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## SYNOPSIS OF THE HISTERIDÆ OF THE UNITED STATES.

BY GEORGE H. HORN, M.D.

*(Read before the American Philosophical Society, June 20, 1873.)*

It is now twenty-eight years since the revision of the species of this family by Major John Leconte, and it has appeared to me that the time has arrived when a second revision is much needed. All the species known to Marseul have been described by him in his very exhaustive Monograph, and in supplements published from time to time, any new or old species previously unknown to him have been fully described. Numerous species are, however, still unknown in nature to Marseul, and his work is to that extent incomplete. To the large majority of our students, Marseul's Monograph is practically inaccessible, and as it deals with the species of the entire globe, the student of a limited fauna like our own finds it no easy matter to deal with the subject rendered all the more difficult by the vast number of species.

In the preparation of this essay I have availed myself of the cabinet and library of Dr. Leconte, which have at all times been as accessible as if they were my own. At this time I must also record the great kindness of M. de Marseul, who through the kind intercession of M. Ang. Sallé, loaned me many of his unique types for study, and also a similar favor on the part of M. Chevrolat. By these kind acts I have had before me for personal inspection, either the types of the majority of our species or those which are almost types by comparison with the types of authors.

The subdivision of the genera of this family into two tribes appears to me the most natural method, viz.:

Head protracted, mandibles very prominent.....	HOLEPTINI.
Head retracted, bend downward, mandibles not very prominent.....	HISTRINI.

## Tribe HOLEPTINI.

This tribe contains in our fauna but one genus, *Holepta*, formed by the union of that genus as recognized by Marseul and *Lionota*, the differences between the two do not appear to be sufficient for their separation.

## HOLEPTA. Payk.

Head prominent, mandibles long produced in the plane of the body, not toothed, inner edge grooved in nearly their entire length for the reception of the maxillæ. Labrum deeply and broadly grooved apex, strongly bent downwards and triangular; on each side slightly notched by the mandibles. Mentum large, entirely corneous, triangularly emarginate in front for the reception of the tip of the labrum. Anterior tibiæ dentate on the inner edge at base, very near the articulation.

By means of these characters the genus *Holepta* may be known from all those which follow. The antennæ are inserted under the margin of

the front, and the club has no distinct cavity for its lodgment, being merely received in a slight depression on the under side of the thorax in front of the coxæ.

The following are the species known to us :

Head with supra-orbital stria.

Elytra without an entire stria ; propygidium smooth at middle ; mentum not carinate ; prosternum moderately prolonged in front but obtuse.

First and second striæ visible at base only, the second short. ....

♂ *Yucateca*.

First and second striæ basal, the second very short, but with an apical portion extending forward to the end of the first stria. ....

♀ *grandis*.

Elytra with the second stria entire ; mentum with oblique ridge on each side ; prosternal lobe very acute in front ; pygidium and propygidium subopaque, the latter sparsely punctured at middle.

First elytral stria short, continued by a row of fine punctures, second entire. ....

cacti.

Head without supra-orbital stria ; prosternum in front truncate

Elytra with one stria entire.

Second stria entire, first short, basal.

Head without frontal stria ; sides of thorax smooth. *quadridentata*.

Head with sinuous frontal stria sometimes interrupted at middle ; sides of prothorax coarsely punctured. ....

*vicina*.

First stria entire, second very short.

Front not striate, sides of thorax with few punctures. ....

*lucida*.

Elytra without entire striæ, first and second striæ short basal, the latter very short.

Second stria without apical appendicular stria. ....

*fossularis*.

Second stria with apical appendix, advancing forward nearly opposite the end of the first. ....

*populnea*.

*H. Yucateca* ♂, Mars. Mon. 1853, p. 203, pl. 5, fig. 1 ; 1860, p. 606 ; *grandis* ♀ Mars. l. c. p. 204, pl. 5, fig. 2 ; *princeps* Lec. Proc. Acad. 1859, p. 310.

Mentum transversely slightly concave, anteriorly triangularly emarginate, surface sparsely punctured and without elevated lines. Head with supra-orbital stria and a slight process on each side behind the mandibles. Elytra with two short dorsal striæ, the inner very short and without apical appendix to second ♂, or with apical appendix reaching nearly the tip of the first ♀ ; subhumeral deeply impressed extending two-thirds the length of the elytra. Propygidium smooth with fine punctures.

tures at the sides only, pygidium coarsely but not densely punctured. Lower crest of hind tibiæ not dentate. Epipleuræ unistriate. Length .36-.40\* inch ; 9-10 mm.

The above synonymy is that of Marseul, confirmed by a comparison with a specimen from Mexico.

The species has a wide distribution, occurring from Cajon Pass, California, to Camp Grant, Arizona.

*H. cacti*. Lec. Ann. Lyc. V., p. 162 ; Mars. Mon. 1857, p. 400, pl. 10, fig. 5.

Mentum coarsely punctured, triangularly emarginate, with an elevated line extending obliquely from the hind angles to the middle of the emargination on each side. Prosterum in front acute. Supra-orbital stria as in the preceding, front on each side near the base of mandibles with rudimental frontal stria. First dorsal stria short, not reaching the middle ; second entire, subhumeral moderately deep extending from apex to basal fourth. Propygidium shining at middle, opaque at the sides and apex, and coarsely and sparsely punctured ; pygidium opaque, sparsely and equally punctured. Hind tibiæ as in the preceding species. Length, .20-.30 inch ; 5-7.5 mm.

Occurs with the preceding. My specimens of both were taken in decomposing *Cereus*.

*H. quadridentata*, Fab. Ent. Syst. I., p. 74 ; Payk. Mon. p. 109, pl. 9, fig. 4 ; Mars. Mon. 1853, p. 212, pl. 5, fig. 10 ; 1860, p. 608 ; *platysma*, Er. Jahr. 1834, p. 95.

Mentum slightly concave transversely, sparsely punctured and with feeble oblique line, in front triangularly emarginate. Head without supra-orbital stria. Elytra with two dorsal stria, first short extending one-third, second entire, slightly arcuate, subhumeral moderately deep, extending three-fourths to base. Propygidium shining coarsely punctured at the sides, pygidium opaque, coarsely and equally punctured. Hind tibiæ with the lower and upper crests dentate. Epipleuræ smooth unistriate. Length .16-.20 inch, 4-5 mm.

Occurs in the Southern States, West Indies and South America.

In the males the anterior angle of the thorax has a moderately deep fossa ; the females are devoid of it.

*H. vicina*, Lec. Ann. Lyc. V., p. 163.

Head without supra-orbital stria, a bisinuate frontal stria. Mentum transversely concave, shining, sparsely punctured. Thorax punctured at the sides. Elytra with the second dorsal entire, first short, scarcely one-third, subhumeral four-fifths the length of the elytra. Propygidium

\*All measurements in the present paper are made from the anterior margin of the thorax to the tip of the elytral suture ; the same method is used by Marseul.

coarsely, and very sparsely punctured: pygidium cribrately punctured. Lower hind tibial crest not dentate. Length .20 inch; 5 mm.

The first dorsal has sometimes a short apical appendix.

The sexes are marked as in the preceding species.

Collected near San Diego, California.

*H. lucida*, Lec. Bost. Journ. V., p. 37, pl. 1, fig. 2; Mars. Mon. 1853, p. 177, pl. 4, fig. 18.

Mentum transversely concave, smooth, triangularly emarginate in front. Thorax punctured at the sides, marginal stria entire. Elytra with first dorsal entire, second short basal, rarely with a very short apical appendix, third punctiform, basal, subhumeral deep abbreviated at both ends. Propygidium smooth at middle, coarsely punctured at the sides and apex, pygidium coarsely and equally punctured. Hind tibiae with upper crest alone dentate. Length .20 inch; 5 mm.

Occurs in the Middle States and Kansas.

*H. fossularis* ♂, Say, Journ. Acad. 1825, p. 47; Lec. Bost., Journ. V., p. 37, pl. 1, fig. 1; Mars. Mon. 1853, p. 147, pl. 4, fig. 5; *equalis* ♀, Say, loc. cit.

Resembles the preceding, but differs in the striation of the elytra. The first stria is short, not larger than a fourth of the elytra, the second shorter, and the third merely a trace, subhumeral deep. Otherwise as in *lucida*. Length .20 inch; 5 mm.

Occurs with the preceding.

*H. populnea*, Lec. Ann. Lyc. V., p. 163; Mars. Mon. 1860, p. 592, pl. 11, fig. 5.

Mentum as in *lucida*. Thorax very sparsely punctured at the sides. Elytra with first dorsal short, scarcely a third the length of the elytra; second shorter, and with an apical appendix frequently advancing opposite the tip of the first. Propygidium smooth, at sides very sparsely punctured, pygidium sparsely punctured. Hind tibiae as in *lucida*. Length .18 inch; .45 mm.

Occurs in Arizona, between the layers of dead Cottonwood bark.

### Tribe HISTRINI.

This tribe may be again subdivided:

Prosternum distinctly lobed in front.....	HISTRINI.
Prosternum not lobed in front.....	SAPRINI.

The prosternal lobe appears to be a piece distinct from the prosternum, and between the two the suture is more or less distinct. In the majority of cases the lobe is provided with a lateral extension, which joins the prothoracic epipleuræ, and when it exists is called the pectoral plate. In every case when the pectoral plate exists it forms part of the boundary of the antennal fossa, and usually renders the latter partially invisible from beneath.

Th subtribes as thus defined are essentially the same as in the "Classi-

fication" of Dr. Leconte. *Bacanius* has been removed from the first and placed near *Acritus* in the second, the reasons for which will be given in the proper place. *Tribalus* has the prosternal lobe short, but its lateral prolongations form the lower boundary of the antennal fossa, a structure which cannot exist in the second sub-tribe.

### Sub-Tribe HISTRINI.

This sub-tribe contains in our fauna the larger number of genera and species.

The genera are thus distinguished :

Antennal cavities at the anterior angle of the thorax, usually closed beneath more or less entirely by the pectoral plate, but open in front.	
Antennal club more or less oval, pubescent, and usually, distinctly annulated.	
Mandibles moderately prominent, upper edge rounded, not clasping the epistoma, labrum trapezoidal.	
Antennal club broadly oval, distinctly annulated, elytra never acutely margined.....	HISTER.
Antennal club elongate oval, apparently solid but pubescent, elytra acutely margined.....	TRIBALISTER.
Mandibles retracted, upper edge acute, at base clasping the epistoma, labrum short, very transverse.	
Prosternum broad, lobe short, elytra scarcely striate, form ovate.....	TRIBALUS.
Prosternum moderate, lobe moderately prolonged, elytra striate, form oblong.....	EPIERUS.
Antennal club obconical, solid, glabrous.	
Prosternal lobe thick, horizontal. Epistoma truncate, labrum normal.....	HETERIUS.
Prosternal lobe thin, broad, deflexed. Epistoma bifurcate, labrum small.....	ECHINODES.
Antennal cavities slightly behind the anterior angles, open beneath, closed in front by the thickening of the inflexed portion of prothorax.	
Antennæ frontal.....	ONTHOPHILUS.
Antennal cavities at the middle of the thorax beneath, in front of the outer portion of the coxæ, prosternal plate not prolonged laterally.	
Anterior tibiæ with moderately large terminal spur...	
Anterior tibiæ dilated, middle and hind tibiæ slender.....	PAROMALUS.
Tibiæ all dilated.....	DENDROPHILUS.
Anterior tibiæ with small terminal spur. Anterior tibiæ slightly dilated, middle and hind tibiæ slender.....	ANAPLEUS.

Many species of *Hister* (*arcuatus*, *levipes*, *interruptus*, etc.), have no proper pectoral plate, and the antennal cavity is entirely uncovered. This character cannot be made use of in a systematic manner, as the transition is so gradual from one form to the other.

In the last three genera, the funicle of the antennæ when at rest passes through an incisure between the prosternum proper and the episternum. The prosternal lobe in *Dendrophilus* is broader and shorter than in *Paromalus*.

#### HISTER, Linn.

For convenience of study this genus may be divided into the following sub-genera, some of which have been considered sufficiently well founded as to have been retained as genera. In the scheme published by Dr. Leconte, Proc. Acad. 1852, p. 38, they have all been united under the name *Hister*, subsequently, Class Col. N. A. p. 76, *Phelister* alone was separated, at the same time doubts were expressed as to the propriety of the course.

Anterior tibiæ with the tarsal groove badly defined, straight.	
Internal marginal thoracic stria more or less distinct, always entire; mesosternum emarginate or truncate at apex.	
Hind tibiæ broad at base, with a single row of spines.....	<i>Psiloscelis</i> .
Hind tibiæ narrow at base, two rows of spines.	
Elytral striæ obliterated, surface opaque, punctured with smooth flattened tubercles.....	<i>Margarinotus</i> .
Elytra striate.....	<i>Hister</i> .
Internal marginal thoracic stria entirely absent; mesosternum more or less produced in front, prosternum at tip emarginate.	
Hind tibiæ with two rows of spines; elytra striate.	<i>Phelister</i> .
Anterior tibiæ with tarsal groove well defined; internal marginal thoracic stria entirely absent. Middle and hind tibiæ dentate.	
Anterior tibiæ without tooth on inner margin; prosternum at apex flattened and without marginal line.....	<i>Platysoma</i> .
Anterior tibiæ with a small internal tooth near the base; prosternum convex and with marginal line...	<i>Cylistix</i> .

#### Sub-genus *Psiloscelis*.

Thorax with two marginal striæ closely approximated, the outer very close to the margin. Hind tibiæ scarcely narrower at base than apex, strongly compressed, and with a single row of spines, anterior tibiæ feebly dentate. Epipleuræ bistriate. Elytra with subhumeral stria abbreviated at apex. Surface densely punctured.

Prosternum with marginal line at tip; surface opaque,  
 foveolato-punctate ..... planipes.  
 Prosternum not margined; surface moderately shining,  
 coarsely punctured..... subopacus.

**H. planipes**, Lec. Proc. Acad. 1852, p. 39; *Harrisii* Lec. Bost. Journ. V., 1845, p. 14, pl. 1, fig. 11; Mars. Monog. 1853, p. 542; pl. 16, fig. 1.

Black, opaque, thorax less opaque than the elytra. Head densely punctured, frontal stria well marked. Thorax densely and equally punctured. Elytra opaque, foveolato-punctate, with six dorsal striae, of which four are entire, the fifth and sutural approaching at base and obliterated, humeral stria very short, subhumeral moderately impressed obliterated at apex. Pygidium and propygidium densely foveolato-punctate, the latter less densely than the former. Body beneath more shining than above, foveolato-punctate. Prosternum with marginal line at apex. Legs shining, sparsely punctate. Length .26 inch; 6.5 mm.

Occurs from Massachusetts to Georgia.

**H. subopacus**, Lec. New Species, 1863, p. 60.

Subopaque. Head densely punctured, frontal stria deeply impressed. Thorax coarsely and densely punctured, more densely at the sides. Elytra coarsely and rather densely punctured, punctures of sutural interval fine; each elytron with six dorsal striae, the sutural and fifth abbreviated at base, humeral stria very short, subhumeral moderately impressed, abbreviated at base and continued at apex, by a row of coarse punctures. Propygidium and pygidium coarsely punctured, the latter more densely. Body beneath more shining than above, coarsely punctured at the sides, more finely and less densely at middle. Femora sparsely punctate. Prosternum without marginal line at tip. Length .24 inch; 6 mm.

Narrower, less convex and less opaque than *planipes*, and readily known by the absence of the marginal line at apex of prosternum.

Two specimens are known, collected in Nebraska and Vancouver.

#### Sub-genus *Margarinotus*.

Marginal striae of thorax confused, scarcely visible, the inner very distant from the margin. Hind tibiae slender at base, biserially spinulose, anterior five dentate, the upper tooth small. Elytra with the intervals of the striae with smooth sub-depressed tubercles, striae almost entirely obliterated. Epipleurae of elytra either unistriate (*guttifer*) or not striate (*scaber*).

The only character separating *Margarinotus* from *Hister* is the sculpture of the surface of the body; and not recognizing this to have any great importance, I have united the former genus to the latter.

**H. guttifer**, Horn. Proc. Ent. Soc. 1863, p. 167; Trans. Ent. Soc. 1870, pl. 1, fig. 5.

As the sculpture of this insect has been as nearly produced as the varying tendencies of the individuals admit, nothing further need here



be added. Between the punctures, however, the striæ, in a partially obliterated condition appear, and at the sides an almost entire subhumeral appears. Thorax without external marginal stria, inner stria nearly obliterated and very distant from the margin. Epipleuræ of elytra unistrate. Length .18-.20 inch ; 4.5-5 mm.

Occurs along the eastern base of the Rocky Mountains, from Nebraska to Texas.

The only other species of the sub-genus is the *scaber* of Southern Europe. The two differ primarily in the surface sculpture particularly that of the thorax, and which can be best seen by a comparison of the figures of the two. The outer marginal striæ of the thorax do not exist in *guttifer*, two are said to exist in *scaber*, of which however one only is at all distinct. The subhumeral stria is nearly obliterated in *scaber* and almost entire and very distinctly impressed in our own. The epipleuræ are punctured and not striate in the former and very distinctly unistrate in the latter. The under surface of the body is coarsely punctured in the former and nearly smooth at middle in the latter, and the femora of each species partake of the sculpture of the under surface. Both species are broadly oval.

#### Sub-genus *Hister*.

Thorax with two lateral marginal striæ and occasionally with the evidences of a third. Hind tibiæ narrower at base than at apex and biserially spinulose and rarely with the spinules somewhat confused, anterior tibiæ variable, either bi-, tri- or multidentate. Elytra always striate. Tarsal groove of anterior tibiæ badly defined.

The sub-genus *Hister* as above restricted contains a very large number of species which for convenience may be divided into groups.

Margin of thorax ciliate, Antennal cavities shallow.

Outer marginal thoracic stria entire, anterior tibiæ dentate..... Gr. *arcuatus*.

Outer marginal stria abbreviated, anterior tibiæ not dentate..... Gr. *laevipes*.

Margin of thorax not ciliate, Antennal cavities deep.

Mesosternum emarginate.

Subhumeral stria entire.

Elytra 3-striate ; outer thoracic stria very close to margin..... Gr. *sexstriatus*.

Elytra 4-striate ; outer thoracic stria often absent or when present distant from margin.

Outer thoracic stria entire..... Gr. *merdarius*.

Outer thoracic stria much abbreviated or absent. Gr. *foedatus*.

Subhumeral stria interrupted, often entirely obsolete.

Tibiæ serrulate..... Gr. *abbreviatus*.

Tibiæ tridentate..... Gr. *depurator*.

Mesosternum truncate (*Atholus*, Thoms.)

Epipleuræ very narrow, unistrate..... Gr. *bimaculatus*.

Epipleuræ bistriate and broader..... Gr. *americanus*.

Owing to the difference which have resulted, by the adoption of the above method of subdivision, the system of numbering the groups has not been adopted, and in lieu thereof a typical and usually a common species has been selected as the representative of each group, in order that the groups here made might not be confounded with those of Marsul and Dr. Leconte.

Group *Arcuatus*.

Species of robust form. Thorax with entire margin ciliate. Antennal cavities shallow. Anterior tibiæ usually bidentate.

The following species compose this group :

Thorax with apical intermediate confused stria.

Elytra with three dorsals and a sutural stria..... *arcuatus*.

Elytra with three dorsals only..... *sellatus*.

Thorax with two thoracic striæ only.

Anterior tibiæ bidentate.

Prosternal lobe acute..... *Gloveri*.

Prosternal lobe rounded at apex.

Elytra with no subhumeral stria.

Hind tibiæ with outer row of spinules densely placed ; thorax densely fimbriate..... *instratus*.

Hind tibiæ sparsely spinulose ; thorax densely fimbriate ..... *biplagiatus*.

Elytra with apical subhumeral, usually deeply impressed..... *Ulkei*.

Anterior tibiæ tridentate apical tooth divided.

No subhumeral stria..... *lucanus*.

*H. arcuatus*, Say. Journ. Acad. 1825, p. 34 ; Mars. Monog. 1854, p. 258, pl. 7, fig. 62.

External and internal thoracic striæ entire gradually approaching at base, and between them at apex a confused intermediate stria extending usually beyond the middle. Three entire dorsal striæ to the elytra, a short basal fourth, and a sutural extending in front of middle. Subhumeral feeble at apex, humeral appendix usually deeper. Elytra black with arcuate red space at middle of each. Hind tibiæ with spinules confusedly arranged. Anterior femora brownish, middle and hind femora red tipped at each end with black. Length .26 inch ; 6.5 mm.

Occurs in the Middle States, but not common.

*H. sellatus*, Lec. Pacif. R. R. Rep. 1857, p. 37 ; *Senevillei*, Mars. Mon. 1857, p. 422, pl. 10, fig. 119.

More elongate than the preceding, and with similar thoracic striation. The elytra have three striæ and a mere rudiment of a fourth at base, the sutural is entirely obsolete. The subhumeral stria is entirely wanting, with rarely but a trace represented by a few punctures, the humeral appendix being entirely wanting. The hind tibiæ are spinulose

in three oblique series. The elytra are entirely red with a narrow apical margin, and sub-scutellar trapezoidal spot black. Legs entirely black. Length .22 inch ; 5.5 mm.

Occurs in California and Oregon.

**H. Gloveri**, Horn, Trans. Am. Ent. Soc. 1870, p. 134.

Form robust as in *arcuatus*. Thorax with two entire striae. Elytra with three entire dorsal and a short sutural stria. Subhumeral stria obsolete replaced by a few punctures, humeral appendix short, moderately impressed. Prosternal lobe acutely produced in front. Hind tibiae biserially spinulose. Legs piceous. Color variable. Length .22-.26 inch ; 6.5 mm.

From all the species of the group this may be once known by the very acute prosternal lobe. In the typical specimen the color is entirely black, while a variety in the cabinet of Dr. Leconte has the elytra colored as in *biplagiatus*, but with less distinctness of definition between the black and red portions.

Kansas and Indian Territory.

**H. instratus**, Lec. Col. Kansas, 1859, p. 7.

Similar in form to *sellatus*. Thorax with lateral striae both entire and with no apical intermediate striae. Elytra with three entire dorsal striae, a rudiment of a fourth and moderately long sutural, subhumeral stria wanting or with merely a faint trace of a short humeral appendix. Elytra colored as in *sellatus*. Legs colored as in *arcuatus*. Hind tibiae biserially spinulose. Length .22 inch ; 5.5 mm.

His species is very closely allied to *biplagiatus*, Lec., but differs by its more robust form, its more distinctly fimbriate thorax, and by the outer row of spinules of the hind tibiae being composed of spinules very closely approximated. In the specimen before me there is a very short appendicular stria under the humeral prominence very feebly impressed, which never exists in any *biplagiatus* that I have seen. From *Gloveri* it differs in having the tip of the prosternal lobe broadly rounded and not acute.

Occurs in Kansas.

**H. biplagiatus**, Lec. Bost. Journ. V., p. 55, pl. 3, fig. 4 ; Mars. Mon., 1854, p. 552, pl. 9, fig. 119.

There is no trace whatever of subhumeral stria or humeral appendix in any specimens before me. There are three entire dorsal striae and rarely a trace of the fourth at base. The sutural frequently extends one-half to base, usually much shorter. Thorax sparsely fimbriate, hind tibiae distantly spinulose, legs black or piceous. Length .20 inch ; 5 mm.

Abundantly distributed from the Middle States to Georgia, and westward to Kansas.

**H. Ulkei**, Horn, Trans. Am. Ent. Soc., 1870, p. 134; *arizonæ*, Horn, l. c., p. 135.

Resembles the preceding in form and coloration, and differs in the presence of an apical subhumeral stria extending two-thirds to base, close to the first dorsal, and rarely with a short subhumeral appendix. There is also a fourth dorsal at apex of varying length, sometimes extending in front of middle, and more rarely the traces of a fifth. The hind tibiæ agree with those of *biplagiatus*. Legs black or piceous. Length .16-.22 inch; 4-5.5 mm.

Occurs in Kansas, Nebraska, Colorado and Arizona.

**H. lucanus**, n. sp.

Thorax sparsely fimbriate, lateral striæ two, entire, at base coarsely punctured, punctures more numerous and coarser toward the sides. Elytra red with sides, apex and trapezoidal scutellar spot black, three entire dorsal striæ and a sutural extending in front of middle. Epipleuræ bistriate. Anterior tibiæ tridentate, the upper tooth feeble, the apical bifid. Hind tibiæ biserially spinulose. Body beneath and legs black and shining. Length .12 inch; 3 mm.

Resembles *biplagiatus* but easily known by the form of the anterior tibiæ. The subhumeral stria is entirely wanting. One specimen, Cape San Lucas, Lower California.

#### Group *Lævipes*.

Anterior tibiæ of elongate triangular, outer margin straight, not dentate. Thorax bistriate, outer stria close to the margin and somewhat abbreviated. Epipleuræ bistriate, subhumeral short, apical. Antennal cavities shallow.

**H. lævipes**, Germ., Ins. spec. nov. p. 87; Lec. Bost. Journ. V., p. 50, pl. 1, fig. 7; Mars. Mon., 1854, p. 233, pl. 7, fig. 49.

Elytra with three entire dorsal striæ, a very short basal fourth and an almost entire sutural. Subhumeral stria apical, close to the first dorsal and half its length. Propygidium sparsely punctured at the sides, smooth at middle, pygidium convex smooth with a very few punctures at the sides. Legs black, smooth. Length .14-.18 inch; 3.5-4.5 mm.

Occurs from Pennsylvania to Georgia.

This species is the only one in our fauna belonging to this group, and may be distinguished from every other by the simple anterior tibiæ.

#### Group *Sexstriatus*.

Thorax bistriate, outer stria close to the margin, and abbreviated at each end. Anterior tibiæ quadridenticulate, apical tooth bifid. Antennal cavities deep, partially enclosed by the prolongation of the sides of the prosternal lobe. Hind tibiæ subtridentate.

**H. sexstriatus**, Lec. Ann. Lyc. V., p. 163; Mars. Mon., 1854, p. 290, pl. 8, fig. 86.

Anterior angles of thorax sparsely and finely punctured, more coarsely



Thorax at sides smooth, bistriate, striæ entire, equal, straight. Elytra with three entire striæ, fourth slightly abbreviated at base, fifth short, apical, sutural extending in front of middle, subhumeral entire. Propygidium coarsely but sparsely punctured, pygidium more finely and sparsely punctured, nearly smooth at apex. Anterior tibiæ sub-5-dentate, apical tooth shorter than second and slightly bifid. Length .20-.26 inch ; 5-6.5 mm.

Middle and Western States, common.

*H. stygicus*, Lec. Bost. Journ. V., p. 48, pl. 2, fig. 4; Mars. Mon., 1854, p. 301, pl. 9, fig. 94.

There are absolutely no characters on which to separate this species from *interruptus* excepting the following :

Species much smaller, form more broadly oval, thoracic striæ entire, parallel and equi-distant from each other, and from the margin. Elytral striæ exactly as in *interruptus*. Propygidium coarsely but very sparsely punctulate, pygidium shining very minutely and sparsely punctulate. Length .10 inch ; 2.5 mm.

The species is described as having four entire striæ, the fourth stria is abbreviated at base. Marseul mentions a basal arc opposite the fifth stria ; this may or may not be present in any species of this group. The head is said to have an impressed point at middle of front ; of the two typical specimens one has it, the other has not.

Two specimens from Georgia.

*H. immunis*, Er. Jahrbuch, 1834, p. 143.

Sides of thorax bistriate, striæ entire, parallel and straight. Elytra with three entire striæ, fourth slightly abbreviated at base, fifth very short, apical, sutural either very short or entirely obsolete, subhumeral entire. Propygidium coarsely and evenly punctured, pygidium more finely punctured especially at apex. Anterior tibiæ sub-5-dentate, apical tooth shorter. Length .20 inch ; 5 mm.

Occurs in the Middle States, and also in California.

#### Group *Foedatus*.

Inner thoracic stria entire or very nearly so, outer either entirely absent or very much abbreviated. Anterior tibiæ multidentate.

Thoracic margin thickened, inner stria entire ; epipleuræ  
unistriate. .... marginicollis.  
External thoracic stria entirely obliterated.

Thoracic margin not thickened.  
Stria posteriorly abbreviated ; epipleuræ unistrate.... cognatus.  
Stria entire ; epipleuræ bistriate..... remotus.  
External thoracic visible, usually very short, rarely half the  
length of the inner.

Inner stria slightly abbreviated at tip ; epipleuræ uni-  
striate..... foedatus.

**H. marginicollis**, Lec. Bost. Journ. V., p. 58, pl. 3, fig. 11; Mars. Mon., 1854, p. 542, pl. 9, fig. 113.

Surface of thorax minutely punctulate, at sides sparsely punctured near the base, inner stria entire, margin convex. Elytra with three entire dorsal striæ, fourth abbreviated at base, extending slightly in front of middle, fifth very short, apical, sutural as long as the fourth, subhumeral entire. Epipleuræ unistriate. Pygidium and propygidium sparsely and rather coarsely punctured. Anterior tibiæ 5-dentate, teeth acute. Length .18 inch; 4.5 mm.

Middle States rare. Marginal line of prosternal lobe distinct, entire.

**H. cognatus**, Lec. Bost. Journ. V., p. 58, pl. 3, fig. 10; Mars. Mon., 1857, p. 421, pl. 10, fig. 111.

Lateral stria of thorax abbreviated at tip, confused by punctures which also extend forward on its inner side. Elytra with three entire dorsal striæ, fourth nearly entire, fifth short apical, sutural rarely extending in front of middle, subhumeral entire. Pygidium and propygidium coarsely and evenly, but not densely punctured. Anterior tibiæ sub-5-dentate, apical tooth very small. Length .10-.14 inch; 2.5-3.5 mm.

Closely resembles *foedatus*, but the absence of an exterior thoracic stria as well as the margined prosternal lobe at once distinguish it. Two specimens are before me in which the punctures within the inner stria of the thorax are entirely absent, and the stria longer, but I feel unwilling to separate them on these characters without a larger series of specimens.

Middle States, Canada, Illinois, Wisconsin. Not rare.

**H. remotus**, Lec. Proc. Acad., 1859. p. 70.

Sides of thorax near the stria with few punctures, stria distant from the margin, entire and slightly sinuous. Elytra with three entire dorsal striæ, fourth slightly abbreviated at base, fifth one-third the length of the elytra, sutural somewhat longer, subhumeral entire. Propygidium coarsely and sparsely, pygidium more densely punctured. Prosternal lobe with marginal line distinct. Anterior tibiæ pluridentate. Length .16 inch; 4 mm.

This species is the most oblong of any in the group.

Occurs at Fort Tejon, California.

**H. foedatus**, Lec. Bost. Journ. V., p. 50, pl. 2, fig. 8; Mars. Mon., 1854, p. 292, pl. 8, fig. 88.

Outer marginal stria of thorax usually forming a short arc near the anterior angle, rarely extending half the length of the thorax, inner stria usually abbreviated at tip. Disc of thorax very minutely punctulate, at the sides more distinctly punctured near the stria. Elytra with three entire striæ, fourth slightly abbreviated; fifth one-third, sutural one-half the length of the elytra, subhumeral entire. Pygidium and propygidium densely punctured. Anterior tibiæ pluridentate. Length .14-.22 inch; 3.5-5.5 mm.

The prosternal lobe has the marginal line entirely obliterated in the

large majority of specimens. A variety occurs in the cabinet of Dr. Leconte, bearing the manuscript name *proximus* in which the sides of the thorax are scarcely at all punctured, the outer stria at its maximum, and the prosternal lobe with the marginal line distinct. I feel unwilling to separate it, however, as the characters are those which are the most likely to be variable, and transitional forms in one or other character constantly appear. A variety occurs in Oregon and Vancouver with the outer thoracic stria half the length of the inner, the prosternum not margined, and the form approaching *remotus*. These have been associated with the latter species in cabinets, but the outer thoracic stria and the unistrate epipleuræ at once distinguish it.

Occurs from Canada to Georgia, and westward to Vancouver and Oregon.

#### Group *Abbreviatus*.

Subhumeral stria interrupted, often very short or even entirely absent. Anterior tibiæ serrulate or mutic. This group and the following may be distinguished from the three which immediately precede by the interrupted or even entirely absent subhumeral stria. This stria when present may be represented by the basal or the apical portion, sometimes both are present and are usually separated; when they are united the union is produced by the extension of a few punctures from the humeral portion, which do not however join the end of the apical portion. The stria never presents that straight continuous form of the preceding groups. The subhumeral in the preceding groups is always the external, and is more distant at apex from the first dorsal than the latter is from the second. The subhumeral in this and the next group is internal, and nearer the first dorsal than the latter is from the second, and when the humeral appendix forms an union with the apical portion, as above indicated, the basal tip of the latter always passes beyond this point in the direction of the fine oblique humeral stria, which is really the continuation of an internal subhumeral.

The species of this group have the anterior tibiæ sometimes multidenticulate, usually serrulate and rarely nearly mutic, the serrulations being composed of spinules, and are independent of any denticulation of the tibia itself.

Subhumeral stria apical, deeply impressed.

Outer margin of anterior tibiæ regularly arcuate, minutely serrulate.

Front flat; anterior tibiæ multidenticulate. . . . . cœnosus.

Front with a moderate impression; anterior tibiæ finely quadridentate. . . . . punctifer.

Outer margin of anterior tibiæ sinuate and multidentate.

Subhumeral with humeral appendicular stria. . . . . abbreviatus.

Subhumeral entirely obliterated or with mere trace.

Elytra 3-striate, outer thoracic very short or absent.

Anterior tibiæ finely serrulate or mutic; outer thoracic stria visible at apex. . . . . civilis.



*H. cœnosus*, Er. Jahrb., 1834, p. 154; Mars. Mon., 1854, p. 276, pl. 8, fig. 76; *decisus*, Lec. Bost. Journ. V., p. 51, pl. 2, fig. 10; *repletus*, Lec. loc. cit. p. 49, pl. 2, fig. 6.

Thorax bistriate, inner stria entire, outer abbreviated but extending beyond the middle, and between the two stria at apex are either a few punctures or a very short stria. Front not impressed. Elytra with four entire striae, a fifth extending to middle and the sutural longer, subhumeral at apex deeply impressed, and with a very short feebly impressed humeral appendix. Epipleuræ bistriate. Propygidium very sparsely punctured, pygidium very minutely punctulate, and with a few coarser punctures near the sides. Anterior tibiae with the outer margin regularly arcuate, minutely denticulate. Hind tibiae biserially spinulose. Length .18-.22 inch; 4.5-5.5 mm.

I cannot find that *repletus* differs except in having the fifth dorsal stria a trifle longer.

Occurs from the Gulf States to Mexico.

*H. punctifer*, Payk. Mon. p. 25, pl. 4, fig. 1, Lec. Bost. Journ. V., p. 51, pl. 2, fig. 9; Mars. Mon., 1854, p. 265, pl. 8, fig. 67.

The surface sculpture of this species is precisely that of *cœnosus*, and differs as follows: Head with a shallow fovea. Outer thoracic stria not extending to middle. Humeral appendicular stria short deeply impressed. Propygidium on each side with a shallow impression. Anterior tibiae feebly quadridentate. Length .22 inch; 5.5 mm.

One specimen said to have been found in the Middle States, corresponding exactly with Marseul's description, is before me.

*H. thoracicus*, Payk. Mon. p. 20, pl. 2, fig. 5.

From the description this species appears to be allied to the preceding. It is, however, entirely unknown, either to us or Marseul.

*H. abbreviatus*, Fab. Syst. Ent. p. 53; Lec. Bost. Journ. V., p. 52, pl. 2, fig. 11; Mars. Mon., 1854, p. 283, pl. 8, fig. 82; *subhemisphericus*, Beauv. Ins. p. 180, pl. 6, fig. 7; *bifidus*, Say, Journ. Acad. 1825, p. 34; Lec. loc. cit. pl. 2, fig. 12; Mars. loc. cit. p. 284, pl. 8, fig. 83.

Thorax at sides bistriate, outer stria extending to middle, inner entire. Elytra with four entire striae coarsely punctured, fifth short, apical, sutural half the length of the elytra. Subhumeral at apex deeply impressed, with humeral appendix extending to base, also deeply impressed, and joining the apical portion behind its tip. Propygidium coarsely and sparsely punctured, pygidium nearly impunctate. Anterior tibiae feebly 4-dentate apical tooth bifid. Length .12-.20 inch; 3-5 mm.

This species varies somewhat in the length of the outer thoracic striae, as well as in the depth of the elytral striae. One specimen before me has a mere trace of an external subhumeral near the apex.

Middle States to Georgia, and westward to Montana and Kansas.

*H. civilis*, Lec. Bost. Journ. V., p. 55, pl. 3, fig. 5; Mars. Mon., 1854, p. 570, pl. 9, fig. 134.

Inner thoracic stria entire, outer very short, forming merely an arc at the anterior angle. Elytra with three entire dorsal striæ, fourth existing merely as a trace at apex, sutural very short, subhumeral entirely absent. Propygidium coarsely and very sparsely punctured, pygidium more finely punctured and nearly smooth at apex. Anterior tibiæ very finely denticulate, often almost entirely mutic. Length .16 inch ; 4 mm.

By the entire absence of subhumeral stria, as well as by the nearly mutic anterior tibiæ this species is abundantly distinguished from any in the group.

Occurs from the Middle States to Illinois.

### Group *Depurator*.

In this group the anterior tibiæ are denticulate, the teeth being formed by processes of the tibiæ itself, and not as in the preceding group merely spinules attached, so to speak, to the outer edge of the tibia.

The species are as follows :

Thorax unistriate ; elytra tristriate.

Epipleuræ unistriate ; anterior tibiæ 4-dentate.....semisculptus.

Epipleuræ bistriate ; anterior tibiæ 3-dentate.....dispar.

Thorax bistriate.

Elytra tristriate.

Apex of prosternal lobe truncate, on each side slightly prominent .....furtivus.

Apex of prosternal lobe rounded, normal.

Epipleuræ tristriate, fourth dorsal basal rudimentary ; no subhumeral.....incertus.

Epipleuræ bistriate, fourth dorsal wanting or apical.

Apical subhumeral moderately impressed, elytra black .....depurator.

Subhumeral entirely wanting, elytra bicolored....militaris.

Elytra with four entire striæ.

Outer thoracic stria abbreviated, usually very short.

A short humeral appendix ; form oblong.....curtatus.

No subhumeral whatever ; form broadly oval.....defectus.

Outer thoracic stria entire.

Pygidium smooth, very minutely punctulate.....indistinctus.

Pygidium very coarsely punctured.....servus.

### H. *semisculptus*, Lec. New Species, 1863, p. 60.

Inner stria of thorax alone entire, external entirely absent. Elytra with three entire striæ, fourth and fifth very short, sutural one-fourth the length of the elytra, subhumeral entirely absent at apex, a faintly impressed subhumeral appendix alone existing. Pygidium and propygidium coarsely and equally punctured. Epipleuræ unistriate. Anterior tibiæ with outer margin arcuate, 4-dentate, apical tooth bifid. Length .20 inch ; 5 mm.

This species by its oblong form recalls *remotus*. Differs from all the species of the present group by the unistriate epipleuræ.

One specimen, Illinois.

**H. dispar**, Lec. Bost. Journ. V., p. 57, pl. 3, fig. 8; *hospitus*, Lec. Proc. Acad., 1859, p. 312.

Thorax at sides unistriate, stria distant from the margin. Elytra with three entire striæ, sometimes with trace of fourth at base and apex, sutural extending three-fourths the length of the elytra, subhumeral entirely absent. Epipleuræ bistriate. Propygidium coarsely but very sparsely punctured, pygidium more finely punctured and nearly smooth at apex. Anterior tibiæ tridentate, apical tooth feebly bifid. Length .12-.16 inch; 3-4 mm.

Occurs in the Middle States, Georgia, Illinois and Kansas.

**H. depurator**, Say. Journ. Acad., 1825, p. 33; Lec. Bost. Journ. V., p. 54, pl. 3, fig. 3; Mars. Mon., 1854, p. 274, pl. 8, fig. 74; *Paykulli*, Kby. Faun. Am. Bor. p. 123; *spretus*, Lec. Bost. Journ. V., p. 53, pl. 3, fig. 1; Mars. Mon., 1854, p. 271, pl. 8, fig. 72.

Thorax bistriate, inner stria always entire, outer variable, sometimes nearly entire, more frequently extending to middle only. Elytra with three entire dorsal striæ, fourth apical rarely extending to middle, fifth existing in mere trace, sutural extending to middle, subhumeral at apex moderately deeply impressed, humeral appendix usually present always very feeble. Epipleuræ bistriate. Propygidium coarsely but very sparsely punctured, pygidium more finely punctured and nearly smooth at apex. Anterior tibiæ tridentate, upper tooth feeble, apical prominent and slightly bifid at tip. Length .22 inch; 5-.5 mm.

Distributed from Canada to Georgia.

**H. furtivus**, Lec. Proc. Acad., 1859, p. 313.

This species closely resembles the preceding, and differs by the total obliteration of the subhumeral stria. The apex of the prosternal lobe is truncate or emarginate with the sides of the emargination slightly prominent. This latter character will serve to distinguish it from every other species in our fauna. Length .20-.22 inch; 5-5.5 mm.

Occurs from Canada to Georgia.

**H. incertus**, Mars. Mon., 1854, p. 269, pl. 8, fig. 70.

Closely allied to *depurator*, but differs in the absence of any subhumeral stria, and the epipleuræ distinctly tristriate. Length .16-.24 inch; 4-6 mm.

Occurs from the Middle States to Florida and Texas, and westward to Kansas.

**H. militaris**, Horn, Trans. Am. Ent. Soc., 1870, p. 135, pl. 1. fig. 4.

Inner thoracic stria entire, outer very short, apical and between the two a few punctures. Elytra with three entire striæ, fourth extending to middle, fifth very short, apical, sutural half the length of the elytra,

subhumeral entirely absent. Epipleuræ bistrate. Pygidium and propygidium moderately densely and coarsely punctured. Anterior tibiae tridentate, apical tooth feebly emarginate. Length .18 inch ; 4.5 mm.

Occurs at Fort Yuma, California.

Differs from all the species of the group by the color of the elytra, which are in great part red with the apical margin and trapezoidal scutellar spot black. The form is also sub-hexagonal.

**H. curtatus**, Lec. Bost. Journ. V., p. 54, pl. 3, fig. 2 ; Mars. Mon., 1854, p. 272, pl. 8, fig. 73.

Form oblong oval. Inner thoracic stria entire, outer very short, forming merely a short arc at the anterior angle. Elytra with four entire dorsal striae, fifth short apical, sometimes extending to the middle, sutural longer than the fifth, subhumeral appendix short. Epipleuræ bistrate. Propygidium shining, very sparsely punctate, pygidium nearly smooth with very few punctures at the sides only. Anterior tibiae feebly tridentate, apical tooth slightly bifid. Length .18 inch ; 4.5 mm.

Differs from the species with 4-striate elytra by its more oblong form, and by the presence of the very short humeral appendix. There is no apical subhumeral stria.

Pennsylvania and Illinois.

**H. Haldemanni**, Mars. Mon., 1860, p. 547, pl. 7, fig. 37.

From the description and comparisons made by Marseul, I cannot separate this species from *curtatus*. A verification of this must be made before placing this in synonymy.

**H. defectus**, Lec. Proc. Acad., 1859, p. 312 ; *permixtus*, Zimm. Trans. Am. Ent. Soc., 1869, p. 252.

Broadly oval. Inner thoracic stria entire, outer short apical. Elytra with four entire striae, fifth short, apical, sutural half the length of the elytra, subhumeral entirely absent. Epipleuræ bistrate. Propygidium sparsely punctured, pygidium nearly smooth, and with a few punctures near the base and sides. Anterior tibiae tridentate apical tooth deeply bifid. Length .12 inch ; 3 mm.

Very closely allied to the following species, and differs from *servus* by the short external thoracic stria.

Georgia and South Carolina.

**H. indistinctus**, Say. Journ. Acad., 1825, p. 35 ; Lec. Bost. Journ. V., p. 56, pl. 3, fig. 6 ; Mars. Mon., 1854, p. 574, pl. 10, fig. 137.

Thoracic striae entire. Pygidium more distinctly punctured. Length .12-.14 inch ; 3-3.5 mm.

The above points are all those from which it differs from *defectus*.

North Carolina and Georgia.

**H. servus**, Er. Jahrb., 1834, p. 147 ; Mars. Mon., 1854, p. 561, pl. 9, fig. 126 ; Zimm. Trans. Am. Ent. Soc., 1869, p. 252.

Thorax with two entire striae. Pygidium convex, coarsely and moder-

ately densely punctured, propygidium more coarsely and more densely punctured. Length .12-.14 inch ; 3-3.5 mm.

The species, otherwise than in the above noted characters agrees precisely with *defectus*.

Occurs in Maryland, South Carolina, Arizona, and in the West India Islands.

These last three species have the emargination of the mesosternum reduced to a minimum, so that they approach the next group in which the mesosternum is truncate.

#### Group *Bimaculatus*.

Mesosternum truncate in front. Epipleuræ narrow, unistriate, side pieces of meso- and metasternum grooved.

*H. bimaculatus*, Linn. Syst. Nat. 1, Vol. 11, p. 567 ; Lec. Bost. Journ. V., p. 59, pl. 4, fig. 1 ; Mars. Mon., 1854, p. 582, pl. 12, fig. 142 ; *obliquus*, Say. Journ. Acad.. 1825, p. 37.

Thorax with a broad shallow impression at the anterior angles within the stria. Side of thorax unistriate, stria fine and not entire. Elytra with five entire striae, sutural stria extending in front of middle, subhumeral absent. Epipleuræ narrow unistriate, side pieces of meso- and metasternum with a broad moderately deep groove. Anterior tibiae tridentate. Length .16 inch ; 4 mm.

The elytra are black with that portion external to a line drawn from the humerus to the tip of suture, red. The truncate mesosternum, narrow and unistriate epipleuræ, with the lateral groove of the thoracic side pieces, at once distinguish this from every other *Hister* in our fauna.

Occurs all over Europe and in the Middle States.

#### Group *Americanus*.

Mesosternum truncate, epipleuræ moderate, bistriate, side pieces of meso- and metasternum not grooved.

Elytra with two subhumeral striae.

Outer subhumeral entire ; thorax unistriate....., sedecimstriatus.

Outer subhumeral short ; thorax bistriate..... ambigena.

Elytra without subhumeral stria.

Elytra with five entire dorsal striae.

Thorax with two lateral striae, outer short.

Surface smooth..... americanus.

Surface distinctly punctured..... perplexus.

Thorax with the inner stria only..... exaratus.

Elytra with four entire dorsals or less.

Thorax with two lateral striae, outer short.

Four entire dorsal striae. Epipleuræ bistriate.... nubilus.

Three entire striae, fourth short basal. Epipleuræ tristriate..... pollutus.

Thorax with inner stria only.

Four entire dorsal striae. Epipleuræ bistriate... relictus.

**H. sedecimstriatus**, Say. Journ. Acad., 1825, p. 36; Lec. Bost. Journ. V., p. 57, pl. 3, fig. 9; Mars. Mon., 1854, p. 285, pl. 8, fig. 84.

Thorax with the internal lateral stria entire. Elytra with five entire striæ, deeply impressed, the fifth arching at base, and joining the sutural, two subhumeral striæ, outer entire, inner more deeply impressed terminating at humerus, but continued by the fine oblique humeral. Epipleuræ bistriate. Propygidium coarsely and sparsely punctured, pygidium nearly smooth, very minutely punctulate. Anterior tibiæ finely tridentate, apical tooth finely bifid. Length .16 inch; 4 mm.

Middle States and Canada. Abundant.

**H. ambigena**, Lec. Proc. Acad., 1859, p. 313.

Inner thoracic stria entire, outer abbreviated, extending nearly to the middle of thorax. Elytra with five entire striæ, fifth arching and joining the sutural, two subhumeral striæ, finely impressed, equal in length, and extending slightly in front of middle. Anterior tibiæ finely 4-dentate, apical tooth bifid. Propygidium and pygidium very sparsely and not coarsely punctured, the latter smoother at apex. Length .14 inch; 3.5 mm.

One specimen, Vermont.

**H. americanus**, Payk. Mon. p. 31, pl. 9, fig. 1; Lec. Bost. Journ. V., p. 56, pl. 3, fig. 7; Mars. Mon., 1854, p. 575, pl. 10, fig. 138.

Thorax with inner stria entire, outer abbreviated, rarely more than an arc at the anterior angle. Elytra with three entire striæ, fourth very slightly abbreviated, fifth curved at base and very rarely joining the sutural, striæ finely impressed. Upper surface smooth. Epipleuræ bistriate. Propygidium coarsely but sparsely punctured, pygidium more finely punctured and nearly smooth at apex. Anterior tibiæ tridentate, apical tooth prominent, and finely bifid at tip. Length .12-.16 inch; 3-4 mm.

Occurs abundantly from Canada to Georgia and Kansas.

**H. perplexus**, Lec. New Species, 1863, p. 61.

Closely allied to the preceding species, and differing in the following slight characters: Surface sparsely and finely punctured. Elytra with three entire striæ, fourth very slightly shorter, fifth equal to the fourth, and joining the sutural. Striæ rather strongly impressed and punctured. Length .16 inch; 4 mm.

As the specimens of this species are better developed than the preceding, it seems probable that they are mere local varieties.

Occurs in Canada, Middle States, Illinois and Wisconsin.

**H. exaratus**, Lec. Bost. Journ. V., p. 59, pl. 3, fig. 12.

Closely allied to *perplexus*, but differs as follows: Thorax with the inner stria only. Elytra with striæ finer. Surface not punctured. Length .14 inch; 3-5 mm.

One specimen, Georgia.

**H. nubilus**, Lec. Col. Kansas, 1859, p. 7.

Inner thoracic stria entire, outer very short apical. Elytra with four entire striæ, fifth short apical, sutural extending in front of middle. Epipleuræ bistriate. Propygidium sparsely punctured, pygidium more finely punctured and nearly smooth at apex. Anterior tibiæ finely 4-dentate, apical tooth slightly bifid. Length .18 inch ; 4.5 mm.

The fourth stria is so very slightly abbreviated at base that it may be called entire, as is also the same in the three preceding species.

Kansas.

**H. pollutus**, Lec. Col. Kansas, 1859, p. 7.

Closely resembles the preceding, and differs as follows : Outer thoracic stria extending beyond the middle of thorax. Fourth dorsal stria of elytra short basal. Epipleuræ finely tristriate. Length .18 inch ; 4.5 mm.

Kansas.

**H. relictus**, Mars. Annales, Belg. XIII, p. 89.

Lateral stria deeply impressed, slightly abbreviated at base, a slight impression within the angle at apex. Elytra with four entire punctured striæ, fifth and sutural abbreviated at basal end. Subhumeral wanting. Epipleuræ bistriate. Pygidium convex sparsely punctured, propygidium similarly, but more coarsely punctured. Anterior tibiæ with four fine teeth, the apical large and prominent. Length 4 mm. (.16 inch).

This species is known by the description only and from it the above extract has been made. Marseul compares this species with *corvinus*, which it resembles very closely, and is probably that cited by Zimmerman (Trans. Am. Ent. Soc., 1869, p. 252) as *corvinus*. The specimen on which the determination was made, does not appear in the cabinet of the latter author.

United States (Marseul), South Carolina (Zimm.).

Sub-genus *Phelister*.

Inner thoracic stria entirely absent, outer stria sometimes present, and then very close to margin. Tarsal grooves not limited on the outer side. Mesosternum prominent in front, prosternum at tip correspondingly emarginate. Hind tibiæ finely biserially spinulose. Prosternum striate.

Prosternum between the striæ flat, striæ distant ; surface metallic.

Thorax without sub-marginal stria.

From oblong.....æneomicans.

Form broad.....venustus.

Prosternum between the striæ convex, striæ approximate ; surface piceous or black.

Thorax with distinct sub-marginal stria ; five entire dorsals, subrotundus.

Thorax with no sub-marginal stria ; four entire dorsal elytral striæ.

Pygidium smooth, very sparsely and finely punctulate vernus.

Pygidium densely punctulate.....Saunieri.

**H. æneomicans**, n. sp.

Oblong oval, subdepressed, surface brilliantly æneous, antennæ and legs rufous. Head sparsely punctured, front not concave supra-orbital striæ distinct. Thorax sparsely punctured on the disc, more coarsely at the sides, marginal stria entire. Elytra sparsely punctured at apex, humeral stria short, basal; dorsals 1-4 entire, fifth abbreviated at base, continued at apex by punctures, striæ punctured except the basal portion of the fourth; sutural stria short basal half wanting, apical portion continued by punctures. Propygidium coarsely punctured, pygidium more finely and less densely punctured. Anterior tibiæ sub-quadridentate, the upper tooth obsolete. Length .07 inch; 1.75 mm. Plate V., fig. 1.

This species is closely allied to *venustus*, from which it differs by its more oblong form, smaller size, front not concave, more deeply impressed elytral striæ and much more coarsely punctured thorax. The two species differ remarkably on comparison, and much more than the description would seem to indicate.

One specimen in the cabinet of Mr. Ulke, collected in the District of Columbia.

**H. venustus**, Lec. Ann. Lyc. V., p. 163; Mars. Mon., 1853, p. 468, pl. 14. fig. 1.

Oval, moderately convex, brilliant greenish-blue. Antennæ and legs reddish-brown. Front concave, coarsely and sparsely punctured. Thorax very finely and sparsely punctulate at middle, more coarsely toward the sides. Elytra at tip with a few coarse punctures, surface with four entire striæ, a very short humeral, fifth and sutural extending to middle. Propygidium coarsely and sparsely punctured, pygidium more densely and finely. Anterior tibiæ quadridentate, the second and third teeth more distant. Length .10 inch; 2.5 mm.

Marseul states that the hind tibiæ of this species have a single terminal spur, but two closely approximate spurs of equal length are distinctly visible with sufficient power.

One specimen has the fifth dorsal entire, but very fine at base.

Georgia, Louisiana and Texas, very rare.

**H. subrotundus**, Say. Journ. Acad., 1825, p. 39; Lec. Bost. Journ. V., p. 60, pl. 4, fig. 2; Mars. Mon., 1853, p. 487, pl. 14, fig. 19.

Broadly oval, black, shining, antennæ and legs reddish-brown. Front concave, sparsely punctured. Thorax finely punctulate on the disc, more coarsely at the sides. Marginal stria distinct, close to margin. Elytra with five entire striæ, sutural extending in front of middle. Propygidium sparsely punctured, pygidium nearly smooth, sparsely and minutely punctulate. Anterior tibiæ multidenticulate. Length .08-.10 inch; 2-2.5 mm.

Occurs over the entire country from Canada to Kansas, and southward to Georgia and Texas.

**H. vernus**, Say. loc. cit., p. 40; Lec. loc. cit. pl. 4, fig. 3; Mars. Mon., 1853, p. 478, pl. 14. fig. 11.



Closely allied to the preceding species, it differs by the absence of any marginal thoracic stria and by having four entire dorsal striae only, to the elytra, the fifth and sutural extending from apex to middle. Length .08-.10 inch ; 2-2.5 mm.

Occurs with the preceding species.

**H. Saunieri**, Mars. Mon., 1861, p. 162, pl. 4, No. 15, fig. 6.

Differs from *vernus* by its stronger punctuation, and especially by the pygidium being densely punctured.

Found by Marseul near Rochester, New York. Unknown to us.

Sub-genus *Platysoma*.

Anterior tibiae with tarsal groove deep, sinuate. Thorax without inner lateral stria. Prosternum without marginal line at apex. Middle and hind tibiae dentate. Anterior tibiae with inner margin straight, and without dentiform process near the base.

Body broad, not twice as long as wide, depressed ; elytra with not more than three entire dorsal striae.

Anterior tibiae 5-dentate sutural stria well marked. . . . . *carolinus*.

Anterior tibiae 4-dentate ; sutural obsolete or wanting.

Sides of thorax smooth. . . . . *aurelianus*.

Sides of thorax punctured. . . . . *Lecontei*.

Body elongate, more or less cylindrical, always as long or longer than twice the width. Elytra with more than three entire dorsal striae.

Sutural stria entire.

All the dorsal elytral striae entire ; sub-cylindrical ;  
mesosternal stria entire. . . . . parallelus.

Fifth dorsal abbreviated at base ; depressed ; meso-  
sternal interrupted. . . . . æquus.

Sutural stria short, or at least, abbreviated.

Mesosternal stria entire.

Thorax evenly punctured ; fifth and sutural striae  
long. . . . . coarctatus.

Thorax smooth at middle ; fifth and sutural abbrevi-  
ated. . . . . punctiger.

Mesosternal stria broadly interrupted. . . . . basalis.

**H. carolinus**, Payk. Mon., p. 45, pl. 10, fig. 2 ; Lec. Bost. Journ. V., p. 39, pl. 1, fig. 3 ; Mars. Mon., 1853, p. 269, pl. 7, fig. 14 ; *sordidum*, Say. Journ. Acad., 1825, p. 44.

Broadly ovate, sub-depressed. Thorax with outer marginal stria entire ; surface smooth, impunctate. Elytra with three entire dorsal striae, fourth and fifth apical, extending to middle, sutural somewhat longer. Propygidium coarsely and not very densely punctate, pygidium much more finely and sparsely punctured, nearly smooth at apex. Anterior tibiae finely 5-dentate, second and third denticles more distant, middle tibiae 4, hind tibiae 3-spinous. Body black, shining, legs reddish-brown. Length .12 inch ; 3 mm.

Occurs from the Middle States to New Mexico.

**H. Lecontei**, Mars. Mon., 1853, p. 273, pl. 7, fig. 17; *depressus*, ‡ Lec. Bost. Journ. V., p. 40, pl. 1, fig. 4.

Slightly longer and more depressed than *carolinus*. Thorax smooth at middle, sparsely punctured at the sides, marginal stria entire. Elytra with three entire dorsal striæ, fourth apical, extending to middle sometimes very nearly entire, fifth short apical, sutural feeble equal to the fifth. Propygidium coarsely, but very sparsely punctured, pygidium coarsely punctured at base, more finely and sparsely at apex. Anterior tibiæ 4-dentate, middle 3-, apical 2-spinous. Length .10-.12 inch; 2.5-3 mm.

Occurs abundantly over nearly our entire territory. The specimens from California all differ from those of the Atlantic region by the entire obliteration of the frontal stria. As there are no other discoverable points of difference, I prefer to regard them merely as varieties.

**H. aurelianus**. n. sp.

Closely allied to *Lecontei*, but more depressed and differing as follows:

Thorax not punctured at the sides. Elytra with three entire dorsals, fourth very short, apical, fifth obsolete, sutural entirely absent. Length .12 inch; 3 mm.

Kindly presented to Dr. Leconte, by M. Sallé, who received it from the neighborhood of New Orleans, Louisiana.

The above three species have the mesosternal stria entire.

**H. parallelus**, Say. Journ. Acad., 1825, p. 42; Lec. Bost. Journ. V., p. 40, pl. 1, fig. 5; Mars. Mon., 1852, p. 264, pl. 7, fig. 9.

Moderately elongate, sub-cylindrical. Thorax sparsely and evenly punctured. Elytra with the five dorsal and sutural striæ entire, and with a short basal humeral stria. Propygidium and propygidium very coarsely, but sparsely punctured. Mesosternal marginal stria entire. Anterior tibiæ 4-dentate, apical tooth bifid, middle tibiæ 4-, posterior 2-spinous. Length .10 inch; 2.5 mm.

Occurs in Georgia, South Carolina and Florida.

**H. æquus**, Lec. New Species, 1863, p. 61; *frontalis*, || Say. Journ. Acad., 1825, p. 43.

Closely allied to the preceding, but more depressed. Fifth dorsal stria always abbreviated at base. Mesosternal stria broadly interrupted at middle. Middle tibiæ 3-spinous. Length .08 inch; 2 mm.

Occurs in Georgia.

**H. coarctatus**, Lec. Bost. Journ. V., p. 41, pl. 1, fig. 6; Mars. Mon., 1853, p. 282, pl. 7, fig. 25.

Elongate parallel, cylindrical. Thorax evenly but not densely punctured. Elytra with four entire dorsal striæ, fifth three-fourths and sutural two-thirds the length of the elytra, a very short basal humeral. Propygidium coarsely, but sparsely punctured, pygidium finely, and very nearly smooth at apex. Mesosternal stria entire. Length .10-.12 inch; 2.5-3 mm.

Closely resembles *parallelus*, but is narrower and slightly more convex. Occurs with the *parallelus*. I have also seen a specimen from Canada.

**H. punctiger**, Lec. Proc. Acad., 1861, p. 343.

Thorax minutely punctulate on the disc, more coarsely punctured at apex and at the sides. Elytra with four entire dorsals, a trace of humeral, fifth extending to middle, sutural longer. Propygidium and pygidium coarsely and sparsely punctured. Mesosternal stria entire. Anterior tibiæ quadridentate, middle 4-, posterior 2-spinous. Length .14 inch ; 3.5 mm.

More robust than the preceding species, and differing more by its general aspect than by any well defined characters.

Occurs in California, Oregon and Nevada.

**H. basalis**, Lec. Proc. Acad., 1861, p. 343, note.

Closely allied in sculpture to *punctiger*, but more robust. Pygidium and propygidium more sparsely punctured, the former nearly smooth at apex. Mesosternal stria broadly interrupted at middle. Middle and hind tibiæ 3-spinous. Length .16 inch ; 4 mm.

Occurs in Ohio.

#### Sub-genus *Cylistix*.

Thorax with inner stria absent, outer stria entire and close to the margin. Anterior tibiæ with small dentiform process on the inner edge near the base. Prosternum convex, with a marginal stria continuing around the apex. Mandibles moderately prominent. Form cylindrical, elongate.

Marginal stria of prosternal lobe entire. Sutural stria entire.

Hind tibiæ with two teeth at middle.....cylindricus.

Hind tibiæ with one tooth at middle..... attenuatus.

Marginal stria of prosternal lobe broadly interrupted.

Fifth dorsal and sutural striæ abbreviated at base.... gracilis.

**H. cylindricus**, Payk. Mon., p. 91, pl. 10, fig. 5 ; Lec. Bost. Journ. V., p. 42, pl. 1, fig. 8 ; Mars. Mon., 1853, p. 289, pl. 7, fig. 1 ; Lac. Atlas, pl. 17, fig. 2 ; ? *cylindricus*, Beauv. Ins., p. 178, pl. 6, b, fig. 1.

Elongate, cylindrical, black, shining. Legs reddish-brown. Head sparsely punctured, clypeus concave, the concavity extending in triangular form on the front. Thorax quadrate, sparsely punctured with moderate and fine punctures intermixed. Elytra with four entire striæ, fifth extending from apex to basal fourth, sutural entire. Propygidium and pygidium with very coarse and sparsely placed punctures. Anterior tibiæ 4-, middle 4-, posterior 3-dentate. Length .18 inch ; 4.5 mm.

Occurs from Massachusetts to Texas, not common.

**H. attenuatus**, Lec. Bost. Journ. V., p. 42, pl. 1, fig. 9 ; ? *elongatus*, Beauv. Ins., p. 178, pl. 6, b, fig. 2.

Closely allied to the preceding, but smaller and more slender. Fifth dorsal stria short, composed almost entirely of punctures. Anterior tibiæ 4-, middle 4-, posterior 2-dentate. Length .10-.12 inch; 2.5-3 mm.

Occurs in North Carolina and Georgia.

*H. gracilis*, Lec. Bost. Journ. V., p. 41, pl. 1. fig. 7; Mars. Mon., 1857, p. 405, pl. 11, No. 9, fig. 24.

Similar in aspect to *attenuatus*, but with the front less concave, sutural stria extending three-fourths, fifth stria extending to middle. Propygidium very sparsely punctured, pygidium nearly smooth. Marginal stria of prosternal lobe entirely obliterated. Anterior tibiæ 4-, middle 3-, posterior 2-dentate. Length .10-.12 inch; 2.5-3 mm.

Occurs in the Middle States.

#### TRIBALISTER, n. g.

Prosternum moderately lobed in front, lobe slightly depressed. Mesosternum truncate in front. Antennæ inserted under a slight frontal process, front joint moderate, joints of funicle gradually thicker, club gradually formed, solid, pubescent, oval and not truncate at tip. Antennal cavity in the anterior angle of the thorax between the dorsal and pectoral laminae.

The solid club of this insect allies it not only with *Heterius*, but also with *Scapicalis*. In both these genera, however, the club is truncate, and in the former glabrous. The legs are those of *Phelister*, while the form of the body resembles *Tribalus*, inasmuch as the margins of the thorax and elytra are continuous and slightly reflexed. From *Scapicalis* it differs not only in the form of the legs, but also in the construction of the first joint of the antennæ, which in the present genus is that which is usual in the Histeridæ, while in *Scapicalis* the form is nearly that of *Echinodes*.

*T. marginellus*, Lec. Proc. Acad., 1859, p. 311.

Pale reddish-brown, smooth shining. Head shining, supra-ocular stria well marked, frontal stria obliterated, front slightly concave. Thorax twice as wide at base as long, sides feebly arcuate, anterior angles broadly rounded, disc moderately convex, smooth shining, margin slightly reflexed. Elytra as broad as long, moderately convex, smooth shining, apex slightly punctured, margin acute continuous with the thoracic and slightly reflexed, disc with four nearly entire striæ, the outer side of each elevated in the form of an acute carina, which is very strong at apex and gradually feebler to base, striæ gradually converging to apex, sutural stria simple extending from apex half to base, epipleuræ bistrate. Pygidium sparsely punctured, shining, propygidium more densely punctured. Prosternum flat, bistrate, stria obliterated at apex. Mesosternum with marginal line entire. Anterior tibiæ 5-denticulate, middle and hind tibiæ finely spinulose. Length .08 inch. 2 mm. Plate V., fig. 2.

The curious sculpture of the elytra of this insect has no parallel

among our Histeridæ, and will serve to make it known should the unique specimen before me be duplicated.

The affinities of this insect may be summed up as a *Phelister* with a gradually formed antennal club, the latter solid, oval, not glabrous, nor truncate, and with the elytral and thoracic margins continuous.

One specimen, Maryland.

#### EPIERUS, Er.

Antennæ inserted under the frontal margin, cavity at the anterior portion of prothorax, within the angle and partly concealed beneath by the pectoral plate, open in front and laterally.

Our species resemble each other closely, and are known by the following table :

Elytra with all the striæ entire.

Epipleuræ deeply bistriate.... . regularis.

Epipleuræ unistriate.

Pygidium finely rugulose, coarsely punctured..... novellus.

Pygidium smooth, finely punctured.

Body moderately convex ; subhumeral sinuous..... pulicarius.

Body subdepressed ; subhumeral straight..... ellipticus.

Elytra with the fifth dorsal and sutural abbreviated at base.

Clypeus not tuberculate..... planulus.

Clypeus with acute tubercle at middle of anterior margin.... nasutus.

*E. coproides*, Mars. is omitted in the above table as it is without doubt South American.

**E. regularis**, Beauv. Ins., p. 180, pl. 6, b, fig. 8 ; *nigrellus*, Say. Journ. Acad., 1825, p. 38 ; Lec. Bost. Journ. V., p. 62, pl. 4, fig. 5, Mars. Mon., 1854, p. 692, pl. 10, fig. 13 ; var *vicinus*, Lec. Ann. Lyc. V., p. 164 ; Mars. l. c., p. 693, pl. 10, fig. 14.

Oblong oval, black, shining, legs piceous. Head shining, minutely punctulate. Thorax not densely punctulate, punctures coarser and finer intermixed, both grades becoming rather coarser toward the base. Each elytron with six entire punctured striæ, intervals sparsely and minutely punctulate, subhumeral entire, rather deeply impressed, epipleural fold deeply bistriate and coarsely punctured. Propygidium with moderate punctures sparsely placed, pygidium minutely punctured. Length .08-.12 inch ; 2-3 mm.

I am unable to find any differences whatever between the *regularis* and *vicinus*, the characters given by Marseul, vanishing entirely even in a small series.

Occurs in Georgia, Texas, Arizona and Southeastern California, under bark of trees, in the latter locality under cottonwood bark.

**E. novellus**, Zimm. Trans. Am. Ent. Soc., 1869, p. 253.

More elongate and parallel than the preceding species. Thorax more coarsely punctured. Elytral striæ entire, intervals sparsely punctulate,

subhumeral stria moderately impressed, inferior to the margin and slightly arcuate at basal end, epipleuræ unistriate, sparsely punctured. Propygidium and pygidium finely rugulose and coarsely, but sparsely punctured. Length .08 inch ; 2 mm.

One specimen, North Carolina.

**E. pulicarius**, Er. Jahr., 1834, p. 162 ; Mars. Mon., 1854, p. 705, pl. 10, fig. 25 ; *minor*, Lec. Bost. Journ. V., p. 73, pl. 4, fig. 6.

Oval, moderately convex, piceous black, shining. Thorax sparsely punctured. Elytræ with six entire striæ, subhumeral slightly inferior, epipleuræ finely unistriate, sparsely punctured. Pygidium minutely punctured, punctures at base coarser, propygidium sparsely and more coarsely punctured. Length .06-.08 inch ; 1.5-2 mm.

Occurs in Florida, Georgia and Texas.

**E. ellipticus**, Lec. Proc. Acad., 1859, p. 313.

This species differs from *pulicarius*, by its broader and more depressed form. The subhumeral stria is marginal and straight, and not sinuous and inferior as in the preceding species. Length .10-.12 inch ; 2.5-3 mm.

Occurs in the Southern States.

**E. planulus**, Er. Jahr., 1854, p. 162 ; Mars. Mon., 1854, p. 702, pl. 10, fig. 22 ; *decipiens*, Lec. Ann. Lyc. V., p. 164.

Oblong oval, moderately depressed. Elytra with four entire dorsal striæ, fifth extending three-fourths to base, sutural extending slightly in front of middle, subhumeral inferior, slightly sinuous, epipleuræ unistriate sparsely punctured. Pygidium and propygidium sparsely punctured. Length .10 inch ; 2.5 mm.

Occurs near Fort Yuma, California.

**E. nasutus**, n. sp.

Almost precisely identical with *planulus*, and differing only in having a dentiform process from the clypeus at its middle slightly behind the anterior margin. Length .08-.10 inch ; 2-2.5 mm.

Occurs at Fort Yuma, and in Arizona, under Cottonwood bark.

Four specimens precisely identical, otherwise this character might be considered an accidental deformity.

#### TRIBALUS, Erichs.

Antennæ inserted under the margin of the front, club rounded, feebly truncate at tip. Antennal cavity at the anterior angle of the thorax between the dorsal and pectoral plates, open in front and laterally.

Two species occur in our fauna.

Pygidium oblique, elytra obsoletely striate..... *americanus*.

Pygidium inflexed, elytra with outer striæ of the elytra

replaced by fine raised lines..... *californicus*.

**T. americanus**, Lec. Bost. Journ. V., p. 64, pl. 4, fig. 7 ; Mars. Mon., 1855, p. 159, pl. 9, No. 31, fig. 5.

Broadly oval, convex, black, feebly shining, rather densely punctured. Elytra with four dorsal striæ, the first and second apical, third and fourth basal. Pygidium and progpygidium densely punctured, the former vertical. Thoracic and elytral margins continuous, and on both members slightly reflexed. Length .08-.10 inch ; 2-2.5 mm.

This insect though not very common is contained in nearly all the collections, and may be readily known from all our Histeridæ by the generic characters, and the above short extract.

Occurs from Maryland to Texas and Illinois.

**T. californicus**, Horn, Trans. Am. Ent. Soc., 1870, p. 1, pl. 1, fig. 11.

Broadly oval moderately convex, feebly shining. Head and thorax coarsely but sparsely punctate. Elytral margin continuous with the thoracic and acute. Elytra with three entire fine raised lines, and a fourth abbreviated, extending from base to the middle of the elytra. Intervals obsoletely punctured. Body beneath sparsely punctate. Legs pale reddish-brown. Length .06 inch ; 1.5 mm.

Occurs near Sacramento, California.

Notwithstanding the dissimilarity of this species and the preceding, I cannot find it generically different, even with the difference in the position of the pygidium.

*T. lævigatus*, Payk. (*lævissimus* Lec.), is West Indian and South American. Its reference to the United States is doubtless erroneous.

#### ONTHOPHILUS, Leach.

Antennæ inserted on the front immediately in front of the eyes. Club oval, annulate. Antennal fossa under the margin of the thorax behind the anterior angle, deep and closed in front, open beneath. Tibiæ slender, the anterior finely denticulate.

Two species only are known in our fauna.

Thoracic carinæ feeble, elytral carinæ equal, pygidium shining, surface even without carinæ..... *Lecontei*.  
Thoracic carinæ strong, elytral carinæ unequal, pygidium and propygidium opaque, and with elevated lines..... *alternatus*.

**O. Lecontei**, Horn, Trans. Am. Ent. Soc., 1870, p. 138, pl. 1, fig. 10.

Broadly oval, black, moderately shining. Head densely punctured, V-shaped carina feeble, front slightly concave. Thorax twice as wide at base as long, at apex broader than the length, sides gradually arcuate from base to apex, margin slightly reflexed ; disc densely punctured, shining with six feeble carinæ, the middle two beginning at the apical margin, but not attaining the base, the second slightly abbreviated at apex and base, outer carinæ arcuate and abbreviated at apex and base ; the four middle carinæ nearly equidistant. Elytra with six dorsal and a marginal entire carinæ, carinæ moderately elevated, intervals finely tri-carinulate, the middle carina of each interval interrupted by a row of coarse punctures. Epipleuræ coarsely punctured shining, limited above

by a sinuous elevated line. Propygidium transversely hexagonal, moderately shining, coarsely punctured, pygidium elongate oval, inflexed, more finely punctured than the propygidium and more shining. Length .16 inch ; 4 mm.

One specimen, Fort Tejon, California.

*O. alternatus*, Say. Journ. Acad., 1824, p. 46 ; Lec. Bost. Journ. V., p. 82, pl. 6, fig. 9 ; var. *pluricostatus*, Lec. l. c., p. 81 ; var. *nodatus*, Lec. l. c., p. 83 ; Mars. Mon., 1856, p. 558, pl. 11, No. 40, fig. 4 (*alternatus*) ; l. c. p. 556, fig. 3 (*nodatus*).

Broadly oval, very convex above, surface either moderately shining or opaque. Head with strong V-shaped carina, vertex slightly concave with short acute carina. Thorax twice as wide as long, disc coarsely punctured margins slightly reflexed, sides strongly arcuate, disc with six carinae, the middle four entire, equidistant and slightly convergent to apex, outer carinae short basal. Elytra carinate, carinae variable in size. Epipleurae coarsely foveatato-punctate. Propygidium coarsely punctate, with three longitudinal carinae, the median entire, the lateral short. Pygidium coarsely punctured with two semicircular elevated lines at base and a longitudinal short carina at apex. Body beneath very coarsely punctate.

*Var nodatus*, Lec. Thorax with the sides more strongly arcuate. Elytra with three entire dorsal and a marginal, costae ; intervals finely 5-carinulate, the third carinula slightly stronger, 2 and 4 interrupted by distant punctures. Length .10-.12 inch ; 2.5-3 mm.

*Var. alternatus*, Say. Surface more shining, thorax with sides less arcuate, third carinula stronger. Length .08 inch ; 2 mm.

*Var. pluricostatus*, Lec. Resembles *alternatus*, but less shining. Third carinula equal to the main carina. Length .08-.10 inch ; 2-2.5 mm.

I find it impossible with the series of specimens before me to separate, other than as varieties, the species above noted.

Occurs from Massachusetts to Georgia, but rare.

#### HETÆRIUS, Erichs.

Anterior angles of thorax dilated.

Legs, especially the posterior long..... **morsus.**

Anterior angles not dilated, thorax arcuately narrowed from base to apex.

Lateral thickened margin of thorax with a transverse sulcus.....brunnipennis.

Lateral thickened margin notched slightly behind the middle..... californicus.

**H. morsus**, Lec. Proc. Acad., 1859, p. 70 ; Horn, Trans. Am. Ent. Soc., 1870, pl. 1, fig. 6.

Ferruginous brown, feebly shining, very sparsely clothed with very



short bristly recumbent hairs, with a very few erect hairs more sparsely placed. Head concave, opaque. Thorax broader than long, on each side a broad oblique groove smooth at bottom, broader and deeper behind, disc of thorax (that is, the part between the grooves) truncate in front, arcuate at base and nearly twice as wide as apex, surface feebly shining, sparsely pubescent with recumbent bristle-like hairs; margin of thorax (part exterior to the grooves), divided behind the middle by a deep fossa into two portions, the posterior globular, the anterior of irregular pentagonal shape, the upper surface of which is flat, subopaque and pubescent. Elytra more shining than the thorax, less pubescent, with striae indicated by finely elevated lines, of which the subhumeral and first dorsal are entire, the second dorsal three-fourths, and the third nearly two-thirds the length of the elytra. Propygidium transversely hexagonal, sparsely punctured, pygidium oval, longer than wide, minutely and very sparsely punctulate. Prosternum at tip deeply emarginate, marginal line scarcely evident, surface opaque; behind the lobe constricted and with a transverse impression, tip of lobe emarginate. Antennae with first joint triangular, coarsely punctured, club not annulated, glabrous and truncate at tip. Anterior tibiae gradually broader at basal third, then parallel to apex which is rounded, outer edge in its entire length minutely denticulate, tarsal groove straight and shallow; middle and hind tibiae similar in form to the anterior, outer edge finely spinulose. Length .12 inch; 3 mm. Plate V., fig. 3.

In its general aspect, and by the length of the legs this species resembles the genus *Terapus*.

One specimen, Fort Tejon, California.

*H. brunnipennis*, Rand. Bost. Journ. II., p. 40; Mars. Mon., 1857, p. 433, pl. 11, No. 28, fig. 2; Horn, Trans. Am. Ent. Soc., 1870, pl. 1, fig. 8.

Pale chestnut brown, shining. Front slightly concave, shining. Thorax on each side with a groove parallel with the margin, disc smooth, shining, marginal space less shining and divided by a shallow transverse fossa slightly behind the middle, anterior angles obliquely truncate. Elytra with entire subhumeral stria, dorsal striae as in *morsus*, but less distinctly defined by the elevated lines, and with erect fine hairs sparsely placed along the line of the striae. Propygidium and pygidium as in *morsus*, but absolutely smooth and shining. Prosternum between the coxae smooth and shining with an elevated marginal line. Tip of prosternal lobe emarginate. Legs similarly formed to *morsus*, but less elongate. Length .06 inch; 1.5 mm.

This is our nearest species to the *quadratus* of Europe, from which it abundantly differs by the transverse sulcus in the thickened margin.

Occurs in the Middle States and Illinois.

*H. californicus*, Horn, Trans. Am. Ent. Soc., 1870, p. 137, pl. 1, fig. 7.

Head shining, pubescent. Thorax nearly twice as wide at base as

long, lateral sulci moderate anteriorly, deep and broad at base, margin convex, shining with a constriction slightly behind the middle; sides of thorax pubescent. Elytra with three entire dorsal striæ and subhumeral entire. Pygidium and propygidium smooth shining. Prosternum between the coxæ narrow with elevated marginal line meeting in front above the middle of prosternum. Prosternal lobe in front feebly emarginate. Length .08 inch; 2 mm.

Collected at Sonoma, California.

#### ECHINODES, Zimm.

Prosternal lobe elongate, broad and slightly deflexed. Antennæ with the first joint elongate truncate at tip and concealing the joints of the funiculus when viewed from the front, second joint inserted near the base of the first, club elongate oval, glabrous, truncate at apex.

*E. setiger*, Lec. Proc. Acad., 1859, p. 316; Zimm. Trans. Am. Ent. Soc., 1869, p. 253.

Broadly oval, moderately convex, rufo-piceous, moderately shining. Front obtusely carinate and with a transverse groove at the base of clypeus. Clypeus moderately prominent, narrow at base, dilated toward apex and acutely emarginate, on each side of base of clypeus a short acute process. Thorax nearly three times as wide at base as long, apex moderately emarginate, base arcuate, sides moderately arcuate and gradually narrowing to apex. Surface shining with sparsely placed fine setigerous punctures, at sides with fine stria close to the margin. Elytral margin continuous with the thoracic, acute nearly to apex and with six dorsal and a sutural stria replaced entirely by punctures, the two outer stria with the punctures in a double series, those of the inner rows gradually more confused and broader, each puncture setigerous, intervals smooth shining. Propygidium and pygidium coarsely but sparsely punctured, each puncture bearing a short seta. Prosternum at tip emarginate, bistrate, striæ divergent at tip, and continuing to the base of lobe. Lobe broad, deflexed, smooth. Mesosternum produced at middle. Tibiæ elongate oval, finely spinulose on the outer margin. Entire length .06 inch; 1.5 mm. Plate V., fig 4.

Resembles *Eretmotus* in the form of the antennæ and somewhat in the form of the legs, but differs abundantly from all the *Heterius*-like genera by the broader and longer prosternal lobe. The peculiar sculpture of the head recalls that of some species of *Dyschirius* in the mode of its formation.

Rare in South Carolina and Georgia, occurs with a pale species of Ant, the name of which is unknown to me, and which has the meta-thoracic segment bispinous, and the first two segments of the abdomen slender and gibbous above.

## PAROMALUS, Erichs.

The antennal club is received in a cavity at the middle of the prothoracic parapleuræ.

The species are thus distinguished :

Form strongly depressed, elytra without entire striæ. Prosternum bistriate.

Third dorsal stria strongly impressed, more than one-third the length of elytron..... æqualis.

Third dorsal stria obliterated or existing in a mere trace..... estriatus.

Form moderately convex, elytra striate. Prosternum bistriate.

Fourth dorsal stria joining the sutural by an arc; subhumeral very short or obsolete.

Elytra normally striate, intervals flat..... conjunctus.

Elytra with deeply impressed striæ, intervals concave..... geminatus.

Fifth dorsal or none joining the sutural, fourth not arched.

Surface metallic. Subhumeral stria entire, fifth dorsal abbreviated..... mimeticus.

Surface not metallic, black or piceous.

Subhumeral stria entire.

Form oval, moderately convex.

Fifth dorsal stria entire.

Sutural stria entire, joining the fifth...quatuordecimstriatus.

Sutural stria abbreviated..... lautus.

Fifth dorsal continued by distant punctures.

Sutural stria abbreviated..... opuntia.

Form parallel, subcylindrical..... tejonicus.

Subhumeral short, apical, sometimes wanting.

Form broadly oval, convex.

Subhumeral distinct at apex; a short outer subhumeral.....

consors.

Subhumeral entirely obliterated.....

gilensis.

Form oblong strongly depressed.

Subhumeral abbreviated at base and apex.....

tenellus.

Form convex, elytra without entire striæ, prosternum not striate, anterior tibiæ minutely 4-dentate.

Form oblong, subdepressed, marginal stria of mesosternum visible at middle.....

bistriatus.

Form oval, convex, mesosternal stria broadly interrupted.....

seminulum.

**P. æqualis**, Say. Journ. Acad., 1825, p. 41; Lec. Bost. Journ. V, p. 66, pl. 4, fig. 9; *affinis*, Lec. loc. cit. fig. 10; Mars. Mon., 1855, p. 108, pl. 8, figs. 1, 2.

Sub-elliptical, piceous shining, strongly depressed, surface sparsely and finely punctulate. Elytra with deep oblique humeral stria, first dorsal visible at middle only and usually deep, second extending from apex to beyond the middle, third stria basal, short. Propygidium finely and sparsely punctulate. Pygidium coarsely sculptured, cicatrix like ♂, smoother and much less rugose ♀. Anterior tibiæ 5-dentate. Length .10-.12 inch; 2.5-3 mm.

I have united the species *affinis*, Lec. to that of Say, as there does not appear to exist between them any point of difference. The form of the two is precisely identical, the difference in this respect indicated by Marseul being rather sexual than specific; the striæ vary greatly in the degree of impression, and by this, two forms might be selected as types of the two species between which very few individuals would form a perfect series. A glance at the figures by Marseul and Leconte will show the propriety of placing the two as synonymous.

Occurs from Canada to Georgia.

**P. estriatus**, Lec. Proc. Acad., 1859, p. 314.

Slightly more convex than *æqualis* and differs in its sparser and finer punctuation and by all the striæ obliterated with the exception of a faint trace of the second at apex and the third at base. Length .10 inch; 2.5 mm.

I have also considerable doubt as to the propriety of retaining this species as distinct, but the total obliteration of the first dorsal stria with the somewhat more convex form have induced me to retain it until intermediate forms present themselves.

Occurs from Canada to Louisiana.

**P. conjunctus**, Say, Journ. Acad. 1825, p. 38; Lec. Bost. Journ. V, p. 68, pl. 5, fig. 1; Mars. Mon. 1855, p. 89, pl. 8, No. 22, fig. 2.

Oval, moderately convex, black, shining. Thorax finely punctulate, punctures at the sides more distinct. Elytra with a very short and fine subhumeral stria at apex, dorsals 1-4 entire, punctured, the fourth broadly arching at base and joining the sutural, fifth stria extending in front of middle. Propygidium moderately punctured, pygidium shining, sparsely and minutely punctulate. Anterior tibiæ bidentate. Length .10 inch; 2.5 mm.

Occurs in the Gulf States.

**P. geminatus**, Lec. Proc. Acad., 1859, p. 314.

Similar in form to the preceding, but less shining. Elytra with the subhumeral stria fine, extending from apex three-fourths to base, dorsals 1-4 entire, the latter arching at base to join the sutural, fifth stria abbreviated at base, striæ deeply impressed, intervals slightly concave. Propygidium rather coarsely but sparsely punctured, pygidium nearly

smooth, very sparsely and minutely punctulate. Anterior tibiæ bidentate and above the upper tooth minutely denticulate. Length .08-.10 inch ; 2-2.5 mm.

The peculiar striation of the elytra at once distinguishes this species from all others in our fauna.

Occurs in Middle States and Illinois.

**P. mimeticus**, n. sp.

Oblong oval, sub-depressed, surface brilliant metallic blue, legs and antennæ piceous, under surface black. Head feebly convex, sparsely punctured. Thorax equally punctured with moderate punctures with coarser punctures intermixed at the sides. Elytra sparsely punctulate, more evidently punctured at apex, subhumeral stria entire, dorsals 1-4 entire, finely punctured, fifth abbreviated at base, sutural replaced by punctures which extend slightly in front of middle. Propygidium and pygidium sparsely and finely punctured. Prosternal striæ well impressed, mesosternal stria entire. Anterior tibiæ bidentate and multidenticulate above the upper tooth. Length .06 inch ; 1.5 mm. Plate V., fig. 5.

Closely allied to *aneicollis* and *dominicanus*, and differs from the first by the abbreviated fifth dorsal, and from the latter by the entire stria of mesosternum.

One specimen in cabinet of Mr. Ulke, collected in Arizona.

**P. quatuordecimstriatus**, Steph. Illust. Brit. Ent. V., 1832, p. 412 ; *nana*, Lec. Bost. Journ. V., p. 71, pl. 4, fig. 4.

Oblong oval, convex, piceous black, shining, antennæ and legs reddish-brown. Thorax sparsely punctulate, punctures at the sides coarser. Elytra with the subhumeral stria entire, striæ 1-5 entire, punctured, the fifth slightly arching at tip, and joining the entire sutural. Propygidium and pygidium sparsely punctured, the latter much more finely and sparsely. Anterior tibiæ bidentate. Length .08-.10 inch ; 2-2.5 mm.

This species occurs in many parts of the world, and it is found in our own country from the Middle States to Georgia.

**P. lautus**, Zimm. Trans. Am. Ent. Soc., 1869, p. 253.

More elongate and convex than the preceding species. Thorax sparsely punctured, punctures moderately coarse and evenly distributed over the entire surface. Subhumeral stria entire, dorsals 1-5 entire, sutural abbreviated at base and not joining the fifth dorsal. Pygidium and propygidium sparsely and finely punctulate. Anterior tibiæ bidentate. Length .06 inch ; 1.5 mm.

Occurs in North Carolina.

**P. opuntiae**, Lec. Am. Lyc. V., p. 164.

Oblong oval, moderately convex, piceous black, shining. Thorax very minutely and sparsely punctulate, punctures more evident at the sides. Elytra with the subhumeral stria straight and entire, dorsals 1-4 entire, fifth abbreviated at base and continued by punctures and gradually converging toward the sutural which is also similarly abbreviated. Propy-

gidium moderately, coarsely and sparsely punctured, pygidium minutely punctulate. Anterior tibiæ bidentate. Length .10-.12 inch ; 2.5-3 mm.

Occurs at San Diego in decomposing *Opuntia*.

**P. Tejonicus**, n. sp.

Oblong, parallel, subcylindrical, piceous, legs and antennæ reddish-brown. Head sparsely punctulate, frontal stria obsolete. Thorax broader than long, slightly narrower in front, sides feebly arcuate, surface rather coarsely but sparsely punctured, marginal stria fine, entire. Elytra parallel, longer than wide conjointly, surface sparsely punctulate, subhumeral stria fine, entire, dorsals 1-5 entire, sutural more deeply impressed, abbreviated at apex and base. Propygidium coarsely and moderately densely punctured, pygidium more finely and less densely punctured. Prosternum bistriate striæ joining at tip. Mesosternum with marginal stria entire. Anterior tibiæ finely 4-dentate, middle tibiæ with two subapical, and a supra median spinule, hind tibiæ with two subapical spinules. Length (entire) .06 inch ; 1.5 mm.

This insect resembles to a remarkable extent some of the species of *Platysoma* or *Cylistix*.

One specimen, Fort Tejon, California.

**P. consors**, Lec. Ann. Lyc. V., p. 164 ; Mars. Mon., 1855, p. 88, pl. 8, No. 22, fig. 1.

Resembles *opuntia*, and differs in having the inner subhumeral stria abbreviated at base, and a short outer subhumeral visible at the middle of the sides only. The fifth dorsal and also the sutural are also more decidedly obliterated at basal end. Length .08-.10 inch ; 2-2.5 mm.

Occurs with the preceding, and extends its habitat southward into Mexico, etc.

**P. gilensis**, Lec. Ann. Lyc. V., p. 164.

Closely resembles *consors*, but differs in having the subhumeral striæ entirely obliterated. Length .08-.10 inch ; 2-2.5 mm.

Occurs in the valley of the Gila River, Arizona.

This species is not synonymous with *P. tenellus*, Er., as stated by Marseul.

**P. tenellus**, Er. Jahrb., 1834, p. 170 ; Mars. Mon., 1855, p. 94, pl. 8, No. 22, fig. 7 ; *corticalis*, Lec. Ann. Lyc. V., p. 163.

Oblong oval, depressed. Elytra with four dorsal striæ entire, fifth and sutural abbreviated at base, subhumeral very short, faintly impressed, abbreviated at apical and basal extremities. Propygidium coarsely, pygidium very finely punctulate. Length .06-.08 inch ; 1.5-2 mm.

The species which we have long known as *corticalis*, Lec., agrees perfectly with the description and figure of Erichson's *tenellus*, and it is probably by an accidental error that the preceding species was placed as the synonym.

Occurs along the borders of the Colorado River, California, under bark.

**P. bistriatus**, Er. Jahrb., 1834, p. 171; Lec. Bost. Journ. V., p. 67, pl. 4, fig. 11; Mars. Mon., 1862, p. 26; 1861, pl. 15, No. 25, fig. 8.

Oblong oval, sub-depressed, piceous black, shining, antennæ and legs reddish-brown. Head sparsely punctured, frontal stria entire. Thorax moderately coarsely but sparsely punctured, marginal stria entire. Elytra more coarsely and sparsely punctured than the thorax, first and second striæ short basal, sutural entirely absent. Propygidium finely and sparsely punctured, pygidium more densely. Prosternum not striate. Marginal line of mesosternum distinctly impressed at middle. Anterior tibiæ finely 4-denticulate. Length .08 inch; 2 mm.

Occurs in the Middle States and Kansas.

**P. seminulum**, Er. Jahr., 1834, p. 171; Lec. Bost. Journ. V., p. 67, pl. 4, fig. 12; Mars. Mon., 1855, p. 120, pl. 8, No. 23, fig. 12.

Oval, moderately convex, piceous, shining. Head sparsely punctulate, frontal stria entire. Thorax sparsely punctulate, marginal stria entire. Elytra more coarsely punctured than the thorax, disc with traces of two striæ at base and a short faintly impressed sutural. Propygidium and pygidium punctulate, the latter more densely and finely. Prosternum with the striæ obsolete. Marginal stria of mesosternum broadly interrupted at middle. Anterior tibiæ finely 4-denticulate. Length .08 inch; 2 mm.

Closely allied to the preceding but the more oval and convex form as well as the presence of sutural stria at once distinguish it.

Occurs from Middle States to Texas.

#### DENDROPHILUS. Leach.

Antennal fossa under the side of prothorax near the middle, broadly open, pectoral plate broadly incised. Tibiæ moderately dilated, outer margins finely denticulate. Spur of anterior tibiæ large.

**D. punctulatus**, Say. Journ. Acad., 1825, p. 45; Lec. Bost. Journ. V., p. 65, pl. 4, fig. 8; Mars. Mon., 1857, p. 435, pl. 11, No. 30.

Piceous black, oval, moderately convex, shining. Head finely punctulate. Thorax sparsely and evenly punctulate, marginal line wanting in front, finely impressed at basal end. Elytra sparsely punctured, punctures denser toward the apex, outer subhumeral entire, deeply impressed, inner sub-obsolete; dorsal striæ 1-2 nearly entire, 3-4 gradually shorter, basal, sutural entirely wanting. Epipleuræ punctured. Progygidium very short, sparsely and finely punctulate, pygidium oval, vertical, feebly convex near the sides slightly concave, coarsely and rather densely punctured. Mesosternum deeply emarginate, without stria. Prosternum on each side striate, apex rounded, lobe short. Tibiæ similarly dilated, outer edge finely denticulate. Length .12 inch; 3 mm.

Occurs in the Middle States region, under bark.

## ANAPLEUS, n. g.

Form broadly oval, convex. Head small, retracted, front slightly concave, clypeus not distinct. Antennæ frontal, inserted above the base of the mandibles, first joint moderately long, second half the length of the first, joints 3-7 small, sub-globular, equal, club suddenly formed, elongate oval, distinctly annulate. Antennal fossa in the middle of the under side of prothorax, broadly open, pectoral plate incised. Thorax without marginal stria. Scutellum very small, triangular. Elytra acutely margined. Abdomen invisible from above. Pygidium vertical or feebly inflexed. Prosternum broad, bistriate, apex feebly emarginate, lobe short sub-truncate, Mesosternum feebly prominent in front. Anterior tibiæ slightly arcuate, feebly dilated, middle and hind tibiæ slender. Tibial spurs minute.

From the insertion of the antennæ, this genus must be placed near *Dendrophilus* from which it differs by its slender middle and hind tibiæ, its shorter prosternal lobe; the mesosternum rounded in front, and many other points. From *Bacanius* it differs notably in the presence of scutellum, and from *Sphærosoma*, in which the species has been placed by the form of the antennal cavity and the form of the antennæ themselves.

**A. marginatus**, Lec. Proc. Acad., 1853, p. 292.

Broadly oval, regularly convex, piceous, subopaque. Head coarsely punctured, front concave. Thorax coarsely and rather densely punctured especially at base. Elytra coarsely punctured much less densely and more coarsely than the thorax, margin acute slightly reflexed, and continuous with the thoracic margin, disc with traces of the third dorsal stria at base. Propygidium short, invisible from above sparsely punctured, pygidium vertical more sparsely punctulate. Epipleural margin of elytra broad with a fine, entire line at middle. Prosternum as broad as long, on each side striate, surface moderately convex coarsely, but very sparsely punctured, lobe short sub-truncate at apex. Mesosternum broad, anteriorly rounded, surface very sparsely punctured and without striæ. Anterior tibiæ slightly arcuate, slender at base and feebly dilated toward the middle, and less dilated at apex, outer margin simple, middle and hind tibiæ slender. Spurs of anterior tibiæ minute, of middle and hind tibiæ not visible, perhaps wanting. Length .06 inch ; 1.5 mm.

The appearance of this insect is that of *Tribalus*. As in *Dendrophilus* the under side of the prothorax is entirely excavated and receive not only the antennæ, but also the femur and tibiæ in repose.

Occurs in Illinois and District of Columbia (Ulke).

## Sub-tribe, SAPRINI.

The genera of this tribe are fewer in number than the preceding and more readily distinguished.



Antennal cavities at the sides of the prosternum. Antennæ inserted under the frontal margin.....	SAPRINUS.
Antennal cavities on the under side of prothorax in front of the coxæ. Antennæ frontal.	
Eyes finely granulated, not prominent.	
Thorax without deep lateral groove.	
Tibiæ toothed. Pygidium regularly convex.....	TERETRIUS.
Tibiæ spinulose. Pygidium double.....	TERETRIOSOMA.
Thorax with deep lateral groove. Prosternum deeply bisulcate, body oblong. Tibiæ not toothed.....	PLEGADERUS.
Eyes coarsely granulated and very convex.	
Hind tarsi five-jointed. Scutellum invisible.....	BACANIUS.
Hind tarsi four-jointed.	
Scutellum distinct.....	ACRITUS.
Scutellum invisible.....	ÆELETES.

Bacanius has been removed from the preceding sub-tribe and placed near Acritus with which it appears to have many points of resemblance. The eyes of the last three genera are rounder and more convex than is usual in the entire family and very coarsely granulated. The scape of the antennæ is lodged in a deep groove immediately in front of the eyes, which are not bordered by a narrow corneous band in front. The deep groove adds still further to the apparent convexity of the eyes.

#### SAPRINUS, Leach.

The arrangement of the species of this genus in groups, adopted by Dr. Leconte (Proc. Acad. VI., p. 40), appears to afford the most natural method of their subdivision and is, at the same time founded on characters which are much the least variable of any that can be made use of. With some slight modification to avoid the use of the epipleural striæ, the following system is identical, and the groups here retained are equivalent to those already established.

Front not margined.

Hind tibiæ more slender than the middle tibiæ and at apex narrower than at middle, outer edge and apex not spinulose..... Group, I.

Hind tibiæ as broad or broader than the middle, at apex always broader, outer edge spinulose.

Prosternum flat, striæ horizontal and united in front.... Group, II.

Prosternum at least moderately convex.

Prosternum without striæ..... Group, III.

Prosternum distinctly striate.

Striæ parallel, horizontal, abbreviated in front..... Group, IV.

Striæ divergent and ascending.

Prosternum moderately convex.

Prosternum anteriorly not foveate..... Group, V.

Prosternum foveate..... Group, VI.

Prosternum compresso-carinate..... Group, VII.

Front distinctly margined.

Prosternum compressed, striæ entire or nearly so, convergent in front.

Hind tibiæ biserially and usually finely spinulose. . . . . Group VIII.

Prosternum compresso-carinate, striæ short, united in front, sometimes entirely absent.

Hind tibiæ at least triserially often confusedly spinulose,

spinules robust and frequently very short. . . . . Group, IX.

In the above scheme *Gnathoncus* and *Pachylopus* have been included as synonymous with *Saprinus*.

#### Group I.

Species of moderately robust form. Front anteriorly not margined, head with distinct supra-orbital stria extending to, and slightly on the margin of the front. Thoracic margin fimbriate. Prosternum moderately elevated, feebly convex but narrow at its summit; striæ following the slight curve of the prosternum, not ascending, broadly divergent at base, slightly divergent in front, nearly attaining the front margin of the prosternum, but not terminating in a fovea. Hind tibiæ more slender than the middle tibiæ, gradually but feebly broader from base to a little beyond the middle, then narrowed to apex, hinder margin not spinulose.

By these characters a California species may readily be separated from all our other *Saprinus*. The epipleural fold is also tristriate, but this character is difficult to appreciate, and is moreover uncertain in its existence.

*S. discoidalis*, Lec. Ann. Lyc. V., p. 167; Mars. Mon., 1855, p. 375, pl. 16, fig. 25.

Black with tinge of violet. Head sparsely and finely punctulate. Thorax at sides coarsely and densely punctured, disc smooth and shining. Elytra with the first dorsal entire, second, third, and fourth extending slightly beyond the middle and gradually obsolete, the fourth at base slightly arched, but not joining the sutural which is slightly abbreviated at base, but extends to apex and thence along the edge of the elytron to the marginal; internal subhumeral not joining the humeral, external subhumeral short, distinct at humerus only. Surface shining with an opaque space, sparsely punctured, enclosed between the first and fourth striæ extending from base to apex, and narrowly along the apex to the suture, enclosing a smooth space on the third and fourth interspaces one-fifth from the base of the elytra; discal space smooth, lateral region shining, sparsely punctulate. Propygidium and pygidium finely and rather densely punctured. Marginal stria of mesosternum entire, surface smooth. Anterior tibiæ multidenticulate, middle tibiæ uniserially strongly spinulose, hind tibiæ mutic. Length .16-.26 inch; 4-6.5 mm.

Occurs in Owen's Valley and San Diego, California, and also in Arizona.

## Group II.

Front not margined, middle and hind tibiæ similar in form and spinulose. Prosternum horizontal, summit flat, striæ converging and united in front.

The following species are contained in this group :

Sutural stria very short, basal, not joining the fourth dorsal by an arc.

Antennal fossæ narrowing the prosternum in front..... *rotundatus*.  
Sutural stria entire or nearly so, arching with the fourth

dorsal ; antennal fossæ not narrowing the prosternum.

Dorsal striæ normal ; elytral sparsely punctured at apex.

Front without supra-orbital stria ; anterior tibiæ multi-

denticulate..... *Behrensii*.

Front with supra-orbital stria ; anterior tibiæ coarsely

dentate..... *planisternus*.

Third dorsal entirely absent, elytra at apex densely

strigoso-punctate abruptly limiting the discal space.... *rugipennis*.

*S. rotundatus*, Kugel. Schneid. Mag., p. 304 ; Mars. Mon., 1855, p. 503, pl. 19, fig. 119 ; *deletus*, Lec. Bost. Journ. V., p. 74, pl. 5, fig. 11 ; *var. communis*, Mars. Mon., 1862, p. 501, pl. 17, IV., fig. 4 ; *var. interceptus*, Lec. Ann. Lyc. V., pp. 166 and 216.

Piceous or black, shining, legs brownish-red. Head sparsely punctulate. Antennæ brownish-red. Thorax coarsely punctate and with a slight ante-scutellar impression. Elytra with the first dorsal stria entire, but very fine beyond the middle, second and fourth equal, not extending beyond the middle, third somewhat longer, fourth slightly arcuate at base, fifth represented by a very short arc sometimes uniting the fourth dorsal and sutural, the latter always very short, basal, never extending beyond the basal fourth ; subhumeral of variable length not joining the humeral ; epipleural fold with three feeble striæ ; surface sparsely punctured, punctures finer toward the sides and base. Pygidium and propygidium moderately punctured. Prosternum strongly narrowed in front, striæ gradually convergent, and uniting at the tip. Anterior tibiæ 5-denticulate, the second and third teeth more distant than the others, middle and hind tibiæ uniseriately spinulose, the latter the more finely. Length variable, .10-.14 inch ; 2.5-3.5 mm.

*Var. interceptus*, Lec. Elytral punctures coarser and apparently denser.

*Var. communis*, Mars. Punctures of the elytra more generally diffused, and more distinct in the sub-scutellar region, striæ somewhat more distinctly impressed.

I have before me a specimen of *rotundatus* from Europe, and it is from an examination of this, and a comparison of the other two forms that I feel compelled to unite them as mere varieties. In fact the variation

here is not nearly so great as has been long known in *pensylvanicus* and *tugens*.

The forms identical with the European occur in the entire Atlantic region, and also in California; *communis* is Canadian, and *interceptus* from California and Oregon. An examination of Marseul's type of *communis* convinces me of the absolute identity of it with *rotundatus*.

**S. Behrensii, n. sp.**

Broadly oval, piceous black, shining. Antennæ and legs reddish-brown. Head finely punctulate. Thorax sparsely punctulate, punctures at sides denser and toward the base coarser. Elytra with the first dorsal extending three-fourths the length of the elytra, second, third and fourth equal extending beyond the middle, the fourth broadly arching at base and joining the sutural which extends nearly to the apex, subhumeral obsolete, humeral distinct and close to the first dorsal; epipleural fold with two striæ finely impressed; surface moderately coarsely but sparsely punctured at the apical third, the punctures not extending beyond the first dorsal, and at the suture extending slightly in front of middle. Pygidium and propygidium moderately punctured. Prosternal striæ strongly convergent in front and uniting before the apex, prosternum not narrowed in front and on each side a small fovea. Anterior tibiæ finely multidenticulate, middle and hind tibiæ uniseriately spinulose. Length .14 inch; 3.5 mm.

The appearance of this species agrees with Group IV., but the converging and united striæ forbid its position in this group. The prosternum in front is not narrowed as in its preceding species. This narrowing is caused by the extension of the antennal fossa, which thus becomes more anterior in *rotundatus* than in any other species of the genus. The genus *Gnathoncus* proposed by Duval for the species allied to *rotundatus* does not seem worthy of being retained. This species was sent me by Mr. Jas. Behrens from San Diego, California.

**S. planisternus, Mars. Mon., 1862, p. 477, pl. 12, fig. 36.**

Oval, moderately convex, surface shining, with distinct bronze lustre, legs brownish. Head sparsely punctulate. Thorax with the margin smooth, a short submarginal stria beginning in a shallow fossa near the anterior angle, and within the stria the surface sparsely punctured. Elytra sparsely punctured at apex beyond the tips of the striæ and near the suture; subhumeral striæ entirely absent, oblique humeral very fine; first dorsal extending slightly beyond the middle, 2-3-4 subequal extending to three-fourths, fourth dorsal arching at base joining the sutural which is entire. Propygidium and pygidium sparsely punctured, the latter more finely. Anterior tibiæ with the apical three teeth coarse, the upper three finer, middle and hind tibiæ spinulose. Prosternal striæ gradually convergent and uniting in front near the tip of the prosternum. Length .15 inch; 3.75 mm.

This species is one of the most distinct in our fauna. The thoracic sculpture is peculiar. Near the apical angle and equi-distant from the

apical margin and sides is a slight fossa from which extends posteriorly a short stria, within which especially in front is a punctured space. The figure given by Marseul is very characteristic.

The type of this species was kindly loaned by M. Chevrolat, through the intervention of M. Aug. Sallé.

No special locality for its occurrence is known ; probably Texas.

*S. rugipennis*, Mars. Mon., 1855, p. 417, pl. 16, fig. 51.

Oval moderately convex, piceous, shining. Head sparsely punctured, supra-orbital stria entire, extending on the sides of the epistoma. Thorax with a narrow space of coarse punctures along the lateral margin, a few punctures at the sides of the base and a slight ante-scutellar impression. Elytra at apex densely strigoso-punctate and opaque, punctured space terminating abruptly in front, extending along the space between the first and second striæ by sparse punctures to base and also to the extreme margin at the apex ; external subhumeral stria indistinct, internal moderately long, oblique humeral finely impressed ; first dorsal short feebly impressed, second extending nearly to middle, third entirely obliterated except a rudiment at base, fourth dorsal as long as the second arching at base, joining the sutural which is entire. Propygidium and pygidium moderately densely and coarsely punctured. Prosternum horizontal, striæ convergent and uniting in front. Anterior tibiæ 5-6 denticulate, middle and hind tibiæ spinulose. Length .14 inch ; 3.5 mm.

This species at first sight has the aspect of relationship with *vitiosus*, Lec., but the form of the prosternum and the arrangement of the striæ absolutely forbid any such reference. The group is, as at present constituted, rather heterogeneous in aspect and might be divided into those species with the prosternum not narrowed in front by the prosternal fossæ, and those in which it is so narrowed, although such a course is at present unnecessary.

The unique before me (the type) was kindly loaned by Marseul, and is said to be from America. I introduce it in our fauna, that attention may be directed to it as its general aspect is that of a southern California species.

### Group III.

Prosternum transversely convex, longitudinally very feebly sinuous anteriorly truncate, striæ entirely wanting. Front not margined.

*S. interstitialis*, Lec. Ann. Lyc. V., p. 166.

Oblong, piceous black, surface with slight bronze lustre. Head densely punctured, supra-orbital stria wanting. Thorax with the disc nearly smooth, at base narrowly, and at apex and with a broad space punctured, punctures denser at the margins and gradually finer toward the centre. First dorsal stria of elytra extending to middle, 2-3-4 sub-equal and longer, the third stria double, fourth dorsal broadly arching at base and joining the sutural which is nearly entire, internal subhumeral obsolete,

humeral short, external subhumeral very short, basal, and close to the marginal stria, marginal stria strongly impressed, epipleural obsolete; surface between the striae 1-4 sparsely punctured from the base, becoming gradually more dense toward the apex and forming a narrow space along the apex. Pygidium and propygidium moderately punctured. Anterior tibiae 5-dentate, middle and hind tibiae uniseriately spinulose. Mesosternal stria obsolete anteriorly. Length .12 inch; 3 mm.

The elytral punctures extend not only in the space indicated, but also along the suture and base, the sides of the elytra beyond the first stria are nearly smooth. The smooth space between the fourth dorsal and sutural is of oblong form and on each elytron more than twice as wide as long. One specimen in my cabinet has the third elytral stria single and not duplicated as in the type, and this character is not of specific value.

This species is thus far rare in California. Pl. v. fig. 6.

#### Group IV.

Prosternum broadly convex, striae at base slightly divergent, then parallel or nearly so, horizontal and abbreviated in front, prosternum in front not narrowed, and on each side with a slight fovea.

The following table will aid in distinguishing the species:

External subhumeral not distinct from the marginal stria.

Internal subhumeral stria entirely absent..... *pectoralis*.

External subhumeral stria distinct from the marginal.

Internal subhumeral distinct and moderately long.

Prosternum at summit moderately convex, striae long, internal subhumeral strongly impressed..... *obscurus*.

Prosternum carinate, striae very short, internal subhumeral very fine..... *Floridæ*.

Internal subhumeral replaced by a row of coarse, disconnected punctures..... *posthumus*.

Internal subhumeral entirely absent.

Thorax finely and sparsely punctured at sides; elytra finely punctured..... *pæminosus*.

Thorax coarsely punctured at the sides, elytra at apex coarsely punctured..... *Copei*.

The external subhumeral stria in this group is always very short, basal, and joined by its basal end to the marginal stria. In the case of *pectoralis* the presence of that stria is only known by the marginal being slightly deeper at base. In *posthumus* and *Floridæ* the external subhumeral is very close to although distinct from the marginal stria, in all the rest of the species the two striae are very distinct. Increased collections will undoubtedly decrease the number of the species, two of them may however be known with certainty, *pectoralis* by the prosternal striae long and convergent in front, and *floridæ* by the prosternum carinate between the striae.

**S. pectoralis**, Lec. Ann. Lyc. V., p. 166.

Piceous black, shining; legs and antennae reddish-brown. Head

sparsely punctulate, without supra-orbital stria. Thorax sparsely and finely punctulate, punctures toward the sides denser and at the margin finer and more sparse, basal margin with very coarse punctures. Elytra with first dorsal stria extending three-fourths, 2-3-4 subequal and extending slightly beyond the middle, striae punctured and terminating in punctures; fourth dorsal arching and joining the sutural which is very nearly entire, oblique humeral finely impressed, external subhumeral confounded with the marginal, internal entirely absent, surface moderately coarsely punctured at the apical third punctures extending slightly in front of the tips of the striae and along the suture slightly in front of middle and becoming gradually more sparse. Pygidium and propygidium coarsely but not densely punctured, and on the former gradually finer and less dense toward the apex. Anterior tibiae finely serrulate, middle and hind tibiae spinulose. Prosternum moderately elevated, striae slightly convergent toward the tip, but not attaining the tip nor united. Length .14-.16 inch; 3.5-4 mm.

This species resembles *S. Behrensi* of Group II., in all its superficial characters, but the latter has the prosternal striae united near the middle of the prosternum. From the characters given in the synoptic table it will be seen that all the species of this group are very closely allied.

The specimens before me are the types collected at San Diego, California.

**S. obscurus**, Lec. Ann. Lyc. V., p. 166.

Thorax sparsely punctured, punctures gradually coarser and more dense to the extreme margin, along the basal margin still coarser and in front of scutellum a slight impression. Elytra with first stria extending three-fourths the length of the elytra, second and third equal extending two-thirds, fourth shorter and arching at base and joining the sutural which extends nearly to the tip; oblique humeral finely impressed, internal subhumeral long, not joining the humeral, external subhumeral short, visible under the humeral protuberance and joining the marginal at its basal end; surface sparsely, but not coarsely punctured at apical third, punctures gradually becoming finer and rapidly more distant and scatter over the entire surface. Propygidium and pygidium rather finely and moderately densely punctured, punctures evenly disposed over the entire surface. Anterior tibiae finely serrulate, middle and hind tibiae spinulose. Prosternum moderately convex, sparsely punctulate, striae exactly parallel, horizontal, and extending three-fourths to apex. Length .16 inch; 4 mm.

The disc of the thorax is much more distinctly punctured than any species of this group.

Occurs at San Diego, California.

**S. Floridæ**, n. sp.

Broadly oval, piceous black, shining, legs and antennæ reddish-brown, club darker. Head sparsely punctured. Thorax nearly smooth at middle, sparsely punctured toward the sides and apex, base with coarse punc-

tures and a faint impression opposite the scutellum. Elytral striæ faintly punctured, first dorsal extending three-fourths to apex, second nearly as long, third and fourth attaining the middle only, the latter arching at base, joining the sutural which is entire; external subhumeral very close to the marginal, humeral oblique, internal subhumeral finely impressed attaining the tip of the first dorsal, but not joining the humeral at base; surface very sparsely punctured, punctures extending from the apex two-thirds to base and as closely placed anteriorly as at the apex. Propygidium and pygidium closely, but not densely punctured. Anterior tibiæ finely multidenticulate, middle and hind, tibiæ finely spinulose. Prosternum strongly elevated, striæ short scarcely attaining the middle, parallel. Length .10 inch; 2.5 mm.

This species is the only one of the group in which the prosternum is acutely elevated.

One specimen in my cabinet from Florida.

**S. posthumus**, Mars. Mon., 55, p. 460, pl. 18, fig. 82.

Head densely punctulate, supra-orbital stria absent. Thorax sparsely punctured at middle, sides more densely and coarsely, at base with coarser punctures, and in front of scutellum a slight impression. Elytra with first dorsal extending three-fourths to apex, 2-3-4 sub-equal, the latter arching at base, joining the sutural which extends nearly to apex; striæ punctured; external subhumeral very short, humeral finely impressed, external subhumeral formed of disconnected very coarse punctures; surface at apex very coarsely but sparsely punctured, punctures extending from the first striæ to the suture, and anteriorly to the tips of the other striæ, and thence anteriorly becoming rapidly finer and more sparse. Pygidium rather densely and coarsely punctured, propygidium more finely and sparsely punctured. Prosternum very feebly convex, striæ deeply impressed, horizontal and very slightly convergent, extending four-fifths to apex. Anterior tibiæ finely denticulate, middle and hind tibiæ spinulose. Length .14-.16 inch; 3.5-4 mm.

The external subhumeral is so short as to be with some difficulty observed. The unusually coarse elytral punctures and the disconnected internal subhumeral will at once distinguish it from any species of the group.

One specimen from Marseul in Cab. Leconte, and one in my own without special designation of locality. I have received a specimen from Mr. F. Blanchard, collected by him in Massachusetts.

**S. pæminosus**, Lec. Ann. Lyc. V., p. 166.

Head sparsely punctulate. Thorax very sparsely punctulate on the disc, at sides more coarsely but still sparsely, at base more coarsely and opposite the scutellum a slight impression. Elytra with first dorsal extending three-fourths, second and third equal, extending slightly beyond the middle, fourth slightly shorter and arching at base, joining the sutural which is entire; external subhumeral short but very distinct, in-



ternal entirely absent, humeral very finely impressed; surface at apex very sparsely and rather finely punctate, becoming rapidly sparser and finer to apex. Anterior tibiæ finely serrulate, middle and hind tibiæ spinulose. Prosternum broad, moderately convex, striæ parallel, horizontal and attaining the apical four-fifths. Length .12-.14 inch; 3-3.5 mm.

Occurs at San Diego, California.

### **S. Copei, n. sp.**

Broadly oval black, shining, legs and antennæ reddish-brown, club darker. Head moderately, neither densely nor coarsely punctured. Thorax sparsely and finely punctured at middle, more densely and very coarsely punctured toward the sides and at margin more sparsely; along the base with coarse punctures, and in front of scutellum a slight depression. Striæ of elytra coarsely punctured, first dorsal extending to apical four-fifths, second and third equal and nearly as long, fourth extending slightly beyond the middle, arching at base, and joining the sutural which is as long as the first dorsal; oblique humeral very fine, internal subhumeral entirely wanting, external subhumeral one-fifth the length of the elytra, distinctly impressed, and joining the marginal in front; surface at apical third coarsely but not densely punctured, punctures becoming rapidly finer near the base, and also near the first striæ. Propygidium and pygidium coarsely and rather densely punctured, the latter much more finely at apex. Prosternum moderately convex, sparsely punctured, striæ strongly impressed, very feebly divergent in front, and very slightly ascending. Anterior tibiæ finely multidenticulate, middle and hind tibiæ finely spinulose. Length .14 inch; 3.5 mm.

By the slightly divergent and slightly ascendant prosternal striæ, this species tends toward the next group. The striæ extend four-fifths to apex. The prosternum in front has on each side a slight fovea. Among the species of the group it most closely resembles *posthumus*, from which it differs by its more coarsely punctured thorax, more finely punctured elytra, and differences in the elytral and prosternal striæ as noted above.

Dedicated to Prof. E. D. Cope, by whom it was collected in the region of Fort Bridger, Wyoming Territory.

### **Group V.**

Prosternum broad at summit moderately convex, striæ divergent in front and ascending, but not terminating in a fovea in front. Head with distinct supra-orbital stria extending slightly along the front.

Inflexed portion of elytra bistriate; fourth dorsal not  
arched at base, punctured space of elytra opaque.... alienus.

Inflexed portion of elytra bistriate; fourth dorsal arched  
at base, and usually joining the sutural, punctured  
region not opaque.

- Fourth dorsal feebly arched at base, not joining the sutural, the latter short, rarely extending beyond the punctured region ; interstrial region coarsely and densely punctured..... lugens.
- Fourth dorsal strongly arched at base, usually joining the sutural, interstrial region very slightly or not punctured.
- Sutural stria wanting at basal and apical portions, visible for a very slight extent at middle only..... imperfectus.
- Sutural stria distinctly impressed at apical portion, and joining the apical marginal stria.
- Surface metallic ; interstrial spaces not punctured ; prosternum strongly convex..... pennsylvanicus.
- Surface piceous or slightly bronzed ; interstrial space more or less punctured ; prosternum feebly convex.
- Elytral punctures aciculate or very dense..... oregonensis.
- Elytral punctures sparse and distinct.
- Internal subhumeral and humeral continuous... impressus.
- Internal subhumeral not continuous with humeral..... infaustus.

**S. alienus**, Lec. Ann. Lyc. V., p. 167.

Broadly oval, robust, black, with slight bronze tinge, antennæ and anterior legs reddish-brown. Head densely and coarsely punctured, supra-orbital stria distinct, not advancing across the front. Thorax with slight impression near the anterior angles, disc smooth, at sides punctured, punctures dense and coarser nearer the margin, at base with very few punctures, especially at middle. First dorsal stria of elytra extending slightly beyond the middle, second, third and fourth gradually shorter, fourth not arched at base, sutural very fine and entire ; external subhumeral short, deeply impressed, not joining the marginal, humeral fine, joining the short internal subhumeral ; inflexed portion of elytra with the marginal and two epipleural striæ ; surface with the space between the striæ opaque, not densely punctured, the punctures and opacity following nearly the curve of the inner dorsal stria to the apex of the suture. Propygidium and pygidium moderately punctured, the latter more sparsely at apex. Anterior tibiæ finely 6-denticulate, middle and hind tibiæ finely biseriately spinulose. Prosternum smooth, feebly convex, striæ scarcely ascendant, gradually divergent in front. Length .14-.16 inch ; 3.5-4 mm.

This species is one of the most readily known of the group. It had been placed in Group I., with which it has indeed considerable resemblance, and has been separated solely on account of the form of the hind tibiæ of the unique species of that Group.

Occurs at San Diego, and in Owen's Valley, California.

*S. lugens*, Er. Jahrb., 1834, p. 181; Lec. Bost. Journ. V., p. 21, pl. 5, fig. 4; Mars. Mon., 1855, p. 395, pl. 16, fig. 34; *californicus*, Mann. Bull. Mosc., 1843, ii, p. 259; *consimilis*, Walker, Nat. in Vancouver, 1866. p. 319.

Black moderately shining. Head rather densely punctured in front. Occiput smoother, frontal stria entire, but feeble at middle. Thorax with very feeble impression near the front angles, disc smooth, at sides with punctured space broader in front and base, continuing to the margin except near the hind angles, and narrowly along the basal margin. Elytra with moderately well defined, smooth scutellar space, and a subhumeral space also smoother, remainder of surface densely punctured, punctures becoming aciculate toward the apex; external subhumeral stria distinct, oblique humeral long, extending beyond its junction with the internal subhumeral, which is longer than the first dorsal; first and second dorsals subequal extending two-thirds the length of the elytra, third and fourth equal and slightly shorter than the preceding two, fourth dorsal rarely arched at base, and then the arch formed of punctures, sutural stria short, scarcely extending beyond the punctured space. Propygidium and pygidium rather densely and coarsely punctured. Prosternum in front moderately convex, striae anteriorly divergent and slightly ascending. Anterior tibiae finely denticulate, middle and hind tibiae biserially spinulose. Length .16-.24 inch; 4-6 mm.

Some of the smaller specimens of this species resemble *distinguendus* very closely.

A very abundant species occurring along the entire plains at the eastern base of the Rocky Mountains, and westward along almost the entire Pacific region.

*S. imperfectus*, Lec. Bost. Journ. V., p. 70, pl. 5, fig. 3.

Black shining. Head sparsely punctured, frontal stria entire. Thorax smooth at middle, and near the sides with a coarsely punctured space distant from the margin and with the punctures more sparse posteriorly, basal region with a few coarse punctures. Elytra at apex sparsely punctured, punctures extending in the first interstria, which is also slightly wrinkled near the base; external subhumeral distinct; oblique humeral long, bifid at tip, the outer branch joining the internal subhumeral which is slightly longer than the first dorsal; dorsals 1-2-4 subequal, extending slightly beyond the middle, third dorsal much shorter than the others, fourth dorsal slightly arched at base, sutural very short, represented by a few closely approximated punctures near the middle of the elytra. Propygidium and pygidium moderately densely and coarsely punctured, the latter slightly reflexed at the sides. Prosternum moderately convex, striae in front divergent and slightly ascending. Anterior tibiae finely denticulate, middle and hind tibiae biserially and rather coarsely spinulose. Length .18 inch; 4.5 mm.

This species, from the figure and description, appears to be closely allied to *concinus*, Mann., from Siberia, but it has a longer third stria.

The type and only specimen known to me, was procured by Maj. Leconte from Melsheimer, by whom it was said to be from Pennsylvania, but as other insects have been obtained from the Melsheimer cabinet with erroneous localities, this might be looked upon with some suspicion.

**S. pensylvanicus**, Payk. Mon., p. 62, pl. 5, fig. 6; Lec. Bost. Journ. V., p. 71, pl. 5, fig. 5; Mars. Mon., 1855, p. 435, pl. 17, fig. 63.

Form broadly oval, robust, color variable from brilliant metallic-green to bronze. Head very sparsely and finely punctulate, frontal stria broadly interrupted. Thorax smooth with a few moderately coarse sparsely placed punctures along the sides distant from the margin, finer near the base, and a narrow basal series of rather coarse punctures; margin sparsely fimbriate. Elytra coarsely but sparsely punctured at the apical half, not extending to the first dorsal stria; external subhumeral distinct, humeral fine, oblique, internal subhumeral longer than the first dorsal, strongly impressed, but not joining the humeral; first dorsal extending two-thirds to apex, second shorter, third very short, but variable, sometimes subobsolete, fourth shorter than the second, broadly arching at base and joining the sutural which is entire. Pygidium and propygidium coarsely and rather densely punctured. Prosternum convex in front, striae divergent and ascending. Anterior tibiae coarsely serrate, middle and hind tibiae biserially spinulose. Length .16-.20 inch; 4-5 mm.

Occurs everywhere in the United States east of the Rocky Mountains.

**S. oregonensis**, Lec. Bost. Journ. V., p. 75, pl. 5, fig. 12; Mars. Mon., 1855, p. 397, pl. 16, fig. 36; *var. distinguendus*, Mars. loc. cit. p. 441, pl. 17, fig. 68; *spurcus*, Lec. Col. Kansas, 1859, p. 7; *sejunctus*, Mars. Mon., 1862, p. 449, pl. 12, fig. 10.

Black, shining, submetallic. Head sparsely punctured, stria interrupted at middle. Thorax smooth at middle, toward the sides sparsely and coarsely punctured in a narrow space, punctures finer posteriorly, margin much smoother, a few coarse punctures along the base, obsolete at middle. Sides of elytra very sparsely punctured, dorsal surface rather densely punctured at apical half, punctures variable in their extent between the striae; external subhumeral short distinct, oblique humeral finer and joining the internal subhumeral, which is longer than the first dorsal; dorsal striae subequal, extending slightly beyond the middle, fourth arching at base and joining the sutural, which is usually entire, sometimes interrupted near the base. Pygidium and propygidium coarsely and rather densely punctured. Prosternum broad, striae divergent in front and scarcely ascending. Anterior tibiae finely denticulate, middle and hind tibiae finely biserially spinulose. Length .12-.18 inch; 3-4.5 mm.

*Var. oregonensis*, Lec. (*spurcus*, Lec.), fourth dorsal stria arching at base and joining the sutural, which is entire and strongly impressed. Punctures of elytra extending to the base in the entire first interstria, and in the outer portion of the second. Oregon, Utah.

*Var. distinguendus*, Mars. Sutural stria as in the preceding. Punctures of the elytra extending along the first and second interstitial spaces to base. Canada, Wisconsin.

*Var. sejunctus*, Mars. (*oregonensis*, ‡ Mars.) Sutural stria interrupted near the base. Elytral punctures not extending forward between the striae. New Mexico, Utah, Wyoming.

The series before me being very much larger than those seen by Marseul, I find myself compelled to unite all the above under one name. The latter variety may seem distinct by the characters given, but the extent of punctuation varies in all the forms to such a degree as to be of no value whatever in the separation of species. The interruption of the union between the fourth dorsal and sutural striae, has caused Marseul to place *distinguendus* and *sejunctus* in separate groups. I have specimens which are true *sejunctus* in punctuation with the arc entire, and others even with the sutural interrupted on one side and entire on the other, in fact every conceivable variation between *distinguendus*, the most densely punctured form, and *sejunctus* on the other extreme.

This is an abundant species, occurring from Arizona to Oregon, and along the eastern base of the Rocky Mountains, and eastwardly to Canada.

**S. impressus**, Lec. Bost. Journ. V., p. 74, pl. 5, fig. 10.

Black, shining, legs piceous. Head very sparsely punctulate, frontal stria interrupted at middle. Thorax at anterior angles slightly impressed, disc smooth, sides coarsely punctured to the extreme margin, base coarsely punctured and slightly impressed opposite the scutellum. Elytra sparsely punctured at apex, punctures sparsely extending to base along the first interstria, which is also wrinkled near the base; external subhumeral short, humeral oblique, finely impressed, joining the internal subhumeral, which is slightly longer than the first dorsal; the latter extending two-thirds to apex, and equal to the third, second slightly longer, fourth shorter than the third and arching at base, joining the sutural which is entire. Propygidium and pygidium coarsely and rather densely punctured, the latter more sparsely at apex. Prosternum moderately broad, striae slightly divergent at apex and not ascending. Anterior tibiae minutely denticulate, middle and hind tibiae finely biserially spinulose. Length .14 inch; 3.5 mm.

Two specimens, Georgia.

**S. infaustus**, Lec. Proc. Acad., 1852, p. 40; *piceus*, || Lec. Bost. Journ. V., p. 73. pl. 5, fig. 8.

Piceous, shining. Head sparsely punctate, frontal stria wanting. Thorax smooth at middle, sparsely punctured at sides and base, and slightly impressed at the anterior angles. Elytra sparsely punctured at apical half, punctures sparsely extending to base of first interstria; external subhumeral scarcely evident, oblique humeral very fine, widely separated from the internal subhumeral, which is strongly impressed and longer than the first dorsal, the latter extending three-fourths to apex,

striae 2-3-4 subequal, slightly shorter than the first; fourth arching at base, joining the entire sutural. Pygidium and propygidium moderately coarsely, but not densely punctured. Prosternum broad, sparsely punctured, striae deeply impressed, slightly divergent in front and scarcely ascending. Legs brownish red. Anterior tibiae finely and distantly denticulate, middle and hind tibiae finely biserially spinulose. Length .10 inch; 2.5 mm.

Closely allied to the preceding species, differing in its smaller size, scarcely evident external subhumeral and the disconnected internal subhumeral.

One specimen, Pennsylvania.

I have seen specimens from Oregon and Vancouver, differing from the unique of *infaustus* in having the external subhumeral somewhat more distinct, and by the form more regularly oval. I do not feel inclined to separate them at present, as I find no tangible character on which to found a specific distinction.

#### Group VI.

Prosternum more or less convex at summit, striae entire, divergent in front, terminating in a fovea. Supra-orbital stria rarely present. Thorax rarely fimbriate.

The species are more numerous than in the preceding groups, and are distinguished in the following manner:

Pygidium with a deep marginal groove.

Groove following the entire apical and lateral margins.....	æneicollis.
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Groove at apex only.....	assimilis.
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Pygidium not grooved.

Thorax not ciliate at the sides.

Elytra punctured at apex, and thorax at sides, only.

Elytra densely aciculate punctured, striae short.	cubæcola.
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Elytra sparsely punctured, striae moderately long.	
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Fourth dorsal and sutural united, the latter strongly impressed at base.

Sutural stria continued by punctures to apex, elytra at apex rather coarsely punctured.

External subhumeral short, distinct.....	conformis.
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External subhumeral stria entirely absent.

Dorsal striae hooked at base.....	placidus.
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Dorsal striae simple.....	vescus.
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Sutural stria entire, usually joining the apical line.

Dorsal striae 1-3 hooked at base; thorax distinctly punctured at sides.....	parumpunctatus.
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Dorsal striæ not hooked at base ; thorax very minutely punctulate.	
Sutural stria not joining an apical line, the latter obliterated at middle.....	convexiusculus.
Sutural stria continued by an entire apical line.....	minutus.
Fourth dorsal arched at base, sutural interrupted at base.	
Sutural stria moderately deeply impressed, abbreviated at base only.	
Color piceous ; pygidium smooth at apex.	scissus.
Color, brownish ; pygidium sparsely punctured.....	scrupularis.
Sutural stria very feeble, interrupted at base and apex.....	wacoensis.
Elytra more or less punctured over the entire surface ; thorax either densely punctured over the entire surface or punctured as strongly at middle as at the sides.	
Fourth dorsal joining the sutural by a strong arc ; pygidium moderately convex.	
Sutural stria feeble at base ; thorax sparsely punctured.....	laridus.
Sutural stria strongly impressed ; thorax rather densely punctured.....	insertus.
Fourth dorsal simply hooked at base ; pygidium strongly convex, apical portion inflexed at a right angle to the superior portion.....	æquipunctatus.
Thorax ciliate at the sides ; head coarsely punctured ; sutural stria interrupted at base.....	ciliatus.

From the construction of the above table it will be inferred that the species are very closely allied, and it is probable that collections made across the continent will unite some of those, not only in this but also in other groups, which are separated on trifling characters, which are really more geographical than entomological. I have united three species under the name *insertus*, to avoid the other alternative of giving nearly every specimen a name.

*S. æneicollis*, Mars. Mon., 1855, p. 424, pl. 17, fig. 56 ; Horn, Trans. Am. Ent. Soc., 1870, p. 141.

Form moderately robust, surface metallic, thorax dark, elytra greenish-blue. Head moderately densely punctured, front slightly impressed, without stria. Thorax impressed at the anterior angles, disc smooth, at sides coarsely punctured, punctures more dense in front, margin comparatively smooth. External subhumeral stria short but distinct, humeral oblique moderately impressed, internal subhumeral deeply impressed, apical, not joining the humeral ; first dorsal long, extending three-

fourths to apex, second shorter, continued by regular punctures, third short, basal, continued by irregular punctures, fourth as long as second, and similarly continued, broadly arching at base and joining the sutural, which is entire, but rather feebly impressed at its basal portion; between the fourth and sutural an irregular row of punctures extending slightly in front of middle forming a *quasi* fifth stria; surface of elytra at apex moderately coarsely but sparsely punctured; punctures coarser near the suture, and extending more anteriorly. Propygidium and pygidium densely and coarsely punctured, the latter somewhat aciculate, and with the entire margin surrounded by a deep groove. Body beneath black, legs piceous. Anterior tibiæ multidenticulate, middle and hind tibiæ biserially spinulose. Prosternum moderately elevated, but not carinate, striae divergent in front and strongly ascendent, terminating on each side in front in a fovea. Length .18 inch; 4.5 mm.

One specimen from Texas. Resembles *pensylvanicus* at first sight, but may be known from every other *Saprinus* in our fauna by the entire marginal groove of the pygidium. The entire surface of the elytra has a few punctures over the entire surface, but very distantly placed.

*S. assimilis*, Payk. Mon. p. 63, pl. 5, fig. 7; Mars. Mon., 1855, p. 431, pl. 17, fig. 60; *extraneus*, Knoch. Illig. Mag. VI., p. 34.

Broadly oval, black, shining. Head sparsely punctulate, supra-orbital stria obsolete. Thorax impressed near the anterior angles, disc smooth, sides coarsely and densely punctured, margin smoother, base with very few punctures and distinctly impressed in front of scutellum. Elytra coarsely punctured at apex, punctures extending in the sutural region to the middle; external subhumeral stria short, deeply impressed, close to the marginal; humeral oblique not joining the internal subhumeral, which is rather deeply impressed and terminating in punctures at apex; first dorsal extending three-fourths to apex, second somewhat shorter, third and fourth equal shorter than the second, and terminating in coarse punctures; fourth stria joining the sutural which is deeply impressed at basal portion, gradually becoming more feeble, and not attaining the apex; apical marginal stria wanting. Propygidium and pygidium coarsely and rather densely punctured, the latter with a deep marginal groove at apex, and a slight impression at tip. Anterior tibiæ finely multidenticulate, middle and hind tibiæ biserially spinulose, the posterior the more finely. Prosternum smooth, broadly convex, striae strongly ascending, terminating on each side in a fovea. Length .16-.20 inch; 4-5 mm.

Occurs from the Middle States to Texas.

*S. cubæcola*, Mars. Mon., 1855. p. 167, pl. 18, fig. 88; Horn, Trans. Am. Ent. Soc., 1870, p. 140.

Black, shining. Head sparsely punctured, occiput slightly impressed, supra-orbital stria subobsolete. Thorax smooth, at anterior angles broadly impressed, at sides punctured, coarsely in front, more finely and sparsely toward the base and the extreme margin, basal margin with a



line of coarse punctures. Elytra densely aciculate punctured at apical two-thirds, punctures extending to the bases of all the interstriae except the inner; external subhumeral close to the marginal, short, humeral slightly oblique, internal subhumeral represented by a few punctures; first dorsal extending beyond the middle, striae 2-3-4 short, subequal, fourth arching at base joining the sutural, which is entire and continuous with the apical marginal. Propygidium coarsely, but sparsely punctured. Pygidium, convex, sides slightly reflexed, surface coarsely and moderately densely punctured. Anterior tibiae finely denticulate, middle and hind tibiae biserially spinulose. Prosternal striae divergent, strongly ascending, terminating in front in a fovea. Length, .16 inch; 4 mm.

One specimen in my cabinet from Key West, others will probably occur in Florida.

*S. conformis*, Lec. Bost. Journ. V., p. 72, pl. 5, fig 7; Mars. Mon., 1855, p. 484, pl. 18, fig. 103.

Black, shining. Head sparsely punctulate, supra-orbital stria entirely wanting. Thorax smooth at middle punctured at the sides to the extreme margin, punctured space narrowest at middle. Elytra coarsely but not densely punctured at apex, punctures forming an irregular triangular space, extending at suture slightly in front of middle; external subhumeral short, close to the marginal, humeral very fine, internal subhumeral short, subapical and moderately deeply impressed; first dorsal extending four-fifths to apex, 2-3-4, gradually shorter, the fourth arched, joining the sutural which extends two-thirds to apex and thence continued by punctures; apical marginal line obliterated near the suture, Pygidium and propygidium densely and coarsely punctured. Anterior tibiae finely denticulate, middle biserially spinulose, hinder spinulose at apex only. Prosternum strongly convex, striae divergent in front, ascending, terminating in a fovea, anteriorly. Length .10-.12 inch; 2.5-2 mm.

Occurs from Pennsylvania to Georgia.

*S. placidus*, Er. Jahrb., 1834, p. 189; Mars. Mon., 1857, p. 444, pl. 11. No. 33, fig. 108 bis; *latubris*, Lec. Proc. Acad. 1859, p. 315.

Black, shining. Head finely punctulate, supra-orbital stria sub-obsolete. Thorax smooth at middle, sparsely punctured at the sides. Elytra sparsely but rather coarsely punctured at the apical third; external subhumeral stria absent, humeral fine, internal subhumeral, short apical, separated from the humeral; first dorsal deeply impressed in its entire length, extending beyond the middle, second somewhat longer, gradually less deeply impressed to tip, third and fourth sub-equal, the latter arching at base, joining the sutural which does not attain the tip of the elytra; apical marginal line obsolete at middle. Propygidium sparsely punctured, pygidium sparsely punctured at base, gradually becoming shorter at apex. Prosternum rather acutely convex, striae divergent and ascending. Legs piceo-rufous, anterior tibiae finely denticulate, middle and hind tibiae finely biserially spinulose. Length .08-.10 inch; 2-2.5 mm.

Occurs in Georgia and Missouri. Closely allied to *conformis*, but differs by the absence of the external subhumeral, and the thorax much more finely punctulate at the sides. It is compared by Marseul to *neglectus*, with what it appears to have very little in common. *S. latubris*, Lec., is a variety with the internal subhumeral reduced to a point.

**S. vescus**, Mars. Mon., 1855, p. 488, pl. 17, fig. 106.

Oblong oval, black, shining, moderately convex. Head sparsely and finely punctured. Thorax sparsely punctured at the sides, and with a row of coarse punctures along the base. Elytra sparsely and moderately coarsely punctured at the apical half, punctures extending between the striae; external subhumeral stria entirely absent, oblique humeral moderately impressed; internal subhumeral short apical; dorsal striae deeply impressed and punctured, first dorsal extending four-fifths to apex, and at tip approaching the second dorsal, second and third nearly equal, slightly shorter than the first, fourth somewhat shorter than the third, arching, at base joining the sutural which extends three-fourths to apex. Propygidium moderately densely punctured, pygidium more sparsely and finely punctured, gradually smoother to apex. Anterior tibiae finely denticulate, middle and hind tibiae finely spinulose. Length .12 inch, 3 mm.

This species is very closely allied to *placidus*, Er., but differs in its less convex form and more broadly convex prosternum. The elytral punctures are finer and more densely placed, but extend more anteriorly and also between the striae. The striae are also longer and not hooked at base as is always the case in *placidus*. Marseul's figure of *vescus* is not characteristic.

Through the great liberality of M. Marseul, I have been enabled to study this unique type from his cabinet.

Occurs in Texas.

**S. parumpunctatus**, Lec. Col. Kansas, 1859, p. 7.

Broadly oval, castaneous, shining. Head sparsely punctured, supra-orbital stria obsolete. Disc of thorax smooth, towards the sides sparsely but not densely punctulate, punctures extending along the base in a moderately wide space. Elytra sparsely punctured at apex, punctures very sparsely extending to base along the suture; external subhumeral very close to the marginal and scarcely distinct; oblique humeral moderately impressed; not joining the internal subhumeral which is feebly impressed; first dorsal extending four-fifths to apex, second and third sub-equal, very slightly shorter, fourth extending to middle, arching at base, joining the sutural which is entire; apical marginal line obliterated near the suture. Propygidium sparsely punctured, pygidium more densely and coarsely punctured except near the apex. Prosternal striae divergent scarcely ascending. Metasternum very coarsely punctured. Anterior tibiae finely denticulate, middle and hind tibiae finely biserially spinulose. Length .12 inch; 3 mm.

The dorsal striæ 1-3 are all hooked at base, or rather have a short process extending parallel with the base.

One specimen, Kansas. The pale color may, in part, be due to immaturity.

**S. convexiusculus**, Mars. Mon., 1855, p. 404, pl. 19. fig. 111.

Black, shining, surface with faint bronze tinge. Head punctulate, supra-orbital stria obsolete, frontal stria visible at the sides. Thorax smooth at middle, with a broad space at sides and very minutely punctulate, and at base more coarsely punctured. Elytra very sparsely punctured at apical third, punctures extending within the striæ and along the suture in front of middle; external subhumeral entirely absent, humeral fine, oblique, not joining the short internal subhumeral; first dorsal extending four-fifths to apex, 2-3-4, gradually and but slightly shorter, the latter arching at base joining the sutural, which is entire, apical marginal line obsolete. Propygidium and pygidium moderately densely punctured. Prosternal striæ divergent, feebly ascending. Legs brownish-red, anterior tibiæ fine denticulate, middle and posterior finely biserially spinulose. Length .10 inch; 2.5 mm.

One specimen from North Carolina, from the collection of the late Dr. Zimmermann.

**S. minutus**, Lec. Bost. Journ. V., p. 73, pl. 5, fig. 9; Mars. Mon., 1855, p. 486, pl. 18, fig. 104.

Black, with slight tinge of bronze, shining. Head, sparsely punctulate, supra-orbital striæ wanting, frontal stria obsolete at the sides. Thorax smooth at middle, very finely and sparsely punctulate toward the sides. Elytra very sparsely punctulate at the apical third, punctures extending forward along the suture, in front of the middle; external subhumeral stria wanting, oblique humeral moderately impressed, usually continuous with the external subhumeral which extends three-fourths to apex; first and second dorsals equal extending three-fourths; third extending slightly beyond middle, and fourth to middle only, joining the sutural which attains the apex, and continued by the apical line to the marginal. Propygidium and pygidium sparsely punctured. Legs rufous. Anterior tibiæ finely denticulate, middle and hind tibiæ finely biserially spinulose. Prosternal striæ divergent and strongly ascending. Length .08 inch; 2 mm.

This species is very closely allied to the preceding, and differs principally in the longer internal subhumeral. The elytral punctures of this species are coarser and much less closely placed than in *convexiusculus*. In the "Catalogus (Gemm. and Harold) p. 789, this species is placed as synonymous with *plenus*," which it does not even remotely resemble.

Occurs in the Middle States.

**S. scissus**, Lec. Ann. Lyc. V., p. 168.

Piceous, shining. Vertex very minutely punctulate, clypeus rugose, supra-orbital stria obsolete, frontal visible at the sides. Thorax with a

few distant fine punctures on the disc, at sides very sparsely punctulate. Elytra sparsely punctured at apex, punctures at middle extending two-thirds to base. External subhumeral very short, humeral oblique, finely impressed, not joining the internal subhumeral which is short and deeply impressed, dorsals 1-2-3 equal, extending slightly beyond the middle, fourth shorter, arching at base, sutural deeply impressed, basal third obliterated, joining at apex the marginal line. Propygidium and pygidium sparsely and rather finely punctured. Prosternal striæ divergent and nearly horizontal. Legs brownish-red, anterior tibiæ finely denticulate, middle and hind tibiæ finely biserially spinulose. Length .06-.08 inch ; 1.5-2 mm.

One of the smallest species of *Saprinus* and readily known by the characters in the table. From *scrupularis* it moreover differs by the entirely smooth disc of thorax, which in that species is moderately coarsely but sparsely punctured.

Occurs in California.

**S. scrupularis**, Lec. Proc. Acad., 1859, p. 315.

Piceous, shining. Legs brownish-red. Head sparsely punctured, frontal stria slightly visible at the sides. Thorax very sparsely punctulate at the disc, more coarsely and densely at the sides. Elytra at apex sparsely punctured, punctures fine at apex and extending in the interstriae and sutural space nearly to base ; external subhumeral short but distinct, humeral finely impressed, internal subhumeral finely impressed, disconnected ; first dorsal extending to middle, second and third somewhat longer, fourth slightly shorter than first, arched at base ; sutural finely impressed, basal third obliterated, attaining the apical margin, apical line obsolete. Propygidium and pygidium sparsely and rather finely punctured. Anterior tibiæ finely denticulate, middle and hind tibiæ, finely biserially spinulose. Length .06 inch ; 1.5 mm.

Resembles *laridus*, which, however, has the sutural abbreviated at apex, and the thorax nearly as closely punctured at middle as at the sides.

Occurs in the Southern States.

**S. wacoensis**, n. sp.

Broadly oval, black shining. Front sparsely, clypeus more densely punctured ; supra-orbital stria obsolete, frontal visible at the sides. Thorax smooth at the middle, moderate densely punctured towards the sides, margin smoother. Elytra sparsely punctured at apex ; punctures forming a triangular space, the apex at the basal fourth of the suture ; external subhumeral wanting, humeral fine, oblique, internal subhumeral obsolete ; first dorsal extending four-fifths to apex, second and third nearly equal, slightly shorter than first, fourth extending to middle only, arched at base ; sutural short, feebly impressed, apical fifth and basal third entirely obliterated. Propygidium and pygidium coarsely but not densely punctured. Prosternal striæ divergent, feebly ascending, prosternum broadly convex. Legs brownish red, anterior tibiæ finely serru-

late, middle and hind tibiae finely biserially spinulose. Length .10 inch; 2.5 mm.

This species in its general aspect resembles *convexusculus*. It is the only species in the group with both subhumeral striae obliterated, and with the sutural also obsolete at base and apex.

One specimen (No. 546) collected by Mr. G. W. Belfrage, at Waco, Texas.

With the next species begins a small group in which the thorax is punctured over its entire surface, always equal (or very nearly so) at the disc and sides. The elytra are also punctured from apex to base, and like the thorax, nearly equally over the entire surface.

*S. laridus*, Lec. Ann. Lyc. V, p. 168.

Piceous, shining, legs brownish-red. Head rather coarsely punctured, supra-orbital and frontal striae obliterated. Thorax coarsely, but sparsely punctured, slightly more densely at the sides, in front of scutellum slightly impressed. Elytra sparsely punctured over the entire surface, somewhat less densely at base; external subhumeral short, but distinct, humeral oblique, rather deeply impressed, separated from the internal subhumeral by a very slight space, the latter stria deeply impressed at the basal portion, extending three-fourths to apex; dorsals 1-4 sub-equal, extending slightly beyond the middle, the fourth arcuate at base joining the sutural, which is rather less impressed at basal third and apt to become obsolete and obliterated at apical fourth. Propygidium and pygidium moderately coarsely, but not densely punctured, the latter much smoother at apex. Prosternal striae strongly divergent and slightly ascending. Anterior tibiae minutely denticulate, middle and hind tibiae finely biserially spinulose. Length .06-.08 inch; 1.5-2 mm.

It is in this species that the smallest representatives of the genus *Saprinus* occur in our fauna. In its aspect it recalls *scissus* but differs in its punctuation and other characters as given above.

Occurs in California.

*S. insertus*, Lec. Ann. Lyc. V., p. 167; *obductus*, Lec., *vinctus*, Lec. l. c. p. 168.

Black, shining, surface with faint bronze tinge. Head moderately, densely and coarsely punctured; supra-orbital stria obliterated, frontal slightly visible at the sides. Thorax rather coarsely but not densely, and nearly equally punctured over the entire surface, punctures at sides slightly aciculate. Elytra punctured similarly to the thorax; external subhumeral confluent with the marginal; oblique humeral moderately impressed, nearly continuous with the internal subhumeral, which extends three-fourths to apex; first dorsal extending three-fourths, second slightly beyond the middle, third and fourth slightly shorter, the latter arching at base, joining the sutural, which is entire. Propygidium and pygidium densely and rather coarsely punctured. Prosternum broadly convex, punctured, striae divergent and slightly ascending. Anterior tibiae

finely multidenticulate, middle and hind tibiae finely biserially spinulose. Length .10-.14 inch ; 2.5-3.5 mm.

After repeated examination I am unable to find any characters on which to separate the three species in the above synonymy.

Occurs in California and Oregon.

I have in my cabinet a specimen from the Yo Semite Valley, California, which is closely allied to the preceding, differing in its less convex form, striae longer, elytra very densely aciculate punctured at apex, and with a narrow basal space somewhat broader at the suture nearly free of punctures. At present I do not feel warranted in giving it a name as I have never seen other than the one specimen.

*S. æquipunctatus*, Horn, Trans. Am. Ent. Soc., 1870, p. 140.

Oblong oval, black, feebly shining. Head moderately densely punctured, supra-orbital obsolete, frontal slightly visible at the sides. Thorax nearly equally, coarsely and rather densely punctured over the entire surface. Elytra densely punctured over the entire surface ; external subhumeral wanting, humeral fine oblique, joining the internal subhumeral which extends four-fifths to apex ; dorsal striae straight, parallel, first extending four-fifths to apex, 2-3-4 gradually and very slightly shorter, the fourth not arcuate at base ; sutural stria feeble especially at base where it forms a slight arc within the fourth dorsal. Propygidium densely and coarsely punctured, pygidium apparently double, upper portion vertical, apical part horizontal, surface densely and coarsely punctured. Prosternum broadly convex, punctured, striae divergent and very feebly ascending. Anterior tibiae finely multidenticulate, middle and hind tibiae finely biserially spinulose. Length .12-.14 inch ; 3-3.5 mm.

This species is one of the most distinct and easily recognizable in our fauna. Pl. v. fig. 8.

Occurs near San Francisco, California.

*S. ciliatus*, Lec. Ann. Lyc. V., p. 168.

Broadly oval, brownish, surface with slight bronze tinge. Head densely rugoso-punctate, supra-orbital moderately distinct and frontal stria slightly visible at the sides. Thorax with the entire margin ciliate with moderately long hairs, disc sparsely punctured, sides densely and aciculate punctured to the extreme margin. Disc of elytra sparsely and finely punctured, sides and apex densely aciculate punctured ; external subhumeral short basal, humeral fine, oblique, uniting by punctures with the internal subhumeral, which extends two-thirds to apex, first dorsal extending slightly beyond the middle, third extending nearly to apex of elytra, second intermediate between the first and third, fourth extending to apical three-fourths and arched at base ; sutural finely impressed, entirely obsolete at basal fourth ; apical marginal line obsolete. Propygidium and pygidium moderately densely but not coarsely punctured. Prosternum broadly convex, striae divergent and slightly ascending. Legs rufous, anterior tibiae rather coarsely denticu-

late, middle and posterior tibiae biserially spinulose. Length .10 inch ; 2.5 mm.

The rather coarsely denticulate tibiae and fimbriate margin ally this species to some of the following groups. The middle tibiae are also more coarsely spinulose than is usual in this or any of the preceding groups.

This species appears to be rare in California.

#### Group VII.

Prosternum narrow, acute at summit, striae almost entirely lateral, strongly divergent anteriorly, ascending, terminating in a shallow depression. Thorax with margins fimbriate in nearly all the species.

This group and the preceding are very closely allied, and it becomes a matter of difficulty with some of the species of both groups to decide to which they should be referred. It is probable that a more natural division would be into those which have, and those which have not the margins of the thorax fimbriate. In the event of such a division of the groups, *neglectus* and *rubriculus* should enter the preceding, and *ciliatus* removed from it.

With the exception of two unique types before me, all the species are represented by good series of specimens, and an amount of variation is seen leading to the belief that were similar series collected of all the species, the number of our Saprini would be reduced fully one-half.

A study of the material before me has resulted in the following table, which I believe exhibits the forms which are entitled to rank as species:

Prothorax with margins not fimbriate.

Prosternal striae well-marked, fossae simple.....,..... *neglectus*.

Prosternal striae feeble, fossae linear uniting at the summit  
of the prosternal carina in front..... *rubriculus*.

Prothorax with fimbriate margins.

Elytra with smooth scutellar space, sometimes well-limited.

Third dorsal stria entirely obliterated..... *vitiosus*.

Third dorsal normally developed.

Scutellar mirror distinctly limited behind.

Interstrial spaces densely punctured..... *lubricus*.

Smooth space at the base between striae 2-4..... *plenus*.

Scutellar mirror not well defined, punctures diffuse.

Third dorsal attaining the base of elytra..... *fimbriatus*.

Third dorsal abbreviated at base..... *acilinea*.

Elytra punctured over the entire surface which is opaque.

Color, bluish; elytra less densely punctured in the sub-  
scutellar region..... *cœrulescens*.

Color, brownish; elytra equally densely punctured..... *vestitus*.

**S. neglectus**, Mars. Mon., 1855, p. 491, pl. 18, fig. 108.

Oval, convex, surface distinctly bronzed. Head moderately punctured. Thorax moderately coarsely punctured at the sides, more finely along the apex, and with a few coarse punctures along the basal margin. Elytra rather coarsely, but sparsely punctured, punctures extending slightly in front of middle and outside of the first stria to the base; external subhumeral stria not distinct from the marginal, internal moderately long joining the humeral; first dorsal extending slightly beyond the middle, second extending two-thirds, third and fourth equal to the first, fourth arching at base with the sutural which is entire. Propygidium densely punctured, pygidium more sparsely punctured. Anterior tibiæ multidenticulate, middle and hind tibiæ spinulose. Length .12 inch; 3 mm.

This species is closely allied to those of the preceding group, with which it had been associated. The prosternum is, however, acutely carinate. In this species may be seen the rather curious tendency of the striæ to be prolonged by smooth lines between the punctures. This character is, however, much better shown in *fimbriatus*.

This species occurs in Georgia.

**S. rubriculus**, Mars. Mon., 1855, p. 489, pl. 18, fig. 107.

Oblong oval, moderately convex, ferruginous brown, shining. Head finely and densely punctured. Thorax sparsely punctured over the entire surface, slightly more densely at the sides. Elytra sparsely punctured, punctures coarser in front, and denser at apex, extending slightly in front of middle, and also between the striæ; external subhumeral absent, internal short apical; first dorsal extending two-thirds the length of the elytra, 2-3-4 gradually shorter, the latter arching at base, sutural attaining the apex interrupted at base, continued by fine punctures to the arch of the fourth dorsal. Pygidium moderately convex densely and moderately coarsely punctured. Anterior tibiæ 5-6 denticulate, middle and hind tibiæ spinulose. Prosternum carinate, striæ very indistinct. Prosternal fossæ linear uniting at the summit of the carina in front. Length .09 inch; 2.25 mm.

The type of this species is before me, and although not properly authenticated as far as habitat is concerned, is introduced into the present essay from its decidedly American aspect. From all the species of *Saprinus* in our fauna it may be distinguished by the curious form of the prosternal fossæ in which the striæ terminate. In place of being merely rounded pits as is usual when they occur, these fossæ are linear and extend to the summit of the prosternal carina parallel with the anterior margin of the lobe, which is also more prolonged than is usual in the genus. The interrupted sutural stria is also peculiar to this species in the present group.

One specimen, locality doubtful.

**S. vitiosus**, Lec. Ann. Lyc. V., p. 169.

Oval, convex, brownish, surface distinctly bronzed. Head moderately



densely punctured, frontal stria slightly interrupted at middle. Thorax with fimbriate margin, surface minutely and very sparsely punctured on the disc, much more densely and coarsely at the sides, and with a row of coarse punctures along the base. Elytra densely punctured at apex, punctured space neatly limited in front, and extending equally densely along the interstrial spaces to base, except a space near the base between the striae 2-4; external subhumeral confluent with the marginal, internal moderately long, joining the humeral; first dorsal confused at base extending beyond the middle, second distinct equal to the first, third entirely obliterated, rarely a rudiment at base or a few punctures, fourth dorsal extending to middle, arching at base, joining the sutural which is entire. Propygidium and pygidium coarsely and moderately densely punctured. Anterior tibiae finely 6-7 denticulate, middle and third tibiae spinulose. Length .10-.14 inch; 2.5-3.5 mm.

The juxta-scutellar impunctured space varies in extent. All the specimens agree in the entire obliteration of the third dorsal. This species and *rugipennis* have a remarkable superficial resemblance, but differ in the structure of the prosternum.

Occurs from Owen's Valley, California, southward to Cape San Lucas, also in Arizona.

*S. lubricus*, Lec. Ann. Lyc. V., p. 169; Mars. Mon., 1855, p. 410, pl. 17, fig. 46; *rotundifrons*, Mars. Mon., 1862, p. 464, pl. 12, fig. 24.

Oval, moderately convex, black, shining, surface slightly bronzed. Head coarsely and moderately densely punctured, frontal stria interrupted at middle. Thorax with lateral margins fimbriate, at sides with moderately broad and well defined space coarsely and densely punctured; punctures slightly stronger at the margins, a narrow basal space punctured. Elytra with well defined smooth space, punctures coarse and dense at apical third, extending also to the bases of the interstrial spaces and equally dense; external subhumeral absent, internal feebly impressed continuous with the humeral; first dorsal confused at base extending nearly to middle, second somewhat longer, third equal to the first, fourth equal to the second, arched at base joining the sutural which is entire and deeply impressed, sutural interspace with a row of punctures. Propygidium and pygidium densely, but not very coarsely punctured. Anterior tibiae multidenticate, middle and hind tibiae spinulose. Length .10-.14 inch; 2.5-3.5 mm.

This is the only species of the present group in which the scutellar space is entirely surrounded by a dense punctuation. The type of *rotundifrons*, Mars., is before me, and is an exact reproduction of the type of *lubricus*.

Occurs in California, especially in the southern portion of the State.

*S. plenus*, Lec. Ann. Lyc. V., p. 169; *olidus*, Lec. Proc. Acad., 1859, p. 316; *pratensis*, Lec. Col. Kansas, 1859, p. 8.

Oval, convex, shining, surface distinctly bronzed. Head convex,

moderately coarsely and densely punctured. Thorax with margin ciliate, disc minutely and very sparsely punctulate, sides coarsely and moderately densely punctured; punctures extending slightly along the apex, and very narrowly along the base. Elytra densely punctured at apex, punctured space neatly limited in front, punctures extending to the bases of the first and second interstriae; external subhumeral very short, internal short, feebly impressed and disconnected; first dorsal extending slightly beyond the middle, 2-3-4 gradually shorter, the latter arched at base joining the sutural which is entire. Pygidium moderately densely and coarsely punctured. Anterior tibiae finely multidenticulate, middle and hind tibiae spinulose. Length .10-.14 inch; 2.5-3.5 mm.

The smooth space at the base of the two inner interstriae varies in extent. The species is somewhat variable. The above description is drawn from the type, *pratensis* is a smaller form less distinctly bronzed, *olidus* is more broadly oval.

By some unaccountable error, Gemminger and Harold quote *minutus* as synonymous with *plenus*. In the "List" of the Coleoptera of N. A., *desertorum*, Mars., is similarly placed, but erroneously. This species is the *aciculatus* of the MS. catalogue of Dr. Leconte, and specimens may have been distributed under that name.

This species is widely distributed from California, through Arizona and New Mexico to Texas and Kansas.

*S. fimbriatus*, Lec. Ann. Lyc. V., p. 169; Mars. Mon., 1855, p. 495, pl. 19, fig. 112; *desertorum*, Mars. Mon., 1857, p. 442, pl. 11, No. 33, fig. 88. b; var. *orbiculatus*, Mars. Mon., 1855, p. 497, pl. 19, fig. 114.

Oval, convex, piceous, elytra brownish, surface bronzed. Head moderately punctured, frontal stria interrupted at middle. Thorax with margins fimbriate, disc minutely and very sparsely punctulate, sides with broad punctured space, punctures moderately dense and gradually coarser to the margin, a slight impression near the anterior angles, and a narrow space punctured along the basal margin. Elytra punctured at apical half, punctures sparse and moderately coarse, extending along the outer two interstitial spaces to base; external subhumeral always present, variable in length, usually short, internal moderate joining the humeral; first dorsal extending to middle, second longer, third shorter than the first, fourth equal to first, arching at base, joining the sutural which is entire; striae continued by smooth lines between the striae, of variable distinctness. Propygidium and pygidium moderately densely and coarsely punctured. Legs rufous, anterior tibiae multidenticulate, middle and hind tibiae spinulose. Length .08-.14 inch; 2-3.5 mm.

Var. *fimbriatus*, Lec. Punctures extending in the first two interstriae to base, sparse but moderately coarse. External subhumeral deeply impressed, short and distant from the margin, striae of elytra very distinctly continued by smooth spaces.

Var. *desertorum* (Lec. †), Mars. Elytral punctures very sparse and

much finer in the interstriae, smooth lines very indistinct, external subhumeral closer to the marginal and relatively longer, first dorsal as long as the second.

Var. *orbiculatus*, Mars. Elytral punctures in the apical region sparse, scarcely extending in the interstriae, external subhumeral parallel with the marginal and moderately long, first dorsal equal to the second.

Notwithstanding the remarkably different aspect of the types of *fimbriatus* and *orbiculatus*, I am compelled to unite them as varieties of one form. I have a large series before me, and every gradation can be detected between the forms above indicated.

Occurs abundantly in California, also in Nevada, Kansas, Arizona, Texas and Lower California.

**S. acilinea**, Mars. Mon., 1862, p. 477, pl. 16, fig. 36.

Oval, convex, piceous, shining, surface slightly bronzed. Head coarsely sub-rugosely punctulate, frontal stria broadly interrupted at middle. Thorax fimbriate, disc finely and sparsely punctulate, at sides more coarsely, and near the anterior angles more densely, and a narrow space along the basal margin coarsely punctured. Elytra at apical half punctured, punctures coarse, more dense and serrate near the tips of the outer striae and extending in the interstriae, and in the outer two to the base; external subhumeral short basal, internal feeble, disconnected, oblique humeral sub-obsolete; first dorsal extending to middle, second longer, third shorter than the first, abbreviated at base, fourth equal to first, arching at base, joining the sutural which is entire. Pygidium and propygidium densely and rather coarsely punctured. Anterior tibiae multidenticulate, middle and hind tibiae spinulose. Length .10 inch; 2.5 mm.

The only difference that I can detect between this and var. *desertorum* of the preceding species is the abbreviation of the third dorsal at base. The size given by Marseul, is evidently too great, as is shown by the figure, the measurement above being from the type.

One specimen is before me (type), collected in the United States (possibly Texas), without definite locality.

**S. cœrulescens**, Lec. Ann. Lyc. V., p. 169.

Broadly oval, moderately convex, surface sub-opaque, steel-blue, prothoracic epipleurae, and legs rufous. Head densely punctured, frontal stria entire. Thorax with margins sparsely fimbriate, disc sparsely punctured, punctures gradually becoming more dense to the sides where they are coarser, and almost confluent. Elytra moderately coarsely punctured over the entire surface, punctures less dense in the scutellar and sutural regions, humeral space smoother; external subhumeral short close to the marginal, internal short apical, humeral obliterated by punctures; first dorsal extending two-thirds to apex, second slightly longer, 3-4 gradually shorter, the latter arching at base, joining the sutural which is entire. Pygidium and propygidium densely and moderately

coarsely punctured. Anterior tibiæ multidenticulate, middle and hind tibiæ spinulose. Length .14 inch ; 3.5 mm.

Easily known by its sub-opaque, steel-blue surface, punctured over its entire extent.

One specimen, California.

*S. vestitus*, Lec. Ann. Lyc. V., p. 168.

Oval, feebly convex piceous, opaque. Head moderately densely punctured, frontal stria interrupted at middle. Thorax with margins sparsely fimbriate, surface moderately coarsely punctured, punctures denser at the sides, but not rugose. Elytra moderately coarsely and equally punctured, over the entire surface, but not densely; external subhumeral short basal, internal feeble disconnected; first dorsal extending slightly beyond the middle, 2-3-4 gradually shorter, 2-3 hooked at base, fourth arched, joining the entire sutural. Pygidium and propygidium sparsely, but not densely punctured. Body beneath, and legs reddish-brown, anterior tibiæ multidenticulate, middle and hind tibiæ spinulose. Length .07-.10 inch ; 1.75-2.50 mm.

Occurs in California near San Francisco, rare.

#### Group VIII.

Species usually of robust facies. Front distinctly margined. Prosternum moderately compressed, foveate at tip, striae usually entire, convergent in front. Anterior tibiæ rather coarsely denticulate, middle and hind tibiæ biserially spinulose.

The species of this group may be readily distinguished by the following table :

Elytra with distinct sutural stria.

Sutural stria entire, punctured space at apex of small extent; dorsal striae not entering the punctures.....sphaeroides.

Sutural stria abbreviated at apex, or confused.

Elytral punctures apical only, basal region impunctured.

Thorax strigoso-punctate at sides and apex; elytra densely punctured at apex and sub-opaque; surface bronzed.....seminitens.

Thorax sparsely punctured at sides; elytra sparsely punctured; color brownish, shining, not bronzed....ferrugineus.

Elytral punctures dense, extending to base between the striae, scutellar mirror more or less defined.

Elytra coarsely punctured.

Mirror sharply defined; sutural stria entire, confused at tip.....fraternus.

Mirror not defined; sutural stria obsolete at apex.....mancus.

Elytra strigoso-aciculate.....bigemmus.

Elytra with sutural stria wanting.

Scutellar mirror well defined; fourth dorsal distinct....Fitchii.

No scutellar mirror; fourth dorsal and are obliterated. estriatus.

**S. sphæroides**, Lec. Bost. Journ. V., p. 78, pl. 6, fig. 5; Mars. Mon., 1855, p. 719, pl. 20, fig. 154; *bigener*, Lec. loc. cit., p. 77, pl. 6, fig. 3.

Surface bronzed or cupreous. Head distinctly margined in front, smooth, and with a faintly marked chevron. Thorax sparsely punctured in front and at the sides, basal margin more coarsely punctured, disc smooth. Elytra punctured at apex, punctured space extending to the middle along the suture; external subhumeral moderately long, humeral finely impressed, not uniting with the internal subhumeral; first dorsal long, extending four-fifths to apex, and sinuate at tip; striae 2-3-4 gradually shorter, the latter arching at tip, joining the sutural which is entire. Propygidium moderately but not densely punctured, Anterior tibiae coarsely denticulate, the apical three teeth much shorter than the others; middle and hind tibiae biserially finely spinulose. Length .10-.14 inch; 2.5-3.5 mm.

Occurs in the Middle States and Canada, on the banks of streams or on the sea shore.

**S. seminitens**, Lec., New Species, 1863, p. 61.

Surface bronzed, moderately shining. Head distinctly margined, front anteriorly rugulose. Thorax punctured and at sides finely strigose, base coarsely punctured, impunctured space short and very transverse. Elytra with large space moderately coarsely and densely punctured, extending in front of middle, and enclosing the tips of the striae, scutellar space smooth, shining, interstitial space, sub-opaque; external subhumeral moderate, parallel with the marginal, humeral obsolete, internal subhumeral moderately impressed; first dorsal extending four-fifths to apex, striae 2-3-4 gradually shorter, the latter arching at base, joining the sutural which extends two-thirds to apex. Pygidium and propygidium moderately densely and coarsely punctured. Legs reddish-brown, tibiae as in the preceding species. Length .12 inch; 3 mm.

One specimen, Nebraska. The interstitial space in this as in the preceding species, is impunctured.

**S. ferrugineus**, Mars. Mon., 1855, p. 712, pl. 19, fig. 148.

Oblong oval, moderately convex, rufo-ferruginous shining. Head smooth, front margined, and with a very faintly impressed chevron. Thorax very sparsely and finely punctured at the apex and sides, and a few coarser punctures along the base. Elytra very sparsely punctured at apex, punctures extending slightly in front of middle, external subhumeral stria absent, oblique humeral finely impressed, internal subhumeral short, disconnected; first dorsal extending to middle, second to two-thirds, third slightly longer than the first, fourth shorter, arching at base, joining the sutural which extends slightly beyond the middle, becoming finer at apex. Pygidium moderately convex, finely punctulate. Anterior tibiae 5-6 denticulate, hind tibiae biserially spinulose. Prosternum carinate, striae approximate. Length .09 inch; 2.25 mm.

This species is easily recognized from this excellent description and

figure, by Marseul. The type is before me through the kindness of M. Marseul.

Occurs in Texas.

**S. fraternus**, Say. Journ. Acad., 1823, V., p. 40; Lec. Bost. Journ. V., p. 77, pl. 6, fig. 4; Mars. Mon., 1855, p. 701, pl. 19, fig. 140.

Broadly oval, convex, black, aeneous, subopaque. Head flat, front rugose at middle, and with two obsolete chevrons, stria entire. Thorax moderately densely punctured, punctures at the sides somewhat strigose, discal broad triangular space nearly smooth. Elytra densely punctured and opaque with a well-defined small scutellar mirror usually limited at the sides by the fourth dorsal; external subhumeral stria obsolete, internal entire, oblique humeral fine; first dorsal long, curved at tip, 2-3-4 extending nearly to the middle, and gradually shorter, fourth arching at base, joining the sutural which is entire, rarely somewhat confused at tip. Pygidium and progygidium very densely punctured. Anterior tibiae 7-8 denticulate, middle and hind tibiae spinulose. Length .14 inch; 3.5 mm.

Occurs on the Atlantic and Lake shores, abundant.

**S. mancus**, Say. Journ. Acad., 1823, V., p. 40; Mars. Mon., 1855, p. 706, pl. 19, fig. 143.

Broadly oval, convex, black, aeneous, subopaque. Head flat, front coarsely punctured, and with a single chevron limiting a smooth triangular space, stria entire. Thorax moderately densely punctured; punctures denser and strigose in front, and at the sides, less dense and finer on the posterior portion of the disc. Elytra densely punctured, punctures strigose, scutellar mirror not well defined; external subhumeral short, close to the marginal, internal long, nearly joining the fine oblique humeral; first dorsal long arcuate at tip, 2-3-4 attaining the middle, successively slightly shorter, fourth arching at base, joining the sutural which extends to middle, its apical portion, and also the apical marginal stria obliterated. Pygidium and propygidium densely punctured. Anterior tibiae six-denticulate, middle and hind tibiae spinulose. Length .10-.14 inch; 2.5-3.5 mm.

Closely allied to the preceding species, but readily distinguished by the characters above given. The scutellar mirror varies in extent as well as in degree of definition, and in some specimens is almost entirely obliterated by strigosity.

Occurs in the Northern States and Canada.

**S. bigemmeus**, Lec. Ann. Lyc. V., p. 169; Mars. Mon., 1855, p. 707, pl. 19, fig. 144.

Surface distinctly bronzed. Head margined anteriorly, front rugoso-punctate. Thorax broadly punctured at the sides and in front, and more coarsely punctured along the base. Elytra densely strigoso-aciculate, opaque, mirror small, well defined; external subhumeral very short, basal

humeral finely impressed, joining the internal subhumeral; first dorsal well defined, extending four-fifths to apex and sinuate at tip; second extending to middle, and finely impressed, third and fourth very finely impressed and rapidly shorter, the fourth arching at base, joining the sutural which extends two-thirds to apex, and is gradually obliterated by the punctures. Pygidium and propygidium moderately, and not densely punctured. Legs as in the preceding species. Length .08-.10 inch; 2-2.5 mm.

Occurs on the sea-coast, of California.

**S. Fitchii**, Mars. Mon., 1862, p. 494, pl. 13, fig. 50.

Surface distinctly bronzed. Head margined, front punctato-rugose. Thorax with a broad space at sides and apex coarsely punctured, at margin strigose, discal smooth space moderately well defined, basal margin coarsely punctured. Elytra densely and coarsely punctured, and opaque over the entire dorsal aspect, except a well defined scutellar mirror; external subhumeral obsolete, humeral fine, not joining the internal subhumeral which is moderately long; first dorsal nearly entire, well marked sinuous at tip, second short, indistinct, third obsolete, fourth very short arcuate at base, sutural entirely wanting. Propygidium and pygidium moderately but not very densely punctured. Legs as in the preceding species. Length .12 inch; 3 mm.

One of the best defined species of the group. One specimen from Lowell, Massachusetts, kindly presented by Mr. P. S. Sprague.

**S. estriatus**, Lec. Pacif. R. R. Rep., 1857, App. I., p. 36; Horn, Trans. Am. Ent. Soc., 1870, p. 139, pl. 1. fig. 12.

Black, subopaque. Head distinctly margined, front with one or two chevrons more or less obliterated. Thorax moderately densely punctured, and at the sides substrigose, disc with spaces of irregular form impunctured. Elytra densely and moderately coarsely punctured over the entire dorsal aspect excepting three small smooth spaces, the first humeral, and extending along the sides, the second small oval and slightly within and beneath the first, the third larger than the preceding and at one-third from the base; external subhumeral not distinct from the marginal, humeral obsolete, internal subhumeral moderately impressed, first dorsal obsolete at base, apical portion nearly entire, sinuate at tip; second, third and fourth striae entirely wanting, sutural entirely obliterated at base, apical portion sometimes evident. Pygidium and propygidium moderately densely and finely punctured, the former with a median narrow space and apex much smoother. Legs as in *fraternus*. Length .12-.18 inch; 3-4.5 mm.

Oregon and California, not common.

#### Group IX.

Front distinctly margined. Prosternum compresso-carinate, striae united in front, usually short, sometimes obsolete. Hind tibiae with

moderately coarse spinules arranged in a triple series or densely and irregularly placed.

Hind tibiæ with moderately long spinules arranged in three series ; thorax punctured or rugose at the sides.

Elytra with punctures in the apical region only.

Thorax with narrow space within the margin punctured.

Sutural stria entire ; elytral punctures coarse.... *patruelis*.

Thorax with wide lateral and apical space strigose ;  
sutural stria abbreviated ..... *lucidulus*.

Elytra densely and coarsely punctured, except a small scutellar space not well defined ; thorax coarsely punctured over nearly the entire surface..... *æneipunctatus*.

Hind tibiæ with short spinules densely placed ; thorax with basal margin only punctured.

Elytra sparsely punctured at apex only.

Elytral punctures coarse ; marginal stria of mesosternum sinuous at middle..... *dimidiatipennis*.

Elytral punctures finer ; marginal stria of mesosternum straight..... *gaudens*.

Elytra coarsely punctured over the greater part of the surface.

Elytra punctured over the entire surface ; marginal thoracic stria not extending on the base ; anterior tibiæ moderately denticulate..... *serrulatus*.

Elytra with impunctured space at base ; marginal stria of thorax extending along the base ; anterior tibiæ with two apical teeth very large..... *sulcifrons*.

**S. patruelis**, Lec. Bost. Journ. V., p. pl. fig. ; Mars. Mon., 1855, p. 711, pl. 20, fig. 147 ; *Javeti*, Mars. loc. cit. p. 709, pl. 20, fig. 146.

Form robust, surface shining with bluish-green or slightly bronze lustre. Head distinctly margined, front smooth and with a chevron more or less marked. Thorax with a narrow band of punctures within the lateral margin extending usually along the apex ; basal margin with a narrow space coarsely punctured. Elytra very coarsely but not densely punctured at apex, punctures extending along the suture two-thirds to apex ; external subhumeral obsolete, humeral oblique, fine and long, internal subhumeral disconnected, short ; first dorsal extending slightly beyond the middle, second shorter, third as long as first, fourth shorter than the preceding, and arched at base joining the sutural. Pygidium and propygidium sparsely and not coarsely punctured, the former smoother at apex. Anterior tibiæ six-denticulate, the apical three teeth much coarser, hind tibiæ biserially spinulose. Length .10-.14 inch ; 2.5-3.5 mm.

In this species the punctuation of the sides of the thorax varies, and its extent may be reduced to a small patch near the anterior angle.



Occurs from the Middle States to Kansas.

*S. lucidulus*, Lec. Ann. Lyc. V., p. 170; *barbipes*, Mars. Mon., 1857, p. 448, pl. 11, No. 33, fig. 150 b.

Oblong oval, black with slight tinge of bronze. Head distinctly margined, front smooth, with a well marked chevron. Thorax sparsely punctured on the disc, more densely at the sides and apex, where they become strigose. Elytra sparsely punctured at apex, punctures extending to the middle along the suture; external subhumeral wanting, humeral moderately impressed, joining the internal subhumeral which is moderately long; first dorsal extending two-thirds to apex slightly sinuous at tip, second and third longer, fourth shorter, arched at base joining the sutural, which extends slightly beyond the middle. Pygidium and propygidium coarsely and densely punctured. Legs as in the preceding species. Length .10 inch; 2.5 mm.

Occurs at San Diego, California.

*S. æneipunctatus*, Horn, Trans. Ann. Ent. Soc., 1870, p. 333.

Oblong oval, black, opaque, elytra with aeneous lustre at bottom of punctures. Head margined in front, with a faintly impressed chevron. Thorax moderately, coarsely and densely punctured over nearly the entire surface except a narrow lateral and small discal space. Elytra very densely and coarsely punctured over the entire surface except at humerus and sides, and more rarely a badly defined space on each elytron near the scutellum and beneath the arch; external subhumeral obsolete, humeral obliterated by punctures, internal subhumeral moderate; first dorsal long, indistinct, second short with an arc at base, third obsolete, fourth very short, uniting by an indistinct arc at base with the sutural, which extends very indistinctly two-thirds to apex. Propygidium and pygidium densely and coarsely punctured. Anterior tibiae 5 or 6-denticulate, apical three teeth very coarse; hind tibiae distinctly triseriately spinulose. Length .12 inch; 3 mm.

The striae of the elytra are nearly as much obliterated as in *estriatus*, from which it may be readily known by the form of prosternum and the armature of the hind tibiae.

Occurs on the sea-coast near San Francisco, Cal.

*S. dimidiatipennis*, Lec. Ann. Lyc. I, p. 170; Bost. Journ. V., p. 75, pl. 6, fig. 1; Mars. Mon., 1855, p. 713, pl. 20, fig. 149; *palmatus*, Say. Journ. Acad., 1825, p. 42; Lec, loc. cit., p. 76; *desertorum* ‡, Mars. loc. cit., p. 715, pl. 20, fig. 151; *deserticola*, Mars. Mon., 1857, p. 443.

Form robust, black, shining, elytra usually black, sometimes obliquely divided, the inner portion black, the outer red. Head strongly margined, front smooth, with distinct chevron. Thorax smooth, shining with a narrow space of punctures along the base. Elytra sparsely punctured at apex, punctures extending to middle along the suture, and rarely beyond the third stria, lateral region sparsely punctured; external subhumeral moderately distinct, humeral fine, internal subhumeral not

joining the humeral, and broadly interrupted at its middle ; first dorsal extending to middle, second and third longer, fourth equal to the first, arching at base, joining the sutural which is entire. Pygidium and propygidium coarsely but sparsely punctured. Anterior tibiae as in the preceding species, hind tibiae densely and irregularly spinulose on the outer face. Length .12-.16 inch ; 3-4 mm.

Occurs on the sea-coast of the Middle States region.

The two synonyms by Marseul, refer to the same insect, which is the nearly totally black form, which was given him as having come from the Rocky Mountains.

**S. gaudens**, Lec. Ann. Lyc. V., p. 165.

Oblong oval, black, shining, with slight tinge of bronze. Head distinctly, margined front smooth without chevron. Thorax smooth with very narrow space of punctures along the base. Elytra sparsely and moderately coarsely punctured at apex, punctures extending in front of middle ; external subhumeral very close to the marginal, humeral moderately long, internal subhumeral short, disconnected ; first dorsal extending slightly beyond the middle, second very nearly as long, third very short, fourth one-third the length of the elytra, arched at base, joining the sutural which is entire and deeply impressed. Pygidium sparsely and rather coarsely punctured. Tibiae as in the preceding species, but with the first two teeth very close and the third more distant. Length .12 inch ; 3 mm.

Occurs on the California sea-coast, but is rare.

**S. serrulatus**, Lec. Ann. Lyc. V., p. 165.

Black, moderately shining, elytra brownish opaque. Head margined, front smooth, chevron feebly marked. Thorax smooth, sparsely punctured along the basal margin. Elytra very coarsely but not densely punctured over the entire surface, except a narrow space extending from the humerus along the outer side of the first dorsal stria ; external subhumeral distinct, humeral finely impressed, internal subhumeral disconnected, short ; first dorsal extending to middle, second and third slightly longer, fourth shorter than the first, arching at base, joining the sutural which is entire. Pygidium and propygidium coarsely and moderately densely punctured. Anterior tibiae 7-8-denticulate and more finely than usual in the group ; hind tibiae densely clothed with short stout spinules. Length .14 inch ; 3.5 mm.

Occurs on the sea-coast at San Diego.

**S. sulcifrons**, Mann. Bull. Mosc.. 1843, II., p. 259 ; Mars. Mon., 1856, p. 101, pl. 3, No. 34, fig. 2.

Form robust, black, subopaque. Head distinctly margined, front with a feeble chevron. Thorax smooth, very convex, with a narrow line of punctures at base, marginal stria advancing along the base, and deeply impressed to the middle of each elytron. Elytra densely and coarsely punctured with smoother spaces at humerus, outer apical angle and

under the arch of the fourth dorsal; marginal stria arched at base; external subhumeral confounded with the marginal, humeral fine, internal subhumeral obliterated; dorsal striæ very short indistinct, except at base where all are more or less arched, fourth joining the sutural which extends very indistinctly nearly to apex. Pygidium and propygidium densely and coarsely punctured. Anterior tibiæ with two very coarse teeth at apex, above which the tibiæ are finely serrulate; hind tibiæ stout, densely spinulose. Length .18-20 inch; 4.5-5 mm.

Occurs on the sea-coast of California.

#### TERETRIUS, Erichs.

Body cylindrical, prosternum emarginate at tip, receiving the mesosternum, tibiæ denticulate. Antennæ frontal, antennal fossa at the sides of thorax under the anterior angle.

Two species only occur in our fauna.

Elytra with a short, very oblique stria at base..... obliquulus.

Elytra punctured without stria.....americanus.

**T. obliquulus**, Lec. Pacif. R. R. Rep., 1857, p. 36.

Oblong robust, piceous shining. Head sparsely punctured. Thorax sparsely punctured, punctures finer and slightly more dense at the sides, marginal stria entire ending abruptly at base. Elytra sparsely punctured, punctures finer toward the sides, subhumeral space smooth, at base a short, very oblique moderately impressed stria. Pygidium moderately coarsely, but not densely punctured. Prosternum broad, broadly emarginate in front, acutely notched behind, mesosternum with entire marginal line, coarsely and sparsely punctured. Anterior and middle tibiæ 6-denticulate, hind tibiæ 4-spinose. Length .10 inch; 2.5 mm.

Occurs near Sacramento, California.

**T. americanus**, Lec. Proc. Acad., 1859, 316; *picipes* ‡, Lec. Bost. Journ. V., p. 79, pl. 6, fig. 6.

Oblong, moderately robust, piceous shining. Head sparsely punctured. Thorax sparsely and moderately coarsely punctured, punctures finer at the sides, marginal stria entire, extending slightly along the base very close to the margin. Elytra sparsely and moderately coarsely punctured, punctures coarser at base, subhumeral smooth space small. Pygidium and propygidium moderately coarsely but sparsely punctured. Prosternum subtruncate in front. Anterior tibiæ 5-6 denticulate, middle tibiæ more coarsely 5-dentate, hind tibiæ bispinose at apex. Length .06-.08 inch; 1.5-2 mm.

This species is very closely allied to the *picipes* of Europe, and appears to differ only in the greater distinctness of the lateral margin of thorax, and by the incurved end of the marginal stria being closer to the base so that the slight groove seen in the European form is obliterated. It is probable that with more specimens this slight difference would disappear.

Widely distributed, but appears to be rare.

## TERETRIOSOMA, n. g.

Form subcylindrical, short, obtuse.

Head deeply inserted, vertex convex, front inflexed ; no frontal stria.

Antennæ inserted on the front, antennal fossa broad and shallow, situated on the underside of thorax in front of the coxæ.

Prosternum short, broad, without striæ, anteriorly subtruncate, posteriorly emarginate ; mesosternum prominent in front, received by the prosternum, and with entire marginal line.

Thorax nearly as long as the elytra, subquadrate, anteriorly emarginate, at base broadly rounded.

Elytra punctured. Scutellum minute.

Propygidium transverse short. Pygidium double, upper portion, transversely oval, feebly convex, inferior portion longitudinally concave, transversely scarcely convex.

Anterior tibiæ slender at base, dilated at apex, exteriorly finely serrulate with many spinulose teeth, middle and hind tibiæ similar, the latter with the spinules less densely placed. Tarsi bi-unguiculate.

This genus is closely allied to *Teretrius* and *Xiphonotus*, and apparently nearly intermediate between the two. From the former it differs especially by the double pygidium, and from the latter by the absence of the prothoracic projection in front, and the two claws to all the tarsi, and the form and armature of the tibiæ. The vertex and front are not in the same continuous curve, but the latter is flat and more strongly inflexed than the former, and longitudinally concave.

**T. chalybæum**, n. sp.

Form subcylindrical, short, obtuse, surface shining bluish with slight tinge of green, sparsely, equally, and not coarsely punctured, antennæ and legs reddish-brown. Thorax subquadrate, slightly broader than long, sides feebly arcuate, and slightly convergent in front. Elytra slightly longer than the thorax, and scarcely longer than wide, at base slightly impressed. Propygidium transverse, punctured similarly to the elytra. Pygidium double, basal portion more than twice as wide as long, and at distal end arcuate, surface similar in color and punctuation to the propygidium ; apical portion viewed directly in front, crescentic, vertically slightly concave, transversely scarcely convex, surface piceous, less distinctly punctured and subopaque. Prosternum as broad as long, moderately convex, sparsely and coarsely punctured. Meso- and metasternum coarsely and sparsely punctured, the suture obliterated. Length .12 inch ; 3 mm. Plate 5, fig. 9.

One specimen, Texas, received from Dr. Summers, of New Orleans.

PLEGADERUS, Erichs.

Plegaderus may be readily known from all the genera of Histeridæ by the structure of the prosternum. The prosternum is broad and has on each side a broad, deep channel extending from the lobe to the tip,

slightly arcuate, so that the two approach slightly at middle, and also a broad transverse groove which divides the median convex portion of the prosternum into two unequal portions. The lateral grooves extend also on the meso- and metasternum, and are there divergent, running parallel with the sutures. On the outer side of the grooves, and limiting them in their entire length is a ridge more or less acute as the groove is broader, and in *P. Sayi*, the ridge approaches so closely to the lateral carina of the prosternum, especially in front that the channel which usually exists between the two ridges is entirely obliterated. In consequence of this in separating our species (Trans. Am. Ent. Soc., 1870, p. 142), I described *Sayi* as having a single sulcus on each side and *nitidus* and *fraternus* two on each side. This method of expression is however faulty and may mislead, and should therefore be lost sight of.

The following table will serve to distinguish our species :

Transverse thoracic impression usually obliterated, rarely visible at the sides ; meso-metasternal plate sparsely punctured.	
Elytral punctures round, coarse and sparsely placed.....	Barbelini.
Transverse thoracic impression entire and moderately deep.	
Elytra strigoso-punctate.....	transversus.
Elytra coarsely punctured, punctures round, not strigose.	
Body beneath coarsely and rather closely perforato-punctate.....	Sayi.
Body beneath very sparsely punctate.	
Transverse sulcus of prosternum scarcely broader than the lateral sulci, posterior division of prosternal carina of moderate extent, the anterior elongate oval. Thorax moderately coarsely but not densely punctured. Lateral sulcus of pronotum entire.	
Posterior portion of prosternal carina trapezoidal..	consors.
Posterior portion of prosternal carina triangular.....	fraternus.
Transverse sulcus of prosternum very broad, wider than the lateral sulci, posterior division of prosternal carina very minute, anterior transverse. Thorax very sparsely and finely punctulate. Lateral sulcus of pronotum not attaining the base.....	nitidus.

*P. Barbelini*, Mars. Mon., 1862, p. 684; 1861, pl. 4, No. 46, fig. 2; *pusillus*†, Lec. Bost. Journ. V., p. 80, pl. 6. fig. 8; *Erichsonii*, Lec. List, p. 28.

Oblong oval, moderately convex, brownish, shining. Head finely and not densely punctured, front slightly concave transversely. Thorax subquadrate, slightly broader than long, base not margined, lateral groove deep, not quite attaining the basal margin, marginal space convex, not interrupted; disc with slight trace of transverse impression at the sides near the anterior third, frequently entirely wanting; surface sparsely punctured, marginal space more densely and coarsely. Elytra coarsely

and not densely punctured, punctures round and distinct; marginal stria short, extending to middle and deeply impressed,\* and at humerus a slight trace of an oblique stria. Propygidium and pygidium sparsely and moderately coarsely punctured. Anterior tibiæ finely spinulose, middle and hind tibiæ ciliate. Prosternum on each side deeply sulcate, median convex portion broadly divided transversely by a deep sulcus ciliate at bottom, anterior division broadly oval, coarsely, but sparsely punctured, posterior portion small, narrow, cariniform. Mesosternal plate coarsely but very sparsely punctured. The two sulci are united in front by a fine transverse groove parallel with, and close to the anterior margin of the prosternum. The lateral ridge of the prosternum is moderately distant from the ridge bounding the sulcus externally, and the space between them is sulciform and smooth. Length .04 inch; 1 mm.

Occurs abundantly in North and South Carolina. Marseul's name has priority by one year, and must be adopted.

**P. transversus**, Say. (*Hister*), Journ. Acad. V., 1825, p. 45; Lec. Bost. Journ. V., p. 80. pl. 6, fig. 7; Mars. Mon., 1856, p. 277, pl. 22, fig. 9.

Oblong oval, brown, moderately shining. Head sparsely punctured, front transversely slightly concave. Thorax slightly broader than long, marginal stria deep, lateral sulcus entire, moderately deep, gradually less impressed to base, margin convex, not interrupted, more densely punctured at the anterior angles; disc divided unequally by a moderately impressed transverse sulcus, anterior portion smaller, and more closely punctured than the posterior, punctures sparsely placed and of elongate form. Elytra strigoso-punctate, more densely near the humeral angles, at humerus a short oblique stria moderately impressed; marginal stria short basal. Pygidium coarsely and moderately densely punctured. Prosternum as in the preceding species, but with the portion behind the transverse sulcus slightly more distinct. Length .05 inch; 1.25 mm.

Occurs from Canada to Texas, more abundant in the Gulf and Southern Atlantic States.

**P. Sayi**, Mars. Mon., 1856, p. 269, pl. 11, No. 38, fig. 7.

Oblong oval, brownish, shining. Head sparsely punctulate, front transversely slightly concave. Thorax slightly broader than long, marginal stria moderately deep, lateral sulcus entire, marginal space convex, not interrupted, coarsely and rather densely punctured; disc unequally divided by moderately deep transverse sulcus, anterior portion more finely and densely punctured than the posterior. Elytra coarsely and rather closely punctured, suture slightly elevated, oblique humeral and one dorsal stria short, rudimentary, marginal short basal. Pygidium and propygidium densely and coarsely punctured. Metasternal plate densely

\* Marseul calls the short stria an *internal* marginal stria, but from the position of the two striae, I find that the short stria is really the marginal, while the other of which he speaks, composed of coarse punctures, is really a portion of the sculpture of the side pieces of the meso- and metasterna.

and coarsely perforato-punctate. Prosternal sulci deep, broad, transverse sulcus not wider than the lateral, anterior portion of prosternum oval, coarsely punctured, posterior portion oval, truncate in front; lateral carina of prosternum confluent with the ridge limiting the sulcus before attaining the front of prosternum. Length .06 inch; 1.5 mm.

This species is readily known by the very coarsely perforato-punctate meso-metasternal plate.

Not common. Occurs in the Middle States.

**P. consors, n. sp.**

Oblong oval, black, shining. Head sparsely punctulate, front slightly concave transversely. Thorax slightly broader than long, marginal stria moderately deep, lateral sulcus moderately deep, entire, marginal space convex, sparsely punctured; disc unequally divided by a transverse sulcus, anterior portion slightly more than half the posterior and more finely but not more densely punctured. Elytra coarsely but not densely punctured, suture slightly elevated, at base a short oblique humeral and rudimentary dorsal; marginal stria feeble extending one-third to apex. Pygidium moderately, neither coarsely nor densely punctured. Metasternum sparsely punctured. Prosternum nearly as in *Sayi*, posterior portion of carina broader than long, trapezoidal, lateral carina of prosternum extending entirely to apex. Length .05 inch; 1.25 mm.

Narrower and less convex than *Sayi* and with the meso-metasternal plate very sparsely punctured.

One specimen, Colorado.

**P. fraternus, Horn, Trans. Am. Ent. Soc., 1870, p. 141.**

Oblong oval, brownish, moderately shining. Head sparsely punctured and slightly transversely concave. Thorax slightly broader than long, marginal stria moderately deep, lateral sulcus entire, marginal space convex, sparsely punctured, more densely in front; disc unequally divided by a transverse sulcus less distinct at middle, surface sparsely punctured, the anterior division more finely. Elytra sparsely punctured, punctures coarse, round and deeply impressed, suture slightly elevated, at base with short oblique humeral and rarely a rudimentary dorsal, marginal short moderately deeply impressed. Pygidium moderately coarsely and densely punctured. Metasternal plate sparsely punctured. Prosternum nearly as in *Sayi*, the portion behind the transverse sulcus oval, subacute in front, lateral ridge entire, the space between it and the marginal ridge of the sulcus not channeled. Length .05 inch; 1.25 mm.

Smaller than the preceding species and relatively broader. Differs especially in the form of posterior division of the prosternum which results from a narrower transverse sulcus.

Occurs in California and Nevada.

**P. nitidus, Horn, Trans. Am. Ent. Soc., 1870, p. 141.**

Oblong oval, black, shining. Head sparsely punctulate, front transversely slightly concave. Thorax slightly broader than long, marginal stria

moderately impressed, lateral sulcus moderately deep in front, gradually shallower behind and not attaining the basal margin, marginal space moderately convex, sparsely punctured, more densely in front, disc sparsely and finely punctured, unequally divided by transverse sulcus. Elytra frequently with two rudimentary dorsal and oblique humeral striæ, surface sparsely and rather finely punctured; marginal stria fine extending one-third. Pygidium moderately coarsely but not densely punctured. Metasternum sparsely punctured. Prosternal sulci broad, deep, transverse sulcus much broader, anterior prosternal division transversely oval, posterior small, obtusely cariniform. Length .07-.09 inch; 2-2.5 mm.

One of our most distinct species, easily known by its black, shining, sparsely and rather finely punctured surface.

Occurs in Nevada and Oregon; in the latter place collected rather abundantly by Lord Walsingham.

#### BACANIUS, Lec.

Frontal suture distinct. Eyes coarsely granulated. First joint of antennæ gradually thicker to the tip, second joint broader than long, rhomboidal, third longer than the two following, antennal fossa as in *Dendrophilus*. Prosternum broader than long, at tip truncate, lobe nearly as long as the prosternum, mesosternum truncate. Anterior tibiæ dilated and bidenticulate, middle and hind tibiæ dilated, but less than the anterior.

The species of this genus are all minute and are thus distinguished:

- |  |               |
|--|---------------|
| Prosternum and mesosternum smooth sparsely punctured, mesosternal stria visible at the sides, obliterated at middle. Elytral punctures simple.   |               |
| Elytra with subhumeral and first dorsal entire. Epipleural fold smooth, impunctured. Pygidium very minutely punctulate.....  | misellus.     |
| Elytra with subhumeral abbreviated at apex, first dorsal short. Epipleural fold sparsely punctured. Pygidium punctured.....  | tantillus.    |
| Prosternum and mesosternum coarsely foveato-punctate, mesosternal stria entirely obliterated. Subhumeral stria wanting, first dorsal entire, broadly arching at base and returning. Epipleural fold coarsely punctured. Pygidium coarsely punctured. Elytral punctures sub-strigose..... | punctiformis. |

**B. misellus**, Lec. Proc. Acad., 1853, p. 292; Mars. Mon., 1856, p. 573, pl. 14, No. 41, fig. 3.

Broadly oval, subglobose, brownish-red, moderately shining. Head very sparsely and minutely punctulate. Thorax sparsely and finely punctured. Elytra more coarsely punctured, punctures simple and sparsely placed, subhumeral stria entire, first dorsal entire, more deeply impressed than the subhumeral. Pygidium shining, very sparsely and



finely punctulate. Meso-metasternal plate shining, very minutely punctulate. Legs paler than the under surface. Length .03 inch ; .75 mm.

Occurs in the Middle States region.

**B. tantillus**, Lec. loc. cit., p. 291.

Larger, more broadly oval and less convex than the preceding species. Thorax more coarsely punctured. Elytra with subhumeral stria abbreviated at base and subobsolete at apex, first dorsal apical, attaining the middle only. Pygidium coarsely punctured. Meso-metasternal plate sparsely punctured. Length .04 inch ; 1 mm.

Occurs from Pennsylvania to Louisiana.

**B. punctiformis**, Lec. loc. cit., p. 288.

Similar in form to *misellus*. Thorax similarly punctured. Elytra without subhumeral stria, first dorsal entire broadly arching at base, surface densely aciculate punctured and with a substrigose aspect. Pygidium coarsely but not densely punctured. Meso-metasternal plate densely foveato-punctate. Length .03 inch ; .75 mm.

Occurs in Pennsylvania, Florida, Missouri.

#### ACRITUS. Lec.

This genus contains the most minute species of the family. It may be at once known by the four-jointed hind tarsi. *Bacanius* bears a superficial resemblance to *Acritus*, but may be known by the five-jointed hind tarsi, the prosternum slightly lobed in front and without striæ, and the form of the tibiæ. They have in common, however, the prominent, coarsely granulated eye, in front of which the antennal scape is lodged, when at rest, in a deep groove.

The four-jointed hind tarsus results from the union of the first two joints, consequently the first joint thus formed is long, always equal to the two following united, and in the majority of cases much longer. The scutellum is small and difficult to see from the very fine sutures between it and adjacent parts, and although small it is proportionately as large as in many *Saprinus*. Several species I find to be totally deprived of scutellum between the basal angles of the elytra ; these I have separated as a distinct genus.

As thus restricted our species are as follows :

Thorax without basal transverse row of punctures.

Anterior tibiæ rather broadly dilated. Prosternum much longer than wide at base, striæ in front strongly divergent, at base parallel..... maritimus.

Anterior tibiæ scarcely broader than the middle.

Prosternum scarcely longer than wide at middle ; elytra finely punctured..... Arizonæ.

Prosternum twice as long as wide ; elytra sparsely punctured..... exiguus.

Thorax with basal transverse row of punctures.

Prosternum scarcely longer than wide ; marginal striæ of mesosternum interrupted.

- Basal row of punctures short, arcuate ; mesosternum slightly concave longitudinally sulcate ; meso-metasternal suture obliterated. .... Floridæ.
- Basal row of punctures long, nearly straight ; mesosternum flat, meso-metasternal suture distinct.
- Form orbicular ; metasternum sparsely and finely punctured. .... discus.
- Form oval ; metasternum coarsely punctured. .... fimetarius.
- Prosternum much (usually twice) longer than wide ; mesosternal stria entire.
- Elytra with very deep humeral and dorsal striæ ; thorax very minutely and sparsely punctulate. .... Sallei.
- Elytra with scarcely a trace of striæ ; thorax moderately punctured.
- Prosternal striæ not more divergent in front than at base, elytral punctures much less distinct at base. strigosus.
- Prosternal striæ more divergent in front, elytral punctures as deep at base as at middle. .... acaroides.

**A. maritimus**, Lec. Ann. Lyc. V., p. 170 ; Proc. Acad., 1853, p. 290.

Oblong, feebly convex, brownish-black, shining. Head sparsely punctulate. Thorax sparsely and finely punctured. Elytra moderately coarsely, but not densely punctured, punctures feebly strigose at apex ; disc with faint oblique dorsal stria extending nearly to the middle of the margin ; marginal stria deeply impressed, entire ; suture slightly channelled at base. Pygidium smooth shining. Prosternum much longer than wide at base, striæ posteriorly parallel, anteriorly very strongly divergent, surface feebly shining, very finely alutaceous. Mesosternal stria entire. Anterior tibiæ dilated, anterior face slightly concave, outer margin finely spinulose. Length .045 inch ; 1 mm.

Occurs in California. It is the largest species in our fauna. The measurement above is the entire length, and it is really more than 1 mm. long.

**A. Arizonae**, n. sp.

Broadly oval, convex, brownish-black, shining. Head sparsely punctulate. Thorax sparsely punctured, punctures at apex fine, becoming gradually coarser to base. Elytra rather sparsely and moderately finely punctured, punctures finer at apex ; disc with a short scarcely evident humeral and dorsal stria not attaining the base, marginal stria fine. Pygidium very sparsely punctulate. Prosternum broad, nearly as wide at middle as long, surface sparsely punctured. Mesosternum moderately punctured, marginal stria interrupted, metasternal suture distinct. Metasternum sparsely punctulate. Anterior tibiæ scarcely broader than the middle. Length .04 inch ; 1 mm.

Occurs in Arizona, at Camp Grant, under Cottonwood bark.

**A. exiguus**, Erichs. Jahrb., 1834, p. 208 ; Lec. Proc. Acad., 1853, p.

291; Mars. Mon., 1856, p. 603, pl. 14, No. 11, fig. 3; *aciculatus*, Lec. Bost. Journ. V., p. 84, pl. 6, fig. 10; Mars. Mon., loc. cit., fig. 2; *obliquus*, Lec., loc. cit., fig. 12; *cribripennis*, Mars. Mon., 1856, p. 605, pl. 14, No. 43, fig. 5; *Natchez*, Mars., loc. cit., p. 604, fig. 4.

Oblong oval, brownish, slightly convex, shining. Head sparsely punctulate. Thorax moderately coarsely and sparsely punctured. Elytra more coarsely but not more densely than the thorax, marginal stria moderately deep, entire. Pygidium finely and sparsely punctulate. Prosternum more than twice as long as wide, surface with very few punctures. Mesosternal stria interrupted at middle, meso-metasternal plate rather coarsely but sparsely punctured. Anterior tibiae slender. Length slightly less than .04 inch; 1 mm.

After a careful study of the types of all the above synonyms, I confess myself unable to separate them. *Natchez* is said to have the mesosternum with an entire marginal stria, but I am thoroughly convinced that the stria is not entire and that the appearance is entirely owing to a very slight elevation of the anterior edge of the mesosternum, against which the tip of the prosternum abuts. The presence of the dorsal stria on which *obliquus*, *aciculatus* and *cribripennis* have been founded, is a character of no value whatsoever here, as every variation occurs from a moderate stria touching the base, to a shorter stria not attaining the base, and from this to no stria at all.

Occurs not uncommonly in the Middle, Southern and Western States, under bark.

**A. Floridæ**, Mars. Mon., 1862, p. 693, pl. 4, No. 51, fig. 2.

Orbicular, feebly convex, piceous, shining. Head sparsely punctulate. Thorax moderately, densely, and coarsely punctured at base, with a short row of closely approximate punctures, arcuate, and terminating within the middle of the elytra. Elytra more coarsely punctured than the thorax at base; punctures less distinct, at middle and near apex slightly strigose; marginal stria fine, entire; two very short striae at base, very feebly impressed. Pygidium finely and not densely punctured. Prosternum scarcely longer than broad, sparsely punctured. Mesosternum slightly concave, surface longitudinally sulcate, stria interrupted. Metasternum sparsely punctured, suture obliterated. Anterior tibiae slender. Length .04 inch; 1 mm.

More elongate and convex than *discus*, but equal in size. Occurs in South Carolina, Florida (Marseul), Louisiana (Sallé).

**A. discus**, Lec. Proc. Acad., 1853, p. 289.

Orbicular, brownish, moderately convex, shining. Head sparsely and minutely punctulate. Thorax finely punctured, at base a transverse, nearly straight, row of punctures extending nearly to the basal angles. Elytra moderately punctured, more coarsely than the elytra and finer and slightly aciculate at apex, marginal stria fine, entire, slightly sinuous at base, and with a very faint trace of a dorsal stria. Pygidium subopaque, finely alutaceous. Prosternum scarcely longer than wide

at middle, coarsely but sparsely punctured. Mesosternum flat, coarsely punctured, stria interrupted, metasternum finely alutaceous, sparsely punctured, suture fine but distinct. Legs pale rufous, anterior tibiæ slender. Length .04 inch ; 1 mm.

Occurs in Georgia, under bark.

*A. fimetarius*, Lec. Bost. Journ. V., p. 84 ; Mars. Mon., 1856, p. 615, pl. 14, No. 43, fig. 14.

Oval, moderately convex, piceous, shining. Head sparsely and minutely punctulate. Thorax sparsely and finely punctulate, at base a transverse, nearly straight row of punctures extending beyond the middle of each elytra. Elytra sparsely punctured, more coarsely than the thorax, at apex slightly aciculate, marginal stria entire, moderately deep. Pygidium finely transversely strigose and sparsely punctured. Prosternum scarcely longer than wide, sparsely punctured, mesosternum flat, coarsely punctured, stria interrupted, metasternum coarsely punctured, suture distinct. Anterior tibiæ slightly dilated at apex. Length .04 inch ; 1 mm.

Scarcely as long as *discus*, but more oval and convex, and with the elytra more coarsely punctured with deeper marginal stria.

Occurs in the Middle and Southern States.

*A. Sallei*, n. sp.

Oval, convex, brownish, shining. Head minutely punctulate. Thorax very finely and sparsely punctured, at base a short row of punctures, nearly straight close to the basal margin and not attaining the middle of the elytra. Elytra coarsely punctured, punctures finer and slightly aciculate at apex, disc with two oblique very deeply impressed striæ, the inner longer and extending to middle and between the tips of the two striæ the rudiment of another, marginal stria deep, entire. Pygidium finely alutaceous. Prosternum nearly twice as long as wide at middle, very sparsely punctured. Mesosternal stria entire, meso- and metasternum coarsely punctured, suture very fine. Anterior tibiæ slender. Length .03 inch ; .75 mm.

Closely allied to *strigosus*, but differs by the much more finely punctured thorax, deep dorsal and marginal stria. The latter stria is very much deeper at base, and there appears to be an additional stria at that point, parallel with and very close to it. In size it is equal to *strigosus*.

Georgia and Louisiana. Respectfully dedicated to M. Aug. Sallé, Paris, whose kindness during the progress of this paper has already been acknowledged.

*A. strigosus*, Lec. Proc. Acad., 1853, p. 289 ; Mars. Mon., 1856, p. 619, pl. 14, No. 43, fig. 19 ; *conformis*, Lec., loc. cit. ; *lateralis*, Mars. Mon., 1856, p. 621, pl. 14, No. 43, fig. 21.

Oval, moderately convex, brown, shining. Head sparsely and finely punctulate. Thorax sparsely and moderately finely punctured, and with a basal row of fine punctures not extending beyond the middle of the elytra. Elytra coarsely punctured, punctures at apex strigose, marginal

stria fine, disc with or without faint traces of an oblique dorsal stria. Pygidium finely alutaceous. Prosternum nearly twice as long as wide, striae not more divergent in front, surface with a few punctures. Mesosternal stria entire, meso- and metasternum coarsely punctured, the latter less so, suture fine. Tibiae slender. Length .03 inch ; .75 mm.

I am totally unable to appreciate the differences between *lateralis*, Mars., and *strigosus*, Lec., and after a careful examination of the species, believe *conformis* to be merely a somewhat smoother form.

Occurs in the Southern States.

**A. acaroides**, Mars, Mon., 1856, p. 618, pl. 14, No. 43, fig. 18.

Oval, convex, piceous, shining. Head sparsely punctulate. Thorax finely and moderately densely punctured, basal row of punctures moderately coarse, close to the margin and short. Elytra coarsely punctured, punctures strigose at apex, marginal stria moderately deep. Pygidium extremely finely alutaceous. Prosternum longer than wide at middle, striae divergent in front. Mesosternal stria entire, meso- and metasternum coarsely punctured, suture fine but distinct. Tibiae slender. Length .05 inch ; 1.25 mm.

I have the type alone before me. Closely allied to *strigosus*.

Occurs in the Southern States.

**A. atomus**, Lec., cited by Marseul from New Orleans, is from Cuba.

ÆLETES, n. g.

The absence of scutellum is the only character separating the species below from *Acritus*.

They are as follows :

Surface smooth, impunctured.

Prosternum twice as long as wide..... politus.

Prosternum nearly as wide as long..... brevisternus.

Surface punctured. Thorax with basal row of punctures.

Basal row of punctures short, arcuate..... basalis.

Basal row of punctures straight, long..... simplex.

**A. politus**. Lec. Proc. Acad., 1853, p. 290 ; Mars. Mon., 1856, p. 610, pl. 14, No. 43, fig. 10.

Oval, convex, brown, shining, impunctured. Prosternum twice as long as wide. Mesosternum longitudinally sulcate, stria obliterated at middle, suture not evident. Length .03 inch ; slightly less than 1 mm.

Occurs in the Middle, Southern and Western States.

**A. brevisternus**, Mars. Mon., 1856, p. 609, pl. 14, No. 44, fig. 9.

Oval, convex, brownish, shining, impunctured. Prosternum scarcely longer than wide. Mesosternum with stria interrupted, surface nearly impunctured, suture indicated by a transverse row of coarse punctures, the punctures finer at the sides and elongate in the middle. Length .035 inch ; .8 mm.

One specimen, the type, is before me. Occurs in Louisiana.

**A. basalis**, Lec., Ann. Lyc. V., p. 170; Proc. Acad. 1853, p. 290.

Oval, moderately convex, piceous, shining. Head sparsely and finely punctulate. Thorax moderately punctured at base with a row of punctures strongly arcuate at middle, and slightly prolonged along the basal margin. Elytra moderately punctured, punctures coarser than those of the thorax, marginal stria moderate. Pygidium shining, very sparsely punctulate. Prosternum as broad as long. Mesosternum with the stria interrupted, metasternum sparsely punctured. Length .04 inch; 1 mm.

The punctures forming the arcuate line of the base of the thorax are longitudinally prolonged, and the base of the thorax is apparently sulcate.

Occurs in the region near Fort Yuma, Cal.

**A. simplex**, Lec. Bost. Journ. V., p. 84, pl. 5, fig. 11; Mars. Mon., 1856, p. 620, pl. 14, No. 43, fig. 20; *acupictus*, Mars. loc. cit. p. 618, fig. 17.

Oval, brownish, moderately convex, shining. Head minutely punctulate. Thorax sparsely and finely punctured, basal row of punctures long, slightly arcuate at middle, punctures at middle sulciform. Elytra sparsely punctulate, punctures fine and aciculate, marginal stria fine. Pygidium smooth. Prosternum nearly as broad as long. Mesosternum and metasternum smooth, suture indicated by a row of coarse punctures, coarser at middle. Length .04 inch; 1 mm.

I have carefully compared the types of Marseul and Leconte, and find them identical, although *simplex* is said by Marseul to have a narrower prosternum. This is certainly not the case in any specimen examined by me. This and the preceding species are closely allied, but differ in the thoracic and elytral punctuation and also by the more strongly arcuate basal line of the former.

Occurs principally in the Southern States.

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#### EXPLANATION OF PLATE V.

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- |  |   |
|--|---|
| FIG. 1. <i>Hister æneomicans</i> Horn.   | FIG. 6. <i>Saprinus interstitialis</i> Lec. |
| " 2. <i>Tribalister marginellus</i> Lec. | " 7. " <i>Copei</i> Horn.                   |
| " 3. <i>Hetærius morsus</i> Lec.         | " 8. " <i>æquipunctatus</i>                 |
| " 4. <i>Echinodes setiger</i> Lec.       | Horn.                                       |
| " 5. <i>Paromalus mimeticus</i> Horn.    | " 9. <i>Teretriosoma chalybæum</i>          |
|  | Horn.                                       |

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