above and beneath sparsely clothed, with hairs scarcely at all scale-like.	caryæ.
Body above moderately densely, beneath very densely clothed, hairs beneath broad, scaly.....	nasicus.

B. caryatrypes Boh. Schönh. Gen. Curc. VII., 2, 276.

Body dark-brown, densely clothed with ochreous scale like hairs, thorax at middle broadly fuscous, elytra with fuscous spots irregularly, but closely placed. Rostrum at base punctured. Second joint of funicle longer than the first. Thorax not longer than wide at middle, apex half the width of base, sides in front rapidly diverging, then arcuate and very slightly narrowed to base ; base on each side very feebly sinuate ; disc convex coarsely and densely punctured, median line smooth, surface clothed with ochreous scale-like hairs with broad space at middle (except fine median pale lines), and sides fuscous. Elytra oval, emarginate at base, apices obtusely rounded, disc anteriorly slightly depressed, surface striate, striæ punctured, intervals flat, densely rugosely punctulate, surface clothed with ochreous scale-like hairs, interspersed with brownish spots. Pygidium densely and coarsely punctured. Body beneath densely clothed with pale yellow silken scales. Legs pale rufo-testaceous, sparsely clothed with silken yellow, short hairs. Femora with a broad triangular tooth, the apex of which is more acute and directed outwards. Length (excluding rostrum) .32-.44 inch ; 8-11 mm.

Male.—Rostrum shorter, not longer than the entire body, gradually arcuate, nearly from the base. Dorsum of abdomen with eight segments. Pygidium with moderately long silken hairs.

Female.—Rostrum often nearly as long as twice the body, straight at basal three-fourths, arcuate at tip. Pygidium scarcely exposed, with short sparse pubescence. Dorsum of abdomen with seven segments.

This is our largest species, said to live on the chestnut. The color of the elytral pubescence is occasionally uniform. The femora near the tip are very deeply sinuate so that I have described them as being strongly toothed, taking the triangular prominence as a tooth, which is, however, suddenly more slender at apex, and directed outwards toward the apex.

Occurs from the Middle States, westward.

B. quercus, n. sp.

Body brownish, clothed with pale-brown scale-like hairs, nearly uniform on the thorax, elytra moderately closely spotted with pale orange

rarely confluent into short transverse lines. Thorax one-third wider than long, sides moderately strongly arcuate, surface densely punctured, very sparsely pubescent, slightly denser along the median line. Elytra oval, gradually attenuate to tip, disc moderately convex, striate, striæ punctured, intervals densely, but not roughly punctured, surface moderately densely clothed with pale-brown, with numerous pale-orange spots, sometimes confluent into short fasciæ. Body beneath moderately densely clothed, paler than above. Femora dentate as in *caryatrypes*. Tarsal claws with the basal appendix narrow.

Male.—Rostrum slightly shorter than the body, moderately arcuate. Abdomen with eight segments above, pygidium at tip deeply concave, the concavity smooth, shining and surrounded by an acute rim fimbriate with long hairs.

Female.—Rostrum longer than the body. Abdomen above with seven segments, pygidium fimbriate, convex.

This species is abundantly distinct by the sexual characters.

There are numerous specimens before me reared by Mr. John Akhurst, of Brooklyn, N. Y., and one from Texas, from M. Sallé (No. 65).

B. rectus Say. Curc. N. A., p. 16 ;* Am. Ent. edit. Lec. I, p. 279 ; *rectirostris* Gyll. Schönh. Gen. Curc. III., p. 376 ; *Sayi*, Gyll. loc. cit. p. 375.

Form moderately slender, color piceous, clothed with brownish scale-like hairs, elytra with numerous pale-yellow spots, more or less confluent. Thorax longer than wide, more or less conical, sides very feebly arcuate or nearly straight from apex to base, surface moderately convex, densely punctured, median line slightly elevated, smooth, clothed with brownish hairs with a paler line near the side. Elytra oval, rapidly attenuate to base, surface striate, striæ punctured, intervals flat, densely punctured, densely clothed with brownish pubescence, with numerous pale-yellow spots more or less confluent, sometimes forming fasciæ. Body beneath with paler, more silken scales. Femora with rather strong triangular tooth, slightly sinuous on its distal edge. Claws with moderately broad basal lobe. Length .20-.26 inch ; 5-6.5 mm.

Male.—Rostrum shorter than the body, feebly arcuate. Pygidium convex at tip, punctured and pilose.

Female.—Rostrum nearly twice as long as the body, moderately arcuate at tip. Pygidium less pilose.

Occurs in the Middle and Southern States.

B. uniformis Lec. Pacif. R. R. Rep., 1857, p. 57.

Form robust, brownish or piceous, surface moderately densely clothed with scale-like hairs of variable color. Rostrum slender. Thorax wider

* The descriptions given by Say, are absolutely valueless, consequently the descriptions of Gyllenhal from types sent by Say, must be relied on in determining the species of the latter author. This appears to be the species supposed to be *proboscideus* Fab. by Say. As none of Say's types are extant, the only way out of the difficulty appears to be to accept the descriptions of Gyllenhal, and determine synonymy directly from them.

than long, sides (slightly sinuate in front), rather strongly arcuate, base slightly narrower, surface sparsely pubescent. Elytra oval feebly emarginate at base, surface striate, striæ punctured, intervals moderately rugulose. Length .24-.30 inch ; 6-7.5 mm.

Male.—Rostrum nearly as long as the body.

Female.—Rostrum longer than the body.

Variety.—Thorax sparsely pubescent, pubescence cinereous ; elytra sparsely cinereo-pubescent with indistinct brownish spots intermixed.

Variety.—Pubescence of thorax more dense, ochreous, discal space darker ; elytra with ochreous pubescence with darker spots.

Variety.—Pubescence moderately dense, nearly unicolorous, that of the elytra cinereous with slight yellowish tinge.

This species is distinguished rather by negative characters from those which precede and follow. It has an aspect of greater robustness than any species of the genus. The tooth of the former is much smaller, and the free edge is deeply sinuous. From *rectus* it may be at once distinguished by the form of the thorax, from *nasicus* by the form of the elytra and the much more feeble femoral tooth, and from *caryæ* by the tooth of the femur of the latter being very large and triangular, and the tibiæ much more strongly mucronate at tip.

Occurs in Canada, Pennsylvania, Illinois, Texas, Kansas, California and Oregon.

One specimen of the third variety is marked as injuring the Hazel nut.

B. caryæ, n. sp.

Brownish, sub-opaque, very sparsely pubescent above and beneath. Thorax wider than long, sides (in front slightly sinuate), strongly arcuate, disc moderately convex, densely and coarsely punctured, very sparsely clothed with ochreous pubescence. Elytra oval, moderately emarginate at base, moderately convex, striate, striæ punctured, intervals flat, roughly punctured, sparsely pubescent with ochreous hairs. Body beneath sparsely pubescent with hairs that are feebly scale-like, and paler in color than the upper surface. Length .36 inch ; 9 mm.

Sexual characters as in the preceding species.

The femora are armed with a strong triangular tooth, and the tibiæ at tip more strongly mucronate than in any of our other species. Among all the females of the preceding species the hind tibiæ are more evidently sinuous than in the male. This is especially noticeable in this species.

The specimens before me are from Mr. Akhurst, of Brooklyn, and they are known to infest the Hickory nut.

B. nasicus Say. Curc. N. A., p. 16 ; Am. Ent. edit. Lec. I., p. 279 ; Gyll. Schönh. Gen. Curc. III., p. 377 ; *nasutus* ♀ Say, loc. cit. ; *rostratus*, Gyll. loc. cit., p. 374 ; *sparsus* Gyll. loc. cit., p. 379.

This species resembles a small *caryatrypes*, and differs in having the thorax broader, the sides more arcuate. The surface is similarly clothed,

but on the elytra the tendency of the paler pubescence is to form bands. The elytra are triangular, the sides scarcely arcuate and very rapidly narrowing to apex. The femora are armed with a strong triangular tooth, and the tibiae, especially the posterior, feebly mucronate. Length .24-.30 inch; 6-7.5 mm.

Sexual characters as in *caryatrypes*.

Occurs in Pennsylvania, Illinois, Kansas, Georgia, said to infest acorns and hazel nuts.

Balaninus porrectus Boh. Schönh. Gen. Curc. VII., p. 292.

This does not appear to belong to the genus.

ORCHESTES Illig.

The form of the hind femora will serve to make this genus readily known, as in nearly all the species they are stout, and enable the species to leap after the manner of the Halticidae. Their facies is much that of Apion. Our species are few in number, and are distinguished in the following manner:

Funicle of antennæ six-jointed.

Body above black, inconspicuously grayish-pubescent,
legs black, tarsi and antennæ pale, rufo-testaceous.... pallicornis.

Funicle of antennæ seven-jointed.

Body above black without conspicuous pubescence;
scutellum densely clothed with white pubescence.... niger.

Body above with pubescence forming a conspicuous
design.

Legs entirely black, pubescence of elytra sparse, an-
tennæ pale rufo-testaceous..... subhirtus.

Legs rufo-testaceous, hind femora piceous, antennæ
pale rufo-testaceous, pubescence of elytral design
dense and nearly white..... ephippiatus.

O. pallicornis Say. Curc. N. A., p. 16; Am. Ent. edit. Lec. Vol. I. p. 280.

Oblong oval, black, moderately shining, sparsely clothed with short grayish hairs. Rostrum nearly as long as the head and thorax, sub-cylindrical, coarsely but sparsely punctured near the tip. Head opaque, finely granulate, and sparsely punctured. Antennæ pale piceo-rufous, club darker, inserted behind the middle of rostrum, funicle six-jointed, first three joints moderately elongate, last three moniliform. Thorax broader than long, sides moderately arcuate, apex narrower, base slightly narrowed, surface sub-opaque, coarsely and rugosely punctured, feebly longitudinally impressed at base. Scutellum black. Elytra oblong oval, at base more than a half broader than the thorax, surface moderately shining, striæ feebly impressed (the sutural and second more distinctly) and with moderately coarse punctures, intervals nearly flat, sparsely punctate. Body beneath black, shining, abdomen moderately coarsely

(the terminal especially) punctured. Legs black, tarsi pale rufo-testaceous. Length .10-.12 inch ; 2.5-3 mm.

This species may be readily known by the six-jointed funicle of the antennæ and by the pubescence of the surface sparsely placed, very inconspicuous even with the lens, and without any tendency to form a design. The antennæ vary somewhat in color, but are never black. The tarsi are always pale rufo-testaceous.

Three specimens before me are from Illinois, and another from near Puget Sound.

***O. niger* n. sp.**

Black, sub-opaque, surface clothed with nearly black, recumbent pubescence, elytra with faint pruinose transverse band at one third from base. Rostrum cylindrical, as long as head and thorax, moderately punctured over its entire surface. Antennæ piceous, inserted near the middle of the rostrum. Thorax broader than long, narrower in front, sides moderately arcuate, base slightly narrowed, surface coarsely, deeply, and moderately densely punctured, sparsely clothed with brownish pubescence, with a few cinereous hairs along the middle and sides. Scutellum densely clothed with silvery-white hairs. Elytra moderately robust, slightly longer than wide, one-half wider at base than the thorax; surface moderately deeply striate, striæ coarsely punctured, intervals flat, rugulose, clothed with short, recumbent, brownish pubescence, and an irregular transverse pruinose band near the basal third. Body beneath and legs black, shining, abdomen moderately coarsely punctured. Length .08-.10 inch ; 2-2.5 mm.

The conspicuously white scutellum is a notable feature in this species. Occurs in Nova Scotia, Canada, and Illinois.

***O. subhirtus*, n. sp.**

Black, feebly shining, surface moderately clothed with brownish hair, and with grayish hair forming an irregular band near the basal third, broadest at suture, and a narrower band near the apex of irregular form and much narrower than the preceding. Rostrum cylindrical, moderately arcuate, coarsely punctured. Antennæ testaceous, inserted near the middle of the rostrum. Thorax nearly three-fourths wider than long, sides moderately arcuate, apex narrower than base, surface opaque, sparsely rugosely punctured, and very sparsely cinereo-pubescent. Scutellum cinereo-pubescent. Elytra oval, longer than wide, at base one-third broader than the thorax, striate, striæ coarsely punctured, intervals flat, rugulose, surface sparsely clothed with dark brownish pubescence, and with an irregular sub-basal band of cinereous pubescence broadest at the suture, anterior and posterior margins sinuous, and a sub-apical narrower band. Body beneath black, sparsely pubescent, moderately punctured and shining. Legs piceous-black, tarsi pale testaceous. Length .08 inch ; 2 mm.

The pubescence clothing the surface is coarser than in the other species

in our fauna, and the design formed by the cinereous pubescence is very distinct, much more evident than in *niger*, but much less so than in *ephippiatus*.

Two specimens are before me from Illinois.

O. ephippiatus Say. Curc. N. A., p. 16 ; Am. Ent. edit. Lec. Vol. I. p. 280.

Piceous, moderately robust. Rostrum rufous, cylindrical, moderately punctured. Antennæ pale rufo-testaceous. Head rugosely punctate, sub-opaque. Thorax broader than long, apex narrower, sides moderately arcuate, median line slightly impressed, surface rugosely punctured and very sparsely cinereo-pubescent. Scutellum white. Elytra moderately robust, slightly longer than wide, at base one-third wider than the thorax, striate, striæ moderately coarsely punctured, intervals flat, rugulose, clothed with dark brown pubescence and with a large irregular space near the base, and a sub-apical irregular band densely clothed with silvery-white hairs. Body beneath black, shining, sparsely punctured. Legs pale rufous, hind femora piceous. Length .12 inch ; 3 mm.

The surface color of the elytra is not entirely piceous, that covered by the white hairs being rufous. The conspicuous character of the design will make this species readily known.

Two specimens are before me, one from Pennsylvania, the other Illinois.

O. puberulus Boh. Eug. Resa, 1859, p. 133. California.

Unknown to me.

The species of *Orchestes*, as far as known to me in our fauna, have the femora unarmed. The larva undergoes its changes in a cocoon, which it prepares in a manner still unknown to science. The same habit has also been noticed by Mr. C. V. Riley in *Prionomerus calceatus* (Say), (*carbonarius* Gyll.), and *Phytonomus comptus* Say, of which full accounts will doubtless soon appear.

RHYSSOMATUS Schönh.

Our species are few in number, and are thus distinguished :

Body above black, sometimes with obsolete brownish elytral spots.

Alternate elytral intervals more elevated; a short humeral carina.

Thorax very obliquely strigose, elytra obsoletely maculate..... palmacollis.

Thorax longitudinally strigose, elytra entirely black.... lineaticollis.

Elytral intervals equal, humeral carina attaining the apex.

Thorax feebly obliquely strigose..... æqualis.

Body above brown, surface sparsely pubescent; humeral carina entire.

Thorax obliquely strigose..... pubescens

R. palmacollis Say. Curc. N. A., pp. 16, 27; Am. Ent. edit. Lec., I., pp. 279, 295; Boh. Schönh. Gen. Curc. IV., p. 366.

Form short, robust, oval, black, feebly shining. Rostrum as long as thorax, moderately arcuate, sparsely punctured at tip, at sides feebly sulcato-punctate, above carinate at base. Head densely punctured. Thorax nearly twice as wide at base as long, sides gradually arcuate, apex moderately constricted, base feebly arcuate, disc moderately convex, median line finely carinate, and with deep strigæ, oblique and parallel, surface glabrous. Scutellum densely clothed with brownish pubescence. Elytra oval, gradually and arcuately narrowed to apex, very convex, with rows of deep oblong punctures, suture and each alternate interval acutely carinate and a short carina at humerus, color black obsoletely spotted with brownish especially near the apex, the spots slightly pubescent. Body beneath coarsely, abdomen and legs more finely and densely pubescent, each puncture bearing a very short yellowish hair at bottom. Femora moderately toothed, tibiae with a tooth near the apex externally. Length .24 inch; 6 mm.

The oblique strigosities of the thorax are nearly at right angles to the sides of the thorax, and the basal line of the thorax is straight and transverse opposite the scutellum.

Occurs in Florida and Texas, not common.

R. lineaticollis Say. Journ. Acad. III., 1823, p. 313; Curc. N. A. and Am. Ent. ut supra; Boh. Schönh. Gen. Curc. VIII., 2, p. 9.

Similar in form and sculpture to the preceding, differing as follows:

Rostrum acutely carinate at basal half, a slight impression slightly above the eyes. Thorax more than twice as wide as long, sides strongly arcuate, apex scarcely constricted, surface with deep strigæ, longitudinal and parallel with the median line, becoming slightly arcuate near the sides. Scutellum glabrous or very nearly so. Elytra entirely black without brownish pubescent spots. Length .22-.26 inch; 5.5-6.5 mm.

The basal line of thorax at middle is slightly arcuate and approaches more nearly the scutellum.

Occurs from Pennsylvania to Kansas and Texas.

R. æqualis n. sp.

Robust, oval, black, feebly shining. Rostrum sparsely punctured in front, basal half punctato-sulcate, not carinate. Head moderately densely punctured. Thorax one-third wider at base than long, sides arcuate, apex feebly constricted at the sides, base feebly arcuate, surface obliquely arcuately strigose, with a few punctures along the apical and basal margins. Scutellum not pubescent. Elytra oval, feebly narrower at apex, surface with rows of coarse deep, elongate punctures, intervals nearly flat, slightly reticulately rugulose, no short humeral carina. Body beneath coarsely, abdomen very densely and more finely punctured. Length .16 inch; 4 mm.

The intervals are not absolutely equal, some are flat the others slightly

convex but the difference is not sufficient to be noticed readily, and the intervals being thus equal the short carina at the humerus disappears.

Pennsylvania, Illionis, Kansas.

R. pubescens, n. sp.

Oval, moderately robust, brownish ferruginous, feebly shining, sparsely clothed with yellowish hairs over the entire surface. Rostrum rather slender, sparsely punctured, at sides punctato-sulcate, above not carinate. Head coarsely and very densely punctured. Thorax nearly twice as wide at base as long, sides arcuate, apex moderately constricted, base feebly arcuate, surface moderately convex, median line not carinate, with oblique strigæ closely placed and a few punctures along the apical and basal margins. Scutellum sparsely pubescent. Elytra feebly narrower to the tip, surface with rows of coarse, deep, nearly round punctures not closely placed, intervals alternately carinate, the flat intervals densely punctulate. Body beneath colored as above, coarsely punctured, abdomen more finely and densely, sparsely pubescent. Legs concolorous. Length .22 inch ; 5.5 mm.

This species agrees with the first two in having the intervals alternately cariniform and a short humeral carina, but differs from all our species in the color and the pubescent surface.

Two specimens, Owen's Valley, California.

CHALCODERMUS Schönh.

This genus is so closely allied to *Rhyssomatus* that it becomes a matter of difficulty to separate them when the foreign species are considered. Lacordaire relies on the character afforded by the hind tibia in which the tip or truncature is entirely open in *Rhyssomatus* and closed by a ridge in the present genus.* Our species are few in number and are the more readily known by their more slender rostrum and the absence of any tooth near the apex of the tibiæ on the outer edge.

Our species are as follows :

Elytra striate, intervals elevated.

Surface ferruginous (with aeneous tinge)..... pruinus.

Elytra not striate but with rows of coarse punctures.

Thorax suddenly narrowed in front, coarsely punctured..... aeneus.

Thorax deeply longitudinally strigose ; body brown elytra paler..... collaris,

Thorax irregularly strigose ; body black..... inaequicollis.

* For a fuller account of this character see Genera des Coléoptères, Vol. 6, p. 11. The truncatures of the hind tibiæ Lacordaire designates as "*corbeilles*," a technical word having no equivalent in our language, and the difference meant by "*cordeilles cavernouses*" and "*découvertes*" are there fully exposed.

C. pruinus Boh. Schönh. Gen. Curc. VIII, 2, p. 13.

Oval, convex, ferruginous, moderately shining. Rostrum sparsely punctured in front, at base feebly longitudinally sulcate, above carinate. Head sparsely punctured, eyes moderately separated. Thorax nearly twice as wide at base as long, sides gradually, arcuately wider to base, apex very feebly constricted, base feebly sub-bisinate, surface moderately convex, median line slightly smoother, coarsely and moderately densely punctured, the punctures tending to strigosity at the sides. Scutellum small, round, glabrous. Elytra oval, arcuately and but feebly narrowed toward apex, surface deeply striate, striæ with coarse punctures, intervals sub-acutely convex. Body beneath ferruginous, sparsely punctured, abdomen very much smoother. Legs ferruginous, femora dentate, anterior tibiæ with margin sinuous. Length .18-.20 inch ; 4.5-5 mm.

Boheman describes this species as having a slight aeneous tinge to the surface, a character not possessed by any of the three specimens before me. One of the specimens has the intervals of the elytra quite conspicuously punctulate but does not otherwise differ.

Occurs in Arizona and Peninsula of California.

C. æneus Boh. Schönh. Gen. Curc. IV, p. 388.

Black with faint bronze tinge. Rostrum sparsely punctulate, feebly carinate. Head sparsely punctulate, eyes very narrowly separated. Thorax one-fourth wider at base than long, anteriorly rather suddenly narrowed, behind the constriction obtusely subangulate, thence feebly arcuate and scarcely broader to base, the latter decidedly bisinuate, surface convex, sparsely perforato-punctate. Scutellum small, glabrous. Elytra oval, subparallel in front, toward apex arcuately narrowed, convex, with rows of deeply impressed punctures, intervals extremely minutely alutaceous and with a row of fine punctures each bearing a very minute scale. Body beneath black, coarsely punctured, abdomen more sparsely punctured, terminal segment more densely punctured. Legs black, coarsely punctured, femora dentate, anterior tibiæ narrower at basal third. Length .20-.22 inch ; 5-5.5 mm.

Occurs in Georgia and Florida. Easily known by the coarsely perforato-punctate thorax.

C. inaequicollis n. sp.

Black with distinct aeneous tinge. Rostrum sparsely punctured at tip, feebly sulcate at sides near base, above obtusely subcarinate. Head sparsely punctured, eyes moderately distant with an impressed puncture between them. Thorax one-fourth wider at base than long, sides in front feebly sinuous and thence feebly arcuate to base, surface shining, median line carinate in front, suddenly wider at middle, on each side a

deep sulcus, anteriorly and laterally with deep broad irregular sulci, on each side of median sulci a smooth space. Other characters as in the preceding species. Length .22 inch ; 5.5 mm.

The sides of the thorax beneath are sculptured with deep broad, short grooves, while the preceding species has deep foveate punctures.

One specimen, Georgia.

C. collaris n. sp.

Brownish with aeneous lustre. Rostrum sparsely punctured, sides at base feebly sulcate. Head sparsely punctured, eyes moderately separated, a slight impression between them. Thorax one-third wider at base than long, sides slightly sinuate in front, thence arcuate to base, surface deeply longitudinally strigose, anteriorly slightly punctured. Scutellum small, smooth, aeneous. Elytra ferruginous with aeneous lustre, obsoletely maculate with brownish, sculptured as in the preceding species. Body beneath and legs as in the preceding species. Length .22 inch ; 5.5 mm.

One specimen, Texas, differs in color and thoracic sculpture from any of our species.

ANALCIS Schönh.

In all the species which I have examined, I have been unable to detect any variation in the number of the dorsal abdominal segments between the specimens which I have superficially considered as opposite sexes.

The species divide themselves naturally into two distinct forms, the one opaque and more or less clothed with scales forming bands of variable width, the other shining, aeneous, and without any surface vesture. The following table shows their further relationship.

Body above black, varying to rufous, surface usually opaque with scale-like vestiture, abdomen punctured.	
Thorax coarsely foveolato-punctate, surface irregular.	
Elytra at base with large pentagonal punctures, at apex the striæ and punctures obsolete.....	morbillosus.
Elytra at base with large round punctures arranged in very regular rows, striæ and punctures at apex distinct.....	foveolatus.
Thorax with coarse punctures evenly distributed.....	variegatus.
Thorax very densely punctured.....	fragariæ.
Body above aeneous, shining, without vestiture, thorax indistinctly punctured, abdomen smooth.....	æreus.

A. morbillosus Lec: Pacif. R. R. Rep. App. 1, p. 58.

Oblong, black, opaque. Rostrum coarsely and densely punctured, at base a slight fovea, surface with distant white scales more dense in the

fovea. Thorax longer than wide, moderately convex, sides obliquely narrowed in front, very feebly arcuate to base, the latter slightly lobed, surface moderately convex, with very coarse punctures on each side of middle (which has a smooth space) at the sides less coarse, and with white scales in the punctures. Elytra broader than the thorax, parallel, at apex rounded, convex, surface with rows of very coarse pentagonal punctures becoming rapidly smaller towards the apex where the striae are rather more evident and the punctures extremely small; vestiture consisting of white elongated scales in the larger punctures and patches arranged as follows:—a small spot on each side of the scutellum, an oblique narrow band from the humerus towards the suture more or less interrupted, a transverse band at two-thirds interrupted at the suture with its anterior and posterior edges of very irregular outline. Body beneath black, opaque, very coarsely punctured. Legs black moderately punctured, each puncture with a short white scale. Length .20 inch ; 5 mm.

One specimen, San Francisco.

A. foveolatus Say, Curc. N. A. p. 19 ; Am. Ent. ed. Lec. I, p. 284 ; Germ. (*Cryptorhynchus*), Schönh. Gen. Curc. IV, p. 140.

Closely allied to the preceding species and differing as follows : Thorax obliquely narrowed in front and slightly sinuous, sides thence moderately arcuate and at base slightly convergent, surface with large foveæ closely placed on each side of median line so that the latter appears carinate, foveæ at sides smaller, fovea with yellowish white scales and a denser line of scales within the margin approaching the middle in front. Elytra with rows of large, round, deep punctures arranged in regular striae becoming gradually smaller to apex ; vestiture as in the preceding species but consisting of yellowish scales. Length .16-.20 inch ; 4-5 mm.

The lateral striae of the elytra have coarse punctures in their entire length while the preceding species has four or five punctures at base only. It is possible that further specimens will unite the two species.

Occurs from Pennsylvania to Iowa and Georgia.

A. variegatus n. sp.

Oblong, moderately shining, piceous, varying to rufous. Rostrum shining, coarsely and irregularly punctured, at base not foveate. Thorax of nearly oblong oval form, longer than wide, subtruncate at base which is narrower than the thorax at middle, surface moderately convex, with coarse punctures finer at the sides, rather unevenly disposed, vestiture arranged as in the preceding species. Elytra oblong oval, sides moderately arcuate, disc with rows of coarse punctures becoming rapidly finer towards the apex where the striae become more evident ; vestiture arranged as in the preceding species but scarcely scalelike, the surface covered by the pubescence rufous, the naked parts black or piceous. Body beneath black, shining, coarsely and sparsely punctured. Length .14-.18 inch ; 3.5-4.5 mm.

The elytra are never in this species as in the preceding, totally black, there being in all the specimens an oblique humeral stripe and the sub-apical band rufous, these rufous spaces may extend themselves so that the black almost entirely disappears excepting in a small triangular lateral space and the extreme tip. The vestiture is hairy rather than scale-like.

Occurs from Illinois to and throughout the Gulf States.

A. fragariæ Riley. Third Annual Report on the Noxious, Beneficial, and other Insects of the State of Missouri. 1871, p. 42, fig. 14.

Form oblong, rufo-piceous, elytra paler. Rostrum moderately coarsely and densely punctured and with a triangular fovea at base. Thorax as in the preceding species, densely and moderately coarsely punctured, each puncture with a short slender scale. Elytra oblong oval, sides arcuate, wider behind the middle, with rows of moderately coarse punctures which become gradually smaller towards the apex without the striæ becoming more evident; pale rufous very sparsely clothed with short cinerous scale-like pubescence, arranged more densely in two crescentic bands on each elytron, placed slightly obliquely, and behind each band a small fuscous spot. Body beneath rufo-piceous, coarsely punctured, legs paler. Length .16 inch; 4 mm.

A specimen of this species was sent me by the late B. D. Walsh, bearing the name which Mr. Riley had adopted. It differs from every species known by the dense and even punctuation of the thorax. Injures the Strawberry plant.

Occurs in Illinois and Missouri.

A. æreus Say. Curc. N. A. p. 29; Am. Ent. edit. Lec. I, p. 297; Rosensch. Schönh. Gen. Curc. IV, p. 279.

Black, shining, upper surface with distinct æneous lustre. Rostrum densely and moderately coarsely punctured, at base a fine sulcus, thorax longer than wide, apex rounded, base feebly bisinuate, sides in front obliquely and slightly sinuously narrowed, at basal half nearly straight and parallel; surface convex, punctuation variable but never more than sparsely punctulate. Elytra with rows of moderate punctures at base, apex smooth. Body beneath black, shining coarsely and sparsely punctured, abdomen smooth. Legs black, moderately punctured. Length .12-.16 inch; 3-4. mm.

The punctuation of the thorax varies. In the typical form the disc is smooth and the sides only sparsely punctured. In the larger specimens the disc is distinctly punctured but the punctures are always moderate and very sparsely placed. The specimens from the Gulf States are smaller. The largest before me are from Iowa.

Occurs from Pennsylvania to Iowa and Louisiana.