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COLEOPTEROLOGICAL NOTICES.

I.

WITH AN APPENDIX

ON THE

TERMITOPHILOUS STAPHYLINIDÆ OF PANAMA.

BY

THOS. L. CASEY.

[Extract from the Annals of the New York Academy of Sciences, Vol. V.]

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## II.—*Coleopterological Notices.*

### I.

BY THOMAS L. CASEY.

Read October 7, 1889.

The following pages embody the results of a number of detached studies in various parts of the Colcopterous series, and are confined, in general, to the fauna of America north of Mexico. The family Phalacridæ, and the genera *Thinobius*, *Aploderus*, and *Limnichus* are treated monographically.

I have to acknowledge my appreciation of the kindness shown me by the authorities of the Museum of Comparative Zoology, at Cambridge, Mass., under the curatorship of Dr. H. A. Hagen, for permission to examine the types of Dr. LeConte, without which no systematic work of scientific value could have been accomplished.

I am also indebted to Prof. C. V. Riley for the use of the material of the National Museum, which has been of great service in determining geographical distribution in the Phalacridæ, and to Dr. D. Sharp, and Messrs. E. A. Schwarz, Otto Lugger, and H. F. Wickham, for valuable specimens.

NEW YORK, September 29, 1889.

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### NOTE.

The introduction of new names for parts of an insect, when names already in use will serve just as well, should be avoided, and, as the term *hypomera* has been employed by me in many descriptions for the inflexed sides of either the pronotum or elytra, by prefixing the proper adjective, it may be objected that *epipleuræ* would serve the same purpose, and that the new word is therefore unnecessary. I have consequently determined to restrict the meaning of *hypomera*, so as to denote simply the inflexed sides of the pronotum, reserving the word *epipleuræ* to denote the inflexed sides of the elytra, and the word *hypo-*

*pleure* to designate the lower beaded margin of the epipleuræ, which, although generally small and sometimes obsolete, occasionally becomes larger and rather conspicuously modified. It is hoped that this will tend to promote conciseness, and that the consequent reduction of words will warrant the proposed nomenclature.

## CARABIDÆ.

### **PSEUDOMORPHA** Kirby.

By referring to the table of species published by Dr. Horn (Trans. Am. Ent. Soc., X, p. 273), it will be seen that the following form is not closely allied to any hitherto known. It is extremely slender, parallel and convex, and is distinguished by the nine series of elytral punctures being very distinctly traceable.

**P. cylindrica** n. sp.—Parallel, very convex, rather more than three times as long as wide, uniformly blackish-piceous above; under surface and legs bright rufous; integuments highly polished; margins fimbriate. *Head* short and broad, feebly convex, nearly four-fifths as wide as the prothorax, very finely, sparsely and unevenly punctate, the punctures in the form of minute strongly embossed rings; eyes large, finely faceted; antennæ slender, compressed, cylindrical; joints four to eleven very compactly joined, second three-fifths as long as the third, the latter longer than the fourth, five to ten subequal, nearly as long as the third, the eleventh longer. *Prothorax* scarcely more than one-third wider than long; sides very feebly convergent from base to apex and just visibly arcuate; basal angles—viewed laterally—broadly rounded, apical narrowly rounded; base and apex transversely truncate, the former with a fringe of short pointed closely placed setæ; disk transversely, very strongly convex, very narrowly explanate along the sides, margined at the sides and apex with a wide elevated bead which is completely obsolete throughout the basal margin, very minutely, sparsely punctate; punctures rather unevenly distributed, annulate; median impressed line completely obsolete. *Scutellum* very minute, transversely triangular. *Elytra* fully as wide as the base of the prothorax, twice as long as wide, three and two-thirds times as long as the prothorax; sides parallel and straight; together abruptly subtruncate at apex, the truncation broadly arcuate; disk cylindrically and strongly convex, with nine distinct and almost even series of fine distant subasperate punctures, the punctures of the second series from the suture much larger and with longer setæ, those of the fourth series also more distinct but much smaller than those of the second; intervals impunctate. Length 7.0 mm.; width (base of prothorax) 2.1 mm.

Texas (El Paso). Mr. G. W. Dunn.

The single specimen is a male, and the sexual characters are remarkably distinct. The third and fourth segments of the abdomen have, each, a large transversely-elliptical impression, or more appa-

rently shallow perforation, which is situated in the middle near the base, and about as wide as the length of the fifth tarsal joint; they are similar in form and position; the bottom is flat and densely spongiöse, and the anterior margin bears a fringe of long closely-placed subrecumbent setæ, which extend over and partially protect the sensitive spongiöse area. The long second segment is more densely pubescent than the remainder of the abdomen.

## STAPHYLINIDÆ.

### **BLEDIUS** Leach.

A partial revision of the North American species of this extensive and interesting genus has been published by Dr. LeConte (Trans. Am. Ent. Soc. VI, p. 217 *et seq.*), and, although apparently somewhat hastily drawn up, the descriptions there given will serve in most cases for purposes of identification. The species as a rule are much larger in size and more open in their habits than those of *Trogophlœus*, and it is almost certain that the proportion of known to unknown forms is much greater than in that genus, but in spite of this the number of species existing in America north of Mexico will probably be found to be in the neighborhood of one hundred and fifty. While, therefore, the time is not yet ripe for a useful monograph of our species, it is highly desirable that the large number of species discovered in recent years should be assimilated, and the revision above alluded to forms a convenient guide for the distribution of them with regard to their systematic relationship.

The groups adopted by LeConte rest in several cases upon characters which have been inaccurately stated, and therefore have not the value which apparently belongs to them. The *armatus* group, for instance, is quite composite, the coxal fissures being open in some and shorter and closed in others. When open, however, as in *strenuus*, they are not of the same form as in the *annularis* group, where they are longer, acutely triangular and gradually more widely open toward the coxæ. The antennæ in *cribricollis* and *monstratus*, with their three-jointed club, are quite different in structure from those of *armatus* and *strenuus*.

The definition, also, of the *cordatus* group by the form of the basal angles of the prothorax is unfortunate, for the form of these angles varies from the broadly rounded and completely obsolete as

in *basalis*, to the distinct and even slightly prominent as exhibited in *cordatus*. There is an undoubted bond of affiliation between the species associated by the author in the group, but it cannot be the form of the basal angles. It would be better to separate them as a group on the longer second antennal joint, which is invariably longer than the next two combined, and the convex head, with small and extremely feeble antennal prominences, or by the small unemarginate labrum, with the apical edge finely and strongly reflexed, or even by the peculiar system of coloration.

The very decided character separating the *mandibularis* group is not entirely constant, for in several, if not all the species assigned to it, the acute lateral edge is present near the apex, and in some species not assignable to it, as *monticola* and *dimidiatus*, the acute margin becomes obsolete before reaching the base, and in the latter is totally absent, almost throughout the basal situation.

These are matters, however, which must be reserved for a more complete study, and the new species here brought to notice are distributed in the groups as limited by LeConte, a list showing their relative positions being given under each heading.

It should be said in conclusion that the tarsi are not three-jointed as stated in the books, but more properly four-jointed. In the species allied to *armatus*, all four joints are perfectly free and distinct, but the basal joint becomes subanchylosed to the second in several species, notably in the *semiferrugineus* group, and in the *annularis* group the anchylosis is generally complete, the tarsus appearing to be three-jointed; even here, however, the suture can often be plainly seen.

#### Group 1.—*mandibularis*.

No additional species assignable to this group have been reported, and it is highly probable that *brevidens* Lec. will prove to be a synonym of *mandibularis* Er., the specimens before me showing all degrees of development of the mandibular tooth.

The magnitude of the triangular incision of the eighth segment in the males of this genus appears to be variable at will, the segment being composed of two overlapping parts, the edge of one forming an oblique line from one side of the apex to the opposite side of the base. When the two parts are pushed apart laterally, the notch at the apex becomes deeper, and as they are closed together it becomes smaller, preserving however the same relative form.

Group 2.—*armatus*.

The succession of species, of which a very large proportion are described below, may be stated as follows:—

<i>armatus</i> Say.	<i>agonus</i> n. sp.
<i>strenuus</i> n. sp.	<i>ineptus</i> n. sp.
<i>furtivus</i> n. sp.	<i>politus</i> Er.
<i>cribricollis</i> Lec.	<i>flavipennis</i> Lec.
<i>monstratus</i> n. sp.	<i>lectus</i> n. sp.
<i>eximius</i> n. sp.	<i>tenuis</i> n. sp.
<i>cuspidatus</i> Lec.	

**B. armatus** Say.—*Oxyt. arm.* Say, Journ. Ac. Phila. III, p. 155.—Rather robust and convex, black; elytra dark rufo-piceous, blackish toward suture and base; abdomen slightly paler at the apex; legs and antennæ dark piceo-rufous, the latter piceous toward apex; head and prothorax moderately shining, rather coarsely and very strongly reticulato-granulose; abdomen polished, finely reticulate. *Head* distinctly narrower than the prothorax, very feebly convex, with a few very small, feeble and indistinct punctures in the lateral depressions, having, on a line through the middle of the eyes, two large, approximate, distinct, but not very strongly elevated tubercles, the surface behind them very feebly impressed; epistomal suture fine, impressed, very distinct; antennal prominences very large and strongly elevated; each apical angle of the epistoma with a strong erect process, the apex of which is reflexed; antennæ long and rather slender; second and third joints equal in length, the latter as long as the fifth and sixth together, outer joints gradually more robust, the tenth scarcely perceptibly wider than long. *Prothorax* as wide as the base of the elytra, scarcely more than one-sixth wider than long; sides in apical three-fifths parallel and nearly straight, then broadly rounded to and through the base, the latter less strongly arcuate, the basal and lateral angles entirely obsolete; apical right, rather narrowly but distinctly rounded; apex nearly transversely truncate; disk sparsely and very unevenly punctate, the punctures impressed, very distinct but not very coarse; median groove deep, impressed, conspicuous. *Elytra* quadrate, toward apex scarcely perceptibly wider than the prothorax, about one-fourth longer than the latter, rather strongly impressed near the suture toward base, not very densely or coarsely punctate, the punctures deep and very distinct, separated by about twice their own diameters; pubescence rather sparse, moderate in length, coarse. *Abdomen* slightly narrower than the elytra, rather sparsely, finely punctate, the impressed areas impunctate; under surface finely, more densely punctate, with long coarse conspicuous pubescence. Length 5.5–6.0 mm.

New Mexico (Albuquerque). Mr. H. F. Wickham.

The above rather full diagnosis is given, as there has been more or less indecision in the identification of this species. The description is taken from the male, the female differing very slightly, the

tubercles of the front and epistoma being rudimentary. The hypomera are very feebly impressed along the outer margin; they are wide, and the apical width is equal to the length of the short, almost completely closed coxal fissures, and two-thirds as wide as the width at the fissures; the suture is obsolete, but traceable from differences in the form of reticulation. The mentum is distinctly but moderately impressed throughout the width toward base, the short coriaceous hypoglottis being separated by a fine deep suture.

In the two following species only those characters are mentioned which differ from the corresponding ones of *armatus*; in other respects they are similar.

**B. strenuus** n. sp.—Robust, moderately convex, black, the elytra sometimes dark piceo-rufous as in *armatus*. *Head* much narrower than the prothorax; epistomal suture very coarse, deep and distinct; antennæ piceous-black throughout, nearly as in *armatus*. *Prothorax* slightly wider than the base of the elytra, one-third wider than long; sides in slightly more than apical two-thirds nearly straight and very feebly but distinctly divergent from the apex, then strongly convergent, at first nearly straight then broadly rounded into the base, without trace of basal angles, the base more feebly arcuate; lateral angles obtuse but very narrowly rounded and distinct, apical very slightly obtuse, rather narrowly but distinctly rounded; apex transversely truncate; punctures rather more densely and evenly distributed than in *armatus*. *Elytra* very slightly wider than long, at apex scarcely perceptibly wider than the prothorax, the sides slightly divergent and nearly straight, between one-fourth and one-third longer than the prothorax. *Abdomen* very slightly narrower than the elytra. Length 6.0 mm.

California.

The description is taken from the male, of which I found a single specimen in the brackish marsh behind the ocean beach at San Francisco. There is an entirely similar specimen from the same locality in the cabinet of Dr. LeConte. With these I have associated a large number of specimens taken at Los Angeles, which differ only in the sides of the prothorax being parallel and not divergent from the apex as in the San Francisco specimens—they, however, probably represent a variety, as the coxal fissures are distinctly shorter and more nearly closed. The species differs from *armatus* in its much more transverse prothorax, rather more robust form, and distinct lateral prothoracic angles.

The hypomera are wide, very feebly impressed laterally, the apical width being slightly more than one-half that at the coxal fissures; the latter are longer than in *armatus*, being nearly as long as the

width of the hypomera at their apex, and are distinctly open, the sides however being parallel, and not angulate and more open toward the coxæ, as in the *annularis* group. The sutures are entirely obsolete, and the mentum is nearly as in *armatus*.

**B. furtivus** n. sp.—General form and sculpture nearly as in *armatus*, the tubercles of the vertex being smaller and more approximate, and the epistomal processes shorter; outer joints of antennæ very slightly more transverse. *Prothorax* scarcely perceptibly narrower than the base of the elytra, rather strongly transverse, two-fifths wider than long; sides parallel and straight, strongly convergent in basal third and nearly straight, the basal angles very obtuse and very broadly rounded, but more distinct than in *strenuus*; lateral angles obtuse but very narrowly rounded and distinct, apical right and very broadly rounded, the apex broadly and very distinctly arcuate throughout the width, otherwise nearly as in *strenuus*. *Elytra* scarcely as long as wide, about two-fifths longer and, near the apex, fully one-fourth wider than the prothorax, the sides distinctly divergent. *Abdomen* entirely impunctate along a broad and distinct median line, finely and rather densely punctate beneath. Length 5.0 mm.

Oregon (The Dalles). Mr. H. F. Wickham.

Although the abdominal punctures are sparser along the middle in *armatus*, there is no well-defined line in which they are entirely absent, as in *furtivus*; this line is, however, broad and almost entirely free from punctures in *strenuus*.

This species, the description of which is taken from the male, differs greatly from *armatus* in its much shorter and more transverse prothorax, with distinct lateral angles, and from *strenuus* in the broadly rounded apex and apical angles of the same part. The prosternal sutures are more distinct than in either of the preceding species, and because of the greater depression of the apical angles of the pronotum, the hypomera are, at apex, distinctly less than one-half as wide as at the coxal fissure; the latter is slightly shorter than the hypomerical width in continuation of it, and is narrowly open, being intermediate between the same part in *armatus* and *strenuus*. The hypomera are not distinctly impressed externally. The mentum is nearly as in the two preceding species.

The three species *armatus*, *strenuus* and *furtivus*, although closely allied, are almost undoubtedly distinct; if however this should prove not to be the case, the structure of the prosternum and hypomera must be considered of very little value, even in the separation of species.

**B. monstratus** n. sp.—Rather slender and convex, parallel, dark testaceous; abdomen dark piceous-brown; elytra paler, flavate throughout; legs and antennae flavate; head strongly shining, reticulato-granulose, the median tubercles, antennal prominences and apical part of the epistoma highly polished and not reticulate; pronotum polished, very feebly reticulate near the punctures; abdomen moderately shining, very strongly reticulate. *Head* very small, much narrower and shorter than the prothorax; eyes moderately prominent; on a line through their apical third there are two very approximate prominent tubercles, behind and between which there is a short feeble canaliculation; between them and the large prominent antennal tuberculations there are a few small, rather distinct punctures; suture short, transverse, feeble, not impressed, situated immediately before the tubercles of the vertex; apical angles of the epistoma tuberculate, the tubercles gradually obsolete posteriorly, and slightly more approximate than the angles; antennae rather short and slender, the three last joints abruptly wider forming a club; second distinctly longer than the third, four to seven moniliform and subglobular, eighth slightly wider, transversely oval, ninth and tenth strongly transverse, eleventh short, ovoidal, slightly narrower than the tenth, longer than wide. *Prothorax* large, about one-fourth wider than long; sides from near the apex to basal fifth parallel and straight, then abruptly, broadly rounded into the base, without trace of basal or lateral angles, the base broadly distinctly arcuate, the apex transversely truncate; apical angles right and distinctly rounded; disk extremely coarsely punctate, the punctures very strongly and broadly impressed, deep, distant by rather less than their own diameters anteriorly, becoming much finer and sparse toward base; median groove wide, entire, very broadly and deeply impressed, conspicuous. *Elytra* scarcely as long as the prothorax and very distinctly narrower, scarcely as long as wide, very broadly and just visibly impressed on the suture at the base; sides very feebly divergent; surface very finely and densely punctate, the punctures distant by nearly twice their own diameters; pubescence dense, moderate in length. *Abdomen* just visibly wider from base to apex, at which point it is fully as wide as the elytra; sides straight; surface very finely, feebly, indistinctly and rather sparsely punctate, rather finely, more distinctly and densely so beneath. Length 3.8–4.3 mm.

California (San Francisco).

The type of this interesting and very distinct species is a male, but possesses no decided sexual modification at the apex of the abdomen. It is closely related to *cribricollis* Lec., but is immediately distinguishable by its very large prothorax and small elytra. It should form, together with *cribricollis*, a group distinct from the *armatus* group of LeConte, because of its very short completely closed coxal fissures, and three-jointed antennal club.

The apical angles of the pronotum are abruptly and strongly deflexed, the hypomera wide, very deeply and broadly concave throughout, the coxal fissures extremely short, closed and directed



strongly and obliquely forward. The sutures are obsolete. The mentum is almost flat, shining and reticulate. The color occasionally becomes very pale flavate-brown throughout.

**B. eximius** n. sp.—Rather narrow and depressed, subparallel, black; prothorax pale, red-brown; elytra same, slightly clouded with piceous toward base; abdomen paler at apex, black beneath; legs and antennæ testaceous, the latter infusate toward apex; head very slightly shining, finely, rather strongly granulose; pronotum distinctly shining, finely and rather strongly granulo-reticulate; abdomen polished, finely reticulate, more strongly so toward apex. *Head* distinctly narrower than the prothorax, very feebly convex, with a few small scattered punctures laterally; vertex with an elongate feeble impressed fovea, on either side of which the surface is very feebly swollen; epistomal suture strong, arcuate, broadly impressed; anterior angles of the epistoma strongly tuberculate; antennal prominences large and very strong, their apices externally finely and strongly margined with an elevated bead; antennæ moderate in length, rather strongly, gradually incrassate; third joint rather longer than the second and as long as the fourth and fifth combined, tenth fully three-fourths wider than long. *Prothorax* just visibly narrower than the base of the elytra, one-fourth wider than long; sides in rather more than apical two-thirds parallel and straight, then convergent and straight for a short distance, then broadly rounded into the base without trace of basal angles; base transverse; apex just visibly arcuate; apical angles right and extremely narrowly rounded, lateral very obtuse, broadly rounded and not distinct; disk rather coarsely, sparsely and very unevenly punctate; median groove wide, very deeply impressed, entire and conspicuous. *Elytra* fully as long as wide, one-fifth wider and one-half longer than the prothorax; sides nearly straight, slightly divergent; surface very feebly impressed on each side of the suture at base, rather coarsely, moderately densely and deeply punctate, the punctures generally separated by nearly twice their own widths; pubescence rather long, distinct but not very dense. *Abdomen* at apex nearly as wide as the elytra, at base much narrower; sides straight and distinctly divergent; surface finely, rather sparsely punctate, finely and densely so beneath, with the surface finely granulo-rugulose and somewhat dull. Length 5.5 mm.

California (San Diego).

The hypomera are flat, but strongly depressed below the lateral edges, the latter being very prominent and acute throughout; at apex the width is fully three-fourths that at the fissures, which are but slightly shorter than the adjacent hypomeral width, and narrowly but very distinctly open; the prosternal sutures are almost completely obliterated but rather distinctly traceable. The mentum is shining, coarsely and very strongly reticulate, and broadly im-

pressed throughout the width, the terminal membranous hypoglottis almost one-third as long.

The description of this very distinct species is taken from the male, the eighth ventral segment being very deeply incised, the seventh broadly cusped. It should be placed near *cuspidatus*.

**B. agonus** n. sp.—Slender, moderately depressed; sides parallel; piceous, elytra rufo-testaceous, broadly and indefinitely clouded with darker castaneous toward the suture and base; abdomen black; legs throughout and coxæ pale flavate; antennæ brownish-rufous. *Head* very slightly narrower than the prothorax, feebly shining, densely, coarsely granulato-reticulate, not distinctly punctate; eyes rather large and prominent, the setæ very short and sparse; antennal prominences strong, the epistomal suture slightly impressed; vertex not tuberculate, but having a large rounded rather deeply-impressed puncture; antennæ moderate, second joint one-third longer and more robust than the third, four to six much shorter, submoniliform, six to eight rapidly wider; outer joints strongly transverse, eleventh ovoidal, scarcely as long as the two preceding together. *Prothorax* as wide as the base of the elytra, about one-third wider than long; sides in anterior two-thirds parallel and almost straight, then convergent and arcuate to the base which is transverse; basal angles very obtuse and rounded, lateral rounded and entirely obliterated, apical right and narrowly rounded; apex transverse; disk feebly shining, densely, coarsely granulato-reticulate, rather finely but distinctly, very sparsely and somewhat unevenly punctate, the pubescence very sparse but rather long; median groove very fine and feebly impressed. *Elytra* very slightly longer than wide, about two-thirds longer than the prothorax, very finely, feebly and sparsely punctate, the punctures separated by about three times their own diameters, but much closer than those of the pronotum; sides nearly parallel; pubescence very sparse and short. *Abdomen* as wide as the prothorax, shining, rather finely, densely and strongly reticulate throughout, finely and very sparsely punctate, the under surface more densely so and distinctly reticulato-rugulose. Length 4.5 mm.

Utah.

The mentum is broadly and deeply impressed especially toward base, and the anterior angles of the epistoma are distinctly tuberculate in the male.

A very distinct species which should be associated with *cuspidatus*.

**B. ineptus** n. sp.—Rather slender and convex, piceous; elytra pale flavate, the suture narrowly dusky, more broadly so toward base; legs and antennæ flavate, the latter infusate toward apex; head finely, strongly granulato-reticulate, feebly shining; pronotum feebly reticulate throughout, except along the median line where the surface is polished and the reticulation obsolete, rather strongly shining; abdomen polished but distinctly, evenly reticu-

late throughout. *Head* very distinctly narrower than the prothorax, very feebly convex, with a few fine scattered and indistinct punctures; median fovea small, the surface before it slightly tumid; suture transverse, rather broadly impressed, distinct; antennal tuberculations rather small, widely distant, rather strongly elevated; antennæ moderate, gradually, rather feebly incrassate; second joint more robust and very much longer than the third, ninth and tenth not much longer than the eighth, distinctly wider than long. *Prothorax* scarcely perceptibly narrower than the base of the elytra, one-fourth wider than long; sides except in basal fourth and apical sixth, parallel and straight, strongly convergent and feebly arcuate to the basal angles, which are very obtuse and broadly rounded, although slightly definable; lateral angles broadly rounded and not very distinct, apical right, broadly and distinctly rounded; apex transversely truncate; base just visibly arcuate; disk rather abruptly and very strongly convex near the apical, basal and lateral margins, finely, feebly, very sparsely and somewhat unevenly punctate, the median line rather broadly impunctate, the median groove almost completely obsolete, only imperfectly visible under certain angles of illumination. *Elytra* very slightly wider and about two-fifths longer than the prothorax, fully as long as wide; sides nearly straight, scarcely visibly divergent; disk very feebly impressed near the suture toward base, somewhat finely and sparsely but distinctly punctate, the punctures separated by rather more than twice their own diameters; pubescence very sparse, moderate in length. *Abdomen* parallel, slightly narrower than the elytra, very finely and sparsely punctate, beneath more coarsely unevenly and rather sparsely punctate. Length 4.2-4.7 mm.

New Mexico (Albuquerque), Mr. Wickham; Texas (El Paso), Mr. Dunn.

The hypomera are wide, rather flat but very feebly impressed near the lateral edges, the coxal fissures short, about two-thirds as long as the adjacent hypomeral width and narrowly but distinctly open; the prosternal sutures are almost completely obsolete. The mentum is flat, scarcely perceptibly and indefinitely concave, coarsely but very feebly reticulate, polished, the terminal membranous hypoglottis strongly developed, nearly one-third as long as the chitinous portion. The anterior angles of the epistoma are finely and very strongly tuberculate in the male.

This species should be placed near *politus*. It is rather closely allied to *agonus*, but differs in its distinctly narrower head, more broadly rounded apical angles of the prothorax, the latter being distinctly less transverse, and in its shorter, more coarsely deeply and densely punctate elytra.

**B. lectus** n. sp.—Rather slender, subparallel, black; pronotum paler, piceo-rufous; elytra bright rufous, very broadly clouded with piceous-black toward suture and base; legs and antennæ pale testaceous, the latter slightly

infusate; head rather finely and strongly, pronotum more coarsely and feebly reticulate, the latter rather strongly shining; abdomen polished, rather coarsely evenly and feebly reticulate. *Head* slightly narrower than the prothorax, feebly convex; eyes rather large, moderately and evenly convex; median puncture very small and feeble; vertex not tuberculate; antennal prominences rather large and strong; suture distinct; apical angles of the epistoma slightly tumid; antennæ rather long and slender, gradually and moderately incrassate; second joint more robust and distinctly longer than the third, fifth longer than wide, tenth very slightly wider than long, the eleventh one-half longer than wide, rather acutely and gradually pointed. *Prothorax* scarcely perceptibly narrower than the base of the elytra, just visibly wider than long; sides except in basal fourth parallel and nearly straight, then convergent and perfectly straight to the basal angles, which are very obtuse but rather narrowly rounded and definable although not distinct; lateral angles obtuse. narrowly rounded and distinct, apical nearly right, very narrowly rounded: apex broadly and very distinctly arcuate; base very feebly so; disk rather convex, very finely and sparsely punctate, the punctures very feebly impressed although distinct, very unevenly distributed; median groove very fine, feebly impressed, entire; pubescence very easily abraded and inconspicuous. *Elytra* as long as wide, one-fourth wider and scarcely more than one-third longer than the prothorax; sides distinctly divergent and feebly arcuate, distinctly so toward apex; surface feebly impressed near the suture almost throughout the length, somewhat deeply and densely punctate, the punctures rather larger and much more distinct than those of the pronotum, separated by slightly more than their own diameters; pubescence short, fine, sparse and inconspicuous. *Abdomen* parallel, distinctly narrower than the elytra, finely, sparsely punctate, finely and densely so beneath. Length 4.2 mm.

#### California (Sonoma Co.).

The hypomera are narrowly and strongly impressed along the outer edge, the width at the apex being fully two-thirds as great as at the fissures; the latter are very short, scarcely two-thirds as long as the adjacent hypomeral width, and are distinctly and rather widely open; the prosternal sutures are almost completely obsolete, although traceable. The mentum is shining, coarsely and strongly reticulate and very feebly concave, the hypoglottis very short.

Belongs near *flavipennis* Lec., from which it is at once distinguishable by its narrower form, less distinct prosternal impressions in front of the coxal fissures, less widely open fissures, different coloration and very different sexual characters. It is described from the male, the eighth segment of the abdomen being deeply and narrowly incised.

**B. tenuis** n. sp.—Slender, black; pronotum brown; elytra paler, brownish-flavate, very feebly clouded toward the suture near the base; legs through-

out and coxæ pale flavate; antennæ brownish-testaceous, paler toward base; head and pronotum moderately shining, densely and strongly granulose and granulato-reticulate respectively; abdomen polished, reticulate. *Head* almost as wide as the prothorax; eyes moderate, setæ very short; antennal prominences very strong; suture feebly impressed; surface very sparsely and not distinctly punctate, vertex not tuberculate, having a somewhat elongate impressed median fovea; antennæ rather slender and elongate; second joint longer and slightly more robust than the third, four to six subequal and submoniliform, six to nine very gradually more robust and transverse, nine and ten equal, about one-third wider than long, eleventh ovoidal, distinctly shorter than the two preceding together. *Prothorax* slightly narrower than the base of the elytra, one-fourth wider than long; sides in anterior two-thirds parallel and straight, then strongly arcuate and moderately convergent to the basal angles, which are obtuse, not rounded, and minutely prominent; lateral angles entirely obsolete, broadly rounded, apical right, very narrowly rounded; base and apex just visibly arcuate; disk somewhat coarsely feebly very sparsely and somewhat unevenly punctate, the pubescence rather long and stout; median groove extremely fine and feebly impressed. *Elytra* slightly shorter than wide, about one-half longer than the prothorax, and, toward apex, nearly one-third wider; sides slightly divergent, broadly feebly arcuate, very feebly emarginate at apex, the inner angles slightly rounded; disk impressed on the suture behind the scutellum, somewhat coarsely but feebly and sparsely punctate, the punctures distant by from two to three times their own diameters, closer and smaller than those of the pronotum; pubescence fine, sparse and moderate in length. *Abdomen* much narrower than the elytra, slightly wider than the prothorax, finely, very sparsely punctate, much more densely so and densely pubescent beneath toward the sides. Length 4.5 mm.

#### Nevada.

The hypomera are distinctly narrowly impressed near the margin, and are rather wider than the distance thence to the coxæ, the coxal fissures being narrowly open and short. The mentum is broadly feebly impressed. The anterior angles of the epistoma, at least in the male, are finely and feebly tuberculate. It is closely allied to *lectus*, but differs in its more slender form and smaller more transverse prothorax.

The prosternal sutures are obliterated and the mentum is margined at apex with a very thick convex bead—hypoglottis—separated by a fine deep groove.

Group 3.—*semiferrugineus*.

But few new species are to be assigned to this group, as may be seen from the following complete list:—

turgidus n. sp.	opacifrons Lec.
semiferrugineus Lec.	rnbiginosus Er.
rotundicollis Lec.	gravidus n. sp.
fumatus Lec.	analis Lec.
foraminosus n. sp.	nitidicollis Lec.
nitidiceps Lec.	assimilis n. sp.

**B. turgidus** n. sp.—Rather robust, parallel, somewhat convex, black; elytra bright rufous, the base piceous-black, the same color extending along the suture, very narrowly so toward apex; legs and antennæ testaceous, the latter infuscate toward apex; head and pronotum rather strongly shining, but densely and rather strongly granulato-reticulate; abdomen polished, finely, feebly reticulate throughout. *Head* much narrower than the prothorax, not very convex; eyes rather small; surface with a few widely scattered, moderately distinct punctures; basal transverse line very strongly impressed, the median fovea small but distinct, being an angular break in the continuity of the groove; tuberculations wanting; antennal prominences rather strong; suture fine but distinct; antennæ rather slender, gradually and moderately incrassate from the sixth joint, moderately compressed; outer joints slightly transverse, second distinctly shorter than the next two together. *Prothorax* slightly wider than the base of the elytra, one-third wider than long; sides in anterior three-fourths parallel and very feebly arcuate, then convergent and very feebly arcuate, distinctly sinuate for a short distance before the basal angles, which are slightly obtuse, not distinctly rounded and somewhat prominent; lateral angles broadly rounded, not very distinct, apical slightly obtuse and narrowly rounded; apex fully two-fifths wider than the base, both transversely truncate; disk somewhat coarsely, very sparsely and distinctly punctate, the punctures unevenly distributed and deeply impressed; pubescence very short, sparse and inconspicuous; median groove very fine, feebly impressed, obsolete in apical two-fifths. *Elytra* distinctly wider than long, scarcely one-fourth longer than the prothorax, and, at apex, not visibly wider; sides rather strongly divergent, feebly arcuate; apex rather strongly, conjointly emarginate in the middle; surface with a small elongate impression on each side of the suture at the base, not very coarsely, somewhat sparsely and unevenly punctate; punctures rather deep and distinct, impressed, separated by from two to three times their own diameters; pubescence moderate in length, fine, rather sparse. *Abdomen* nearly as wide as the elytra, finely, very sparsely punctate, finely, rather sparsely so beneath. Length 4.5 mm.

Colorado (Ft. Garland). Mr. E. A. Schwarz.

The hypomera are wide, about as wide as the length of the coxal

fissures; they are nearly flat anteriorly but strongly impressed near the lateral edge posteriorly, the sutures distinct, the fissures moderate in length and not entirely closed, the posterior edge below the anterior appearing closed when viewed vertically, but widely open near the coxæ. The mentum is moderate, shining, coarsely reticulate and nearly flat.

This very distinct and beautiful species belongs, because of its distinct sutures and half-closed coxal fissures, in the *semiferrugineus* group of LeConte, but differs from every described species in its prominent basal angles of the prothorax.

**B. foraminosus** n. sp.—Rather robust and convex, black; elytra rufous, clouded with piceous-black toward base; legs and antennæ dark testaceous, the latter blackish toward apex; head finely reticulato-granulose, moderately shining; pronotum polished, not reticulate; abdomen polished, finely feebly reticulate. *Head* slightly narrower than the prothorax, slightly convex; eyes rather small; surface distinctly and rather densely punctate; median fovea deep, distinct and slightly elongate, the surface immediately about it polished and impunctate; suture fine, feebly arcuate, distinct but not impressed; antennal prominences rather large but short and not very strongly elevated; antennæ rather robust and compact, moderate in length, very evenly and distinctly incrassate; second joint but slightly longer than the third, sixth distinctly wider than long, six to eight subequal in length, increasing in width, nine and ten abruptly much longer but not wider, the latter rather longer than wide, eleventh long, gradually pointed. *Prothorax* slightly narrower than the base of the elytra, one-fourth wider than long; sides in apical three-fifths parallel and straight, then convergent and just visibly arcuate, and then broadly rounded into the base, the basal angles being very obtuse, broadly rounded and not distinct; lateral angles very obtuse but rather narrowly rounded and quite distinct, apical right and distinctly rounded; apex broadly, very feebly arcuate, the base very distinctly arcuate; disk rather coarsely, very deeply and densely punctate, the punctures almost contiguous laterally but a little more dispersed toward the median groove, which is very coarse, deep and conspicuous. *Elytra* scarcely as long as wide, one-fifth wider and one-third longer than the prothorax, not very coarsely but very deeply and rather densely punctate, the punctures separated by slightly more than their own widths; pubescence moderate in length, not very dense. *Abdomen* parallel, almost as wide as the elytra, feebly, finely and not very densely punctate, beneath polished and more densely punctate. Length 5.5 mm.

California (Lake Co.). Mr. Fuchs.

This species is allied to *fumatus* Lec., but differs greatly in its smaller eyes, straight and not broadly rounded sides of the prothorax, deeper and more distinct punctuation of the head, and, especially, in the structure of the antennæ which in *fumatus* are

more slender, and much more feebly incrassate, with joints six and seven distinctly longer than wide, and eight fully as long as wide, nine and ten much less abruptly longer than eight; in the present species the eighth joint is nearly one-half wider than long. The description is taken from the only specimen which I have seen, and this is unfortunately the female, but the above comparison has been made with the same sex of *fumatus*.

The hypomera are flat, rather wide, the apical width fully one-half that at the fissures, the latter rather long but slightly shorter than the hypomeral width in continuation of them, and are almost completely closed; the prosternal sutures are very distinct, being defined by a fine elevated line. The mentum is shining, coarsely reticulate, finely, deeply impressed along the base and unusually coarsely, deeply but very sparsely punctate.

**B. gravidus** n. sp.—Moderately robust, rather convex, piceous: elytra bright rufous, feebly clouded with piceous toward base, and slightly along the suture; abdomen above and beneath dark rufo-testaceous, the apices of the segments clouded with piceous; head finely reticulate, feebly shining; pronotum distinctly reticulate, rather strongly shining, the reticulation obsolete posteriorly toward the sides, the surface becoming polished; abdomen polished, finely, very feebly and subobsoletely reticulate. *Head* rather distinctly narrower than the prothorax, feebly convex, finely, sparsely and not very distinctly punctate, not tumid in the middle, the median puncture small, rounded, feebly impressed, not surrounded by a polished area; antennal tuberculations large, short, moderately prominent, polished toward apex; suture fine, feebly arcuate, not impressed; apical angles of the epistoma distinctly tuberculate; eyes large, more convex behind; antennæ rather long, the last five joints gradually, evenly and moderately incrassate; second joint scarcely perceptibly longer, although distinctly more robust than the third, sixth slightly wider than long, eighth about one-third wider than long, ninth and tenth longer, the latter slightly wider than long, eleventh one-half longer than wide. *Prothorax* rather distinctly narrower than the base of the elytra, nearly one-third wider than long; sides from apical fourth to just behind the middle parallel and straight, then convergent and just visibly arcuate to the basal angles, which are very obtuse, rather broadly rounded although somewhat definable; lateral angles obtuse, very broadly rounded and not distinct; sides in apical fourth convergent and strongly arcuate, the angles at the apex being slightly obtuse and scarcely at all rounded; apex transversely truncate; base just visibly arcuate; disk convex, finely, sparsely and unevenly punctate, the punctures distinct but not very deep, the median groove rather fine but deeply impressed and distinct. *Elytra* not quite as long as wide, together broadly, angularly emarginate at apex, one-fourth wider and one-third longer than the prothorax; sides feebly divergent; disk flattened but not distinctly impressed on the



suture at the base, rather finely but distinctly and densely punctate, the punctures separated by but very slightly more than their own diameters; pubescence moderate in length. *Abdomen* parallel, distinctly narrower than the elytra, rather finely but not very densely punctate toward the apices of the segments, polished and moderately densely punctate beneath. Length 5.0–5.7 mm.

New Mexico (Albuquerque). Mr. H. F. Wickham; Utah.

The hypomera are broadly, very feebly impressed along the outer edge, the apex about three-fifths as wide as the width at the fissures, the latter rather long, fully as long as the adjacent hypomeral width, and almost completely closed, the prosternal sutures distinct. The mentum is not visibly punctate, shining, coarsely reticulate and distinctly impressed along the base.

The description of this distinct species is taken from the male, the sixth segment being evenly emarginate in circular arc, the emargination simple, not margined with membrane, and about five times as wide as deep; the surface at the sides of the emargination bears several very long, erect, interlacing setæ. It should be placed near *rubiginosus* Er.

The punctures of the pronotum vary in size, and in some specimens are slightly coarser.

**B. assimilis** n. sp. (Fauvel MS.).—Rather slender and convex, black; elytra piceous; legs and antennæ pale flavate, the latter infusate except toward base; head and prothorax finely, densely granulate, feebly shining; abdomen polished, finely, feebly reticulate. *Head* scarcely perceptibly narrower than the prothorax, rather convex, finely, very obsoletely punctate, not tuberculate; median fovea small, feebly impressed; antennal prominences small, feeble; suture fine, distinct, not impressed, arcuate; epistoma simple; antennæ rather long, moderately and gradually incrassate; second joint distinctly longer than the third, four to six decreasing in length, the latter distinctly wider than long, seventh longer, slightly wider than long, eight to ten increasing in length, the latter longer than wide, eleventh nearly twice as long as wide, shorter than the two preceding together; last three joints together as long as the preceding six. *Prothorax* slightly but distinctly narrower than the base of the elytra, about one-fourth wider than long; sides in anterior two-thirds parallel and straight, then convergent and nearly straight to the basal angles, which are obtuse, narrowly rounded, rather distinct but not at all prominent; lateral angles obtuse, narrowly rounded and rather distinct, apical right and distinctly rounded; apex almost transversely truncate; disk very densely and somewhat deeply punctate, the punctures moderate in size, separated by scarcely their own diameters but slightly sparser toward the median impunctate line, which is entire and moderate in width, the median groove being completely obsolete. *Elytra* nearly as long as wide, two-fifths longer,

and rather more than one-third wider than the prothorax, feebly impressed near the suture toward base, rather finely punctate, the punctures distinct, rather smaller than those of the prothorax, and separated by nearly twice their own diameters. *Abdomen* slightly narrower than the elytra, gradually wider from base to apex, finely, somewhat densely punctate, beneath polished, finely, somewhat densely punctate. Length 3.3 mm.

Illinois; Iowa.

The description is taken from the male, and the sexual characters at the apex of the abdomen are, as usual in the *semiferrugineus* group, very strongly marked, in this case more remarkable than in any other species which I have seen, and reminding us somewhat of the male modification in *Apoellus*.

The sixth segment is broadly, strongly emarginate in circular arc nearly throughout the width, the emargination bordered with a wide and thin, very slightly inflexed membrane; at each side of the emargination there is a small, acute, pointed tooth; the seventh segment is slightly produced and rounded in the middle, the eighth as usual obliquely divided, the two overlapping portions having an acute apical incisure, which can apparently be varied at will.

The hypomera are wide, flat, the suture distinct; the coxal fissures very short, almost completely closed; the mentum shining, reticulate, very feebly, transversely impressed near the base. The species should be placed immediately after *nitidicollis* Lec.

#### Group 4.—*annularis*.

This group is by far the most extensive of the genus; the species may be provisionally arranged in the following order:—

punctatissimus Lec.	ruficornis Lec.
villosus n. sp.	languidus n. sp.
laticollis Lec.	bicolor n. sp.
nebulosus n. sp.	divisus Lec.
longipennis Mäkl.	pleuralis Lec.
luteipennis Lec.	diagonalis Lec.
monticola n. sp.	parvicollis n. sp.
sinnatus Lec.	tau Lec.
gentilis n. sp.	ornatus Lec.
gracilis n. sp.	suturalis Lec.
annularis Lec.	phytosinus Lec.
stabilis n. sp.	cognatus Lec.
confusus Lec.	emarginatus Say.
adustus n. sp.	<i>troglydtes</i> Er.
	honestus n. sp.

**B. villosus** n. sp.—Moderately robust, piceous-black, paler beneath; elytra pale brownish, the suture and base slightly and indefinitely darker; legs and antennæ pale flavo-testaceous, the latter infusate; head and pronotum strongly shining, finely and very feebly reticulate; abdomen polished, very minutely, feebly reticulate, the basal impressions very much more coarsely and strongly so. *Head* distinctly narrower than the prothorax, not distinctly convex, with a few scattered, well-defined punctures, not tuberculate; basal transverse groove broadly impressed, strong; median fovea rather badly defined; antennal tuberculations small but distinct; suture fine and feeble, almost completely obliterated in the middle; antennæ rather long, gradually and moderately incrassate; outer joints slightly transverse; second much shorter than the next two together, fourth and fifth longer than wide. *Prothorax* distinctly narrower than the base of the elytra, one-fourth wider than long; sides in anterior three-fifths just visibly divergent from the apex, and very feebly arcuate, then convergent and feebly arcuate, broadly and very feebly sinuate before the basal angles, which are very obtuse, rounded and not at all prominent although definable; lateral angles broadly rounded, not very distinct, apical obtuse, distinctly rounded; apex nearly two-fifths wider than the base, both broadly, feebly arcuate; disk very feebly convex, rather finely, densely punctate, the punctures deep and well defined, sparser near the apex and median groove, the latter very deep, widely impressed and conspicuous throughout; pubescence very long. *Elytra* subquadrate, distinctly wider at apex than at base, one-third wider and one-half longer than the prothorax; sides feebly arcuate toward apex; surface feebly impressed along the suture in basal half, coarsely, very deeply and densely punctate; punctures separated by from less than to slightly more than their own diameters, very deep and perforate and distinctly larger than those of the pronotum; pubescence very long, rather dense, cinereo-flavate and conspicuous. *Abdomen* slightly narrower than the elytra, rather coarsely and densely punctate upon the convex portions, the basal impressions impunctate, beneath densely punctate, the pubescence very long. Length 5.0 mm.

California.

A very well-marked species in its extremely long conspicuous pubescence, almost twice as long as in any other known to me. The hypomera are about one-half as wide as the distance thence to the coxæ, nearly flat anteriorly, strongly impressed along the middle, the sutures almost completely effaced, the coxal fissures very long and widely open. The mentum is very deeply impressed in the middle toward base, almost excavated, highly polished and quite devoid of reticulation, except near the lateral edges and sometimes near the apex.

For the present *villosus* may be associated with *laticollis*.

**B. nebulosus** n. sp.—Rather robust, nearly parallel, black; elytra pale rufo-ferruginous, indefinitely clouded with piceous-black toward the suture,

especially toward the base; abdomen piceous-black, rufo-piceous beneath; metasternum black; legs and antennæ pale testaceous, the latter infusate toward apex; head and pronotum feebly shining, rather coarsely and strongly granulato-reticulate; abdomen finely, evenly and feebly reticulate throughout, polished. *Head* slightly narrower than the prothorax; eyes large; surface rather depressed, finely, very sparsely and indistinctly punctate, not tuberculate; median fovea rounded, distinct; transverse impressed line distinct; antennal tuberculations small, feeble; suture fine, feebly defined; antennæ rather strongly incrassate; second joint more robust and nearly as long as the next two, five to seven increasing gradually in width, eight to ten wider, two-thirds wider than long, eleventh not as long as the two preceding combined. *Prothorax* just visibly narrower than the base of the elytra, nearly one-half wider than long; sides in anterior two-thirds parallel and broadly but distinctly arcuate, then convergent and straight to the basal angles, which are obtuse, slightly rounded, rather distinct but not at all prominent; lateral angles broadly rounded, not distinct, apical slightly obtuse and very narrowly rounded; apex truncate, less than one-third wider than the base, which is broad and feebly arcuate; disk rather finely and sparsely punctate, the punctures deep and distinctly defined, slightly closer toward base; pubescence moderate in length, sparse, pale flavate; median groove rather fine but very deeply impressed and conspicuous. *Elytra* nearly as long as wide, one-half longer and nearly one-fourth wider than the prothorax; sides straight, slightly divergent; surface distinctly impressed near the suture at base, densely, rather finely punctate, the punctures very deep and distinct and separated by slightly more than their own diameters; pubescence fine, moderate in length. *Abdomen* nearly as wide as the elytra, very finely, sparsely punctate; under surface finely and rather sparsely so. Length 3.9 mm.

#### Iowa.

The hypomera are moderate in width, deeply concave throughout, the lateral edges being very prominent; sutures distinct; coxal fissures moderate in length, widely open. The mentum is large and extremely feebly concave throughout its extent; it is rather shining and coarsely reticulate, the membranous hypoglottis very short, inflexed and inconspicuous.

Belongs near *laticollis*, but is well distinguished by its more shining head and pronotum, the punctures of the latter being better defined and the basal angles rather more distinct, by its relatively larger and more finely punctate elytra, less concave mentum, much wider pronotal hypomera, shorter coxal fissures, and larger but less prominent eyes.

**B. monticola** n. sp.—Rather slender, black; elytra and antennæ piceous-black, the latter very slightly paler toward base; legs rufous; head and prothorax dull, densely granulose; elytra and abdomen polished, the latter

reticulate, much more strongly so toward base. *Head* very nearly as wide as the prothorax; eyes rather small, very prominent; antennal prominences rather large, moderately conspicuous; suture fine but distinct; surface behind the suture dull and densely granulate, finely, rather densely but very indistinctly punctate; vertex neither tuberculate nor foveate, rather convex; epistoma shining, coarsely reticulate; antennæ rather robust; second joint nearly as long as the next two, third but slightly shorter than the fourth and fifth together, four to six short, the latter transverse, seven to ten rather abruptly wider and gradually longer, the tenth nearly two-thirds wider than long, eleventh short, much shorter than the two preceding combined. *Prothorax* distinctly narrower than the base of the elytra, scarcely one-fifth wider than long; sides in anterior two-thirds parallel and very slightly arcuate, then convergent and feebly sinuate to the basal angles, which are obtuse and very narrowly rounded, not at all prominent, the acute lateral edge entirely disappearing just before attaining them; lateral angles very obtuse and rounded but somewhat distinct, apical distinctly rounded; apex about one-third wider than the base, both truncate; disk rather convex, very densely but somewhat indistinctly punctate, densely but not distinctly pubescent, the median groove rather fine but deep and distinct. *Elytra* quadrate, scarcely one-fourth wider and two-fifths longer than the prothorax, rather convex, broadly impressed toward base near the suture; sides parallel; disk rather coarsely, very densely and deeply punctate, the punctures separated by scarcely more than one-half their own diameters, the intervals polished although feebly rugulose; pubescence moderate in length, rather coarse and dense, flavo-cinereous and conspicuous. *Abdomen* very slightly narrower than the elytra, finely, sparsely punctate, rather coarsely and densely so beneath. Length 2.8 mm.

California (Lake Tahoe, 6200 feet).

A small species, quite distinct in its very dense punctuation; the absence of an acute lateral margin near the basal angles of the prothorax will distinguish it from its nearest allies; it should be placed near *sinuatus* Lec.

The hypomera are very broadly, feebly concave and rather more than one-half as wide as the distance thence to coxæ, the sutures distinct, the coxal fissures moderate in length and widely open. The mentum is shining, coarsely reticulate and broadly, rather strongly impressed in the middle throughout its length, the coriaceous hypoglotis very short and not distinct.

**B. gentilis** n. sp.—Rather slender and convex, black throughout; legs rufo-testaceous; antennæ black, the two basal and eleventh joints paler, piceo-testaceous; head and pronotum feebly shining, the former finely granulose, transversely reticulate near the base, the latter more coarsely granulato-reticulate and shining; elytra and abdomen polished, the latter coarsely reticulate throughout, the lines very fine. *Head* very slightly narrower than the pro-

thorax, rather strongly convex, completely devoid of fovea or tuberculations; antennal prominences small and feeble; epistomal suture fine, feeble, not impressed; eyes moderate; antennæ rather short and strongly incrassate, compressed; second joint nearly as long as the next two, three to six gradually shorter, the latter slightly transverse, seven to ten gradually wider, strongly transverse, tenth on the compressed side nearly twice as wide as long, the eleventh ovoidal, obtusely pointed, longer than wide and as long as the preceding two. *Prothorax* distinctly narrower than the base of the elytra. sides in apical three-fifths parallel and rather distinctly arcuate, convergent and evenly, very feebly sinuate thence to the basal angles, which are obtuse, narrowly rounded and not at all prominent; lateral angles very broadly obtuse, rounded but rather distinct, apical nearly right, narrowly rounded; apex nearly one-half wider than the base, both subtruncate; disk scarcely one-fourth wider than long, rather finely, somewhat densely and distinctly punctate; pubescence rather long, pale fulvous; median groove rather deeply impressed and very distinct. *Elytra* quadrate, two-fifths wider and nearly one-half longer than the prothorax; sides nearly straight and almost parallel; surface densely and somewhat coarsely punctate, the punctures rather deeply impressed, separated by about their own diameters; pubescence fine, moderate in length, cinereous, rather dense and distinct. *Abdomen* slightly narrower than the elytra and much wider than the prothorax, finely, sparsely punctate, finely and more densely so beneath. Length 3.0 mm.

California (Sonoma Co.).

The unique example represents a very distinct species differing from any other which I have seen; it may, however, be placed next after *sinuatus* in the catalogue.

The hypomera are very narrow, scarcely more than one-third as wide as the distance thence to the coxæ, very feebly concave, the sutures distinct; the coxal fissures are long and very widely open. The mentum has a large, moderately deep median impression; it is shining and coarsely reticulate, the hypoglottis thin, polished, flat, not reticulate and rather long, being about one-fifth as long as the entire mentum, the dividing suture very feeble.

**B. gracilis** n. sp.—Slender and somewhat convex, black throughout; antennæ piceous, paler toward base and apex; legs testaceous; head feebly shining, rather coarsely, feebly granulose; pronotum strongly shining, coarsely, strongly reticulate; elytra and abdomen polished, the latter coarsely reticulate, the lines fine. *Head* rather distinctly narrower than the prothorax, rather strongly convex, not tuberculate; median fovea nearly obsolete; surface finely, sparsely and not distinctly punctate; neck transversely reticulate; antennal tuberculations small, not strong, polished at the apices; suture very feeble, not impressed; antennæ moderate, strongly incrassate; second joint much longer than the next two together, gradually, strongly incrassate from the fourth joint, tenth strongly transverse, eleventh shorter than the two preced-

ing together. *Prothorax* about one-fifth wider than long, scarcely narrower than the base of the elytra; sides in anterior two-thirds parallel and feebly arcuate, then convergent and feebly sinuate to the basal angles, which are obtuse, extremely narrowly rounded but not prominent; lateral angles very obtuse but narrowly rounded and rather distinct when viewed sublaterally, less distinct vertically, apical nearly right, slightly but distinctly rounded; apex two-fifths wider than the base, both subtruncate; disk rather strongly convex, rather finely but deeply, distinctly and not very densely punctate; pubescence sparse, moderate in length; median groove very wide, deeply excavated and extremely conspicuous. *Elytra* quadrate, one-third longer and wider than the prothorax; sides feebly arcuate toward apex; disk sparsely punctate, the punctures feebly impressed, distant by twice their own diameters and about as sparse as those of the pronotum; pubescence fine, rather long and sparse. *Abdomen* very slightly narrower than the elytra and very much wider than the prothorax, finely, sparsely punctate, somewhat coarsely and sparsely so beneath. Length 2.5-3.0 mm.

California (Mendocino, Sonoma, and Santa Cruz Cos.).

This species is allied only to *gentilis*, which it somewhat strongly resembles in external form, color and lustre. It is, however, a rather smaller species, with much sparser elytral punctuation, and much deeper and wider median groove of the pronotum. The mentum is not impressed in the middle as in *gentilis*.

The hypomera are nearly one-half as wide as the distance thence to the coxæ and are flat, except externally and posteriorly near the lateral margin, where they are narrowly impressed; the sutures are distinct, and the coxal fissures long and widely open.

**B. stabilis** n. sp.—Rather robust and depressed, widest at the elytra, black; elytra dark rufo-piceous to piceous-black; legs, and antennæ toward base pale flavo-testaceous, the latter infuscate toward apex; head and pronotum feebly shining, densely and somewhat coarsely granulose; abdomen polished, finely and evenly reticulate. *Head* very distinctly narrower than the prothorax; eyes large; surface feebly convex, not tuberculate, the median fovea rather large and feeble but distinct; antennal prominences feeble; suture very fine and nearly obsolete; antennæ moderate, gradually incrassate; second joint rather shorter than the next two combined, tenth fully one-half wider than long. *Prothorax* nearly as wide as the base of the elytra, fully one-third wider than long; sides in anterior two-thirds parallel and very feebly arcuate, then convergent, arcuate, feebly sinuate near the basal angles, which are obtuse, not rounded and distinct, lateral broadly rounded and not very distinct, apical right and narrowly rounded; apex one-third wider than the base, both just visibly arcuate; disk finely, sparsely punctate, the punctures rather deep and distinct; median groove fine but distinct. *Elytra* large, toward apex, one-fourth wider than the prothorax, nearly two-thirds longer; sides feebly divergent and nearly straight; surface impressed on the suture at the base, deeply,

distinctly and densely punctate, the punctures rather fine, about twice as dense as those of the pronotum, and separated by slightly more than their own diameters; pubescence fine, very short, rather dense, pale brownish-ginereous and somewhat conspicuous. *Abdomen* distinctly narrower than the elytra and wider than the prothorax, very finely and extremely sparsely punctate, somewhat coarsely and moderately densely so beneath. Length 3.5 mm.

Pennsylvania (Allegheny Co.). Dr. Hamilton.

The hypomera are about one-half as wide as the distance thence to the coxæ and are broadly, rather feebly concave, the sutures fine and distinct, the coxal fissures rather long and extremely widely open. The mentum is rather shining, broadly, feebly concave, the apex being broadly feebly emarginate.

This species belongs near *annularis*, but differs in its more shining, more sparsely and distinctly punctate, and decidedly wider and more transverse prothorax, the hind angles being more prominent, and in its larger, longer and wider elytra.

**B. adustus** n. sp. (Fauvel MS.)—Slender, subparallel, black; elytra piceous-black, slightly paler and testaceous along the apices; legs and antennæ dark rufo-testaceous, the femora slightly clouded toward base; head and pronotum alutaceous, finely, densely granulose; elytra and abdomen polished, the latter coarsely reticulate, the lines very fine, the reticulations not finer toward apex. *Head* very slightly narrower than the prothorax; eyes moderate; surface feebly convex, not tuberculate, the vertex with a small median impressed fovea; epistoma flat, more coarsely granulose; suture fine, not impressed; antennal prominences feeble; antennæ rather short and robust, but feebly compressed; second joint more robust and fully one-half longer than the third, four to six decreasing in length, seven to ten rather abruptly wider, transverse, the latter two-thirds wider than long, eleventh ovoidal, slightly longer than wide. *Prothorax* very slightly narrower than the base of the elytra, scarcely one-fourth wider than long; sides in anterior three-fifths parallel and distinctly arcuate, thence convergent and just visibly sinuate to the basal angles, which are obtuse but not rounded, and not prominent; lateral angles rounded, apical slightly obtuse, scarcely perceptibly rounded; apex feebly arcuate, two-fifths wider than the base, the latter subtruncate; disk rather convex, not very coarsely but rather sparsely and very indistinctly punctate, the punctures feebly impressed; median groove impressed, distinct. *Elytra* quadrate, one-third wider and nearly one-half longer than the prothorax, scarcely perceptibly wider toward apex; sides very feebly arcuate; disk rather convex, not impressed in the middle at base, rather coarsely, feebly and not very densely punctate, the pubescence fine, moderate in length. *Abdomen* slightly narrower than the elytra and wider than the prothorax, very finely, sparsely punctate, more densely so beneath. Length 3.0 mm.



Colorado (Garland). Mr. E. A. Schwarz.

A small species, closely allied to *ruficornis* Lec., but differing in its sparser punctuation and rather shorter, more robust antennæ. The hypomera are feebly concave, two-fifths as wide as the distance thence to the coxæ, the sutures fine but distinct. The coxal fissures are long and very widely open.

**B. languidus** n. sp.—Slender, subparallel, black; elytra piceous black; legs throughout testaceous; antennæ black, two basal joints paler; head and pronotum feebly shining, rather coarsely granulose; elytra and abdomen polished, the latter rather coarsely reticulate, more strongly so toward base, not more finely toward apex. *Head* quite distinctly narrower than the prothorax; eyes moderate; surface scarcely perceptibly convex, neither tuberculate nor foveate; antennal prominences feeble; epistomal suture very fine, not impressed; antennæ rather short; second joint more robust, nearly as long as the next two together, three to six subequal in width, decreasing in length, the latter transverse and about one-half as long as the former, seven to ten strongly transverse, the former not very abruptly wider than the sixth, the latter nearly twice as wide as long. *Prothorax* very slightly narrower than the base of the elytra, one-third wider than long; sides in apical three-fifths parallel and feebly arcuate, thence broadly rounded, convergent and feebly arcuate to the basal angles, which are obtuse, not appreciably rounded and very feebly prominent; lateral angles obsolete, apical nearly right and extremely narrowly rounded; apex very feebly arcuate, one-third wider than the base, the latter truncate; disk rather finely and sparsely punctate; median groove very fine but deep and distinct; pubescence long, sparse and flavate. *Elytra* nearly as long as wide, one-fourth wider and one-half longer than the prothorax; sides feebly arcuate toward apex; disk not impressed at base, somewhat coarsely and feebly punctate; punctures impressed, distant by rather more than their own widths; pubescence cinereous, rather short, fine and sparse. *Abdomen* slightly narrower than the elytra, finely, very sparsely punctate, very finely sparsely punctate beneath. Length 3.8 mm.

Oregon (Huntington). Mr. H. F. Wickham.

This is a rather slender species, allied to *ruficornis* Lec., but distinguished by its very much sparser pronotal punctuation, black antennæ, and less opaque lustre.

The hypomera are very narrow, distinctly less than one-half as wide as the distance thence to the coxæ, and rather deeply concave, the sutures being feeble and not very distinct. The coxal fissures are very long and widely open. The mentum is broadly, feebly concave, coarsely reticulate, polished and furnished along the apical margin with a short flat polished non-reticulate hypoglottis, separated by a fine suture.

In *ruficornis* Lec. the abdomen beneath is much more densely

and coarsely punctate, and the hypomera are wider and almost perfectly flat, the sutures more distinct.

**B. bicolor** n. sp.—Black; prothorax, elytra and antennæ brown; legs flavate; head and pronotum very finely, densely granulate and opaque; elytra and abdomen polished, the latter reticulate. *Head* just visibly narrower than the prothorax; eyes rather large but moderately prominent, the setæ rather long; surface rather convex, finely and not distinctly punctate, not tuberculate, the median fovea very small and feeble; antennal prominences feeble; epistomal suture fine, not impressed; antennæ but feebly compressed, rather strongly incrassate; second joint much longer and more robust than the third, but not as long as the next two, three to six subequal in width, decreasing rapidly in length, the latter but slightly transverse, seven to ten gradually wider, the former not very abruptly so, the latter one-half wider than long. *Prothorax* very slightly narrower than the base of the elytra, scarcely one-third wider than long; sides in apical three-fifths parallel and nearly straight, then convergent and broadly, feebly sinuate to the basal angles, which are obtuse but not rounded and not prominent; lateral angles obtuse and rounded but rather distinct, apical nearly right and narrowly rounded; apex one-third wider than the base, both subtruncate; disk finely and rather densely punctate, the punctures being very indistinct and scarcely at all impressed, the pubescence fine, rather dense but dark and scarcely visible; the median groove very fine but distinct. *Elytra* nearly quadrate, one-third wider and one-half longer than the prothorax, very slightly wider toward apex; sides nearly straight; disk not impressed at base, densely and distinctly, but somewhat coarsely punctate, the punctures separated by distinctly less than their own diameters; pubescence fine, moderate in length and density, cinereous and distinct. *Abdomen* broad, but slightly narrower than the elytra and much wider than the prothorax, finely, not densely punctate, more strongly and somewhat densely so beneath. Length 3.3 mm.

California (Napa Co.).

A rather small inconspicuous species, allied to *ruficornis*, but well distinguished by its peculiar coloration, which is very constant throughout a series of eight specimens. It is further distinguished by its sexual characters, the anterior margin of the epistoma being perfectly devoid of tuberculation in the male. In the corresponding sex of *ruficornis* there are two remote and very small tuberculations which, however, are not at the apical angles as in *armatus*, but distinctly nearer the middle.

The hypomera are flat, except near the apex of the coxal fissures where they are feebly impressed; they are scarcely one-half as wide as the distance thence to the coxæ, the sutures being distinct. The coxal fissures are very widely open. The mentum is exceedingly feebly concave, the hypoglottis apparently obsolete.

**B. parvicollis** n. sp.—Very robust; head and prothorax much narrower; black throughout, legs pale flavate, the coxæ and femora toward base piceescent; antennæ fuscous, paler toward base; head and pronotum opaque, extremely minutely and densely granulose; elytra and abdomen polished, the latter reticulate, the lines very fine, the reticulations strongly transverse and much smaller toward apex. *Head* rather distinctly narrower than the prothorax, very finely, not distinctly punctate; antennal prominences feeble, the epistomal suture scarcely visible, not at all impressed; vertex rather convex, not tuberculate; median fovea obsolete; antennæ rather long; second joint nearly one-half longer than the third, three to eight gradually decreasing in length and increasing in width, the latter obtrapezoidal, one-half wider than long, ninth and tenth similar, slightly wider, but not shorter than the ninth, the eleventh orbicular, scarcely longer than wide, the antennæ viewed upon the compressed side. *Prothorax* nearly one-third wider than long; sides parallel and strongly arcuate, slightly convergent and straighter in basal third, the basal angles very obtuse, not at all rounded and minutely though noticeably prominent, lateral entirely obliterated, apical obtuse but not perceptibly rounded; apex transverse; base feebly arcuate; basal and lateral beaded margins distinct; disk finely, densely and somewhat indistinctly punctate, the median groove fine, impressed, obliterated near base and apex; pubescence rather dense, moderate in length and coarse but dark brownish in color and scarcely visible. *Elytra* large, quadrate, slightly dilated behind, where they are nearly one-half wider than the prothorax, fully three-fourths longer than the latter; sides feebly arcuate toward apex; humeri right, narrowly rounded; disk finely, rather deeply and very densely punctate, the punctures separated by from one and one-half to two times their own diameters; pubescence fine, short, dense, silvery and rather conspicuous. *Abdomen* slightly narrower than the elytra, fully one-third wider than the prothorax, finely, sparsely punctate; punctures denser along the apices of the segments; under surface densely, strongly punctate, densely pubescent. Length 4.5 mm.

California (Mendocino Co.).

The hypomera are not impressed along the lateral edges; they are one-half as wide as the distance thence to the coxæ; the coxal fissures are very long and widely open. The mentum is large and perfectly flat, finely, densely granulose and dull, the hypoglossitis apparently rudimentary. The prosternal sutures are distinct.

The elytra are sometimes pale, indefinitely clouded toward the suture. Two specimens are decidedly more slender. This is a very distinct species, to be placed near *diagonalis*; the latter resembles it greatly in form, but has the surface of the head and pronotum much more shining, and the basal angles of the prothorax obtuse, narrowly but distinctly rounded, and not at all prominent. From *longipennis* it differs in its denser pronotal punctuation; this part in that species is, according to Mannerheim, "parce punctato."

**B. honestus** n. sp.—Slightly robust, subparallel, black; elytra, legs and antennæ throughout testaceous, the first very broadly and indefinitely clouded toward the suture: head and pronotum strongly shining, rather coarsely and strongly reticulate; abdomen reticulate, polished, the retal lines fine throughout. *Head* rather convex, slightly narrower than the prothorax, not tuberculate; median fovea very small and feeble, shining, with a few rather large and distinct widely-dispersed punctures; antennal tuberculations moderate, smooth; suture very fine but distinct; antennæ rather slender; second joint quite robust, nearly as long as the next two, third scarcely one-half longer than the fourth, fourth and fifth subequal, sixth slightly shorter, feebly transverse, six to ten very evenly but rapidly wider, the tenth nearly one-half wider than long, eleventh slightly shorter than the two preceding. *Prothorax* as wide as the base of the elytra, one-third wider than long; sides in anterior two-thirds parallel and nearly straight, then convergent and feebly arcuate, feebly sinuate for a short distance before the basal angles, which are very obtuse, slightly rounded and not distinctly prominent; lateral angles very broadly rounded and not distinct, apical right, very narrowly rounded; apex two-fifths wider than the base, just visibly arcuate, the latter truncate; disk not very coarsely punctate, the punctures very deep and distinctly defined, sparsely and somewhat unevenly distributed; pubescence fine, sparse and inconspicuous, the median groove rather coarse, deep and distinct. *Elytra* scarcely as long as wide, just visibly wider and about two-fifths longer than the prothorax; sides feebly divergent, nearly straight; surface feebly impressed near the base and suture, rather finely and not very densely punctate, the punctures separated by about twice their own diameters; pubescence moderate in length, fine, rather sparse. *Abdomen* just visibly narrower than the elytra, rather more coarsely and densely punctate than usual, beneath rufo-piceous, slightly more densely but rather finely punctate. Length 3.3 mm.

New York (Catskill Mts.). Mr. H. H. Smith.

The hypomera are narrow, distinctly less than one-half as wide as the intervening coxal distance, and are strongly and narrowly concave throughout the length, the sutures almost completely obsolete, the coxal fissures rather long, widely open, the prosternal surface immediately before them transversely impressed. The mentum is shining, coarsely reticulate and broadly, strongly impressed in the middle toward base, the hypoglottis membranous, and nearly one-fourth as long as the entire mentum.

The prosternal sutures being effaced, with the coxal fissures widely open, constitute of this very distinct species, one of the bonds uniting the *cordatus* and *annularis* groups of LeConte. Although the sutures are obsolete, it is easy to perceive the extent of the hypomera, as the reticulation of the surface is longitudinal on these parts, and without definite arrangement elsewhere.

Group 5.—*cordatus*.

A rather limited group containing the smallest species of the genus, polished, sometimes dull, black, with the elytra always pale, white or yellowish-white, clouded toward suture and base with brown, piceous or black:—

<i>dimidiatus</i> Lec.	<i>turbulentus</i> n. sp.
<i>basalis</i> Lec.	<i>opaculus</i> Lec.
<i>ignavus</i> n. sp.	<i>cordatus</i> Say.
<i>misellus</i> n. sp.	<i>forcipatus</i> Lec.
<i>neglectus</i> n. sp.	

**B. ignavus** n. sp.—Slender, rather convex, parallel, black; elytra very pale, whitish, translucent, indefinitely clouded with piceous toward suture and at the base; legs piceous, tibiae and tarsi flavate; antennae flavate, piceous toward apex; integuments polished throughout, head and prothorax very finely reticulate, the reticulations on the latter tending to a transverse arrangement; abdomen more coarsely reticulate, the lines very fine. *Head* distinctly narrower than the prothorax, very convex, neither tuberculate nor foveate, rather finely, distinctly and sparsely punctate; antennal tuberculations extremely small and feeble; epistomal suture very fine, feeble, not impressed; anterior angles of the epistoma very minutely but acutely and distinctly tuberculate; antennae rather short, gradually and very strongly incrassate; second joint robust, longer than the next two together; three to six small, sixth strongly transverse, eighth twice as wide as long, shorter than the ninth and tenth which are rather strongly transverse, eleventh ovate, scarcely longer than wide. *Prothorax* as wide as the elytra, nearly one-half wider than long; sides in apical two-thirds parallel and very nearly straight, then very broadly rounded into the base, without lateral or basal angles; base subtransverse in the middle; apex broadly evenly and just visibly arcuate; apical angles right and narrowly but distinctly rounded; disk rather strongly, evenly, transversely convex, very finely, evenly and sparsely punctate; median groove very fine but distinct, not quite attaining the apex. *Elytra* quadrate, about two-thirds longer than the prothorax; sides nearly parallel and straight; outer angles very broadly rounded, inner narrowly but distinctly so; surface not distinctly impressed near the base, rather coarsely, very feebly and somewhat densely punctate, the punctures separated by their own widths. *Abdomen* slightly narrower than the elytra; sides parallel and feebly arcuate; surface finely, sparsely punctate, beneath very minutely and sparsely punctate. Length 1.9 mm.

Rhode Island.

The hypomera are flat but depressed below the lateral edges which are, therefore, finely prominent; the coxal fissures are very short and narrowly open, the sutures obsolete. The mentum is

very short, twice as wide as long, shining but coarsely confusedly reticulate, broadly, feebly emarginate throughout the width at apex, with a narrow impressed transverse groove just behind and along the apical margin, and a small deep abrupt impression in the middle at the base, elsewhere convex and slightly tumid.

The description is taken from the male, the eighth segment having the usual acute incisure; it is very closely allied to *basalis* Lec, but differs in its smaller size, more transverse and more sparsely punctate prothorax, in which the anterior angles are less prominent, and its shorter, more coarsely and much more feebly punctate elytra, in which the exterior apical angles are more broadly rounded. In *basalis* the mentum is truncate at apex, feebly impressed in the centre, the surface on each side of the impression forming a rounded tumid elevation. It is totally devoid of the small round fovea near the base, which is so marked in *ignavus*.

**B. misellus** n. sp.—Rather slender, black; elytra very pale, whitish, the basal third piceous-brown, the same tint extending broadly along the middle nearly to the apex; legs and antennæ very pale, the latter infuscate; femora darker; integuments polished, except the elytra reticulate, the abdomen coarsely so, the lines very fine, the pronotum more finely so, with the reticulations tending to a transverse arrangement. *Head* rather distinctly narrower than the prothorax, strongly convex, neither tuberculate nor foveate, rather finely but distinctly and sparsely punctate; antennal prominences very small and extremely feeble; suture fine, not impressed; eyes moderate, very coarsely faceted, not very prominent; antennæ short, robust, gradually and strongly incrassate, rather strongly compressed; scape as long as the next six joints combined; second joint much longer than the next two, all the joints after the third transverse, successively more strongly so, compactly placed, the eleventh short, very broad, not as long as wide, very obtuse. *Prothorax* nearly as wide as the base of the elytra, nearly two-fifths wider than long; sides in apical three-fourths parallel and nearly straight, then abruptly, broadly rounded into the base without lateral or basal angles; base transverse; apex truncate, the apical angles acute and slightly anteriorly prominent, feebly rounded externally; disk transversely, rather strongly convex, very finely though distinctly, sparsely punctate, the median groove very fine, rather feebly impressed and not quite attaining the apex. *Elytra* slightly longer than wide, two-fifths wider and fully four-fifths longer than the prothorax; sides just visibly divergent, nearly straight; exterior apical angles very broadly rounded, interior extremely narrowly so; surface feebly impressed near the suture toward base, very finely, feebly, not very distinctly punctate, the punctures generally separated by between two and three times their own diameters; pubescence extremely short, sparse and inconspicuous. *Abdomen* distinctly narrower and scarcely longer than the elytra; sides very feebly convergent

from base to apex and very feebly areolate, very minutely and sparsely punctate, beneath minutely, very sparsely punctate, the pubescence longer and more distinct. Length 1.8 mm.

Texas (Galveston).

The hypomera are feebly impressed along the sides and are rather wide, the sutures obliterated, the coxal fissures short, almost completely closed. The mentum is short, fully twice as wide as long, broadly, feebly emarginate at apex throughout the width, deeply and coarsely foveate in the middle near the base, the surface distinctly tumid on either side of the fovea, and having a few coarse setigerous punctures.

Although to be classed with *basalis*, this little species, one of the smallest known in our fauna, is not very closely allied to it. The elytra are relatively larger and longer, and are much more finely punctate. The sides of the prothorax are straight in apical three-fourths, while in *basalis* the parallel portion of the sides is much shorter. The series before me exhibits great variation in the extent of the brownish-piceous tint, this being confined in one specimen to the basal margin.

**B. neglectus** n. sp.—Slender, black; elytra very thin and translucent, whitish, the suture and base blackish; legs and antennæ testaceous, the latter infusate, the femora darker; head and pronotum very finely, densely and evenly granulato-reticulate, rather feebly shining; abdomen polished, coarsely reticulate, the lines fine. *Head* much narrower than the prothorax, convex, neither foveate nor tuberculate, finely, rather feebly and sparsely punctate, the median portions impunctate; antennal prominences very small and feeble; eyes moderate; epistomal suture fine; epistoma with a fine distinct tubercle on the apical edge near each anterior angle; antennæ moderate, rather strongly compressed, gradually and strongly incrassate; second joint slightly longer than the next two together, fifth quadrate, rather longer than either the fourth or sixth, six to ten wider than long, the latter by three-fourths its length, eleventh very slightly wider than long, very obtuse; joints throughout not very compactly joined. *Prothorax* nearly as wide as the base of the elytra, two-fifths wider than long; sides in anterior three-fourths parallel and straight, then very strongly convergent and broadly, feebly but distinctly sinuate to the basal angles, which are obtuse and rounded but rather distinct, lateral more broadly rounded and less distinct, apical right, very narrowly rounded, not at all prominent; base and apex transversely truncate; disk transversely, moderately convex, rather finely, feebly and densely punctate; punctures separated by nearly twice their own widths; median groove very fine but distinct. *Elytra* quadrate, two-thirds longer and one-third wider than the prothorax; sides nearly straight, feebly divergent; surface distinctly impressed near the suture at base, finely, rather feebly and densely punctate; pubescence extremely

short. *Abdomen* distinctly narrower than the elytra; sides parallel and nearly straight, a little more convergent toward apex; surface very finely, sparsely punctate, beneath minutely and sparsely so. Length 2.5 mm.

#### Rhode Island.

The hypomera are very wide, with the sides parallel, flat but depressed far below the lateral edges, so that the latter are very acute and prominent; the coxal fissures are extremely short and appear to be very narrowly open, the hypomeral edge being beneath the prosternal or anterior edge. The mentum is nearly flat, the subbasal median impression being somewhat feeble.

This species belongs in the neighborhood of *basalis*, but differs in the form of the prothorax and sinuation of the convergent portion of the sides, and in its rather distinct basal angles; the elytra are more finely and densely punctate and the size considerably larger.

**B. turbulentus** n. sp.—Rather slender, black; elytra very pale, yellowish-white, the basal margin piceous-black; legs and antennæ testaceous, the femora darker; integuments polished, head and prothorax finely, evenly and rather strongly reticulate; abdomen coarsely reticulate, with the retal lines very fine. *Head* distinctly narrower than the prothorax, convex; eyes rather large and prominent; surface finely, rather feebly and sparsely punctate, neither foveate nor tuberculate; antennal prominences small and very feeble; suture fine, not impressed; epistoma with a fine apical tubercle near each anterior angle; antennæ rather slender, evenly incrassate; second joint not very robust, cylindrical, slightly longer than the next two together, fifth distinctly longer than wide, eighth and ninth similar in form, the latter the larger, just visibly wider than long, tenth slightly shorter than the ninth, less than one-half wider than long, eleventh not quite as wide as the tenth, distinctly elongate, gradually pointed, as long as the seventh and eighth together. *Prothorax* nearly as wide as the base of the elytra, two-fifths wider than long; sides in anterior two-thirds parallel and straight, then convergent and very feebly arcuate to the basal angles, which are very obtuse and broadly rounded and not distinct; lateral angles very obtuse and broadly rounded, apical right, not visibly rounded and just perceptibly anteriorly prominent; apex transversely truncate; base very feebly arcuate; disk transversely, moderately convex, finely punctate, the punctures rather feebly impressed and somewhat dense, being separated by scarcely more than twice their own diameters; median groove very fine, feebly impressed, not attaining the apex. *Elytra* quadrate, two-thirds longer and one-fourth wider than the prothorax; sides nearly straight, just visibly divergent; outer angles rather broadly, inner very narrowly rounded; surface feebly impressed near the suture at base, finely, feebly and densely punctate. *Abdomen* distinctly narrower than the elytra, as wide as the prothorax; sides parallel and nearly straight, the sixth



segment distinctly narrower from base to apex; surface finely, sparsely and unevenly punctate, beneath rather densely so, especially toward base. Length 3.0 mm.

Florida. Mr. E. A. Schwarz.

This species was confounded by LeConte with *basalis*, from which it differs in many conspicuous characters, and chiefly in its much longer, more slender antennæ, these in *basalis* being very short, the outer joints very strongly transverse and more compactly connected, the eleventh very short, obtuse and much wider than long, the fifth wider than long; it also differs in its much more finely and densely punctate elytra, and in its decidedly greater size. *Basalis* is quite uniform in size, the series of six specimens before me offering but slight variation in this respect, the length being 2.0–2.2 mm., and not as great even as the minimum length (2.5 mm.) given by Dr. LeConte in the original description. The present description is taken from the male, and it has been compared with the same sex of *basalis*.

The structure of the under surface of the prothorax is nearly as in *basalis*, the coxal fissures being very short and entirely closed. The mentum is flat, with a large deep impression in the middle near the base.

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#### NOTE.

In the list of Staphylinidæ published since the date of the Munich Catalogue, recently compiled by M. Ant. Duvivier, appears the name *Bledius LeContei* Duviv., for *B. phytosinus* Lec., under the supposition that the latter name was pre-occupied, but as LeConte's name was published in 1877, and *phytosinus* Fauvel not until 1878 (l. c. p. 101), it is evidently the latter which should fall and not *phytosinus* Lec. The name *Bledius LeContei* has recently been given by Dr. Sharp to a Mexican species (Biol. Cent.-Amer., Coleop. 1, Pt. 2, p. 685). The Fauvelian species must be considered therefore as still unnamed.

#### **APLODERUS** Steph.

*Haploderus* Lac., Lec., etc.—*Phleconeus* Er., Lec.

The species of *Aploderus*<sup>1</sup> are comparatively few in number and

<sup>1</sup> The alteration of the original name *Aploderus* as published by Stephens, to *Haploderus*, is unwarranted by any rule of nomenclature based upon solid reason. To legitimize the changing of a name once given by an author, even by the purists, is to open the way to unending confusion, and should not be encouraged. The sense of the majority of modern authors seems to favor, or

somewhat resemble *Trogophlœus* in external facies. They are at once distinguishable, however, by the extremely large, externally angulate and open anterior coxal cavities, the open portion beyond the coxæ having a large trochantin or plate, which probably serves the purpose of an operculum; they also differ by having a row of short rather robust and distinct spinules along the outer edge of the anterior tibiæ. The genus is rather closely related to *Ancyrophorus*, the latter being distinguished by the visible scutellum and rather longer and more conical fourth joint of the maxillary palpi. The affinity with *Oxytelus* is much more remote, not only in habitus, but in the special modifications of structure.

The eighth ventral segment of the males, as usual in this portion of the *Oxytelini*, is longitudinally divided throughout its length, forming two distinct parts which overlap. In the present genus the overlapping edge is parallel to the axis of the body, and the

at least tolerate, the adoption for generic names of any combination of letters which is moderate in length, easily pronounceable, and which has a Latin form or habitus so to speak, and although *Aploderus* may not be as good Greek as *Haploderus*, it is at all events a certain definite combination of letters, having a Latin form, and easily pronounceable, and could not be altered even by the author himself.

Although generic names are generally taken or derived from the Greek, they cease to be Greek and become Latin as soon as published over a description, and *Aploderus* is as good a Latin word as *Haploderus*, or *Bledius*, or *Hamletia*. The only reason for altering a name once published is because of a typographical error which may either delatinize it, or render it unpronounceable.

If generic names be not considered as Latin simply and solely, we are continually guilty of a "barbarism" of the worst kind—the modification of a Greek word by a Latin adjective. It being granted therefore that generic words are Latin and not Greek, it follows that the gender of specific names should depend upon the ending of the generic name in its Latin sense, *i. e.*, words ending in *a*, *is*, and *e* are feminine, *e. g.* *Tylosderma urea* and not *ureum*. Unfortunately there are many words used for genera which are perfectly Greek in form and not Latin; in these cases the only course to pursue is to give to the specific names genders which coincide with the Latin equivalent, *e. g.*, *Medon fusculum* and not *fusculus*.

The reason given by LeConte for the suppression of *Aploderus* and the substitution therefor of *Philœonæus* Erichs., is not, in the opinion of the writer, a valid one. As long as a certain definite described species is stated by an author to be the type of a genus, the genus must be considered established, even though not described.

apex is therefore never deeply angularly incised, as would be the case when the two edges are oblique, as in *Bledius*.

In the table and descriptions given below, the specific characters throughout are drawn from the male only.

The species belonging to our fauna, although as far as known only five in number, are easily divisible into two distinct groups as follows:—

Anterior coxal cavities extremely large, angulate, extending to within a short distance of the lateral edges of the prothorax, this distance being not greater than the distance separating them from the anterior margin of the prosternum .....**I**

Head and prothorax narrower than the elytra; eyes moderate, the tempora behind them equally prominent and but slightly longer .....**linearis**

Head and prothorax as wide as the elytra; form parallel; eyes very small, the tempora behind them nearly three times as long, strongly arcuate and much more prominent .....**cephalotes**

Anterior coxal cavities smaller and shorter, broadly triangular, the hypomera wide, the distance separating the cavities from the lateral margin of the prothorax much greater than their distance from the anterior margin of the prosternum .....**II**

Head equal in width to the prothorax or extremely nearly so; basal joint of the antennæ subequal in length to the next three together; elytra distinctly less than twice as long as the prothorax.

Antennæ much longer than the head and prothorax together; sides of the abdomen straight and feebly divergent from base to apex....**princeps**

Antennæ about equal in length to the head and prothorax, the joints more compactly joined and more transverse; sides of the abdomen parallel and evenly, distinctly arcuate throughout.....**flavipennis**

Head slightly, although distinctly, narrower than the prothorax; basal joint of the antennæ shorter, subequal in length to the next two together; elytra about twice as long as the prothorax; sides of the abdomen parallel and straight .....**annectens**

**A. linearis** Lec.—*Haploderus lin.* Lec., Smith. 8vo., n. sp. Col., p. 54.—Slender, black; elytra and sometimes prothorax paler, dark piceous-brown; polished; pubescence very short, extremely sparse. *Head* equal in width to the prothorax; eyes moderate, nearly equal in length to, and rather more convex than the tempora behind them, the latter as prominent as the eye; antennæ rather slender, geniculate, the basal joint as long as the next three, second scarcely visibly longer than the third, oval, the latter strongly obconical, tenth joint very slightly wider than long. *Prothorax* nearly three-fourths wider than long; sides strongly arcuate anteriorly, feebly convergent and straight toward base, the base and apex broadly arcuate; basal angles rounded; disk very sparsely, deeply punctate, with a broad median impunctate line, on either side of which there is a narrow, feeble and rather indefinite

longitudinal impression. *Elytra* quadrate, one-third wider and about three-fourths longer than the prothorax, densely, very deeply and somewhat coarsely punctate. *Abdomen* narrow, much narrower than the elytra; sides straight and parallel; surface extremely minutely and sparsely punctate.

*Male*.—Sixth ventral segment with a very large median area, which is flattened and finely densely pubescent; seventh broadly, feebly emarginate throughout the width at apex, the middle of the emargination feebly produced in a short rounded process.

*Female*.—Sixth segment not densely pubescent; seventh not emarginate, longer, the middle of the apex produced in a rather long process—about twice as wide as long—which is strongly arcuate.

Length 2.7–3.0 mm.

California; Oregon; British Columbia.

An extremely common species, easily separated from the next by its relatively longer and wider elytra and many other characters.

**A. cephalotes** n. sp.—Rather slender, parallel, piceous-black; pronotum rufous; elytra paler, flavescens; legs pale flavate; antennæ piceous-black throughout; integuments polished; pubescence very short and sparse. *Head* large, orbicular, slightly wider than long, as wide as the prothorax, feebly convex; transverse basal line finely, feebly impressed; surface finely, feebly, very sparsely punctate, with a short fine very feeble canalicular in the middle nearly attaining the transverse groove; antennal prominences short, rather wide and rather strongly elevated; eyes very small, feebly convex, the sides behind them almost three times as long, strongly arcuate and much more prominent; antennæ fully as long as the head and prothorax together, feebly incrassate, second and third joints subequal, tenth rather distinctly transverse. *Prothorax* nearly twice as wide as long; sides more strongly arcuate anteriorly, strongly convergent and feebly arcuate toward base, the latter broadly, distinctly arcuate, the basal angles very broadly rounded, apical acute, not at all rounded, and slightly anteriorly prominent; apex truncate; disk not distinctly impressed, not very coarsely or deeply, very sparsely and unevenly punctate, a broad median line impunctate. *Elytra* quadrate with the sides parallel, equal in width to the prothorax and one-half longer, coarsely, very deeply and densely punctate, a narrow line on each, near the suture rather deeply impressed. *Abdomen* nearly as wide as the elytra; sides parallel and very slightly arcuate; surface very minutely, sparsely punctate.

*Male*.—Sixth ventral segment with a very large median area which is distinctly flattened, and covered very densely with fine erect pubescence; seventh broadly, feebly emarginate throughout its width, the middle of the emargination not in the least produced; eighth with a narrow elongate impression.

*Female*.—Unknown.

Length 3.0 mm.

California (San Francisco).

This is a remarkable species, its slightly transverse orbicular

head, with very small eyes, and long strongly arcuate tempora, its parallel form and relatively smaller, very coarsely punctate elytra, at once distinguishing it from any other.

**A. princeps** n. sp.—Rather convex, parallel, pale flavate throughout; head slightly darker, fuscous; antennæ feebly infuscate toward apex; integuments polished; pubescence sparse but rather long and distinct. *Head* fully as wide as the prothorax, rather strongly and densely punctate except in the middle and anteriorly; punctures moderate; median post-vertical impression feeble; nuchal constriction very strong; eyes moderate, slightly prominent, the tempora nearly twice as long, strongly arcuate and a little more prominent; antennæ rather slender, feebly incrassate, distinctly longer than the head and prothorax; basal joint subequal in length to the next three, second very slightly longer than the third, sixth fully as long as wide, tenth rather longer than wide and wider than long on the uncompressed and compressed sides respectively. *Prothorax* three-fifths wider than long; sides broadly, obtusely subangulate at anterior third, thence distinctly convergent and nearly straight to the broadly rounded basal angles; base broadly subtransverse: apex very broadly, feebly arcuate; apical angles slightly obtuse and scarcely perceptibly rounded, not at all prominent; disk strongly, arcuately impressed on each side of the median impunctate area, the impressions abruptly reflexed and continuing anteriorly nearer the sides, inclosing an impunctate callus; elsewhere rather strongly and densely punctate. *Elytra* about two-fifths wider and two-thirds longer than the prothorax, not quite as long as wide, strongly impressed along the suture toward base; disk rather depressed, rather coarsely, deeply and densely punctate, the punctures generally separated by a little less than their own diameters. *Abdomen* just visibly increasing in width from base to apex, slightly narrower than the elytra; sides straight; surface very finely, sparsely punctate, just perceptibly clouded with fuscous toward apex, the latter again paler.

*Male*.—Sixth segment very broadly arcuately emarginate throughout its width, the edge in middle third fimbriate with a line of excessively short and minute pointed membranous hairs, the surface with two diverging tufts of long setæ, the intermediate broadly triangular apical portion scarcely impressed but devoid of pubescence. Seventh segment broadly, angularly emarginate, the surface having in middle two-fifths a transverse strongly and posteriorly angulate line of densely placed obliquely inclined spinose setæ, the anterior inclosed surface feebly impressed and devoid of pubescence; surface laterally, beyond the line of setæ, having numerous very long stiff bristles. Eighth segment nearly normal, not impressed.

*Female*.—Unknown.

Length 4.4 mm.

Nevada.

In its wonderfully distinct sexual characters, large size, pale coloration and longer pubescence, especially of the pronotum, this

is by far the most remarkable species of this section of the genus. There are but two specimens known, and the male above described I owe to the kindness of Mr. C. H. Roberts, of New York.

**A. flavipennis** n. sp.—Somewhat robust, but moderately depressed; head black; pronotum dark rufo-piceous; elytra pale flavate; abdomen piceous throughout; legs pale flavate; antennæ piceous-black, the basal joint very dark rufo-testaceous; integuments polished, very finely and extremely sparsely pubescent. *Head* as wide as the prothorax; eyes rather small, somewhat convex, the tempora about three-fourths longer, less strongly arcuate but rather more prominent; transverse basal impression distinct; surface feebly convex, finely but distinctly and rather densely punctate, a wide median area impunctate; antennal prominences strong but small and very short; antennæ rather slender, very feebly incrassate, as long as the head and prothorax, basal joint about equal in length to the next three together, second scarcely visibly longer than the third, tenth very slightly longer than wide. *Prothorax* fully three-fourths wider than long; sides near the apex broadly subangulate, the angle narrowly rounded, thence feebly convergent and nearly straight to the apex, slightly more strongly so and very feebly arcuate to the basal angles which are rounded; base subtruncate toward the middle; apex broadly and distinctly arcuate, very feebly sinuate near each angle, the latter very slightly obtuse, very narrowly rounded, not prominent; disk strongly impressed in the middle at each side of the impunctate median line, the impression reflexed posteriorly and extending thence anteriorly nearer the sides, becoming broader and feebler and not attaining the apex; intermediate callus smooth, impunctate; impressed areas finely, rather densely punctate. *Elytra* slightly wider than long, one-third wider and nearly three-fourths longer than the prothorax; sides nearly parallel and straight; surface with a strong elongate impression at each side of the suture at base, rather finely deeply and densely punctate. *Abdomen* rather distinctly narrower than the elytra; sides parallel and very distinctly arcuate; surface very minutely and extremely sparsely punctate; under surface more densely so and with rather long cinereous and conspicuous pubescence.

*Male*.—Sixth ventral segment with a very small narrow elongate-oval area, not attaining the apex, which is more densely and finely pubescent; seventh very broadly, feebly emarginate throughout its apical width, the middle of the emargination transverse; eighth flattened but not impressed.

*Female*.—Seventh segment very broadly arcuate, the median portion with a fringe of very fine porrected membranous hairs; eighth broadly impressed.

Length 3.4 mm.

California (Mendocino, Santa Clara and Monterey Cos.).

The specimens before me consist of a single representative from each of the above localities—one male and two females. The species differs from *annectens*, not only in the characters given in the table, but in its shorter and rather more coarsely punctate elytra, and in the sexual characters of the female.

In the male type above described, there is a stout spinose seta at the posterior extremity of the pubescent area of the sixth segment; I cannot determine whether this is accidental or not.<sup>1</sup>

**A. annectens** Lec.—*Ancyrophorus annect.* Lec., Trans. Am. Ent. Soc., VI, p. 242.—Slightly robust, strongly depressed, piceous-black; elytra paler, rufo-piceous; legs pale flavate; antennæ piceous-black, fuscous toward base; pubescence extremely fine and sparse, much less sparse on the elytra; integuments polished. *Head* rather distinctly narrower than the prothorax, feebly convex, feebly and sparsely punctate, a wide median area impunctate; eyes moderate, rather convex, the tempora one-half longer and a little less convex than the eye, although equally prominent; transverse basal impression strong; vertex not impressed in the middle; antennæ long, evenly and rather distinctly incrassate, a little longer than the head and prothorax together, strongly geniculate, basal joint about as long as the next two together, the latter subequal, tenth nearly as long as wide. *Prothorax* three-fourths wider than long, transversely truncate at base and apex; sides obtusely angulate near the apex, convergent and nearly straight to the apex and base; basal angles distinctly rounded, apical nearly right and just visibly rounded, not anteriorly prominent; disk broadly, rather feebly, somewhat indefinitely and arcuately impressed on each side of the rather narrow median impunctate line, the latter wider near the apex; punctures moderate, somewhat dense in the impressed areas. *Elytra* one-third wider than, and nearly twice as long as the prothorax, quadrate, depressed, broadly impressed in the middle at base, rather finely distinctly and densely punctate. *Abdomen* distinctly narrower than the elytra; sides straight and parallel.

*Male*.—Sixth segment normal, without trace of denser pubescence in the middle; seventh extremely broadly and feebly emarginate at apex, the middle of the emargination just visibly produced and arcuate; eighth not impressed.

*Female*.—Seventh segment longer, broadly rounded at apex, the middle of the apex with a very feeble sinuation, the margin of the sinuation lined with a fringe of short, porrected, semi-membranous or gelatinous hairs; eighth impressed.

Length 3.5 mm.

California (Sonoma Co.).

A wider, more depressed species than the preceding, and apparently somewhat rare. The series before me consists of five specimens, all taken at Fisk's Mill on the seacoast.

<sup>1</sup> Since writing this paragraph I have received one other male example from Alameda Co. The spine is very distinct and in the same position, but instead of a single spine, there is here a closely condensed clump of five or six stiff setæ. The appearance of a single stiff spine in the original type is probably due to the complete agglutination of these setæ. The head in the Alameda male is, however, quite distinctly narrower, and this particular specimen may possibly be less fully developed.

**THINOBIVS** Kies.

This genus, although allied somewhat to *Trogophlœus*, differs in three very important structural characters, viz: the visible scutellum, broadly rounded inner apical angles of the elytra, and antennal structure, the fourth and sixth joints of the latter being invariably smaller than the fifth and seventh. These differential characters are very constant throughout our species, and there are no others which I have observed of sufficient importance to warrant the creation of a new genus. There are, however, certain characters possibly of subgeneric value, which should at least be noted.

In group I, the pubescence of the elytra is of dual composition. The very densely placed punctures bear, each, a very minute recumbent and scarcely visible seta, sometimes quite robust, and which constitutes the principal part of the vestiture, but, in addition, there is a system of longer erect and much more sparsely distributed hairs. In the other two groups here indicated, there is no sign of this complexity, and the pubescence is uniform throughout, consisting of fine erect or suberect hairs, all of equal length. It should also be stated that in groups I and II, the sixth abdominal segment is equal in length to the fifth, while in group III it is very much longer.

The European species are divided by Rey into sections which are considered of generic value. The species here noted under group I, seem to be entirely congeneric with the true *Thinobius* of Rey (*Hist. Nat. Col. Fr., Oxyt.*), but the *Thinophilus* of that author is almost certainly not represented in our fauna, at least there is no species known to us at present, which possesses the cephalic structure indicated as a prominent character of that genus (*l. c.* Plate VI), and should our groups be considered of subgeneric value, as they might with possible propriety in a general monograph, they must receive new names.

The species are probably numerous, but owing to their very minute size they have been almost totally neglected by our collectors. Those at present known to me may be identified by the following characters:—

Antennæ moderate in length, scarcely ever much longer than the head and prothorax, with the outer joints robust, the last ovoidal; integuments very minutely and densely punctate, or punctato-rugulose and dull .....  
Antennæ flavate.



Elytra twice as long as the prothorax, or very nearly so.

Pronotum distinctly, broadly impressed laterally.....**oxytelinus**

Pronotum not impressed laterally.....**pallidicornis**

Elytra not more than one-half longer than the prothorax.

Castaneous; elytra together distinctly wider than long...**flavicornis**

Black, elytra quadrate.....**grossulus**

Antennæ black or piceous-black.

Pronotum not perceptibly impressed.

Integuments more coarsely and strongly granulose, the short appressed pubescence bright fulvous in color.....**macropterus**

Integuments much smoother, not granulose but excessively minutely and densely punctate, the punctures all distinct, the pubescence dark cinereous and not at all conspicuous.....**sonomæ**

Pronotum with two small, feeble but distinct impressions near the basal margin.

Castaneous or piceous, the punctures granulose and subconfluent.

Form rather robust.....**fimbriatus**

Form slender.....**hesperius**

Black, the punctures not quite so dense, and the lustre more shining.

**pygmaeus**

Antennæ very long and slender, outer joints elongate, the eleventh elongate, and subcylindrical; integuments very minutely, densely punctate; lustre alutaceous.....**II**

Size large, 1.7 mm.; elytra very short, one-fourth longer than the prothorax.....**antennarius**

Size smaller, not exceeding 1.5 mm.

Pale brown; antennæ pale flavate.....**pallidus**

Black; antennæ piceous-black.....**gracilicornis**

Antennæ very short and robust; integuments shining, coarsely and more sparsely punctate.....**III**

Pale brownish-flavate, very slender; punctures finer; pronotum strongly impressed along the lateral edges; antennal joints very strongly transverse.....**crassicornis**

Black, more robust; punctures much coarser and relatively denser; pronotum not impressed along the sides; antennal joints very feebly transverse.....**validus**

**T. oxytelinus** Lec.—*Trans. Am. Ent. Soc.*, VI, p. 240.—Rather robust and depressed, castaneous; abdomen piceous; legs and antennæ pale flavate; integuments dull. *Head* almost as long as wide, feebly convex, very minutely and densely punctate, the punctures distinct and just visibly separated, the interspaces slightly shining; tuberculations moderate in size, feeble; eyes moderate, rather convex and prominent, very coarsely faceted, the sides behind them distinctly convergent to the neck, and very short; antennæ a little longer than the head and prothorax, rather slender, distinctly clavate, second joint cylindrical, more than twice as long as wide and fully as long as the next two, third distinctly longer than wide, fourth just visibly longer than wide,

slightly longer than the sixth and distinctly shorter than the fifth, the latter scarcely more robust, outer joints scarcely wider than long, the eleventh robust, ovoidal, rather abruptly pointed, one-half longer than wide. *Prothorax* nearly one-fifth wider than the head, three-fifths wider than long; sides parallel, evenly and distinctly arcuate; base broadly, feebly arcuate, angles broadly rounded; apex truncate, angles obtuse and narrowly rounded; disk feebly convex, broadly, distinctly impressed laterally and anteriorly, also with very faint traces of two small basal impressions which trisect the width; surface punctured like the head. *Elytra* nearly one-fourth wider than the prothorax and about twice as long, very depressed; sides just visibly divergent from base to apex and very slightly arcuate; surface excessively minutely and densely granulate, the recumbent pubescence not distinctly visible, the longer erect hairs rather distinct, not dense. *Abdomen* very slightly narrower than the elytra, short; sides nearly parallel; border narrow, deep; surface more coarsely, sparsely punctate and slightly shining. Length 1.0 mm.

California (Oak Grove 1). Mr. G. R. Crotch. Cab. LeConte.

In the type-specimen there is not the slightest trace of an impressed dorsal channel on the pronotum, and the record of one by LeConte is an inadvertence. The elytra are distinctly paler, rufescent, and practically uniform throughout the surface, the duskiness of the base and margins spoken of in the original description being not clearly evident. This is a very distinct species.

**T. pallidicornis** n. sp.—Rather slender, piceous-black; femora dark piceous-brown, tibiae, tarsi and antennae throughout paler, brownish-flavate; integuments dull. *Head* fully as long as wide, very minutely, strongly and densely granulose, the punctures not distinct; tuberculations very small and feeble; suture very fine, shining; eyes moderate, feebly convex, the tempora about as prominent, parallel, feebly arcuate and more than one-half as long; antennae about as long as the head and prothorax, slightly robust, rather feebly clavate, second joint about as long as the next two together, fourth and sixth subequal, smaller than the fifth and very slightly wider than long, outer joints slightly transverse, eleventh ovoidal, abruptly pointed, scarcely more than one-third longer than wide. *Prothorax* slightly wider than the head, three-fourths wider than long; sides parallel and distinctly arcuate; basal angles obsolete, very broadly rounded into the base, the latter in the middle more feebly arcuate; apex truncate; apical angles slightly obtuse and not distinctly rounded; disk with very faint traces of two parallel impressions, feebly convex, obsoletely tumid along the middle toward base, extremely minutely and densely punctate. *Elytra* parallel, one-fourth wider and four-fifths longer than the prothorax, excessively minutely and densely, and rather strongly punctato-granulose, the longer suberect hairs very minute and rather sparse. *Abdomen* slightly narrower than the elytra, decidedly narrowed toward apex; border rather thin, moderate in depth; surface feebly

convex, very finely and rather more sparsely punctate and less dull, the sixth segment shining and with a transverse row of erect discal setæ. *Legs* moderate. Length 0.8 mm.

Texas (Austin I).

Very easily distinguishable by its small size, piceous-black color, with pale antennæ, and more strongly granulose integuments.

**T. flavicornis** Lec.—Trans. Am. Ent. Soc., VI, p. 240.—Rather slender, somewhat pale, castaneous; abdomen piceous-black; legs and antennæ throughout pale flavate; integuments alutaceous. *Head* nearly as long as wide, very feebly convex, excessively minutely and very densely punctate; tuberculations very small, rather feeble, widely distant; suture distinct; antennæ as long as the head and prothorax, rather robust, very feebly incrassate, second joint scarcely twice as long as wide and barely as long as the next two together, third decidedly longer than wide, fourth and sixth quadrate and but slightly smaller than the fifth, outer joints just visibly transverse, eleventh ovoidal, gradually pointed, three-fourths longer than wide; eyes moderate, feebly convex. *Prothorax* very slightly wider than the head, slightly less than one-half wider than long; sides parallel and very feebly arcuate; base transversely, strongly arcuate, angles very broadly rounded; apex very feebly, broadly sinuate, angles not distinctly rounded; disk very feebly, evenly convex, punctured like the head and without trace of impressions. *Elytra* parallel, a little wider than long, just visibly wider and one-third longer than the prothorax, depressed, excessively densely punctato-granulose, the sculpture being decidedly finer and denser than that of the prothorax, the recumbent pubescence excessively fine and not distinct, the erect sparser hairs distinct. *Abdomen* short, fully as wide as the elytra; sides parallel, straight; border narrow, moderate in depth; surface more coarsely punctato-reticulate, the sixth dorsal broadly, feebly sinuate in the middle. *Legs* robust. Length 0.9 mm.

New York (Coney Island). Cab. LeConte.

The paler color, larger, relatively longer prothorax, and decidedly shorter elytra, will serve to separate this species from any other of the present section of the genus. The antennæ are just perceptibly darker toward tip, and the abdominal punctuation is quite coarse, somewhat dense and very distinct.

**T. grossulus** n. sp.—Rather slender, parallel, piceous-black, the anterior portions with a very feeble castaneous tinge; legs and antennæ flavate; integuments dull. *Head* fully as long as wide, very feebly convex, very minutely and densely punctate, the punctures not absolutely in contact; tuberculations very feeble; eyes moderate, feebly convex, the sides behind them feebly convergent to the neck; antennæ as long as the head and prothorax, rather feebly incrassate, second joint fully as long as the next two, more than twice as long as wide, third distinctly longer than wide, fourth and sixth subequal, very slightly transverse, fifth more robust, slightly longer

than wide, seventh slightly longer and thicker than the eighth, outer joints rather longer than wide, the eleventh ovoidal, gradually pointed, twice as long as wide. *Prothorax* slightly but distinctly wider than the head, one-half wider than long; sides parallel, evenly and rather strongly arcuate; base broadly, more feebly areolate, angles very broadly rounded; apex very feebly emarginate, angles not at all rounded; disk feebly, evenly convex, punctured like the head and without distinct trace of impressions. *Elytra* quadrate, parallel; sides nearly straight; disk just perceptibly wider and scarcely two-fifths longer than the prothorax, excessively minutely and densely granulose, the recumbent pubescence excessively short, silvery, the erect hairs distinct. *Abdomen* long and linear, very slightly narrower than the elytra; sides straight and parallel; border moderate; surface more coarsely and sparsely punctato-reticulate; punctures strong; the apex of the sixth segment broadly feebly sinuate in the middle, with the edge fringed with a close series of pale porrected membranous hairs. *Legs* somewhat slender. Length 1.4 mm.

New York (near the city 1). Mr. W. Jülich.

This species, the largest of this section of the genus, approaches very near to *flavicornis* in general form, especially in its comparatively short elytra and large unimpressed prothorax; it differs in its much larger size, in its longer abdominal segments, in color, and in its much more coarsely granulose and less abbreviated elytra. In *flavicornis* the elytra together are very distinctly wider than long, while in the present species they are quadrate.

**T. macropterus** Lec.—Trans. Am. Ent. Soc., VI, p. 241.—Rather robust, piceous-black throughout the body, legs and antennæ; integuments very dull, the minute recumbent pubescence of the anterior portions fulvous, the sparser suberect hairs cinereous. *Head* as long as wide, rather small, feebly convex, minutely, very densely punctate, the punctures not completely coalescent and rather distinctly definable; eyes rather large, the tempora not as prominent and less than one-half as long; tuberculations feeble; antennæ distinctly longer than the head and prothorax, moderately robust, distinctly clavate, second joint rather more than twice as long as wide and nearly as long as the next two together, third much less robust, elongate, nearly twice as long as wide, fourth very slightly longer than wide, slightly longer and less robust than the sixth, the latter very slightly transverse, fifth more robust, distinctly longer than wide, outer joints very slightly transverse, eleventh more robust, ovoidal, abruptly pointed, one-half longer than wide. *Prothorax* nearly one-third wider than the head, two-thirds wider than long, almost semicircularly rounded behind from the middle of the sides, the middle of the base less strongly arcuate; sides before the middle slightly convergent; apex strongly, evenly sinuate throughout the width, angles not at all rounded and very distinct; disk rather more finely sculptured than the head, granulose, evenly, feebly convex, without trace of impressions. *Elytra* one-third wider and four-fifths longer than the prothorax; sides parallel and distinctly arcuate; surface

strongly, densely granulose. *Abdomen* very short, strongly convergent toward apex, slightly narrower than the elytra; border rather wide and shallow; surface more coarsely and sparsely punctato-reticulate, the sixth segment apparently with a fine coriaceous margin throughout the width. Length 0.9 mm.

California. Cal. LeConte.

A very distinct species, easily distinguishable from any other of this section by its more robust form, unimpressed pronotum, broadly emarginate apex of the prothorax, the head, prothorax and elytra increasing in width in an almost uniform ratio, by the distinctly arcuate sides of the elytra, the longer, more aberrant antennæ, and many other characters. The measurements of length given by LeConte in his descriptions of the species of this genus are decidedly too small.

**T. sonomæ** n. sp.—Rather slender, moderately depressed, picous-black throughout the body, legs and antennæ, the elytra with a feeble castaneous tinge; integuments rather dull. *Head* fully as long as wide, feebly, evenly convex, very finely, feebly and densely punctate; antennal tuberculations very feeble; eyes rather large, feebly convex, very coarsely faceted, the tempora scarcely as prominent and about two-thirds as long, broadly rounded; antennæ rather robust, distinctly clavate, scarcely longer than the head and prothorax, second joint rather more than twice as long as wide and very slightly shorter than the next two combined, third distinctly longer than the fourth, the latter fully as long as wide, shorter than the fifth and subequal to the sixth, eleventh ovoidal, pointed, two-thirds longer than wide. *Prothorax* slightly but distinctly wider than the head, nearly three-fourths wider than long; sides parallel, feebly arcuate, the basal angles obsolete, very broadly rounded into the base which is broadly feebly arcuate; apex broadly, very feebly emarginate, the apical angles slightly advanced and very narrowly rounded; disk not at all impressed, feebly convex, very minutely and densely punctate throughout. Scutellum very small, equilatero-triangular. *Elytra* parallel, one-third wider and four-fifths longer than the prothorax; disk nearly flat, strongly impressed at the scutellum, extremely minutely, densely punctate; pubescence excessively fine, short and dense, the longer erect hairs sparsely distributed over the surface. *Abdomen* very slightly narrower than the elytra, rather short, slightly narrowed toward apex; border narrow and deep; surface more coarsely and sparsely punctate, also coarsely reticulate, and a little more shining than the other portions, the sixth segment distinctly shining. *Legs* rather short and robust. Length 1.2 mm.

California (Duncan's Mills, Sonoma Co. 2).

May be distinguished from *pygmæus* by its larger size, longer, relatively narrower prothorax, with the apical angles more advanced, and by the entire absence of any distinct pronotal impressions. The punctuation is slightly finer and denser than in that species.

**T. fimbriatus** Lec.—Trans. Am. Ent. Soc., VI, p. 240.—Somewhat robust, dark piceo-castaneous; antennæ same; legs slightly paler; integuments dull. *Head* fully as long as wide, very feebly and evenly convex, very minutely and densely punctate; tuberculations small and feeble; transverse suture fine, arcuate, distinct; eyes moderate, feebly convex; tempora feebly arcuate, about as prominent and more than two-thirds as long as the eye; antennæ as long as the head and prothorax, not very robust, feebly clavate, second joint about twice as long as wide and scarcely as long as the next two together, third slightly longer than wide, fourth and sixth very little wider than long and but slightly smaller than the fifth, outer joints very slightly transverse, the eleventh ovoidal, gradually pointed, two-thirds longer than wide. *Prothorax* very slightly wider than the head, five-sixths wider than long; sides parallel, strongly, evenly arcuate; base feebly arcuate, angles very broadly rounded; apex truncate or very feebly sinuate, the angles slightly obtuse and not perceptibly rounded; disk feebly convex, punctured like the head, with two feeble, distant, basal impressions. *Elytra* not wider and four-fifths longer than the prothorax, parallel, depressed, punctured like the prothorax but rather more finely, the fine dense recumbent hairs so small as to be not distinctly visible, the longer erect ones rather sparse and very distinct. *Abdomen* nearly as wide as the elytra, more coarsely punctato-reticulate; sides nearly parallel and straight; border narrow and deep. Length 0.7 mm.

Michigan (Detroit 1). Cab. LeConte.

This species bears considerable resemblance to *hesperius*, but may be distinguished by its more robust form, larger, wider prothorax, and relatively shorter elytra. In the type, the abdomen is drawn up so as to be very short, and the length given is therefore less than the normal one for the species; the length given by LeConte (0.5 mm.) is not correct.

**T. hesperius** n. sp.—Slender, piceo-castaneous; legs and antennæ throughout same; integuments dull and dense. *Head* fully as long as wide, rather feebly, evenly convex, very densely granulato-punctate; prominences moderate in size, feeble; eyes large, feebly convex, very coarsely faceted, the tempora not quite as prominent, feebly arcuate and scarcely more than one-half as long; antennæ equal in length to the head and prothorax, moderately robust, distinctly clavate, second joint oval, twice as long as wide, as long as the next two together, third as wide as long, fourth and sixth equal, smallest, distinctly transverse, fifth subequal to the third, outer joints feebly transverse, eleventh ovoidal, pointed, two-fifths longer than wide. *Prothorax* very slightly wider than the head, five-sixths wider than long; sides parallel anteriorly and distinctly arcuate; base broadly arcuate, coarctate with the sides through the very broadly rounded basal angles; apex broadly, feebly arcuate; apical angles slightly obtuse, not distinctly rounded; disk feebly, evenly convex, punctate like the head, with two small feeble impressions at the base, trisecting the

width. *Elytra* parallel, scarcely one-fifth wider than the prothorax and fully twice as long; humeri right and very narrowly rounded; surface feebly convex, extremely densely and finely punctato-granulose, the short appressed pubescence correspondingly dense, and the longer erect hairs somewhat dense, very small and not easily seen. *Abdomen* very slightly narrower than the elytra and subequal in length, feebly narrowed toward tip; border moderate in width and depth; surface feebly convex, more coarsely punctato-reticulate and rather more shining, the pubescence coarser, as usual. Length 0.8 mm.

California (Fort Yuma 3).

This species may be distinguished by its slender form, piceous-black antennæ, short prothorax, and long elytra.

**T. pygmæus** n. sp.—Rather slender and depressed, black throughout; legs and antennæ same; integuments rather dull. *Head* fully as long as wide and distinctly longer than the prothorax, very feebly, evenly convex, very minutely, densely punctate; tuberculations very feeble; transverse epistomal suture very distinct; eyes large, feebly convex, the tempora nearly as prominent, very feebly arcuate and nearly two-thirds as long as the eye; antennæ just visibly longer than the head and prothorax, feebly clavate, second joint slightly less than twice as long as wide, nearly as long as the next two together, the third very much longer than the fourth which is slightly transverse, subequal to the sixth, the fifth larger and very slightly wider than long, eleventh one-half longer than wide, ovoidal, abruptly pointed. *Prothorax* slightly wider than the head, very slightly less than twice as wide as long; sides parallel and strongly arcuate; basal angles very broadly rounded, the base feebly arcuate; apex truncate, the apical angles slightly obtuse and scarcely at all rounded, scarcely perceptibly advanced; disk broadly, feebly convex, extremely minutely and densely punctate throughout, and broadly strongly impressed on each side at the base, the impressions trisecting the width. *Elytra* slightly wider than the prothorax, and about twice as long, parallel, very minutely, densely punctate and pubescent, the longer suberect hairs very short, somewhat dense and not very distinct. *Abdomen* slightly narrower than the elytra, slightly narrowed toward tip, short; border rather thick, flat and shallow, the surface transversely convex, more coarsely, sparsely punctate, and slightly shining, especially the sixth segment. *Legs* moderate. Length 1.0 mm.

Nevada (Reno 1).

The abdomen with its somewhat convex surface, and very shallow and rather wide border, contrasts greatly with the same part as seen in *sonomæ*, but the structure of this part seems to vary considerably within specific limits, even in the mature state.

The three species last described are more closely allied than usual, and, although easily distinguishable in nature by peculiarities of

form, size and sculpture, are not so satisfactorily differentiated by description.

The following group of three species is very distinct in the long slender antennæ, with all the joints elongate, and may be further identified by the abdomen rather strongly narrowed from base to apex, by the large subrectangular prothorax, with the disk perfectly even and free from impressions, by the slightly sparser, finer punctures, with the surface correspondingly more shining, and by the decidedly larger size.

**T. antennarius** Fauv.—Bull. Soc. Linn. Norm., Ser. 3, Vol. II, p. 97.

I have not been able to examine this species in nature, and the characters given in the table were taken from the original description of M. Fauvel.

**T. pallidus** n. sp.—Rather slender and fusiform, feebly convex, pale brown; abdomen piecons; legs and antennæ pale flavate; integuments slightly shining. *Head* about as long as wide, rapidly narrowed and triangular in front of the eyes; sides in basal half parallel; surface subdepressed, very minutely punctato-reticulate, finely pubescent; eyes moderate, rather convex, very coarsely faceted; antennæ much longer than the head and prothorax, very slender, scarcely visibly incrassate, all the joints much longer than wide, second shorter than the next two, fourth and sixth slightly shorter than the third and fifth, and very slightly more slender, tenth nearly one-half longer than wide, eleventh slender, cylindrical, abruptly pointed at apex, nearly three times as long as wide. *Prothorax* slightly though distinctly wider than the head, about one-sixth wider than long; base and apex subequal, very feebly arcuate; sides parallel, feebly arcuate; apical angles narrowly, basal more broadly rounded; disk broadly, feebly convex, more strongly so near the margins, even, without trace of impressions, more strongly shining, subalutaceous, very minutely and excessively feebly punctate. *Elytra* about one-fourth wider and two-fifths longer than the prothorax, parallel, subquadrate; sides nearly straight; surface very feebly convex, alutaceous, excessively minutely punctate, the punctures smaller but stronger than those of the prothorax, not in mutual contact. *Abdomen* narrowed toward apex, very slightly narrower than the elytra; segments rather long; border strong, not very deep; surface strongly alutaceous, reticulate in broken transverse wavy lines, the interspaces dull. Length 1.2 mm.

Texas (Austin 2).

The pubescence of the anterior portion is very fine and dense; it is suberect, and is not intermingled with longer hairs as in the preceding section. It belongs near *antennarius* of Fauvel, but is a much smaller species.



**T. gracilicornis** n. sp.—Moderately slender and fusiform, feebly convex, black; legs and antennæ throughout piceous-black; integuments alutaceous. *Head* small, nearly as long as wide; sides parallel in basal half; surface very feebly convex, finely, densely punctate; tuberculations moderate, rather distinctly elevated; eyes rather large and convex, very coarsely faceted; sides behind them very short, about one-third as long and obtusely, narrowly rounded; antennæ very slender, much longer than the head and prothorax, extremely feebly incrassate, all the joints longer than wide, second shorter than the next two, fourth and fifth subequal, longer than the sixth and shorter than the third, ninth longer than the tenth, the latter but slightly longer than wide, eleventh cylindrical, abruptly pointed, two and one-half times as long as wide. *Prothorax* rather more than one-fourth wider than the head, one-sixth wider than long; base scarcely perceptibly narrower than the apex, both feebly arcuate; sides nearly parallel, feebly arcuate; apical angles narrowly but distinctly, basal broadly, rounded; disk evenly and rather distinctly convex, without trace of impressions, very minutely, feebly punctate; punctures not distinctly definable. *Elytra* one-third wider and nearly one-half longer than the prothorax, quadrate, depressed; sides parallel and nearly straight; surface extremely minutely, densely punctate and pubescent. *Abdomen* gradually narrowed from base to apex, slightly narrower than the elytra; segments rather long; border moderate, not very deep; surface dull, finely and strongly punctato-reticulate, the reticulations small and slightly transverse. Length 1.5 mm.

California (Sonoma, San Mateo and Santa Clara Cos. 8).

This species seems to vary slightly in the relative proportion of its parts, but I can perceive no well-defined limits of a specific nature. It is very distinct from *pallidus* in its larger size, black color, smaller head, finer, stronger abdominal sculpture, and several other characters.

**T. crassicornis** n. sp.—Extremely slender, linear, subdepressed, pale brownish-flavate; legs and antennæ very pale flavate; integuments shining, the pubescence moderate in length although somewhat dense. *Head* nearly as long as wide, feebly, evenly convex above, rather coarsely and sparsely punctate, the interspaces fully twice as wide as the punctures, polished, the epistoma on a slightly lower plane than the front, the suture short, strongly arcuate and very distinct; tuberculations small but rather prominent; eyes moderate; tempora parallel, abruptly rectangular behind, the head being transversely truncate at base; antennæ fully as long as the head and prothorax, robust, distinctly incrassate, the second joint very short, scarcely one-third longer than wide and slightly shorter than the next two together, third transversely oval, fourth and sixth rather wider than the third, very strongly transverse, about equal in width to the fifth but rather shorter, the latter nearly twice as wide as long, outer joints very strongly transverse, twice as wide as long, the eleventh ovoidal, pointed, one-third longer than wide. *Prothorax* equal in width to the head and very slightly shorter, two-fifths wider

than long; sides parallel, just visibly arcuate; apex and base equally and feebly arcuate; apical angles very narrowly, basal more broadly, rounded; disk feebly convex, somewhat coarsely and sparsely punctate, with two strong parallel impressions in the middle, also strongly impressed at the lateral edges in the basal half, and more narrowly so in the anterior half, the edge being explanate or very feebly reflexed. *Elytra* slightly longer than wide, one-sixth wider and four-fifths longer than the prothorax; sides parallel and straight; disk rather coarsely and sparsely punctate, the punctures separated by from once to twice their own widths, and rather closer than those of the head and prothorax. *Abdomen* long, linear, slightly narrower than the elytra; sides nearly straight, parallel; border rather wide, very shallow; surface finely reticulate, finely, not densely, and subsparsely punctate, the punctures not sparser but much finer than those of the head; apical margin of the sixth segment narrowly free from punctures, smooth and polished. *Legs* short. Length 1.1 mm.

Texas (Austin I).

A remarkably distinct species, decidedly aberrant in the strong and complex impressions of the pronotum, and unusually robust antennæ. The punctuation is very much sparser than in any other species known to me.

**T. validus** n. sp.—Slender, depressed, linear, black throughout; elytra slightly piceous; tibiæ slightly paler, flavo-piceous; integuments rather shining. *Head* scarcely as long as wide, flattened above, vertex in the middle just behind the line of antennal insertion more strongly convex; tuberculations rather large, not very strong; surface coarsely, deeply and rather densely punctate; eyes rather small, feebly convex; tempora parallel, feebly arcuate, as prominent as the eye and nearly as long; antennæ slightly longer than the head and prothorax, robust, distinctly incrassate, second joint fully as long as the next two, third obconical, very slightly longer than wide, fourth and sixth smaller, distinctly transverse, fifth larger, very slightly wider than long, outer joints rather distinctly transverse, eleventh robust, ovoidal, not one-half longer than wide, rather abruptly pointed. *Prothorax* equal in width to the head and distinctly shorter, fully one-half wider than long; sides feebly convergent from near the apex to the base, and scarcely visibly arcuate; apical angles rather broadly rounded; apex very feebly arcuate; base strongly arcuate throughout the width, the angles obtuse and distinctly rounded; disk feebly convex, rather coarsely, deeply and densely punctate, with two large wide very feeble longitudinal impressions in the middle, without lateral impressions. *Elytra* one-third wider than the prothorax, distinctly longer than wide, more than twice as long as the prothorax and slightly longer than the head and prothorax together; sides parallel and almost perfectly straight; disk depressed, rather coarsely, deeply and densely punctate, the punctures rather smaller than those of the pronotum and separated by nearly one-half their own widths. *Abdomen* rather distinctly narrower than the elytra; sides parallel and straight; border narrow, moderate in depth; seg-

ments moderate in length; the sixth very much longer than the fifth, with the apex for one-fifth the length perfectly smooth and polished; surface feebly reticulate, very minutely and rather sparsely punctate, more strongly shining. Length 1.6 mm.

California (Mendocino, Sonoma and Marin Cos. 11).

The pubescence in this well-marked species is not very dense, and is somewhat longer than usual. The anterior legs throughout, together with the coxæ, are pale flavate, the posterior piceous, the posterior tibiæ having, at the middle of the exterior edge, a long erect seta, which seems to be a constant generic character, but becoming here more than usually pronounced. It is gregarious on the under surface of chips and stones near running water, and its motions are extremely slow, differing greatly from the normal forms, as for instance *hesperius*, which are never gregarious, and which move much more rapidly over the sand and adobe mud of the river bank. Similar differences of habit are well known in the genus *Trogophlæus*.

#### PHALACRIDÆ.

With the exception of a few more or less isolated descriptions, the representatives of this family have of late years been greatly neglected by systematists. The study of the European species has, however, been recently resumed by Tournier and Flach, and the description of several interesting new genera by Dr. Sharp in the *Biologia Centrali-Americana*, has served to revive a still more general interest. In the following pages I have attempted to perform a corresponding service for the North American species.<sup>1</sup>

The family seems to be more especially characteristic of the American, than of the European fauna, for it is here that it reaches its greatest development, not only in the number and variety of its species, but more noticeably in the unexpected number of distinct and highly specialized generic groups. Although to a superficial view presenting a very monotonous and little varied appearance, I have found the study of the American species a highly interesting one, the various genera being quite abruptly limited, and characterized by an unusual paucity of intergrading forms.

<sup>1</sup> *Olibrus piceus* Boh., mentioned by Gemm. and Harold (Cat. Col. p. 801) as described from California, cannot be identified, and, as the name is pre-occupied, should be dropped from our lists. *Phalacrus difformis* Lec. (Agass. L. Sup. 222) is an Agathidium. *Litochrus brunnipectennis* Mann. is a Choleva.

In the general classification of the genera I have departed from the original Erichsonian system, based upon the relative length of the anterior and posterior tarsi and visibility of the terminal spurs, and have taken as the most important characters in the primary grouping, the structure of the eye and tibial spurs, the mode of antennal insertion, and the size of the scutellum. In the Olibri the point of antennal insertion is exposed from above, the large irregular pit or fovea in front of the under part of the eye being very shallow, because of the deep sinuation of the sides of the epistoma. In all the genera of this group there is visible, just above the point of insertion and immediately under the extreme upper edge of the epistoma, a round flattened chitinous tubercle, apparently entirely filling a deep fovea; this is very constant in all the genera, but its significance cannot be determined.

The variation in the form of the trophi in passing from one genus to another, appears to be of so little importance in comparison to the sternal and tarsal structure, that but slight use has been made of these parts, and they have been totally disregarded in the scheme of arrangement here proposed. They are, however, of somewhat greater moment in the Litochride genera, as will appear below.

In the following table I have included all the described genera, indicating those which do not occur within the faunal limits of the United States by an asterisk.<sup>1</sup> The genus *Augasmus* Mots. is said by Tournier to be identical with *Phalacrus*, and the recently described *Olibrosoma* of Tournier, seems to be so aberrant in its five-jointed antennal club, that I think it would be better to exclude it from the family as at present organized; it may possibly find a more fitting place in the Silphidæ. With these exceptions, therefore, the family is found to consist of three groups of genera which may be defined as follows:—

Eyes of dual structure, the upper portion finely faceted, the lower coarsely so; spurs of posterior tibiæ strongly dilated.

Antennæ exposed at base, the epistoma projecting and trapezoidal; scutellum small or moderate; elytra striate throughout the width.....*TOLYPHI*  
Eyes normal, coarsely faceted throughout; spurs of posterior tibiæ not at all dilated.

Antennæ inserted under the sides of the front, the base entirely concealed

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<sup>1</sup> Through the generosity of Dr. Sharp, I have been able to study all of the Central American genera recognized by this distinguished author, and recently published in the *Biologia Centrali-Americana*.

from above, and the margin of the epistoma evenly coarctate; scutellum large .....PHALACRI  
 Antennæ inserted at the sides of the front, the base visible from above, the margin of the epistoma above the point of insertion being more or less sinuate; scutellum small or moderate .....OLIBRI

The genera composing the groups may be defined as follows:—

TOLYPHI.

Sides of the prothorax not coarctate with those of the elytra....\***Tolyphus**

PHALACRI.

Spurs of posterior tibiæ very short, not projecting beyond the terminal fringe of spinules; elytra with a discal stria .....**Phalacrus**

Spurs of posterior tibiæ long and distinct; elytra entirely devoid of striæ.

**Phalacropsis**

OLIBRI.

Basal joint of the posterior tarsi shorter than the second.

Apex of the prosternal process inflexed, without an acute and free edge, and devoid of spinose setæ; metasternal process greatly developed, the mesosternum before it reduced to a fine bead.

Elytra with one or two discal striæ, the suture beaded; second joint of the posterior tarsi moderate in length, free.....**Olibrus**

Elytra with a single discal stria, the suture not beaded; second joint of the posterior tarsi moderate in length, rigidly articulated with the basal joint.....**Olibroporus**

Elytra entirely devoid of discal striæ; second joint of the posterior tarsi greatly elongate, subanchylosed to the first.....\***Eulitrus**

Apex of the prosternal process with an acute free edge bearing a transverse series of spinose setæ; mesosternum more developed in front of the metasternal process; elytra constantly with a single discal stria, the suture not beaded.

Mesosternum not prolonged behind the middle acetabula; second joint of the posterior tarsi very long, subanchylosed to the first.

**Litolibrus**

Mesosternum prolonged and sometimes greatly developed behind the middle acetabula.

Second joint of the posterior tarsi very long, spongy-pubescent beneath in the male, the articulation with the first joint rigid; posterior tibial spurs long, very unequal; sexual differences in the posterior tibiæ, terminal spurs and tarsi strongly marked .....**Acylomus**

Second joint moderate in length, anchylosed rigidly to the basal joint, clothed throughout with small subrecumbent spinose setæ; tibial spurs moderate .....\***Liophalacrus**

Second joint moderate in length, finely pubescent beneath in both sexes; articulation with the basal joint free; tibial spurs small and inconspicuous; sexual differences in the posterior legs not observa-

- ble, the male sexual characters, when visible, affecting the abdominal segments only .....**Stilbus**
- Basal joint of the posterior tarsi longer than the second; elytra with two discal striæ.
- Prosternal process inflexed at apex, devoid of terminal setæ.
- Basal joint of the posterior tarsi extremely elongate, much longer than the entire remainder; mesosternum not extending behind the middle acetabula except as a fine marginal bead; sexual differences in the posterior legs not observable .....**Litochrus**
- Basal joint elongate but distinctly shorter than the remaining joints combined; mesosternum extending behind the middle acetabula, where it is moderately developed; sexual differences in the posterior legs conspicuous .....**Litochropus**
- Prosternal process not inflexed, having a free acute edge.....**Ochrolitus**

#### **TOLYPHUS** Erichs.

The antennæ in this genus are unusually short and robust, the two basal joints of the club strongly transverse. The prosternal process is rather wide, gradually inflexed at apex, and margined throughout the sides and apex with a fine strong convex bead; it is not in the least setose, and, in repose, rests against the vertical portion of the mesosternum. The metasternal process is rather narrower than in *Phalacrus*, but similar in form and extent, the mesosternum forming a fine apical and lateral bead. The mesosternum behind the middle acetabula forms a fine bead as in *Phalacrus*.

The terminal spurs of the posterior tibiae are short, although projecting well beyond the terminal fringe of spinules; they are very strongly dilated toward base and pointed at apex.

The singular structure of the eyes mentioned in the table, together with the structure of the tibial spurs, isolates *Tolyphus* widely from the entire remainder of the family, and constitutes of it a group equivalent to either the *Phalacri* or *Olibri*. The first of these characters, neither of which has apparently been before noticed, is of exceedingly rare occurrence in the Coleoptera; the second is often seen as a modification of the anterior spurs in the *Harpalini*.

The observations above noted were made upon *T. granulatus* Guér. from Spain. No species has yet occurred outside of the Mediterranean province of the palaearctic fauna.

**PHALACRUS** Payk.

The general characters distinguishing this genus from the others are fully laid down in systematic works, and are stated in a less extended form in the preceding table.

The species do not appear to be very numerous, and among the sixty-seven specimens before me, I am unable to distinguish more than eight, which is considerably less than the eighteen described by Tournier (L'Ent. Gen. 1889, pp. 7-10), as belonging to the European fauna. The species are more closely allied and indefinite than in any other genus of the family. I have not noticed any distinct sexual modification in the male; the middle of the anterior margin of the epistoma is, however, in some forms broadly arcuate and coarctate with the sides and in others more or less truncate, and these differences are said by both Tournier and Flach to be sexual in origin. I have not attempted to verify this, and have simply mentioned the form of the apical margin when noticed during description.

The punctures of the head mentioned by Tournier, are present in all our species, but I have not been able to employ them in separating or characterizing the species, as they appear to vary in relative position in different individuals. These little fovea to the number of four, are situated along the inner margin of the eye, and there is also another near the anterior margin of the epistoma, and remote from the eye; they are not setigerous as far as can be observed with the highest working powers.

The sculpture of the elytra is moderately constant, but the impressed lines lying parallel to and near, but not including the series of punctures, are more or less variable in distinctness, and do not seem to form a specific character of very great importance.

On each elytron in some if not all the species there are certain short stiff and erect setæ, which do not appear to have been previously noticed, and which in *simplex* are disposed as follows:—

A row of very closely-placed excessively minute setæ along the under surface of the acute lateral edge, projecting downward.

A row of more distant, longer and coarser setæ, very close to the minute bead forming the lateral edge, or just within its outer limit.

Finally, on the disk of each elytron, five rows of excessively minute stiff setæ which are extremely widely spaced, and more evident toward apex. The fifth row from the suture contains six

or seven setæ and extends nearly to the base, the fourth row four setæ, extending to about one-fourth the length from the base, the third row about three setæ, extending slightly beyond the middle, the second row two, extending nearly to the middle, the first row being between the sutural and discal striæ and containing two to four setæ.

The setæ are more widely spaced in the rows toward the suture, except in the first row where they become slightly less distant. The setigerous punctures may or may not coincide with the punctures of the series, and do not differ greatly from them in form, being merely a little more pronounced. In some species they are not visible at all, but as far as I have been able to observe the marginal line of larger, more closely placed setæ never becomes obsolete. These are entirely distinct from the excessively minute fine recumbent hairs, borne by the ordinary punctures, and no doubt serve quite a different purpose.

In the following table only those characters are employed which appear to be of decided importance; they relate to the sternal, tarsal and antennal structure, and elytral sculpture, and weight should perhaps be assigned to them in the order named:—

Metasternal process not extending beyond the middle coxæ, truncate at apex.

**ovalis**

Metasternal process projecting beyond the middle coxæ, more or less strongly rounded at apex.

Third antennal joint equal in length to the two following united.

Elytra entirely polished, or with but slight trace of reticulation toward apex.

Punctures of series very fine, not becoming decidedly coarser at the sides.

Form robust, suboblong; size large.....**penicillatus**

Form less robust, evenly elliptical; smaller in size.....**Sayi**

Punctures of series very fine, becoming abruptly much larger and broadly lunate at the sides; form narrowly oval and slightly narrowed behind.....**simplex**

Elytra finely and more or less feebly reticulate over the entire surface.

Punctures of elytral series extremely feeble and rather indistinct.

Antennæ pale; sternal processes very wide, the metasternal scarcely more than twice as wide as the prosternal; form very broadly oval.....**politus**

Antennæ black; metasternal process narrower, more strongly rounded at apex and about three times as wide as the prosternal; form more narrowly oval; reticulation of upper surface much more feeble.

**conjunctus**



Punctures of series very strong, the series equal, approximate and very distinct, extending almost to the base.....**seriatus**  
 Third joint of antennæ distinctly shorter than the two following united ; upper surface finely, feebly reticulate.....**pumilio**

**P. ovalis** Lec.—Proc. Ac. Phil., 1856, p. 15.—Evenly elliptical, one-half longer than wide, intense black throughout ; legs, trophi and antennæ same ; highly polished. *Head* and antennæ nearly as in *penicillatus*. *Prothorax* at base twice as wide as the head, a little more than twice as wide as long, very minutely, feebly and rather sparsely punctate, otherwise as in *penicillatus*. *Scutellum* large, two-thirds wider than long ; triangular ; sides arcuate ; apex narrowly rounded ; surface very minutely and almost imperceptibly punctate. *Elytra* two and one-half times as long as the prothorax, gradually, evenly, semi-circularly rounded behind, polished but having very indistinct traces of coarse reticulation toward apex, punctured in approximate rows of small rather closely-placed rounded and distinct punctures, which become nearly obsolete toward base, the alternate rows being decidedly more distinct and even, the intermediate rows composed of much smaller and feebler punctures, quite unevenly arranged ; sutural bead fine and distinct, the stria continuous along the scutellum and with the basal stria ; discal stria strong, vanishing at from one-fifth to one-sixth the length from the base. *Abdomen* clothed rather densely in the middle, and very sparsely toward the sides, with coarse hairs. *Legs* robust ; posterior tarsi slender, two-thirds as long as the tibia, with the first joint scarcely one-half as long as the second. Length 1.8–2.5 mm.

California (Sonoma and Monterey Cos.).

The metasternum projects between the middle coxæ to the anterior limit of the latter ; it is broad and subtruncate at apex, between three and four times as wide as the narrowest part of the prosternal process, and the mesosternum forms a fine bead in the middle portions of the apex, which becomes much more evident at the sides.

The species resembles *penicillatus* very closely in sculpture and coloration, but is smaller, the largest specimens being equal in size to the smallest of that species ; its form is more narrowly and evenly elliptical, and the structure of the meso-intercoxal parts quite different. In *penicillatus* the metasternal process extending beyond the anterior limit of the middle coxæ, the mesosternum is excavated under the overreaching visible portions, while in the present species the mesosternum, excepting the portion forming the very fine terminal bead of the metasternum, forms a very feebly concave perpendicular surface.

**P. penicillatus** Say.—Journ. Ac. Phil., IV, p. 91.—Robust, somewhat oblong ; sides feebly arcuate in the middle, subtruncate behind ; highly polished, intense black throughout the body, legs, trophi and antennæ, the

latter sometimes slightly piceous. *Head* twice as wide as long, feebly, evenly convex; eyes moderate, their surface perfectly continuous in convexity with the front, and their lateral margin coarctate with the anterior margin of the head, the latter perfectly evenly arcuate throughout in circular segment; surface finely and somewhat sparsely punctate; antennæ moderate, funicle very slender, third joint as long as the next two, club as long as the five preceding joints combined, the last joint one-third longer than the ninth and tenth combined. *Prothorax* twice as wide as the head, and two and one-half times as wide as long; base transverse, very feebly broadly sinuate at each side of the scutellum; bead very feeble and entirely obsolete in lateral third; sides evenly arcuate; disk very finely and rather sparsely punctate. Scutellum large, nearly twice as wide as long; sides feebly arcuate; apex narrowly rounded; surface very finely, feebly punctate except toward the margins. *Elytra* about three times as long as the prothorax, abruptly rounded behind; sutural stria very fine, forming a narrow sutural bead, continuous along the scutellum with the transverse basal stria, the single discal stria fine but distinct, joining the sutural at the apex, and becoming obsolete at one-fifth the length from the base; disk highly polished, without reticulation, having equidistant approximate rows of fine rounded feeble punctures, the alternate rows being slightly better defined, the punctures becoming obsolete toward base, and scarcely perceptibly larger near the sides and apex. *Abdomen* clothed rather sparsely with stiff semi-erect hairs. *Legs* robust; middle and hind femora with a row of stiff hairs along the posterior lower edge, which become longer near the apex; anterior femora without trace of such hairs, posterior clothed on the lower surface with coarse yellowish hair; terminal spinules of posterior tibiæ short, even, concealing the spurs, the corresponding tarsi short, with the first joint about one-half as long as the second. Length 2.3-3.0 mm.

Southern California; Arizona; New Mexico.

In the type, which is one of the larger specimens from Southern California, the metasternal process projects well beyond the middle coxæ, the apex being broadly arcuate or subtruncate, the mesosternum forming a thickened and very strong apical bead; the width of the portion between the middle coxæ is three times as great as the narrowest part of the prosternal process; the latter is impressed. In other specimens the metasternal process is nearly four times as wide as the prosternal, more strongly arcuate, and more finely beaded at apex.

**P. Sayi** n. sp.—Evenly elliptical, convex, highly polished, about one-half longer than wide, intense black throughout above and beneath, the antennæ just visibly piceous toward base. *Head* very minutely, rather sparsely punctate; eyes small; antennæ moderate, third joint as long as the next two together, club very slender, the eleventh joint distinctly longer than the two preceding together. *Prothorax* very minutely sparsely and feebly punctate, extremely broadly feebly lobed at base; beaded margin evident in the middle.

Scutellum triangular, one-half wider than long; sides feebly arcuate. *Elytra* having series of minute, feeble and rather distant punctures, which are but slightly more distinct and but slightly closer at the sides, not in the least reticulate; discal stria fine and distinct, obsolete at basal fourth. Posterior tarsi very slender, the third joint elongate, not dilated and not wider than the second. Length 1.7 mm.

Arizona (Coolidge).

The metasternal process, as usual, projects beyond the coxæ and is strongly rounded at apex, with a fine apical bead; it is about three times as wide as the prosternal process, the latter moderate in width.

This species very greatly resembles *simplex*, but differs in its finer, feebler, sparser and less dilated punctures at the sides of the elytra, in its still more slender posterior tarsi, and in its decidedly smaller size. It is represented by two specimens, collected by Mr. H. F. Wickham.

**P. simplex** Lec.—Proc. Ac. Phil., 1856, p. 16.—Ovoidal, more pointed behind, black; legs and antennæ piceo-testaceous; upper surface highly polished. *Head* feebly subtruncate in the middle at apex, feebly convex, very minutely feebly and sparsely punctate; antennæ rather short, the club about as long as the six preceding joints together, not very robust, the eleventh joint one-half wider than the ninth and nearly one-half longer than the two preceding together. *Prothorax* slightly more than twice as wide as long, two-thirds wider at base than at apex; basal bead almost completely obsolete; disk very minutely, sparsely and feebly punctate. Scutellum large, two-thirds wider than long, triangular, the sides very feebly arcuate, and the apex just visibly rounded, the surface extremely finely sparsely and obsoletely punctate. *Elytra* about two and one-third times as long as the prothorax, gradually narrowed behind and acutely rounded at apex, the sutural stria very fine and as usual continuous along the scutellum, the discal stria fine but distinct, terminating at one-fifth the length from the base; disk polished, not at all reticulate or subgranulose, except very obsoletely so near the apex, and in the very vaguely impressed striæ adjacent to the ill-defined rows of punctures, the latter very fine and feeble except near the sides and apex, where they become abruptly unusually large, strong and broadly lunate; the vaguely defined impressed lines are, however, more or less definable nearly to the base. *Abdomen* covered sparsely with very coarse hairs, denser toward the middle. *Legs* moderate; posterior tarsi slender, nearly three-fourths as long as the tibiæ, the basal joint not quite one-half as long as the second. Length 1.9–2.5 mm.

New Mexico; Texas; Iowa.

The metasternal process is broad, distinctly prolonged beyond the middle coxæ, broadly and distinctly rounded and subtruncate in the middle at apex, with the mesosternal bead rather fine. The vaguely impressed lines of the elytra, which are distinctly visible in some

specimens of which the original type is one, occasionally entirely disappear.

There are before me two specimens collected at Luna, New Mexico, by Mr. Wickham, which appear to belong to this species; they are nearly as small as *Sayi*, and notably smaller than any other specimens of *simplex* which I have seen. I prefer to attach them provisionally to *simplex*, because the punctures at the sides of the elytra are wide and deeply impressed, as in that species, but they are not included in the above measurement of length.

**P. politus** Melsh.—Proc. Ac. Phil., II, p. 102.—Broadly oval, from one-third to two-fifths longer than wide, black above and beneath; legs and antennæ paler, dark rufo-testaceous; moderately shining. *Head* feebly subtruncate at apex, very minutely, feebly reticulate in broken wavy lines, finely, rather sparsely and distinctly punctate; antennæ rather slender, club much shorter than the six preceding joints combined, the last joint about one-third longer than the two preceding together. *Prothorax* twice as wide at base as at apex, and slightly more than twice as wide as long, the basal bead fine and distinct in middle third; disk excessively minutely and feebly reticulate in wavy lines, extremely minutely, feebly and rather sparsely punctate. *Scutellum* acutely ogival, one-half wider than long. *Elytra* about twice as long as the prothorax, not narrowed toward apex which is very broadly, evenly rounded; sutural stria continuous, very fine; discal fine, distinct, terminating at basal sixth; disk without distinct impressed lines, having approximate and nearly equal rows of fine feeble punctures, which do not become entirely obsolete at base, and rather abruptly much larger, stronger, partly confused and broadly lunate at the sides and apex; surface finely and distinctly reticulate, the reticulations extremely minute, and forming imperfectly defined transverse wavy rows toward base, coarse and more rounded toward sides and apex. *Abdomen* finely reticulate, rather coarsely, subsparately punctate, coarsely pubescent. *Tarsi* moderately slender, with unusually coarse and prominent tufts of yellowish hair beneath, the posterior two-thirds as long as the tibiæ, with the first joint scarcely one-half as long as the second. Length 1.5–2.2 mm.

Pennsylvania; North Carolina; Missouri; Texas.

The metasternal process projects far in advance of the middle coxæ, and is strongly rounded at apex, the apical bead rather fine and not at all dilated laterally, the prosternal process unusually wide, being at its narrowest part but slightly less than one-half as wide as the metasternal.

This species is very common and widely diffused; it does not appear to vary much except, as usual in this genus, in point of size. It is the least shining of any of our species except *pumilio*.

**P. conjunctus** n. sp.—Evenly elliptical, one-half longer than wide, black; legs and antennæ piceous-black; strongly shining. *Head* twice as wide as long, finely, rather sparsely but distinctly punctate; anterior margin subtruncate in the middle; antennæ rather robust, last joint of club moderately densely and rather coarsely pubescent, but slightly longer than the two preceding together. *Prothorax* rather distinctly more than twice as wide as long; base three-fourths wider than the apex, the former transverse, very feebly sinuate at each side of the scutellum; basal bead very feebly defined in the middle, obsolete laterally; disk very minutely sparsely and indistinctly punctate. *Scutellum* three-fourths wider than long, ogival, very minutely, feebly punctate except toward the edges. *Elytra* about two and one-half times as long as the prothorax, gradually, evenly and not obtusely rounded behind; sutural striæ very fine, entire, very closely bordering the scutellum; discal fine but distinct, vanishing at one-fifth the length from the base; disk very finely but distinctly reticulate throughout, punctured in approximate rows of small distinct feebly impressed punctures, the alternate rows not apparently more well marked or even, the punctures being sensibly dilated and crescentiform, each with the usual minute recumbent hair, the reticulations and punctures stronger toward apex and the sides, and almost obsolete near the base. *Abdomen* sparsely clothed with coarse hair. *Legs* moderately robust; terminal spurs of posterior tibiæ small, short but distinct and not concealed by the even and closely-placed row of terminal spinules; corresponding tarsi rather slender, nearly three-fourths as long as the tibiæ, the basal joint two-thirds as long as the second. Length 1.8–2.3 mm.

California (San Diego); Arizona.

The metasternal process is of the usual width; it projects slightly beyond the middle coxæ, and is strongly rounded at the apex, the apical bead very fine and not much dilated laterally.

This species is not very closely related to any other, resembling *penicillatus* in sternal structure, but differing greatly in size, shape and sculpture.

**P. seriatus** Lec.—Proc. Ac. Phil., 1856, p. 15.—Broadly, evenly elliptical, less than one-half longer than wide, black; antennæ black; legs piceous-black, the tarsi dark piceo-testaceous; upper surface polished. *Head* finely but distinctly punctate, feebly subtruncate in the middle at apex; antennæ moderate, club rather robust, the last joint distinctly longer than the two preceding together. *Prothorax* fully twice as wide at base as at apex, and nearly two and one-half times as wide as long, the basal bead extremely fine and feeble; disk minutely and sparsely, but rather distinctly punctate, the surface not visibly reticulate. *Scutellum* nearly twice as wide as long, ogival; sides distinctly arcuate; surface very minutely punctate. *Elytra* nearly two and one-half times as long as the prothorax, very broadly, evenly rounded behind, the sutural and discal striæ as usual, the surface excessively finely, feebly and indistinctly reticulate, more visibly so near sides and apex; disk

with approximate and equal rows of very distinct punctures, which do not become larger at the sides, and which disappear only within a very short distance of the base. *Abdomen* reticulate in wavy lines, especially near the sides, coarsely pubescent. *Legs* robust, posterior tarsi somewhat robust, very densely, coarsely pubescent beneath, about one-third as long as the tibiæ. Length 2.0 mm.

Kansas—Dr. LeConte; Colorado—Mr. Schwarz.

The description is taken from one of the Colorado specimens, as the original type cannot be found.

The metasternal process is rather narrower than usual, projects far beyond the middle coxæ, and is strongly rounded throughout at apex; it is scarcely three times as wide as the narrowest part of the prosternal process, and the apical bead is rather fine and not dilated laterally. It is a very distinct species in its strongly marked, approximate, equal rows of elytral punctures. The type exhibits no trace of impressed elytral lines.

**P. pumilio** Lec.—Proc. Ac. Phil., 1856, p. 16.—Evenly, rather broadly oval, scarcely one-half longer than wide, black above, piceous beneath; legs and antennæ pale yellowish-testaceous; rather strongly shining. *Head* as usual; antennæ rather robust, the club moderate, the eleventh joint but slightly longer than the two preceding combined, the third joint notably shorter than the fourth and fifth together. *Prothorax* very nearly as in *politus*. *Scutellum* ogival, nearly two-thirds wider than long. *Elytra* a little more than twice as long as the prothorax, not at all narrowed toward apex, broadly, evenly rounded behind, with reticulation and discal striæ nearly as in *politus*; having approximate and nearly equal rows of rather small and distant, and extremely feeble punctures which are, at the sides, much larger, more confused and broadly lunate; surface with very fine vague impressed lines, which are continuous nearly to the base. *Legs* moderately robust, short. Length 1.4 mm.

Middle Atlantic States.

The condition of the type, which is the only specimen which I have seen, prevents a description of the abdomen and posterior tarsi. The metasternal process is very wide, and projects far beyond the middle coxæ, the apex strongly rounded, the apical bead very strong and rather flat, not dilated laterally.

*Pumilio* greatly resembles a very small specimen of *politus*, almost exactly so in sculpture; it is, however, very distinct in several important points of structure, and notably in the antennæ, in which the third joint in *politus* is fully as long as the next two together, also in sternal structure, the prosternal process here being

much narrower and not over a third as wide as the metasternal. The punctures of the elytral series are, on the upper parts of the disk, rather more distant and decidedly more feeble than in *politus*. It appears to be very rare.

### PHALACROPSIS n. gen.

Mentum trapezoidal, truncate at apex. Maxillary palpi with the last joint slender, subcylindrical, minutely truncate at apex, slightly narrower than the third, and nearly twice as long. Antennæ slender; third joint as long as the next two together; club slender, the ninth joint fully as wide as the tenth and slightly longer, eleventh narrower, elongate-oval, and slightly shorter than the two preceding. Prosternal process moderate in width, very feebly concave, inflexed, not ciliate at apex; metasternal process broad, fully three times as wide as the prosternal, projecting to the anterior limits of the coxal cavities, where it is transversely truncate, the truncation very feebly arcuate, the apical bead very fine in the middle, thickened at the lateral angles, and again fine along the coxal cavities. Legs short and very robust; spurs of the posterior tibiæ slender, equal, nearly parallel, projecting distinctly beyond the spinose fimbria; the corresponding tarsi but very slightly longer than the anterior, nearly as in *Phalacrus*, with the basal joint less than one-half as long as the second. Pronotum without trace of basal bead in the middle. Scutellum large. Elytra not at all striate, having a very fine sutural bead, the fine stria being continuous with the basal stria along, and almost touching, the scutellum; discal stria entirely obsolete.

The single species forming the type of *Phalacropsis*, is quite peculiar in form, being decidedly more elongate-oval and just perceptibly more depressed than in the various forms of *Phalacrus*. Although remote, it is the nearest ally of *Tolyphus* in our fauna.

**P. dispar** Lec.—Bull. U. S. Geol. Survey, V, No. 3, p. 513.—Castaneous, evenly elongate-elliptical, fully three-fourths longer than wide, convex, polished. Head rather small, evenly rounded at apex throughout its width, very minutely sparsely and obsoletely punctate. *Prothorax* at base more than twice as wide as the head, polished, without trace of reticulation, very minutely, rather sparsely but distinctly punctate; base transverse, feebly sinuate at each side of the scutellum. Scutellum large, about twice as wide as long, ogival, very obsoletely finely and sparsely punctate. *Elytra* nearly three times as long as the prothorax, not narrowed behind, broadly, evenly rounded at apex, polished but having very indistinct traces of minute wavy reticulation, which becomes more evident and confused near the sides and apex; punctures lunate, arranged in rather poorly-defined distant series, the intervals with more confused punctures which are nearly equal to them in size, rather large but feeble, much larger, denser and more confused at the sides, where they are very broadly crescentic. *Legs* and under surface pale testaceous, sparsely, coarsely pubescent. Length 3.0 mm.

Colorado (Veta Pass). Mr. Schwarz.

I have only seen one specimen of this remarkable species.

#### **OLIBRUS** Erichs.

The genus *Olibrus* differs from *Phalacrus* in only two very important particulars, but in a large number of characters which must be considered of more or less subsidiary value. The two most marked differences are found in the mode of antennal insertion, and in the size of the scutellum. In *Phalacrus* and its allies with large scutellum, the antennæ are inserted far under the epistoma in very deeply excavated cavities in front of the eyes, the anterior margin of the head being arcuate continuously with the eye throughout the width, while in the genera with small scutellum, the epistomal edge is deeply sinuate laterally, and the points of antennal insertion more visible from above. In the structure of the sterna the two genera are identical. The posterior tarsi and tibial spurs are, however, slightly longer than in *Phalacrus*, but I cannot regard this as of such decisive importance as the two characters mentioned. The small foveæ near the eyes, visible in the genera with large scutellum, are generally obsolete in the others. From *Stilbus* this genus differs much more radically than it does from *Phalacrus*, in the very important structure of the mesosternum behind the middle coxæ.

In two characters *Olibrus* stands almost alone in the family, the one relating to the form of the terminal joint of the antennæ, the very strongly constricted terminal process so perfectly developed here being merely indicated in *Phalacrus*, and almost entirely obsolete in *Stilbus*, the other relating to the punctures of the elytral series, which are never transversely crescentiform, but if modified at all from fine simple points, distinctly attenuate posteriorly; this form of elytral punctuation I have not found to exist elsewhere, except in *Olibroporus*.<sup>1</sup> It is true there are many species of *Stilbus* which are perfectly devoid of the peculiar crescentiform punctures, but in this case the punctures simply disappear and never assume the elongate form here alluded to.

In the absence of the terminal line of robust setiform spinules at

<sup>1</sup> There is an undescribed South African species before me, in which the punctures at the sides become slightly dilated, but although it is apparently assignable to *Olibrus*, I am not entirely certain that it really belongs to that genus.



the apex of the prosternal process, *Olibrus* again resembles *Phalacrus* and differs correspondingly from *Stilbus*. In fact the resemblances of *Olibrus* to the latter genus must be regarded as in great part superficial.

Our species are very much less numerous than those of the European fauna, but the very limited number which we possess are more heterogeneous, and this opinion is strengthened by the characters assigned to the Central American forms by Dr. Sharp. Our species are in fact divisible into two groups of subgeneric importance, only one of which appears to be represented in the European fauna.

I.

*Elytra with two discal striae.*

Elytra maculate, vittate or differing in color from the pronotum.

Black, elytra with two oval rufous spots near the apex.....**LeContei**

Elytra paler, castaneous, each with a broad ill-defined flavate vitta; prothorax concolorous.....**vittatus**

Elytra pale, a suffused lateral, and a more distinct sutural, vitta blackish; head and pronotum piceous-black.....**nigricollis**

Elytra unicolorous.

Elytra without impressed lines accompanying the series of punctures; surface without trace of reticulation, perfectly polished throughout.

**pallipes**

Elytra with very finely, feebly impressed lines.

Impressed lines stronger and more evident; elytra polished, finely granulo-reticulate only at the immediate apex.....**semistriatus**

Impressed lines very feeble; elytral reticulation finer, more longitudinally aciculate, present at the sides and toward apex.

Form evenly elliptical, more convex, not attenuate behind; impressed lines almost obsolete.....**neglectus**

Form more narrowly oval, attenuate behind, less convex; impressed lines fine but somewhat distinct.....**rufipes**

II.

*Elytra with a single discal stria.*<sup>1</sup>

Narrow, densely aciculato-reticulate.....**Wickhami**

**O. LeContei** n. sp.—Rather broadly oval, just perceptibly attenuate behind the middle, strongly convex, highly polished, black above, with a very clearly-defined elongate-oval spot of bright rufo-testaceous from the middle of each elytron nearly to the apex, approaching but not attaining the suture;

<sup>1</sup> *Olibrus bisignatus* Boh., of the Cape of Good Hope, also belongs in this group; it almost perfectly resembles *LeContei* in form and coloration, but is very densely reticulato-granulose throughout.

under surface, legs and antennæ pale rufo-testaceous. *Head* extremely finely and feebly punctate; antennæ moderately slender, third joint about as long as the next two together, club nearly as long as the six preceding joints combined, rather compact, nearly symmetrical, the eleventh joint as long as the two preceding together. *Prothorax* of the usual form, more than twice as wide as long, feebly lobed in the middle at base; basal bead apparently entirely obsolete; surface very minutely, sparsely and extremely feebly punctate. *Scutellum* ogival, one-half wider than long. *Elytra* about two and one-half times as long as the prothorax, very strongly rounded at apex, highly polished, without reticulation except the feeblest possible trace at the immediate apex, the sutural bead continuous nearly to the base, very fine; two discal striae distinct, nearly equal in length, vanishing at between one-third and one-fourth the length from the base, the first coincident with the suture at the extreme apex, the second approaching but not uniting with the first at posterior fourth or fifth; disk with rows of excessively fine feeble punctures, which become slightly more distinct at the sides, the series not accompanied by impressed lines. *Abdomen* minutely reticulate, coarsely pubescent. *Legs* moderate; posterior tibiæ slender, subcylindrical toward apex; spurs distinct, the tarsi slender, fully three-fourths as long as the tibiæ, with the first joint less than one-half as long as the second. Length 2.3 mm.

#### Atlantic States.

The metasternum is polished, not reticulate and not perceptibly punctate, the process rather short, strongly rounded at apex, the mesosternum widely visible at the sides of the apex, but reduced to a fine acutely elevated bead in the middle.

This species has heretofore been considered identical with the European *bicolor*, but specimens of the latter sent me by Reitter and confirmed as to their identity by the tables of Flach, show conclusively that it is very distinct. In the true *bicolor*, the elytra are reticulate at least as far as the middle, the metasternum is coarsely and deeply punctate, the form is much more elongate, the size is larger and the elytral spots more diffused. *LeContei* seems to coincide much more closely with the *lepidus* of M. Tournier's recently published table (L'Ent. Gen. I, p. 89), but is probably distinct, as the European species of this group seem to be uniformly more slender and attenuate behind, and have a large part of the elytra distinctly reticulate.

**O. vittatus** Lec.—Trans. Am. Ent. Soc., 1868, p. 50.—Evenly elliptical, or very feebly attenuate behind, about two-thirds longer than wide, strongly convex, highly polished, pale castaneous above, each elytron with a broad, very diffused median vitta of paler flavo-testaceous, more distinct toward base and not quite attaining the apex; under surface, legs and antennæ pale flavo-

testaceous. *Head* excessively finely, feebly and rather sparsely punctate; antennæ moderate, third joint not quite as long as the next two, club robust, compact, very strongly compressed, ninth joint slightly wider than long, ninth and tenth slightly more developed on the anterior side, nine to eleven increasing gradually in width, the latter fully as long as the two preceding, with the apical process well developed. *Prothorax* feebly lobed in the middle of the base; basal bead distinct in the middle; surface extremely sparsely minutely and feebly punctate. *Scutellum* wider than long, ogival. *Elytra* nearly three times as long as the prothorax; sutural bead very fine, disappearing at basal third; discal striæ fine but distinct, almost exactly as in *LeContei*; surface not reticulate, having rows of very fine punctures accompanied by the feeblest trace of fine impressed lines; alternate series more distinct, the intermediate series of finer punctures almost completely obsolete toward suture. *Abdomen* minutely and rather strongly reticulate and alutaceous except as usual along the apices of the segments, where it is polished, coarsely and rather sparsely pubescent, and subsparately punctate. *Legs* nearly as in *LeContei*. Length 2.2 mm.

New York.

The metasternum is polished, not perceptibly punctate, the few sparse hairs entirely filling the punctures, the process is broader than usual, broadly, evenly rounded at apex, projecting but slightly beyond the middle coxæ, the mesosternum being reduced to a very fine apical bead which is only slightly wider at the extreme sides of the apex.

The vittæ of the elytra are extremely diffused, and in some lights become almost invisible; the punctures of the elytra are rather more distinct than in *LeContei*, and the form is slightly more elongate-oval and less attenuate behind than in that species.

**O. nigricollis** Lec.—*Trans. Am. Ent. Soc.*, 1868, p. 50.—Evenly, rather broadly elliptical, strongly convex, polished; head and pronotum blackish-piceous; elytra rufo-testaceous, the lateral margins narrowly, more feebly and indefinitely, and a broad, more definite and darker sutural, vitta piceous, the latter gradually attenuate from base to apex; under surface piceous-brown, the legs and antennæ flavate. *Head* strongly, sparsely punctate; eyes small. *Prothorax* more than twice as wide as long; basal lobe very broadly, feebly arcuate; basal bead fine, flat, strongly marked, obsolete at lateral fourth; disk very minutely, sparsely punctate, the punctures rather denser and more distinct laterally; marginal bead very fine; apical angles right, very narrowly rounded. *Scutellum* two-thirds wider than long; apex rounded; sides arcuate. *Elytra* about three times as long as the prothorax, not narrowed behind; apex very broadly rounded; sides coarctate with those of the prothorax; basal stria very fine, reflexed along the scutellum and obsolete opposite the apex of the latter; sutural bead very fine, attaining the apex of the scutellum; two discal striæ very fine but distinct, the first continuous from the suture at the apex and obsolete at basal fourth, the second approaching very near the first

at apical sixth or seventh, obsolete at basal third, sometimes also with traces of an incomplete third discal stria; disk polished, not reticulate except coarsely and confusedly so at the apex and thence slightly along the sides, having even distant rows of very minute punctures, the rows not attaining the base, the punctures coarser and confused near the sides and apex; intervals with uneven single rows of excessively minute feeble punctures. Metasternum polished, with scarcely perceptible sparse feeble punctures. Length 2.3-2.6 mm.

New Mexico (Las Vegas); Dakota (Bismarck).

Although the elytra are unmistakably vittate in this species, it cannot be considered a variety of *vittatus*; its large size, dark head and prothorax, much broader and more definite pale vittæ, coarser, denser and more rugose punctuation at the sides and apices of the elytra, and especially the more coarsely punctate head, preclude any such association.

The original unique type is immature, as there is no trace of the dark sutural stripe. The measurement given in the original description is too great.

**O. pallipes** Say.—Journ. Ac. Phil., IV, p. 90.—Evenly elliptical, very convex, highly polished, dark piceous-brown above; under surface, legs and antennæ pale, flavo-testaceous. *Head* sparsely and very obsoletely punctate; eyes rather small; antennæ rather robust, third joint almost as long as the next two combined, club rather robust, scarcely as long as the first three joints combined, ninth triangular, a little wider than long, tenth trapezoidal, twice as wide as long and distinctly wider and shorter than the ninth, eleventh as wide as the tenth, as long as the two preceding, but slightly wider than long, rather abruptly constricted at apical third forming a very distinct narrowly rounded apical process. *Prothorax* at base twice as wide as the head, a little more than twice as wide as long, slightly lobed and feebly beaded at the middle of the base, very obsoletely and finely punctate. *Scutellum* small, a little wider than long. *Elytra* two and one-half times as long as the prothorax, not narrowed behind, polished, not reticulate, with a fine transverse basal stria, reflexed slightly along the scutellum where it becomes obsolete; sutural bead wanting near the base, very fine thence to the apex; discal striæ two in number, the first extending to basal fourth, the second a little beyond the middle, the first uniting with the suture at the extreme apex, the second vanishing without attaining the suture at apical fourth or fifth; disk with distant rather regular rows of excessively fine feeble punctures, which become slightly more visible but still in regular series at the sides, almost obsolete at base, the rows not accompanied by impressed lines, the intervals excessively minutely feebly and obsoletely punctate in single irregular lines. *Abdomen* rather distinctly and subsparsely punctate, plentifully but not densely pubescent. *Legs* moderate; posterior tibial spurs slender, rather long, the corresponding tarsi rather slender, densely pubescent beneath, two-thirds as long as the tibiæ, the

first joint less than one-third as long as the second, apparently subanched, second as long as the fifth exclusive of the basal node, which is unusually robust and well marked. Length 2.6 mm.

Kansas; Texas; Pennsylvania; New York.

The punctures of the elytral series are minute points, apparently absolutely non-setigerous. The metasternal process extends beyond the coxæ, and rests upon the inflexed prosternal process; it is strongly rounded at apex, very finely beaded throughout, and around the edges of the middle acetabula; its surface is polished, with a few excessively minute feeble and widely scattered setigerous punctures; the sides are slightly divergent from apex to base, at which latter point it is about three times as wide as the prosternal process, and as wide as the length of the last antennal joint. There is sometimes a very short isolated third elytral stria.

The species described by LeConte as *striatulus*, I believe to be the same as this, and the above description is taken from the original type of *striatulus*.

**O. semistriatus** Lec.—Proc. Ac. Phil., 1856, p. 16.—Rather narrowly and very evenly elliptical, strongly convex, highly polished, castaneous above, pale rufo-testaceous beneath; legs, trophi and antennæ concolorous. *Head* rather coarsely but not densely punctate; eyes moderate; antennæ moderate, third joint fully as long as the next two together, club rather robust, nearly as in *pallipes*. *Prothorax* twice as wide at base as at apex, distinctly lobed in the middle at base, the edge slightly sinuate opposite the scutellum; basal bead distinct, becoming obsolete at one-fourth the width from the sides; surface very sparsely, unevenly, feebly punctate, the punctures subelongate. Scutellum moderate, wider than long, rounded at the sides. *Elytra* three times as long as the prothorax, strongly, evenly rounded at apex, polished, without reticulation except very near the apex, not perceptibly so at the sides; sutural bead very fine, continuous to within a very short distance of the scutellum; first discal stria joining the suture at the apex, vanishing at less than one-third the length from the base; second distinct, obsolete at one-third the length from the base and one-fifth or one-sixth the length from the apex, approaching but not uniting with the first; basal stria continuous along the scutellum; disk with series of very fine feeble evidently elongate punctures, distinctly stronger at the sides, and accompanied by distinctly impressed lines which are continuous to the base. *Abdomen* moderately pubescent. *Legs* rather robust; posterior tibial spurs distinct, the corresponding tarsi three-fourths as long as the tibiæ, with the first joint one-half as long as the second. Length 1.9–2.4 mm.

Kansas; Atlantic States.

The metasternum is polished, with very sparse fine pubescence, the punctures excessively minute and entirely filled by the hairs,

the process extending beyond the coxæ, strongly and narrowly rounded at apex, the mesosternum forming an apical border which is very fine in the middle but dilated at the sides and rather feebly declivous, so that it is readily visible in a perpendicular direction from below; it is moderate in width.

The description is taken from an eastern specimen which is much larger than the Kansas type, as the latter is in very bad condition. The species greatly resembles *pallipes*, but seems to be distinct.

**O. neglectus** n. sp.—Evenly and not very broadly elliptical, strongly convex, highly polished, black; under surface piceous-brown; legs, trophi and antennæ pale testaceous. *Head* finely but somewhat deeply densely and distinctly punctate; antennæ rather robust, third joint slightly shorter than the next two combined, club rather short, compact and robust, ninth joint triangular, wider than long, more pointed at the anterior side, tenth slightly shorter and wider than the ninth, much more than twice as wide as long, more pointed on the anterior side toward the apical angle, eleventh pyriform, slightly wider than the tenth, as long as the two preceding together. *Prothorax* of the usual form, feebly lobed in the middle at base, the lobe evenly, feebly arcuate; basal bead distinct, becoming obsolete at one-fourth the width from the sides; disk extremely minutely, feebly, sparsely punctate. *Scutellum* moderate, two-thirds wider than long, ogival; sides feebly arcuate; apex not rounded. *Elytra* two and one-half times as long as the prothorax, rather strongly rounded at apex, the sutural bead obsolete at nearly one-fourth the length from the base, excessively fine; discal striæ very fine, the first continuing to within one-eighth the length of the base and joining the suture just before the apex, the second obsolete at two-fifths the length from the base and one-fourth from the apex, at this point approaching very close to, but not joining the first; surface with traces of very fine impressed lines, polished, but with feeble traces of minute reticulation, which becomes very evident at the apex and also along the sides; punctures of the series excessively fine and feeble, becoming but slightly more visible at the sides, rather distant in the rows, the intervals punctured in single series which are almost as regular as the principal series, but composed of smaller punctures; punctures not elongate and each with a very minute fine recumbent hair. *Abdomen* with coarse sparse pubescence. *Legs* rather slender; posterior tibiæ slender, spurs distinct, the corresponding tarsi three-fourths as long as the tibiæ, with the basal joint scarcely one-half as long as the second, the latter subequal to the fifth. Length 1.8 mm.

Vermont; New York.

The metasternum is polished and not distinctly punctate, having fine, very sparse pubescence, the process advancing but slightly beyond the coxæ, evenly rounded at apex, with the mesosternum as in *semistriatus*, but less exposed at the sides of the apex.

The basal stria of the elytra is very fine and is reflexed along the scutellum, rather distant from the latter and not extending beyond it.

**O. rufipes** Lec.—Proc. Ac. Phil., 1856, p. 16.—Rather narrowly oval, fully three-fourths longer than wide, rather distinctly attenuate behind from basal fourth of the elytra, polished, piceous-black above, testaceous beneath, the metasternum and abdomen clouded with piceous; legs and antennæ pale flavo-testaceous. *Head* finely but rather strongly and distinctly punctate; antennæ nearly as in *vittatus*. *Prothorax* more than twice as wide as long, with a broad distinct median lobe at base; basal bead distinct except toward the sides; surface finely but rather distinctly, sparsely and somewhat unevenly punctate, the punctures attenuate posteriorly. Scutellum ogival, one-half wider than long. *Elytra* three times as long as the prothorax; sutural bead very fine, becoming obsolete near the base; discal striæ fine but distinct, both becoming obsolete at basal third, the first coincident with the suture at the extreme apex, the second approaching but not joining the first at apical fourth or fifth; having also series of exceedingly minute simple punctures which are scarcely more distinct at the sides, the series accompanied by fine, feebly impressed lines which almost attain the basal stria; surface with very feeble, densely crowded, longitudinally aciculate reticulations, which are extremely minute, more distinct at the sides and especially at the apex, where they become more rounded and less aciculate. *Abdomen* sparsely pubescent, alutaceous. *Legs* moderate; posterior tarsi slender, three-fourths as long as the tibiæ, with the first joint about one-third as long as the second. Length 2.0 mm.

Oregon. Cab. LeConte.

The metasternum is polished, although finely reticulate, very sparsely, finely punctate and pubescent; the process is rather wide, projecting beyond the coxæ, with the apex broadly rounded, almost subtruncate in the middle, the mesosternum not distinct at the sides.

This species differs from the preceding in its broader, more obtusely rounded metasternal process, which is here about as wide as the anterior femur; in *neglectus* it is not much more than two-thirds as wide.

**O. Wickhami** n. sp.—Elongate-oval, nearly twice as long as wide, more or less attenuate from anterior third, black above, piceous beneath; trophi, antennæ, tibiæ and tarsi paler, rufo-testaceous; shining. *Head* very finely, sparsely punctate; antennæ moderate in length, rather slender, third joint as long as the next two together, club of nearly normal form but slightly less strongly compressed, slightly more parallel and less robust. *Prothorax* but slightly more than twice as wide as long; sides less arcuate than usual; basal lobe broadly arcuate; basal bead very feeble; surface polished, not at all reticulate, extremely minutely, feebly and sparsely punctate. Scutellum moderate, ogival, nearly twice as wide as long. *Elytra* three times as long as the prothorax; sutural bead very fine, not becoming entirely obsolete at the

base, the single discal stria very close to the suture, distinct, extending to basal third, coincident with the suture just before the apex: having rows of excessively minute, feeble, posteriorly attenuated punctures, attended by finely impressed lines which are continuous to the basal stria; entire surface covered with a dense system of short, closely crowded, longitudinally aciculate reticulations, which are strongly marked toward apex and the sides but sometimes very feeble or obsolete on the upper portions. *Abdomen* polished, without the usual minute reticulation, rather coarsely, asperately punctate, very coarsely pubescent. *Legs* normal, not very robust; posterior tarsi slender, three-fourths as long as the tibiae, with the basal joint about one-third as long as the second. Length 1.7-2.4 mm.

Southern California; Arizona; New Mexico.

The metasternum is excessively minutely, sparsely punctate, reticulate in wavy lines laterally; the process is rather wide, extending very slightly beyond the coxæ, broadly rounded and finely beaded at apex, the mesosternum very narrowly visible and declivous at the sides in front of the coxæ as usual. The third joint of the maxillary palpi is distinctly longer than wide, the fourth scarcely wider, elongate fusiform and nearly twice as long as the third.

In one specimen the discal stria does not quite attain the middle of the elytra, and in several other respects this species seems to be very variable. In the five typical representatives obtained by Mr. G. W. Dunn, in Southern California, or the northern part of Lower California, the form is generally very slightly narrower than the majority of a large series taken by Mr. H. F. Wickham, at various localities in Arizona and New Mexico, and the type has a distinctly longer development of the metasternal process than can be observed in the others, this process gradually shortening by insensible degrees, until in one of the broader forms from New Mexico, the mesosternum instead of being deeply excavated under the apex of the process, is simply strongly declivous. There is also marked variation in the width of the process and its degree of obtuseness, in some specimens being very broadly rounded and in others very narrowly so, in the latter case leaving much more of the declivous mesosternum visible at the sides of the apex.

The dense aciculate-reticulate sculpture, which is unique, and the single discal stria, taken in connection with the sternal and tarsal characters of *Olibrus*, show that this species is an isolated and highly specialized form, without any near congeners—although in *rufipes* there is a feeble indication of the sculpture here so highly developed;—and for this reason, as well as the fact that there appears to be no



stability in the variations observed, it is impossible to specifically divide the large amount of material before me.

**OLIBROPORUS** n. gen.

Base of the antennæ entirely exposed in deep frontal emarginations just before the eyes. Scutellum small. Elytra with a single discal stria, the sutural bead completely wanting. Prosternal process rather narrow, abruptly inflexed at apex, the latter not setose. Mesosternum forming a minute bead along the apex of the very broad, transversely truncate metasternal process, the latter not advancing beyond the coxæ, the mesosternum not developed behind the middle acetabula, forming merely a beaded margin. Legs short and robust; terminal spurs of posterior tibiæ small, slender, slightly unequal; posterior tarsi moderate, cylindrical; basal joint obliquely truncate and prolonged beneath the second, the articulation rigid; second joint moderate in length, scarcely twice as long as the first.

These few words will serve to characterize a genus intermediate in some characters between *Stilbus* and *Olibrus*, and combining also several of the structural features of other genera. The apex of the prosternal process is more abruptly inflexed than is usual in *Olibrus*, but the edge is not as free and acute as in *Stilbus*.

**O. punctatus** n. sp.—Rather broadly, evenly elliptical, convex, strongly shining, black above, rufo-testaceous throughout beneath; antennæ same. *Head* short, very minutely, rather feebly punctate; eyes large, not margined internally; antennæ moderate, third joint nearly as long as the next two, club large, longer than the funicle, elongate-elliptical, strongly compressed, the eleventh joint but slightly longer than wide, one-half longer than the tenth, the terminal process not well defined and obtusely rounded. *Prothorax* very short, almost three times as wide as long, strongly narrowed from base to apex; sides arcuate and continuous in curvature with those of the elytra; basal lobe almost obsolete; basal bead fine, very strong and continuing to within a very short distance of the basal angles, the posterior margin of the basal bead finely granulato-aciculate; disk very minutely, feebly and not very densely punctate, the punctures rather larger and denser near the lateral edges; the latter margined with a broad flattened bead which becomes very wide around the apical angles. Scutellum very small, slightly wider than long, pointed; sides broadly arcuate. *Elytra* more than three times as long as the prothorax, not narrowed toward apex, the latter very broadly, evenly rounded; transverse basal stria fine, deeply impressed, abruptly ending at the base of the scutellum, which it attains, but at which point it is not in the least reflexed; anterior half of the basal bead—formed by the basal stria—longitudinally granulato-aciculate; discal stria very deeply impressed, coincident with the suture at the apex, and very gradually evanescent at basal fourth, becoming an unimpressed row of punctures; disk rather coarsely reticulate in transverse wavy lines,

having nine very even rows of large, rather closely placed, deeply impressed and slightly elongate punctures, which are equal in size throughout the width, and not in the least dilated laterally, the rows almost attaining the base and not accompanied by impressed lines; intervals flat, with uneven single rows of fine punctures. Metasternum shining, very finely, sparsely, subasperately punctate, coarsely and sparsely pubescent. Length 1.9 mm.

#### Florida.

The widely spaced, perfectly even rows of deeply impressed punctures, distinguish this species from any other of the family, but recall to a considerable degree the punctuation of *Phalacrus serialus*; in the latter, however, the series of the intervals are as distinct as the others, so that the regular rows are twice as numerous as in the species here described. The general character of these punctures is perfectly similar to the prevailing type in *Olibrus*.

#### **EULITRUS** Sharp.

Head extremely minutely but distinctly and not very sparsely punctate, with several larger, widely dispersed punctures toward the sides of the front. Epistoma transversely, feebly arcuate; sides widely divergent posteriorly, the antennal sinuations feeble, a very small portion of the basal joint concealed. Antennæ rather long; basal joint large, much longer and more robust than the second; third scarcely as long as the next two combined; outer joints of funicle slightly more robust, the eighth wider than long; club long, loose; ninth and tenth joints triangular, subequal in length, ninth to eleventh much more developed on their anterior sides, the last much shorter than the two preceding together. Ligula short and very broad, the paraglossæ corneous, connate, pointed at the sides, extending laterally beyond the subquadrate mentum. Palpi robust; last joint of the labial slightly swollen, as long as the two preceding; fourth joint of the maxillary subcylindrical, obtusely pointed, as long as the two preceding together. Prosternal process inflexed at apex, not at all setose, moderate in width. Metasternal process very wide and long, extending beyond the coxæ and resting in repose upon the prosternal process which is feebly impressed, strongly evenly rounded at apex. Mesosternum forming a fine beaded margin along the apex and coxal cavities, and expanded behind the latter, becoming here about three times as wide. Legs moderately robust; tibial spurs long, strong, unequal; posterior tarsi rather long, cylindrical; basal joint short, almost rigidly ankylosed to the second, and not extending beneath it; second joint extremely long, nearly four times as long as the first and about one-half longer than the entire remainder, not very densely clothed throughout with short robust closely recumbent spinose setæ; fourth joint very distinct as a basal node of the last; third not in the least dilated, obliquely lobed beneath.

In addition to the above characters, it should be mentioned that the elytra are entirely destitute of any trace of discal striæ, although

the suture is very finely beaded, the bead becoming obsolete before attaining the base. The scutellum is small, and the elytra are rendered feebly opalescent by an excessively minute transverse strigilation, which is just resolvable under a power of 80. The punctures are small, feebly crescentiform and disposed in rather approximate but not very regular rows, becoming wider and more confused near the sides.

The description is taken from the typical Central American *E. estriatus* Sharp, one of the largest and finest species of the family.

The affinities of *Eulitrus* are evidently strongly toward *Olibrus*, and it bears very much the same relation to that genus that *Acylo-*  
*mus* bears to *Stilbus*. The feeble dilatation of the mesosternum behind the middle acetabula, shows also that it should form one of a series joining *Olibrus* and *Acylo-*  
*mus* or *Stilbus*. No species has yet been discovered within the United States.

#### **LITOLIBRUS** Sharp.

The nearest ally to this genus is probably *Acylo-*  
*mus*, from which it differs primarily in four important characters as follows:—

1. The mesosternum is not produced at all behind the middle acetabula, being reduced to a simple fine bead forming the margin of the cavity, as in *Olibrus*.

2. The metasternal process is very narrow and much shorter.

3. The sexual modification of the posterior tibiæ, tibial spurs, and tarsi does not apparently exist, and the second joint in the male is not spongiose beneath.

4. The basal joint of the posterior tarsi is extremely obliquely truncate at apex, and extends more or less beneath the second joint, this being more noticeable in the northern forms than in the typical *obesus* where, however, it is also very marked. In *Acylo-*  
*mus* the apex of the first joint is only slightly oblique, and its lower surface does not extend at all beneath the second. In both genera the connection between these joints is rigid, apparently admitting of but little, if any motion, but the line of demarcation is rather stronger in *Litolibrus* than in *Acylo-*  
*mus*.

Both of the genera here compared differ greatly from *Stilbus* in the very elongate second joint, and *Litolibrus* differs from *Acylo-*  
*mus* as well as *Stilbus* in its extremely robust legs, especially the middle and posterior femora and tibiæ.

This genus is one of the most distinct of the family, ranking, in  
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the radical nature of its peculiarities of structure, with either *Olibrus* or *Stilbus*; it is essentially tropical, but extends into the southern limits of the United States, where it is represented by two species characterized as follows:—

Pale testaceous; elytra black, with the margins and two oval approximate spots just before the middle pale.....**princeps**  
 Pale ochreous-flavate throughout.....**uniformis**

**L. princeps** Schwarz.—Proc. Am. Phil. Soc., XVII, p. 361.—Rather broadly, evenly elliptical, moderately convex, polished; head, pronotum, a large oblique oval spot on each elytron before the middle, attaining the suture, the lateral margin and apex narrowly, entire under surface, legs and antennæ pale rufo-testaceous; remainder of the elytra black. *Head* polished, somewhat coarsely, sparsely and feebly punctate; eyes large, their inner margin slightly elevated above the general surface of the vertex; epistoma without a beaded margin, except laterally along the antennal sinuations; antennæ rather long and robust, joints three to five decreasing uniformly and very slightly in length, outer joints of funicle slightly more robust, seventh and eighth equal in length, the latter just visibly wider than long, club rather robust, strongly asymmetric, the anterior sides much more strongly angulate, and the eleventh joint slightly lobed on this side near the base, longer than the two preceding together. *Prothorax* much more than twice as wide as long, not reticulate, very minutely and obsoletely, but somewhat densely punctate; basal lobe moderate, broadly, evenly arcuate, the basal bead fine, very strong, extending laterally to within one-fourth the width of the sides, with its posterior margin finely and very strongly granulose. Scutellum equilatero-triangular, small, the sides very feebly arcuate. *Elytra* polished, the transverse strigilation so minute as to be merely suggested by a very feeble opalescence under high power, having rows of very small, rounded punctures which are larger, deeper and more distinct at the sides, always crescentiform, the intervals with an obscurely double line of nearly similar punctures; discal stria obsolete at basal third. *Abdomen* coarsely, sparsely pubescent. *Legs* short and very stout, the posterior tibiæ short, obliquely truncate at apex, the truncation sinuate; spurs very long, stout, and distinctly unequal, the corresponding tarsi nearly as long as the tibiæ, the first joint short above, very strongly produced beneath the second; second joint arcuate above near the base, more than four times as long as the upper or shorter side of the basal joint, and very much longer than the entire remainder. Length 2.6 mm.

Florida. Mr. Schwarz.

The metasternal process is narrow and very short, flat, impunctate, truncate at apex, the mesosternum in front of it abruptly declivous, and extending laterally so as to slightly envelop the middle coxæ, having one or two robust setæ at the sides near the coxæ and metasternum, not at all prominent; prosternal process moderate, with two or three very fine feebly developed setæ.

This is an extremely distinct species in many characters, especially those of the antennæ, mesosternum and posterior tarsi, but it does not differ generically from *L. obesus*. The species described as *varians* by Dr. Sharp (Biol. Cent.-Amer. Col., II, i, p. 260), does not appear to differ specifically, and, in accordance with the theory of distribution by ocean currents from Central America to Florida, formerly held by Dr. LeConte (Proc. Am. Phil. Soc., XVII, p. 471), and more recently demonstrated by Mr. Schwarz (Proc. Ent. Soc. Wash., I, p. 145), the proposed synonymy is rendered highly probable.

**L. uniformis** n. sp.—Somewhat broadly, evenly oval, very strongly convex, pale ochreous-flavate throughout, strongly shining. *Head* not reticulate, extremely minutely, obsoletely and sparsely punctate, with a few scattered punctures of larger size near the eyes; the latter moderate, the inner margin and beaded edge of the epistoma as in *princeps*; antennæ moderate, funicle slender, third joint much shorter than the next two combined, fourth slightly shorter than the fifth, eighth very slightly shorter than the seventh, a little wider than long, club robust, fusiform, nearly symmetrical, eleventh joint fully as long as the two preceding combined. *Prothorax* distinctly more than twice as wide as long; basal lobe very broad and extremely feeble, the bead fine but strong, continuing laterally to within one-fifth the width of the sides, with the posterior margin finely and strongly granulose; surface polished and almost completely devoid of punctuation. *Scutellum* equilatero-triangular, the sides feebly arcuate. *Elytra* distinctly opalescent, having widely distant rows of moderate punctures, which are more deeply impressed and very distinct toward the suture, and more broadly crescentiform but rather more feebly impressed near the sides and apex, obsolete toward base; intervals with a few widely dispersed, excessively minute punctures; sutural stria distinct, obsolete at basal third or fourth, the transverse strigilation excessively minute and dense, not resolvable under high power. *Abdomen* reticulate, sparsely pubescent, the rows of robust setæ at the apices of the segments especially prominent. *Legs* short and very stout; obliquity of truncation of the posterior tibiæ rather slight, the spurs long and strong, the tarsi rather slender, more symmetrical than in *princeps*, the basal joint less strongly produced beneath the second, the latter seven or eight times as long as the first on the upper side, and slightly more than twice as long on the lower side, sparsely clothed with very short recumbent setæ, and much longer than the entire remainder. Length 2.4 mm.

Texas.

The metasternal process is very narrow, short, truncate at apex, the mesosternum before it moderately declivous, not at all prominent, and not much dilated over the coxæ at the sides; prosternal process narrow, very strongly dilated at apex, where it is between

two and three times as wide as at the narrowest part, the apical margin bearing two short stiff setæ.

This species appears to be distinct from any of those recently described by Dr. Sharp; *minor*, which undoubtedly resembles it in color and size, has the club of the antennæ short and broad, and "developed on one side only of the mesial line."

#### ACYLOMUS Sharp.

Although bearing a certain general resemblance to *Stilbus*, this genus possesses two characters which render it one of the most remarkable of the entire family.

The first character is not entirely peculiar, as it reappears to a less marked degree in *Litochropus*; it relates to sexual modifications affecting the posterior tibiæ. In the males these increase strongly in width from base to apex; they are obliquely truncate, and have the terminal spurs extremely unequal, the smaller being longer than usual in *Stilbus*, and the other greatly developed, being sometimes between one-third and one-fourth as long as the entire tibia, and generally slightly contorted toward apex. In the female the tibiæ are normally and sometimes unusually slender, transversely truncate, and have the terminal spurs of the usual form, although much longer, stouter and more unequal than in *Stilbus*.

The other character relates to the vestiture of the under surface of the second joint of the posterior tarsi, which, in the males, is of a densely spongiöse nature, similar to the under surface of the anterior tarsi in the males of *Anisodactylus*. This character seems to be absolutely peculiar to *Acyломus*, and is most highly developed in the typical *A. aciculatus* Sharp.

In the genus *Acyломus* the second joint of the posterior tarsi is very much more elongate than in *Stilbus*, and the basal joint correspondingly abbreviated, the connection between the two being more rigid. The structure of the mesosternum is nearly similar, but its extension behind the middle coxæ generally less, being intermediate in this respect between *Stilbus* and *Litolibrus*; it is also a connecting link between these two genera in the sculpture of the elytra, the reticulation of the surface when present in *Stilbus* being coarser and tending less to a transverse arrangement in wavy lines, while in *Litolibrus* it is very much finer, taking the form of a more regular transverse strigilation, of such excessive minuteness and close-

ness that it cannot be distinctly resolved by the highest ordinary working powers of the microscope; it is to this natural optical diffraction-grating, that the opalescence observable in most of the species is due; the same effect from a similar cause is more familiar to us, and even more strongly developed, in *Selenophorus* of the *Harpalini*.

The elytral punctures prevailing in the genus are very strongly transversely crescentiform, being much more highly developed than even the most extreme cases which I have observed in *Stilbus*; this character is also very marked in the *Litochride* genera. The setæ at the apex of the prosternal process are less highly developed than in *Stilbus*, being generally shorter and sometimes reduced in number to two, situated at the apical angles. The metasternal process is generally rather longer than in *Stilbus*, somewhat variable in width, and is usually slightly dilated at the immediate apex, the tumid mesosternum before it being almost invariably shorter.

The species are probably moderately numerous in the United States; the five which I have before me may be separated as follows:—

Color throughout the upper surface piceous or black.

Form evenly elliptical or suboblong, not at all attenuate behind.

Piceous, the crescentiform punctures of the series toward the suture wide and strongly developed; transverse strigilation somewhat coarser; form more feebly convex.

Setæ at the apex of the prosternal process uniformly two in number.

**calcaratus**

Setæ more robust, four or five in number; form of body much more elongate .....**extricatus**

Intense black, the punctures of the series toward the suture very fine and feeble; transverse strigilation very much finer; form more convex.

**ergoti**

Form broadly oval, distinctly attenuate behind from the base of the elytra, pale piceous, the elytra very minutely strigilate .....**piceus**

Color castaneous, the head, pronotum, apex of the elytra, and two discal spots near the base of the latter pale rufo-testaceous.....**nebulosus**

**A. calcaratus** n. sp.—Almost evenly oval, more broadly so and less convex in the male; piceous above, under surface, legs and antennæ pale flavo-testaceous; lustre subalutaceous. *Head* extremely minutely, rather sparsely punctate, polished, not distinctly reticulate; eyes large; antennæ moderate in length, rather slender, third joint slightly shorter than the next two together, fourth much shorter than the fifth, outer joints of funicle just visibly stouter, seventh a little longer than the eighth, the latter rather longer

than wide, club rather slender, symmetrical, ninth joint longer than wide, longer than the tenth, the latter slightly transverse, eleventh nearly as long as the two preceding together. *Prothorax* more than twice as wide as long, distinctly, broadly lobed at the middle of the base, and finely but distinctly beaded; surface excessively minutely, sparsely punctate, polished toward apex, very minutely strigilate in wavy transverse lines which are distinct toward base and obsolete toward apex. Scutellum ogival, nearly as long as wide. *Elytra* finely and very distinctly strigilate in transverse wavy lines throughout, having rows of broadly crescentiform, feebly impressed punctures, which are but slightly wider at the sides, where they are more approximate laterally, and becoming obsolete near the base; discal stria distinct, obsolete at basal two-fifths. *Abdomen* coarsely, sparsely pubescent, shining, coarsely reticulate. *Legs* moderate, the posterior femora not unusually robust; tibiæ feebly dilated from base to apex, the apical truncation slightly oblique, very sparsely setose, having an internal and external line of fine erect setiform spines, the terminal spurs extremely unequal, the larger feebly contorted, as long as the apical width of the tibia; corresponding tarsi very slender, cylindrical, with the second joint nearly four times as long as the first, and longer than the entire remainder, the under surface spongy-pubescent only in the apical half. Length 1.4–1.7 mm.

Texas (Galveston and Austin).

The description is taken from the male; the female has the posterior tibiæ nearly equal in width throughout, and rather slender, the terminal spurs smaller and more slender, but decidedly unequal, the longer one being still as long as the apical width; the tarsi are more slender, with the second joint rather shorter and not spongiose beneath.

The metasternum is very minutely, sparsely punctate, very sparsely pubescent, the process very wide, rather long, slightly and abruptly dilated at the immediate apex, the mesosternum in front of it transverse and very short, not distinctly tumid, the prosternal process rather wide, the free apex very feebly, broadly arcuate, and having but two short spinose setæ—one at each angle.

**A. extricatus** n. sp.—Elongate, evenly elliptical, nearly twice as long as wide, piceous above, dark rufo-testaceous throughout beneath; elytra sub-alutaceous. *Head* very strongly retractile; antennæ moderate, outer joints of funicle slightly robust, club very distinctly increasing in width from base to apex, ninth joint scarcely longer than the tenth, the eleventh as long as the two preceding together. *Prothorax* but slightly more than twice as wide as long, very broadly, strongly lobed in the middle of the base, the beaded margin distinct; surface polished, very minutely, transversely strigilate in wavy lines which are very distinct toward base and nearly obsolete toward apex. Scutellum very small, ogival, slightly wider than long, the sides strongly arcuate.



*Elytra* more than three times as long as the prothorax, having rows of moderate crescentiform punctures which, at the sides, become very strongly transverse, sometimes confluent, and more or less confused in arrangement; intervals toward the suture each with a row of similar punctures, but about one-half as wide; discal stria distinct, obsolete at basal third; surface rather coarsely strigilate in wavy transverse rows throughout. *Abdomen* nearly as in *calcaratus*. *Legs* moderate. Length 1.8 mm.

Texas.

This species is closely related to *calcaratus*, but differs in its much more elongate, slightly less convex form. It is described from the female, and the posterior tibial spurs are rather less developed and less unequal than in the corresponding sex of *calcaratus*; the tarsi are nearly similar in structure. In *calcaratus* the apex of the prosternal process has, without exception, only two terminal setæ, while in the present species there is a row of four or five which are longer, and nearly twice as stout; this constitutes one of the most decisive points of difference between these species. The head is so far retracted within the prothorax in the type as to be invisible from above.

**A. ergoti** n. sp. (Walsh MS.)—Strongly convex, almost evenly elliptical, one-half to two-thirds longer than wide, the male slightly the shorter, black above, pale flavo-testaceous throughout beneath; lustre strongly shining. *Head* very minutely, sparsely punctate, polished, not reticulate; eyes rather large; antennæ nearly as in *calcaratus*, but with the outer joints rather more robust, and the club more strongly narrowed from apex to base. *Prothorax* polished throughout, toward base excessively obsoletely transversely strigilate in wavy lines, the punctures extremely minute and sparse; basal lobe and beaded margin distinct, the latter not extending laterally further than the lobe. *Scutellum* equilatero-triangular, with the sides very feebly arcuate. *Elytra* sub-alutaceous, very minutely, transversely strigilate in wavy lines, having rows of punctures which, toward the suture, are very minute and feeble, and toward the sides slightly larger, always transversely crescentiform; discal stria distinct, obsolete at basal two-fifths. *Abdomen* coarsely reticulate, moderately shining, coarsely, sparsely pubescent. *Legs* moderate; posterior tibiæ increasing very rapidly in width from base to apex, very obliquely truncate; spurs nearly as in *calcaratus*; tarsi very long and slender, three-fourths as long as the tibiæ, with the second joint between three and four times as long as the basal, and spongiose throughout beneath, except at the immediate base. Length 1.8–2.2 mm.

Pennsylvania; Delaware; Iowa; Texas.

The description is drawn from one of the Iowan males; the female is larger, rather more convex, and has the posterior tibiæ

more slender, the spurs being smaller and less unequal than in the female of *calcaratus*, the longer one much shorter than the apical width of the tibia.

The sternal structure is nearly the same as in *calcaratus*, but the metasternal process is rather less broad, and the mesosternum is more developed behind the middle acetabula. The terminal setæ of the prosternal process are about three in number, extremely short, being much shorter than in *calcaratus*.

This species is widely distributed, and differs from the preceding in its larger size, black color, more convex form, finer elytral sculpture and punctuation, more especially in the rows toward the suture, and, more decidedly, in the greater dilatation and obliquity of truncation of the posterior tibiæ in the male. It varies considerably in size.

**A. piceus** n. sp.—Broadly oval, rather pale fusco-piceous above, very pale brownish-flavate throughout beneath, polished, the elytra feebly alutaceous, moderately convex; sides feebly convergent behind from the base of the elytra. *Head* not reticulate, extremely finely and feebly punctate; eyes moderate; apical margin of the front with two minute foveæ on each side just above the insertion of the antennæ, the latter rather slender, the third joint distinctly shorter than the next two together; club elongate, very slender, symmetrical, parallel and rather loose; ninth joint slightly longer than wide and a little longer than the tenth, the latter nearly as long as wide and not wider than the ninth, the eleventh elongate, nearly as long as the two preceding, obtusely rounded at the apex, without trace of terminal process. *Prothorax* between two and three times as wide as long, very strongly narrowed from base to apex; basal lobe very feeble, the bead strong but very short, not extending laterally beyond the lobe; disk with feeble traces of transverse reticulation toward base; punctures almost obsolete. *Scutellum* scarcely wider than long, ogival, with the sides slightly arcuate. *Elytra* rather short, about two and one-half times as long as the prothorax, evenly and not very broadly rounded at apex; surface very minutely and rather strongly transversely strigilate in wavy lines throughout, except near the base, where the sculpture becomes very feeble, having series of small transversely crescentiform punctures, which are feebly impressed and which are not much wider or more distinct toward the sides, the series accompanied by fine feebly impressed lines, the intervals with uneven series of excessively minute feeble punctures of the same nature; all the punctures becoming gradually obsolete in basal third; discal stria fine but distinct, obsolete at basal third. Length 1.9 mm.

District of Columbia. Mr. Ulke.

The description is drawn from the male, the posterior tibiæ being gradually strongly dilated from base to apex and very obliquely truncate, the spurs long and very unequal, the posterior tarsi long

and extremely slender. The metasternal process is rather narrower than usual in this genus.

**A. nebulosus** n. sp.—Very broadly oval and moderately convex, about one-half longer than wide; elytra feebly attenuate from base to near the apex, then conjointly evenly rounded, subalutaceous, castaneous; head, pronotum, each elytron obliquely at apex, and a small indefinite spot at the base of each elytron, nearer the humerus than the scutellum, paler, rufo-testaceous; under surface, legs and antennæ very pale testaceous. *Head* extremely minutely, sparsely punctate, not reticulate; eyes moderate; antennæ slender, joints one to eight elongate, club moderate, the eleventh joint about as long as the two preceding together. *Prothorax* distinctly more than twice as wide as long; basal lobe very broad, feeble, transverse opposite the scutellum; bead fine but rather distinct, not extending laterally beyond the lobe; surface polished, extremely minutely and obsoletely punctate, very feebly strigilate in wavy transverse lines which become almost obsolete toward apex. Scutellum ogival, slightly wider than long. *Elytra* strongly and distinctly, but very minutely strigilato-reticulate in broken transverse wavy lines throughout, alutaceous in lustre, having series of very small feeble crescentiform punctures which become larger laterally, and rather confused near the sides; intervals each with a very irregular line of similar though extremely fine punctures; discal stria fine but distinct, obsolete at basal fourth. *Abdomen* reticulate, very sparsely pubescent. *Legs* moderate, the posterior femora not unusually robust. Length 2.2 mm.

California (Fort Yuma).

The posterior tibiæ are but slightly more robust and dilated in the male, the terminal spurs in that sex being extremely unequal, the longer nearly three times as long as the shorter, and rather longer than the apical width, the corresponding tarsi being rather robust, the second joint nearly four times as long as the first, and slightly longer than the entire remainder, spongiose along the middle beneath throughout the length, the spongiose area being limited laterally, as usual, by two lines of long, very closely-placed and slender setæ; first joint not at all produced beneath the second, the attachment apparently rigid. In the female the spurs are smaller and more nearly equal, the larger but twice as long as the smaller, the tarsi more slender, especially the second joint which is not spongiose beneath.

The metasternal process is very broad, and the sternal structure in general very similar to that of the typical forms.

The setæ at the apex of the prosternal process appear to be normally three in number, but the middle one is occasionally absent, and there may sometimes be one which is superfluous and sporadic. In

the female they are more than twice as long and stout as in the male, being extremely minute in the latter sex.

The discovery of this peculiar secondary sexual character proves that these terminal setæ play a more important part in the economy of the insect than has been hitherto supposed, and that the gap separating those genera possessing them from those in which they are wanting, as for instance *Stilbus* and *Olibrus*, is even correspondingly greater. It also indicates that any classification of the species in genera possessing these setæ, based in any way upon them, must be used with more or less caution. It is only fair to state, however, that I have not been able to discover similar sexual variation in *Stilbus*, where I have separated several species because of the abnormal shortness of these setæ, and in this particular case it is of very little consequence, as the four species constituting the second group are so distinct in other characters that they can be easily identified, and after all this is the main object of taxonomical tables in such preliminary and superficial studies as the present is necessarily forced to be.

The terminal setæ in *A. calcaratus* also differ sexually, but only to a slight degree, being a little longer in the female; they are, in that species, very persistently two in number.

Besides being aberrant in this way, the present species differs greatly in coloration from the others, reminding us somewhat, but in facies only, of *Stilbus viduus*. It also appears to resemble the Central American *Olibrus submaculatus* Sharp, especially in coloration, but the sculpture and punctuation seem to be much more pronounced and evident than in that species.

#### **LIOPHALACRUS** Sharp.

The single specimen of the typical *L. bicolor* before me is in a very imperfect state, so that I cannot examine the mouth-parts or antennæ; otherwise it is extremely closely allied to *Stilbus*, and differs only in the structure of the posterior tarsi, which are comparatively short and slender, cylindrical, with the proportional length of the joints as in *Stilbus*, but with the first joint rigidly anchylosed to the second. The second joint is not remarkably long, and not quite twice as long as the first, the third being slightly dilated and deeply emarginate above. In *Stilbus* the articulation

between the first and second joints is much less rigid and the motion apparently perfectly free.

In *L. bicolor* the metasternal process is wide, strongly rounded throughout at apex, and does not extend to the anterior limits of the coxæ; the mesosternum in front of it forms a perfectly flat transverse piece, rather long, projecting beyond the coxæ, with the apex transversely truncate, and the surface bearing a transversely arcuate row of robust recumbent spinose setæ, projecting posteriorly, the line of demarcation between it and the mesosternum extremely fine. Behind the middle acetabula the mesosternum is very strongly developed, the piece being posteriorly produced in a slender cusp, extending almost to within one-third the length of the metasternum of the posterior margin of the latter. The prosternal process is rather wide, the posterior edge being free, acute, transversely truncate, and bearing a series of four or five erect robust and prominent spinose setæ.

On the upper surface the sutural bead is entirely obsolete, and the single discal stria fine, close to the suture, and rather short. The sculpture consists of very fine transverse strigilation which, however, is not sufficiently fine and close to produce an opalescent lustre. The punctures throughout are extremely minute and feeble, not transversely crescentiform, and not more distinct at the sides, in this respect being exactly similar to many species of *Stilbus*.

No species of this Central American genus has yet occurred within the United States.

### **STILBUS** Seid.

*Olistherus*<sup>1</sup> Seid.;—*Eustilbus*<sup>2</sup> Sharp.

Some of the structural characters distinguishing this genus have been before indicated, and it is only necessary to state in general that it differs from *Olibrus* in its short metasternal process, prominent and tumid mesosternum, extension of the latter behind the middle acetabula, in the form of the prosternal process which is here furnished with a distinct free edge posteriorly, and armed with a transverse series of stout setiform spinules, in the absence of a bead along the elytral suture, in the form of the eleventh joint of the

<sup>1</sup> This is not, properly speaking, a pre-occupied name, *Olistherus* being to some extent different from *Olisthærus*.

<sup>2</sup> Biol. Cent.-Amer., II, Pt. 1, p. 253.

antennæ which is not constricted in apical third, and in the form of the fourth joint of the maxillary palpi which is distinctly more robust and securiform.

It resembles *Olibrus* in the mode of antennal insertion, but differs radically in this respect from *Phalacrus*. Its relationship with *Acylopus* and *Litolibrus* has been mentioned under those genera.

The posterior tibial spurs are generally very small, slender and subequal, and in some species become quite as insignificant as in *Phalacrus*. The basal joints of the posterior tarsi are simply densely setose beneath, the second joint being but moderately elongate, generally nearly twice as long as the first, but in *nitidus* relatively shorter and but slightly longer than the first. The sculpture varies from the completely polished, as seen in *apicalis*, to a rather coarse and very strong reticulation throughout the upper surface, as seen in *subalutaceus*. The punctures are generally very minute and obscure, sometimes almost completely obsolete, the broadly crescentiform type being rare and exceptional. In *pusillus*, *modestus*, *attenuatus*, and *elongatulus*, the punctures become deeper and more distinct on certain limited portions of the elytral disk.

Our species are moderately abundant, usually widely distributed, and are somewhat diversified in structure. The four species assigned to group II, differ each very greatly from those of group I, in several peculiarities of structure or sculpture, but at the same time differ from each other to quite as great a degree. In general, the reticulation of the elytral surface, when present, is relatively somewhat coarse, and does not exhibit the transversely wavy lines so perfectly as in *Acylopus*; in *convergens* and *attenuatus* it is replaced by a very minute wavy strigilation which, however, is not sufficiently fine to produce an opalescent effect as in *Litolibrus*.

The following table will probably enable the student to recognize those species which I have been able to study:—

Spinules at the apex of the prosternal process long and conspicuous.....	<b>I</b>
Punctures of the second and third elytral series not more distinct in the middle.	
Elytra either entirely pale or very distinctly paler at the apex.	
Elytra highly polished, not reticulate except sometimes very feebly toward apex; punctures excessively minute and scarcely visible.	
Elytra paler at apex.	
Form narrowly oval, piceous, each elytron abruptly and obliquely paler at apex.....	<b>apicalis</b>

Form broadly oval, color pale castaneous; pale area at apex not well defined .....**viduus**

Elytra entirely pale.....**pallidus**

Elytra reticulate throughout.

Very small, strongly convex, the elytra acutely rounded behind; punctures obsolete; color pale throughout .....**nitidus**

Larger, more depressed.

Pale reddish-flavate throughout; punctures of the elytral series distinct, at least toward the suture.....**aquatilis**

Dark piceous-brown, the apex abruptly paler; punctures obsolete.  
**floridanus**

Elytra piceous or piceous-black throughout.

Elytra finely reticulate throughout, larger species, moderate in size.

Eighth joint of antennæ elongate.....**obscurus**

Eighth joint slightly transverse, and much shorter than the seventh.  
**obtusus**

Elytra highly polished, not reticulate; very minute species.

**nanulus**

Punctures of the second and third series from the discal stria composed of punctures which are large, deep and distinct in the middle third, but obsolete toward base and apex.

Lateral series composed of very minute, nearly obsolete punctures.

**pusillus**

Lateral series composed of widely dilated, crescentiform punctures.

**modestus**

Spinules at the apex of the prosternal process short .....**II**

Discal stria very short and feeble, not extending beyond the middle; body evenly elliptical, piceous-black, strongly reticulate ....**subalutaceus**

Discal stria normal, obsolete at basal third; body attenuate behind from the base of the elytra.

Elytra very minutely, transversely strigilate; color pale testaceous throughout.

Punctures very feeble; metasternal process very wide, the mesosternum in front of it short, transverse and tumid .....**convergens**

Punctures distinct and rather distant; metasternal process narrow, shorter, the mesosternum before it long, rather narrow and flat.

**attenuatus**

Elytra more coarsely reticulate in transverse wavy lines; color intense black above; punctures of the series rather close and very deeply impressed throughout the width.....**elongatulus**

**S. apicalis** Melsh.—Proc. Ac. Phil., II, p. 102.—Oval, strongly convex, very feebly attenuate behind the middle, about two-thirds longer than wide, highly polished, piceous-black; apex rather abruptly pale testaceous, the general blackish tint being prolonged along the suture nearer the apex; under surface rufo-testaceous; legs, antennæ and trophi paler and more flavate. *Head* polished, excessively minutely, feebly and very sparsely punc-

tate; antennæ slender, third joint not as long as the next two combined, seventh longer than wide, eighth shorter, slightly wider, slightly trapezoidal, a little longer than wide, club elongate, slender, compact and parallel; ninth joint obconical, slightly longer than wide, longer than the tenth, and two-thirds as long as the eleventh, the latter oval, three-fourths longer than wide, not constricted, narrowly rounded at apex. *Prothorax* slightly more than twice as wide as long, length equal to apical width; basal lobe very feeble; basal bead obsolete; punctures almost obsolete. Scutellum ogival, two-thirds wider than long. *Elytra* distinctly longer than wide, rather narrowly rounded at apex; sutural bead entirely wanting; discal stria very deep and strongly impressed, coincident with the suture at the apex, disappearing at basal fourth; surface smooth, highly polished, without reticulation, the punctures of the series simple, very minute, distant and excessively feeble, not becoming more distinct at the sides. *Abdomen* feebly reticulate in wavy broken lines, sparsely, asperately punctate, a transverse row of punctures along the apex of each segment more evident, coarsely pubescent. *Legs* moderate; posterior tibial spurs very small, slender, not very unequal; corresponding tarsi slender, nearly three-fourths as long as the tibiae, basal joint scarcely one-half as long as the second, the articulation perfectly free and mobile. Length 1.9–2.4 mm.

New York; Iowa; Texas; California.

The metasternal process is rather narrow, extending about two-thirds the length of the coxæ, the mesosternum being strongly developed in front of it, and slightly tumid. The post-coxal plates are narrowly and very feebly prolonged behind.

This common species, which seems to vary considerably in distinctness of coloration, is quite different from the European *consimilis*, in form, size, coloration, and especially sculpture. The entire surface of the European insect is minutely, but distinctly strigilato-reticulate.

**S. viduus** n. sp.—Broadly oval, feebly attenuate behind from anterior third, one-half longer than wide, obtusely rounded at apex, highly polished, rufo-piceous, each elytron obliquely paler at apex; under surface, legs and antennæ paler and more flavate. *Head* almost completely impunctate; antennæ rather long and slender, third joint slightly shorter than the next two together, fourth a little shorter than the fifth and equal to the sixth, club rather elongate, becoming broader from base to apex, the eleventh joint robust, the compressed apex rather transversely truncate and subangulate at the sides, very much wider than the ninth. *Prothorax* not definitely punctate; basal lobe and its beaded edge almost obsolete. Scutellum small, ogival, scarcely one-half wider than long. *Elytral* punctures and discal stria nearly as in *apicalis*, the punctures more nearly obsolete, and more decidedly visible in the lateral series. *Abdomen* rather sparsely, coarsely pubescent, asperately punctate. *Legs* rather short and slightly robust; posterior tibial spurs short, subequal,



robust; posterior tarsi nearly three-fourths as long as the tibiæ, somewhat robust, the basal joint one-half as long as the second. Length 2.3 mm.

North Carolina; Texas; Arizona.

This species resembles *apicalis* in sculpture, but is decidedly more robust, paler in color, with the apical pale area less defined than in the mature specimens of *apicalis*; the sternal characters are nearly as in that species, but the antennal club is more robust toward apex, and the tibial spurs are also more robust.

The type is a male and exhibits the strongest sexual characters which I have observed in the genus. The third segment of the abdomen has, just before the apex, a short broad porrected tooth in the middle, which does not extend beyond the apical margin, and bears along its apex seven or eight very short robust porrected spinules. The fourth segment has a feeble median impression, and the fifth has the usual very feebly defined transverse impression near the apex.

**S. pallidus** n. sp.—Evenly elliptical, about two-fifths longer than wide, polished, pale flavo-testaceous throughout. *Head* very finely, feebly punctate; antennæ slender, club slender, compact, third joint scarcely as long as the next two combined, fourth shorter than the fifth. *Prothorax* very distinctly more than twice as wide as long; punctuation obsolete; basal lobe extremely feeble, the bead obsolete. *Scutellum* ogival, wider than long. *Elytra* nearly as in *apicalis*, except that they are less attenuate and rather more broadly rounded behind, uniform testaceous in color, and with a very feeble obsolete reticulation near the apex. *Abdomen* very feebly reticulate, the reticulation very fine, dense and strong toward the base of the basal segment. *Legs* moderate or rather short; spurs of posterior tibiæ very small, slender; posterior tarsi three-fourths as long as the tibiæ; basal joint two-thirds as long as the second and more robust; first and second sparsely, finely spinose beneath; third slightly dilated, bilobed, with a tuft of whitish hair beneath. Length 1.9 mm.

Rhode Island.

The sternal characters are nearly as in *apicalis*, from which this species differs in its smaller size, pale uniform color, relatively slightly longer basal joint of the hind tarsi, and finer, stronger and denser reticulation along the base of the abdomen. The reticulation at the apices of the elytra, although very feeble, is more distinct than in *apicalis*, where it is all but totally obsolete; in *pallidus* it is distinctly traceable over most of the apical half of the elytra, being especially noticeable in lines accompanying the series of punctures.

The species is represented by two specimens which do not indicate any variation.

**S. nitidus** Melsh.—Proc. Ac. Phil., II, p. 102.—Pale reddish-flavate throughout, very convex, strongly shining, totally impunctate, the fine recumbent hairs rather long. *Head* very feebly reticulate in transverse wavy lines; antennæ rather robust, third joint shorter than the next two together, distinctly clavate, fourth shorter than the fifth, outer joints of funicle more robust, club moderate, slightly more robust toward apex, ninth scarcely longer and a little narrower than the tenth, eleventh two-thirds longer than the tenth. *Prothorax* rather more than twice as wide as long, very obsoletely reticulate; basal lobe and bead almost completely obsolete. Scutellum ogival, wider than long. *Elytra* slightly attenuate and narrowly rounded at apex, the discal stria very narrowly separated from the suture at apex, obsolete at basal third; surface minutely and distinctly reticulate in transverse wavy lines throughout, the minute recumbent hairs arranged in regular series, the punctures not evident, each being entirely filled by the hair. *Abdomen* feebly, coarsely reticulate, distinctly asperately punctate, coarsely pubescent. *Legs* rather short and robust; tibiæ short and broad, coarsely spinose; terminal spurs of the posterior very minute, subequal, not longer than some of the spinules of the terminal fimbria; corresponding tarsi short, very slightly longer than the anterior, the basal joint relatively long, about three-fourths as long as the second which is shorter than usual. Length 1.3 mm.

New York; Iowa; Texas.

The metasternum is reticulate at the sides, the process moderate in width, coarsely sparsely setose, the mesosternum in front of it much broader and distinctly prominent.

This minute species is very distinct and, as far as I have seen, has no very close allies; it is the only species in which the punctures of the elytral series become completely invisible, and confused with the fine reticulation of the surface. In very pale specimens the chitinous cells of the elytra surrounding the base of the hairs become darker, giving the appearance of series of coarse areolæ or punctures by transmitted light and under low magnifying power. The form of the body is extremely convex, resembling some of the small convex species of *Cereyon*.

The minute setigerous punctures of the elytra, described under *Phalacrus*, are observable here to a very limited extent.

**S. aquatilis** Lec.—Proc. Ac. Phil., 1856, p. 17.—Almost evenly elliptical, about two-thirds longer than wide, ochreous-flavate throughout, shining. *Head* excessively finely, sparsely punctate and very finely, feebly reticulate; antennæ nearly as in *nitidus*. *Prothorax* rather short, much more than twice as wide as long; basal lobe very broad and extremely feeble, bead almost

completely obsolete; surface very minutely but distinctly reticulate in broken transverse wavy lines, the punctures very sparse and just visible. Scutellum feebly reticulate, ogival, with the sides strongly arcuate, one-half wider than long. *Elytra* very feebly attenuate from before the middle, evenly rounded at apex; discal stria as in *obtusus*; surface finely but strongly and distinctly reticulate in wavy lines, subalutaceous in lustre; punctures of series very evident, coarser and distinctly crescentiform in the rows toward the suture and the sides, smaller and feebler but still distinctly crescentiform in the median rows. *Abdomen* coarsely pubescent, distinctly reticulate, rather strongly, asperately punctate, especially as usual toward the middle and apex. *Legs* moderate; posterior tibiæ rather slender, sparsely and coarsely setose; spurs small and rather distinctly unequal, not longer than the outer spinules, the same tarsi setose beneath, moderate in length, with the basal joint one-half as long as the second. Length 1.8 mm.

#### California.

The metasternum is reticulate but not distinctly punctate, very sparsely and rather coarsely pubescent; the sternum and sternal processes throughout are nearly as in *obtusus*, from which this species differs in its pale color, more distinct reticulation, and very notably in the character and strength of the elytral punctures. It is rare, and although fortunate enough to secure a single specimen myself, I am not certain of the exact locality; it is, however, probably southern.

**S. floridanus** n. sp.—Rather broadly oval, convex, widest a little before the middle, dark piceous-brown above, with the apex conjointly and rather abruptly paler, the anterior margin of the apical pale area posteriorly angulate in the middle, paler, flavo-testaceous throughout beneath, polished. *Head* extremely feebly, finely reticulate, the punctures very sparse and excessively minute; eyes moderate; antennæ slender, the club abrupt, rather small and slender and scarcely as long as the five preceding joints combined, ninth and tenth joints subequal, slightly transverse, eleventh oval, longer than wide, obtusely rounded at apex and rather shorter than the two preceding. *Prothorax* short, nearly three times as wide as long, with the feeblest possible trace of transverse reticulation toward the base and sides, the punctures very sparse and excessively minute; base transverse, with a small feeble sinuation at each side of, and at some distance from, the scutellum; basal bead very fine, the stria disappearing at lateral third. Scutellum small, triangular, one-half wider than long, the sides and apex rounded. *Elytra* fully three times as long as the prothorax; sides more strongly arcuate at basal fourth or fifth, thence feebly convergent behind and very feebly arcuate, the apex rather abruptly and somewhat narrowly rounded; basal stria very fine, reflexed along the scutellum; surface very finely reticulate throughout, the sculpture becoming very feeble toward base, the reticulations not forming very well-defined transverse wavy lines; single discal stria fine but distinct, dis-

appearing at basal third or fourth; disk without impressed lines, the punctures of the distant series obsolete throughout the width, and only indicated by the extremely minute recumbent hairs growing from slightly more marked retal lines at their points of origin. Under surface and legs normal, the second joint of the posterior tarsi short, about one-half longer than the first; tibial spurs very small and slender. Length 1.5 mm.

Florida (Lake Poinsett). Mr. Schwarz.

A small species allied to *apicalis* and *consimilis*, but distinguished from the former by its smaller size, more broadly oval, less convex and more posteriorly attenuate form, and elytral reticulation, and from the latter by its shorter prothorax, more abruptly marked apical pale area, less convex form and other characters.

**S. obscurus** n. sp.—Rather broadly oval, piceous above; antennæ, legs and under surface pale testaceous; upper surface polished. *Head* extremely feebly and sparsely punctate; antennæ rather slender, third joint shorter than the next two together, fourth much shorter than the fifth, club rather slender, sides nearly parallel, ninth joint much longer than the tenth and slightly shorter than the eleventh. *Prothorax* scarcely visibly and very sparsely punctate, not reticulate; basal lobe very broad and feeble, the marginal bead almost obsolete. Scutellum one-half wider than long. *Elytra* more strongly narrowed behind in apical half, rather strongly rounded at apex, unicolorous or sometimes very feebly paler toward apex; discal stria strong, obsolete at basal third or fourth, punctured as in *apicalis*; surface finely, feebly but distinctly reticulate, the reticulations visible over the entire surface except in the vicinity of the base, where they become obsolete, generally in very broken wavy lines on the upper portions of the disk. *Abdomen* very strongly reticulate, the portions very near the base, and also the metasternum toward the sides, almost granulose. *Legs* moderate; posterior tarsi rather short and robust, scarcely two-thirds as long as the tibiæ, setose beneath, the first joint two-thirds as long as the second; tibial spurs small. Length 1.8–2.0 mm.

Iowa. Mr. Wickham.

The metasternal process is rather wider than in *apicalis*, and the mesosternum in front of it is very strongly tumid and prominent. The sexual characters are nearly as in *viduus*, except that the tooth of the third segment is more deflexed, with the spinules excessively short. This species is very easily distinguishable from *apicalis* and *viduus* by its small size, more rounded form, dark piceous color, which does not become noticeably paler at apex except from the transparency of the elytra, and by the reticulation of the upper surface; it is represented by a good series of specimens, and does not vary appreciably.

**S. obtusus** Lec.—Proc. Ac. Phil., 1856, p. 17.—Almost evenly elliptical, moderately convex, blackish-piceous throughout the body, legs and antennæ; tarsi slightly paler; upper surface shining. *Head* very feebly and sparsely punctate; antennæ nearly as in *nitidus*, but with the ninth joint rather longer. *Prothorax* extremely minutely, feebly and sparsely punctate, extremely obsolete reticulate in broken wavy lines; basal lobe very broad and feeble, the bead very fine but somewhat distinct. Scutellum one-half wider than long. *Elytra* rather obtusely rounded behind, finely but rather distinctly reticulate in transverse wavy lines over the entire disk; discal stria very strong, coincident with the suture at the apex, becoming obsolete at basal third or fourth; punctures of the series very fine and feeble but visible, not more distinct but rather wider at the sides, where, however, they do not become crescentiform, but simply a slight deepening of the lines forming the reticulation at the points of attachment of the hairs. *Abdomen* reticulate, sparsely, coarsely pubescent. *Legs* moderate; spurs of posterior tibiæ very small, subequal, and about as long as the exterior spinules of the terminal limbria; the corresponding tarsi rather slender, nearly three-fourths as long as the tibiæ, with the basal joint one-half as long as the second. Length 1.5 mm.

California (Santa Cruz Co.).

The metasternal process in this species is rather broad, reticulate but not distinctly punctate, the mesosternum transversely, moderately prominent in front of it, the prosternal process strongly dilated and broadly rounded at apex, the spinules rather close and very stout, distinctly shorter than in *apicalis*, but rather longer than in *attenuatus*, in this respect approaching the second of the arbitrary groups into which I have divided the genus.

The type of LeConte seems to be an unusually robust specimen, and I have several which are distinctly narrower. The under surface and antennæ are sometimes paler from immaturity.

**S. nanulus** n. sp.—Narrowly and evenly elliptical, strongly convex, highly polished, piceous-black throughout above; legs, antennæ and under surface testaceous. *Head* without trace of punctuation or reticulation; antennæ rather short, the funicle very slender, the outer joints more robust, club rather large and compact, the ninth joint but very slightly longer than the tenth, the eleventh almost as long as the two preceding together, although moderate in length. *Prothorax* impunctate and not at all reticulate, the median basal lobe broadly arcuate and rather well developed, the marginal bead obsolete. Scutellum small, oval, about two-thirds wider than long. *Elytra* highly polished, without trace of reticulation except near the apex and narrowly along the sides, where it is very feeble and not at all distinct; discal stria strongly impressed, totally impunctate, obsolete at basal third; punctures of the discal series completely obsolete and only represented by the minute hairs, except abruptly, very near the sides, where they become dilated, distinct and cres-

centiform, although not at all deeply impressed. *Abdomen* somewhat coarsely and densely, asperately punctate, and very coarsely pubescent. *Legs* very short and somewhat robust; the posterior tibiæ more strongly arcuate within, strongly setose, nearly spinulose externally; spurs very small, slender, unequal; the corresponding tarsi four-fifths as long as the tibiæ, one-half longer than the anterior, with the first joint about two-thirds as long as the second. Length 1.0–1.2 mm.

New Mexico (Albuquerque). Mr. H. F. Wickham.

The metasternal process is short and very broad, coarsely reticulate, but with the lines very feeble, truncate at apex, very sparsely pubescent, the mesosternum before it moderate in length, not very tumid, pubescent at the sides only. The prosternal process is broad, the terminal setose spines long and conspicuous.

This is the most minute species known to me within our faunal limits, and is so distinct in all its characters that it cannot be mistaken for any other.

**S. pusillus** Lec.—Proc. Ac. Phil., 1856, p. 17.—Oval, slightly attenuate behind from anterior third, strongly convex, piceous-black throughout above, pale testaceous beneath, strongly shining. *Head* very minutely, feebly punctate, not reticulate; eyes rather large; antennæ moderate, third joint clavate, nearly as long as the next two together, outer joints of funicle but slightly more robust, seventh much longer than the eighth, the latter strongly transverse, club rather long and slender, the ninth joint longer than wide, longer than the tenth and much shorter than the eleventh. *Prothorax* excessively minutely and feebly punctate, not at all reticulate; basal lobe extremely feeble, broad, the marginal bead almost obsolete. Scutellum one-half wider than long. *Elytra* finely and distinctly reticulate in wavy broken transverse lines; discal stria obsolete at basal third, rather deeply impressed, punctate anteriorly; surface with rows of punctures of which the two nearest the suture are very distinct, but obsolete in basal and apical third, rather deeply impressed and very narrowly but strongly crescentiform; the rows thence to the sides composed of more minute and very feeble punctures, which are not larger or more distinct, and rather more confused near the sides, except a regular series just within the extreme lateral bead which is composed of slightly larger, more closely placed and feebly dilated punctures. *Abdomen* very sparsely, feebly punctate and pubescent. *Legs* slender; posterior tibiæ slightly wider at apical third than at apex, spinose, especially externally; terminal spurs minute, the tarsi slender, with the basal joint rather more than one-half as long as the second. Length 1.1–1.3 mm.

Florida; Texas (Galveston).

The post-coxal portion of the mesosternum is indefinitely limited and angulate behind; the metasternum is very strongly reticulate, and rather densely and distinctly punctate and pubescent in the

middle posteriorly; the process is wide, short, much smoother, very sparsely pubescent and not distinctly punctate; the mesosternum in front of it very short and feebly tumid, not at all conspicuous. The prosternal process is very strongly dilated at apex, the setose spines unusually long.

This minute species is abundant and widely distributed throughout the Gulf States.

**S. modestus** n. sp.—Somewhat broadly oval, very feebly narrowed behind the prothorax, polished, rather dark brownish-testaceous above, the legs, antennæ and under surface pale flavo-testaceous. *Head* extremely obsolete and sparsely punctate, not at all reticulate; eyes moderate; antennæ rather slender, third joint nearly as long as the next two together, the fourth shorter than the fifth, seventh longer than the eighth, the latter slightly transverse, club rather slender and compact, ninth joint but slightly longer than the tenth, and but slightly more than one-half as long as the eleventh. *Prothorax* nearly as in *pusillus*. Scutellum two-thirds wider than long. *Elytra* finely and distinctly reticulate throughout in transversely wavy broken lines; discal stria strongly impressed, punctate anteriorly, obsolete at basal third, the punctures of the two rows nearest the suture very strongly impressed, but obsolete in basal and apical third, the punctures of the remaining rows thence to the lateral margins very feeble but broad and distinctly crescentiform, becoming broader in the lateral rows. *Abdomen* shining, sparsely, coarsely pubescent, much more densely so toward the middle and apex. *Legs* rather slender, moderate in length; posterior tibiæ rather wider at apical third than at apex, having series of spinose setæ, more evident along the external edge; terminal spurs very small, slightly unequal; the corresponding tarsi very slender, but slightly shorter than the tibiæ, with the basal joint fully one-half as long as the second. Length 1.3–1.5 mm.

Texas (Austin).

The post-coxal portion of the mesosternum is not at all defined posteriorly; the metasternal process is short and broad, densely pubescent, the mesosternum in front of it rather long, feebly tumid, scabrous and rather densely, coarsely pubescent; the prosternal process is very abruptly, strongly dilated at apex, the terminal setæ very long and conspicuous.

The nature of the elytral punctuation, especially in the lateral series, the larger size, paler coloration, and more prominent mesosternum will readily distinguish this species from *pusillus*, to which it is otherwise closely allied. It was taken in considerable abundance.

**S. subalutaceus** n. sp.—Almost evenly oval, fully two-thirds longer than wide, strongly convex, moderately shining, piceous-black throughout

above; legs, antennæ and under surface dark testaceous. *Head* finely and strongly reticulate, the reticulations rounded and not tending in the least to a linear arrangement; antennæ moderate, coarsely setose, fourth joint shorter than the fifth, club rather robust, moderate in length, the eleventh joint but slightly longer than the ninth. *Prothorax* more than twice as wide as long; base transverse, without a median lobe but slightly sinuate for a short distance each side of the scutellum; bead very minute; surface not visibly punctate, finely reticulate, the reticulations tending to a transverse arrangement. Scutellum ogival, nearly twice as wide as long, transversely reticulate. *Elytra* tending and very strongly reticulate over the entire surface, the reticulations tending to form very broken transverse wavy lines; punctures of the series almost completely obsolete although perceptible, scarcely more visible at the sides, where they become slightly wider but not at all crescentiform; discal stria feeble, coincident with the suture at the apex, very short, disappearing in a row of feeble punctures at about the middle. *Abdomen* strongly reticulate, sparsely, finely punctate, very sparsely pubescent. *Legs* moderate, tibiæ slender; posterior spurs small, subequal, the corresponding tarsi about two-thirds as long as the tibiæ, with the basal joint more than one-half as long as the second. Length 1.4 mm.

New Jersey (Cape May).

The metasternal process is very wide, broadly rounded at apex, the mesosternum in front of it rather short, transverse and but very slightly tumid; the prosternal process is wide, and the spinules along its apical margin very short and widely distant. The surface of the metasternum in the middle anteriorly is extremely sparsely pubescent, and not visibly punctate.

The dark color and sternal structure will at once distinguish this small species from *nitidus*, which it somewhat resembles in elytral sculpture and punctuation, and the short very feeble discal stria separates it from every other species of the genus known to me. It appears, however, to resemble the Mexican *Olibrus porrectus* Sharp, which is almost certainly not an *Olibrus*.

**S. convergens** n. sp.—Somewhat narrowly oval, very convex, polished, dark rufo-testaceous throughout, distinctly attenuate behind from the base of the elytra, the apex narrowly subtruncate and about one-half as wide as the base. *Head* finely but rather distinctly punctate, more densely so toward the eyes and base, not at all reticulate; antennæ moderate in length, third joint rather shorter than the next two together, fourth shorter than the fifth, seventh and eighth subequal in length, more robust, club very long and strongly developed, ninth and tenth joints equal in length, more acutely angular on the anterior side which is more densely pubescent, eleventh nearly as long as the two preceding. *Prothorax* rather long, not more than twice as wide as long, highly polished, not reticulate, very minutely and rather sparsely punctate;



basal lobe very feeble, the marginal bead obsolete. Scutellum very short and broad, more than twice as wide as long. *Elytra* excessively minutely and feebly strigilate, having series of very minute simple punctures which, abruptly, near the sides, become strongly transverse, confused and feebly crescentiform, the sculpture also becoming more granulato-reticulate; discal stria deeply impressed, obsolete at basal third. *Abdomen* sparsely, coarsely pubescent, the transverse rows near the apices of the segments almost spinose. *Legs* moderate in length, rather robust; spurs of posterior tibiae slightly robust, moderate in length, and very slightly unequal; posterior tarsi rather robust, the third joint rather strongly dilated and bilobed, first joint about two-thirds as long as the second, the latter spinose beneath and longer than the fifth which is very slender. Length 2.0 mm.

Florida. Mr. Schwarz.

The metasternal process is very broad and rather long, advancing almost to the anterior limits of the coxæ, subtruncate at apex with the lateral beaded margin very wide, the surface polished, and almost completely impunctate and glabrous, the mesosternum before it very short, slightly tumid, glabrous in the middle but scabrous and setose at the lateral angles. The prosternal process is broad, dilated at apex, having a fine strong beaded margin throughout the sides and apex, the setæ of the transverse apical series very short but numerous.

This is a decidedly aberrant species, especially in tarsal structure. It is also peculiar in having the small foveæ at the sides of the head near the eyes quite as well developed as in *Phalacrus*.

**S. attenuatus** n. sp.—Narrowly ovoidal, convex; sides of the elytra gradually convergent from base to apex, the latter narrowly rounded; dark rufo-testaceous throughout, polished. *Head* very strongly retractile, polished, not reticulate, very minutely and sparsely punctate; antennæ nearly as in *convergens*, the club rather more slender and more symmetrical. *Prothorax* not more than twice as wide as long, the sides rather feebly arcuate; basal lobe almost completely wanting, the marginal bead nearly obsolete; surface not reticulate, excessively finely, feebly and very sparsely punctate. Scutellum very short, twice as wide as long. *Elytra* excessively minutely strigilate in transverse wavy lines which are obsolete toward suture and base; discal stria distinct, obsolete at basal third; punctures of the series equal throughout the width from the suture to the sides, deeply impressed, narrowly and strongly crescentiform and distinct, except near the base and toward apex where they become nearly obsolete; intervals each with a single more irregular series of very feeble and much smaller punctures of the same general character, the series not confused near the sides. *Abdomen* finely reticulate, sparsely, coarsely pubescent. *Legs* somewhat robust; posterior tibiae more arcuate within, rapidly narrowed toward base; spurs very small, slightly unequal; tarsi slightly robust, basal joint two-thirds as long as the second. Length 1.6 mm.

New York; Michigan; Texas.

The head is strongly retracted within the prothorax in each of the single representatives of the above localities. The metasternal process is rather narrow, short, strongly rounded at apex, and strongly beaded at the sides, the mesosternum in front of it unusually long but almost perfectly flat and not setose, except very sparsely at the sides. Prosternal process rather wide, extending rather further than usual beyond the coxæ, with the free edge strongly, transversely arcuate, and very acute; the process is very minutely beaded at the sides, but not at all at apex, where the setiform spinules are short, erect and very widely spaced.

This species is quite as aberrant as *convergens*, but does not at all resemble it in the structure of the sterna. The post-coxal portion of the mesosternum is not as long as in some other species, but is very clearly and abruptly limited throughout by an evenly arcuate declivous line. The terminal setæ of the prosternal process are not quite as short as in *convergens*, but are very much more widely spaced, being only about four in number.

**S. elongatulus** n. sp.—Subelongate, convex, polished, black above, the elytra gradually slightly paler at apex; under surface pale, rufo-testaceous throughout; sides feebly convergent behind from the base of the elytra. *Head* retractile, feebly convex, rather closely but extremely finely punctate; surface not reticulate; eyes rather large; antennæ slender, the club slender, somewhat compact, attenuate toward base, the ninth joint rather longer than wide, longer and narrower than the tenth, eleventh about as long as the two preceding. *Prothorax* rather elongate, scarcely twice as wide as long; sides evenly, distinctly arcuate; surface polished, not at all reticulate, excessively minutely punctate, the punctures not very sparse; basal lobe extremely feeble, the bead fine but distinct near the middle, obsolete laterally. Scutellum small, nearly twice as wide as long, angulate; sides straight, abruptly arcuate near the base. *Elytra* rather distinctly more than twice as long as the prothorax; sides nearly straight toward base, together somewhat narrowly rounded behind; basal stria fine, reflexed along the scutellum, the single discal stria very coarse and deeply impressed, becoming gradually feebler and punctate toward base; disk coarsely and strongly reticulate in well-defined transverse wavy lines, the sculpture becoming abruptly almost obsolete near the base, having rather distant rows of coarse deeply-impressed rounded punctures, which are scarcely perceptibly stronger toward the suture, the rows not attaining the base and becoming gradually obsolete toward the apex, the punctures of the lateral rows distinct but not dilated, the rows not accompanied by impressed lines. Length 1.3 mm.

Florida (Tampa). Mr. Schwarz.

The structure of the under surface agrees quite closely with that of *attenuatus*, to which this species is most unquestionably allied, but from which it is abundantly distinct in size, coloration, and punctuation, the punctures of the elytral series being much less widely spaced and more numerous.

### LITOCRUS Erichs.

This genus, and the two which follow, are distinguished from all the others of the family by an abrupt and very radical difference in the structure of the posterior tarsi, for here, instead of the basal joint being very much shorter than the second, it is correspondingly longer, and in the present genus is extremely developed.

The four species which are assigned below to *Litochrus*, possess the following assemblage of characters, *pulchellus* being assumed as the type:—

Ligula short, broad, with a small median tooth at apex, the paraglossæ large, dilated, semimembranous, rather thick and slightly reflexed. Labial palpi very short and robust, first joint minute, triangular; second oblique, short, slightly longer than the first, strongly transverse; third longer than the two preceding together, extremely robust, subquadrate, slightly longer than wide, strongly compressed and broadly, transversely truncate at apex. Prosternal process inflexed at apex, not setose. Mesosternum in front of the metasternal process very short and transverse, not prominent, forming a fine undilated bead behind the middle coxæ. Metasternal process rather long and wide. Posterior tibiae and tarsi very slender, the first joint of the latter much longer than the entire remainder; tibial spurs well developed, slender.

The true *Litochrus* of Erichson agrees with this, according to description, in the structure of the ligula, but differs greatly in the labial palpi,<sup>1</sup> and the species here assigned to it may possibly have to be separated. The fact that widely different localities have been assigned to the genus by its author, renders it almost certain that several genera have been confounded, more especially as we know now that there are several distinct genera with elongate basal joint

<sup>1</sup> The labial palpi are described by Erichson as having the first joint long, somewhat longer than the second, the third elongate-ovoidal, which is much more true of either *Litochropus* or *Ocbrolitus*, than it is of the American species of *Litochrus*. This is, however, a matter which cannot be satisfactorily settled until the entire family is monographically revised.

in North America alone. The original description probably refers to either the Madagasean, New Holland or Tasmanian representatives.

Our four species may be easily separated as follows:—

Castaneous; elytra each with two large oblique spots of pale flavate.

**pulchellus**

Piceous-black; elytral suture, lateral and apical margins, and a transverse band at basal third paler, rufo-testaceous.....**crucigerus**

Piceous above throughout, the suture sometimes very narrowly, indefinitely and feebly rufescent.....**immaculatus**

Intense black throughout above.....**aterrimus**

**L. pulchellus** Lec.—Proc. Ac. Phil., 1856, p. 17.—Evenly and not very broadly oval, moderately convex, dark brownish-testaceous, the elytra each with two oblique pale flavate spots, one near the base and the other near the apex, the latter the larger, neither attaining the suture or the lateral margin, the anterior extending from near the humeri to anterior third, and slightly sinuous; under surface throughout pale flavate. *Head* polished, extremely minutely and rather sparsely punctate; eyes large; antennæ slender, outer joints of funicle slightly more robust and slightly transverse, third not as long as the next two combined, club slender, as long as the seven preceding joints, eleventh distinctly longer than the two preceding together. *Prothorax* short, much more than twice as wide as long, polished, not reticulate, very finely, moderately sparsely punctate; basal lobe wide, abrupt, short but very distinct, the apex transverse; marginal bead obsolete. Scutellum angulate, slightly wider than long; sides feebly arcuate. *Elytra* very minutely but distinctly strigilate in transverse wavy lines throughout, having series of very wide feeble and feebly crescentiform punctures, which become wider near the sides where the series are still regular; intervals near the sides with single regular series of very small punctures of similar nature, which, toward the suture, become much more minute and feeble, and confusedly dispersed over the entire interval, especially between the discal striæ; the latter fine but distinct, obsolete at basal third or fourth, the first continuous to the apex, the second coincident with the first at apical fifth; sutural bead obsolete, except toward apex, where it is excessively fine, feeble and just traceable. *Legs* very slender; posterior tibial spurs slender, long and distinct, slightly unequal, the tarsi extremely slender, cylindrical, the first joint fully one-third longer than the entire remainder. Length 1.1–1.7 mm.

Florida; Texas.

The metasternal process is wide, and extends to the anterior limits of the coxæ, the mesosternum before it being very short and transverse, and not at all prominent; the prosternal process is rather wide and feebly dilated at the inflexed apex.

**L. crucigerus** n. sp.—Narrowly, almost evenly elliptical, strongly convex, polished, piceous-black, the suture and lateral and apical margins

narrowly, and a transverse line crossing the suture at basal third paler, rufo-testaceous, the pale areas not very abruptly limited; under surface pale flavo-testaceous. *Head* and antennæ nearly as in the preceding species, the former more sparsely and unevenly punctate. *Prothorax*, scutellum and strigulation of the elytra nearly as in *immaculatus*, the former slightly more sparsely punctate. *Elytra* having rows of extremely wide crescentiform punctures, nearly as in the preceding species, but rather more strongly impressed, the punctures of the intervals very small but distinct toward the suture, becoming almost obsolete laterally; two discal striæ distinct, obsolete at basal third. *Legs*, tarsi and sternal structure nearly as in *pulchellus*. Length 1.5 mm.

Florida. Mr. Schwarz.

This species differs conspicuously from the others in coloration, but the structural characters are nearly alike in all of them, the punctures in general, and especially the very strongly transverse crescentic punctures of the elytra, are, however, decidedly most distinct in the present species.

**L. immaculatus** n. sp. (Zimm. MS.)—Narrowly and almost evenly oval, strongly convex, polished; upper surface dark piceous, the suture feebly rufescent; under surface throughout pale flavo-testaceous. *Head* not reticulate, polished, finely but rather distinctly punctate, the punctures broadly, feebly impressed; eyes rather large; antennæ nearly as in *pulchellus*. *Prothorax* much more than twice as wide as long, polished, not reticulate, the basal lobe abrupt, short, distinct, truncate, the marginal bead obsolete; punctures sparse, very fine but somewhat distinct, broadly, very feebly impressed. Scutellum nearly twice as wide as long; sides strongly arcuate toward base, straight near the apex; angle not appreciably rounded. *Elytra* finely, transversely strigulate in wavy lines; sutural bead, discal striæ and punctures of the principal series nearly as in *pulchellus*, the punctures of the intervals excessively minute and feeble, and almost obsolete even toward the sides. *Abdomen* shining, coarsely reticulate, the lines very fine, very sparsely pubescent. *Legs* slender; posterior tarsi extremely slender, the first joint much longer than the entire remainder. Length 1.5 mm.

New Jersey; South Carolina.

The metasternum is shining, coarsely reticulate, the lines very fine; surface very sparsely pubescent, almost impunctate except posteriorly toward the middle, where the punctures are fine and subasperate; process broad, extending to the anterior limits of the coxæ, feebly constricted near the apex, the latter broadly, feebly arcuate, the mesosternum before it extremely short, transverse, finely setose, not prominent; the prosternal process is moderate in width.

This species is more narrowly oval and convex than *pulchellus*, and is very differently colored.

**L. aterrimus** n. sp.—Oval, about two-thirds longer than wide, strongly convex; sides very feebly convergent behind from near the base of the elytra; intense black throughout above, paler, piceous beneath, the legs and antennæ flavate; shining. *Head* not reticulate, very minutely and rather sparsely punctate; eyes moderate; antennæ rather short, third joint elongate, obconical, rather longer than the next two, four to eight very short, compact; club small and slender, about as long as the preceding seven joints combined, ninth just visibly longer and wider than the tenth, eleventh oval, a very little longer than wide, shorter than the two preceding. *Prothorax* rather short, more than twice as wide as long, extremely minutely and obsoletely punctate, not at all reticulate, the basal lobe broad and rather strong, the marginal bead almost completely obsolete. Scutellum triangular, two-thirds wider than long. *Elytra* rather more than three times as long as the prothorax, evenly and somewhat narrowly rounded at the apex; discal striæ very fine, vanishing at basal third, the first continuous to the apex, the second approaching very near but not joining the first at apical fifth or sixth; disk coarsely reticulate in very wavy broken lines, having distant regular rows of small widely-spaced crescentiform and very feeble punctures, which become slightly wider and stronger near the sides, the punctures of the intervals almost completely obsolete. *Legs* moderate; posterior tibiæ very slender, cylindrical, the terminal spurs very unequal and rather long, the corresponding tarsi very slender and cylindrical, the first joint just visibly longer than the remainder. Length 1.2 mm.

Florida (Biscayne Bay). Mr. Schwarz.

Remarkably distinct in its intense black color and feeble punctures. The eyes are, as usual, very coarsely faceted, the facets, however, unusually convex, especially beneath. The metasternal process is wide and long, extending slightly beyond the coxæ, the apex feebly arcuate, the sides parallel, very finely beaded and not at all incurvate; the mesosternum forms a very thick and even apical bead. In *crucigerus* and *immaculatus* the metasternal process is narrower, the sides being distinctly, although feebly, incurvate.

#### LITOCHIROPUS n. gen.

Mentum slightly wider than long, transversely truncate at apex, the sides strongly lobed just before the middle. Ligula small, narrow and rather short, deeply and distinctly sinuate in the middle at apex, not at all dentate, the paraglossæ very small and nearly obsolete. Labial palpi moderate; first joint slightly longer than wide, distinct, but much shorter and narrower than the second, the latter feebly obconical; third not strongly compressed, but slightly wider than the second, oblique, dilated toward base, attenuate toward apex, as long as the two preceding combined. Maxillary palpi well developed: second and third joints obliquely truncate at apex, the latter shorter and not as long as wide; fourth slightly longer than the preceding three together, not wider than the second, cylindrical in the basal half, feebly narrowed toward

apex in the apical half. Antennæ with the club very long and finely, asperately punctate throughout. Prosternal process moderate in width, the apex inflexed and unarmed; metasternal process rather wide, with the sides parallel, rather long, extending fully to the anterior limits of the coxæ, broadly, evenly rounded at apex. Mesosternum in front of the metasternal process forming a very thick, strongly prominent, feebly scabrous and minutely setose marginal bead, which becomes fine along the inner side of the coxæ, and is dilated behind the middle acetabula as in *Acylomus*. Legs slender; posterior tarsi very slender, cylindrical, nearly as in *Litochrus*, but with the first joint scarcely four-fifths as long as the entire remainder; posterior tibial spurs moderate, very slender, decidedly unequal.

In the structure of the ligula, labial palpi, and the extension of the mesosternum behind the middle acetabula, this genus differs very greatly from those species which we consider *Litochrus* and represented by *pulchellus* as a type; the basal joint of the posterior tarsi is also distinctly shorter, and the third joint of the latter is very obliquely truncate at apex, the fourth with its ill-defined basal lobe being inserted at the middle of the truncation.

**L. scalptus** n. sp.—Rather broadly oval, piceous-black throughout above; under surface, legs and antennæ very pale flavate; polished. *Head* finely, sparsely but rather distinctly punctate; eyes unusually small; antennæ robust, the club almost as long as the entire remainder, third joint fully as long as the next two together, outer joints of funicle robust and transverse, ninth and tenth subequal in length, eleventh as long as the two preceding. *Prothorax* very feebly, sparsely and obsoletely punctate, polished; basal lobe as in *Litochrus* but more feeble; marginal bead obsolete. Scutellum ogival, nearly twice as wide as long. *Elytra* entirely polished, without trace of fine sculpture, having series of long fine transverse scratches, the punctures entirely obsolete, although each of the fine lines has a very minute recumbent hair in the middle, the lines feebler toward base and apex, the series so close that the transverse lines are sometimes continuous laterally; sutural bead subapical, excessively fine; discal striæ obsolete at basal third, distinct, the first continuous to the apex, the second coincident with the first at apical fourth. *Abdomen* finely, feebly reticulate, sparsely, coarsely pubescent. *Legs* moderate in length. Length 1.5–1.7 mm.

North Carolina; District of Columbia.

The posterior tibiæ, in the males, are slightly more robust than in the females, but there does not seem to be any decided sexual difference in the terminal spurs or tarsi.

The remarkable transverse scratches, which are an extreme modification of the ordinary type of transversely crescentic punctures, are peculiar to *Litochropus* and *Oehrolitus*, and it is probable that *Litochrus globulus* Sharp, should be assigned to the present genus.

**OCHROLITUS** Sharp.

This genus is well distinguished from either of those which precede by the structure of the prosternal process, which is here more developed, projecting beyond the anterior coxæ, having the apex free, with an acute edge which is transversely arcuate.

The two species described below differ generically. I did not receive the type of *tristriatus* until a time subsequent to the printing of the table of genera, given on page 91, and had previously regarded *rubens* as a typical form of the genus; it is therefore undesirable, at present, to create a new genus for the latter species, although this must be done when the family is monographically revised. The species are very easily distinguishable as follows:—

Prosternal process moderate in width, feebly, longitudinally convex, extending but slightly beyond the coxæ, the apex moderately dilated, very feebly arcuate, unarmed. Mesosternum not developed behind the middle acetabula. First joint of the posterior tarsi much longer than the next two combined. Discal striæ three in number .....	<b>tristriatus</b>
Prosternal process wider and longer, projecting distinctly beyond the coxæ, flat, spatuliform, the apex very strongly rounded and bearing a series of five or six long spinose setæ. Mesosternum developed as a short arcuate plate behind the middle acetabula. Basal joint of the posterior tarsi shorter, subequal in length to the next two together. Discal striæ two in number.....	<b>rubens</b>

**O. tristriatus** n. sp.—Oval, very convex, rather more than one-half longer than wide, widest near the base of the elytra, the sides thence very feebly convergent behind; upper surface shining, dark piceo-rufous, the elytra slightly opalescent; beneath paler, rufo-testaceous. *Head* not reticulate, very finely but distinctly and rather densely punctate; eyes moderate; antennæ long and well developed, second joint small, much shorter than the third, the latter equal in length to the fourth and but slightly longer than the fifth, eighth but slightly wider than the seventh, scarcely as wide as long; club nearly symmetrical, rather loose, as long as the five preceding joints combined, ninth joint very slightly longer than the tenth and fully two-thirds as long as the eleventh. *Prothorax* large, but slightly more than twice as wide as long, the base very feebly incurvate between the basal angles, the basal lobe rather wide but excessively feeble, the bead completely obsolete; surface not reticulate, extremely minutely and moderately sparsely punctate, the fine hairs unusually long and distinct. Scutellum triangular, nearly twice as wide as long. *Elytra* scarcely more than twice as long as the prothorax, the apex evenly, semicircularly rounded, excessively minutely and densely strigilate, the lines not resolvable under a power of 80, having long transverse very distinct, and anastomosing scratches, from which arise the fine but rather



distinct hairs, the latter not being very definitely arranged; each elytron with three distinct discal striæ, vanishing at about basal third, and converging toward the apex, the outer two slightly abbreviated; sutural bead fine, but distinct toward the apex. *Legs* rather robust; posterior tibiæ cylindrical, narrowed in basal third, almost transversely truncate, the spurs long and very unequal, the corresponding tarsi long, cylindrical, the basal joint one-third longer than the next two together. *Metasternum* coarsely and strongly punctate toward the middle. Length 2.1 mm.

Florida (Key West). Mr. Schwarz.

The metasternal process is narrow and rather short, the mesosternum before it forming a rather long gradually declivous piece, feebly enveloping the coxæ at the sides,—almost exactly as in *Litolibrus*—and not developed behind the middle acetabula, except as a fine marginal bead. The prosternal process is finely beaded at the sides but not at the free acute and feebly arcuate apex, the latter being also devoid of true spinose setæ.

There can be but little doubt that this species is a complete representative of *Ochrolitus*, but it is also certain, on comparison with the carefully drawn figure of *O. optatus* Sharp, that it cannot be identical with that species. In the present form the transverse scratches are very strong and extend throughout the elytral disk, except very near the base.

**O. rubens** Lec.—Proc. Ac. Phil., 1856, p. 16.—Evenly, moderately broadly oval, strongly convex, polished, bright rufous throughout above and beneath. *Head* finely, sparsely punctate, polished; eyes moderate; antennæ moderate, funicle rather slender, outer joints slightly robust, the eighth decidedly wider and rather strongly transverse, third as long as the fourth and fifth, the latter equal, longer than wide, club robust, moderate in length, nearly symmetrical, ninth and tenth joints nearly equal in length, the eleventh as long as the two preceding combined. *Prothorax* rather long, but slightly more than twice as wide as long, polished, almost completely impunctate; basal lobe excessively feeble, not abruptly limited, the marginal bead obsolete. *Scutellum* small, ogival, wider than long. *Elytra* excessively minutely, transversely strigilate in wavy lines toward apex only, covered throughout except toward base with very deep long transverse scratches, which are sometimes broadly angulate at the minute hairs, the punctures rather distinct near the suture; discal striæ strong, obsolete at basal fifth or sixth, the second coincident with the first at apical fourth. Posterior tarsi very slender, cylindrical, the basal joint three-fourths as long as the entire remainder; tibial spurs well developed, unequal. Length 1.8 mm.

North Carolina; Florida.

This is a very distinct species which appears to be rather rare;

I have seen three specimens. The setæ of the prosternal process are not erect as in the *Stilbide* genera, but perfectly porrected. The metasternal process is rather long, moderate in width, projecting almost to the anterior limits of the coxæ, the apex truncate, the mesosternum before it abruptly declivous and not in the least prominent.

## CORYLOPHIDÆ.

### ÆNIGMATICUM Matth.

This singular genus was described by me from some Californian specimens, before the appearance of Mr. Matthews' description in the *Biologia Centrali-Americana*, but I was somewhat at a loss where to place it, hesitating between the *Corylophidæ* and *Latridiidae*.

The following species occurs in great abundance near San Francisco, in moist places among the roots of grasses, and I have also shaken it from small shrubs in the vicinity of Oakland.

**Æ. californicum** n. sp.—Form rather slender, dark piceous-brown, moderately shining, but without trace of metallic lustre; pubescence cinereous. *Head* small, subtriangular; eyes rather large, at the base, convex, coarsely faceted; front emarginate at each side before the eyes, feebly convex, finely, feebly granulose, very finely, feebly, sparsely punctate, each puncture bearing a small subrecumbent hair. *Prothorax* two and one-half times as wide as the head, scarcely one-third wider than long, widest at the middle; sides broadly, evenly rounded in the apical half, feebly convergent, straight and feebly, minutely serrulate thence to the basal angles, which are slightly obtuse but not at all rounded; apex and base broadly, evenly and feebly arcuate, the latter distinctly the wider, disk feebly, evenly convex, finely subgranulose, slightly alutaceous, rather coarsely, deeply, but somewhat sparsely punctate, finely sparsely pubescent. *Scutellum* moderate, very strongly transverse, smooth and polished. *Elytra* one-fifth longer than wide, widest near the middle, one-fifth wider and two-thirds longer than the prothorax; sides broadly arcuate; apex angularly emarginate, exterior angles rounded; disk feebly convex, shining, not distinctly alutaceous, very feebly and finely reticulate, finely, feebly and sparsely punctate; punctures rather obsolete, not arranged in well-defined order; pubescence very fine and sparse. *Legs*, antennæ and under surface, except the abdomen, much paler, brownish-testaceous, the latter piceous-black. Length 0.8–0.9 mm.

California (San Mateo and Alameda Cos.).

Differs from the Central American *ptilioides* Matth. in its larger size, more elongate prothorax, and shining elytra and scutellum.

The fifth antennal joint in *ptilioides* is represented on the plate as being slightly elongate; it is correspondingly transverse in the present species, and the joint immediately before the club is strongly transverse and not elongate as in *ptilioides*. The sutural stria is feeble and continuous with the basal stria.<sup>1</sup>

## BYRRHIDÆ.

### LIMNICHUS Latr.

The species of this genus, although but moderately numerous in the United States, appear to be much more abundant and diversified in structure than their European congeners. Our species have never been fully described, and have been somewhat neglected by systematists. The table given by LeConte (Bull. U. S. Geol. Surv., V, p. 515), bears evidence of insufficient observation, and I have not found it of very great service in identifying the species, which in reality are well differentiated. They may be divided as follows into four subgeneric groups, which are perhaps of still greater value. These groups are all distinct from the representatives of the palæarctic fauna, there being generally no trace whatever of the antennal groove on the superior surface of the head which is such a singular character of *Limnichus* proper. In all of our subgenera the antennæ are perfectly free in repose, although generally pressed closely against the head, and between its surface and the projecting anterior margin of the prothorax. In the first group (*Eulimnichus*), the last vestige of the groove is visible, being indicated by a minute carina bordering the sides of the head above the eye, but it can be of no use as a shelter for the antennæ in repose:—

Pubescence in a single system, rather sparsely distributed, subrecumbent, robust and aciculate.

Head longitudinally rugulose; basal joint of antennæ in great part concealed by the acute sides of the front, the emarginations at the extremities of the epistomal suture small. Prosternum grooved; hypomera flat, not impressed at the inner angle, having a wide prominent polished bead along the inner margin; margin of the crural excavation acute and cariniform; acute outer edge minutely and abruptly reflexed at apex.

<sup>1</sup> Dr. Sharp, who has been kind enough to compare a specimen of this species with the type of *ptilioides* in the British Museum, writes me that, although the light at the time was very poor, he has no doubt of the distinctness of *californicum*.

- Scutellum distinct, much longer than wide. Elytral punctures generally distinct, always well separated .....**I**
- Head coarsely, very densely punctate, without trace of longitudinal rugulation; basal joint of antennæ in great part exposed in the large deep emarginations at the extremities of the epistomal suture. Prosternum grooved; hypomera very deeply impressed near the inner obtuse angles; inner polished bead well developed; crural margin acute and cariniform; acute outer edge very gradually, feebly sinuate toward the apex. Scutellum moderate, slightly longer than wide. Elytral punctures generally coarse and densely placed, cribrate .....**II**
- Head finely, feebly punctate, finely granulose; basal joint of antennæ in great part exposed, the emarginations large. Prosternum not grooved; hypomera flat, not impressed, without trace of an inner polished bead, the crural margin rounded, not distinctly and abruptly defined by an acute edge, the acute outer edge deflexed at apex. Scutellum large, equilatero-triangular. Elytral punctures very minute, entirely filled by the hairs. Antennæ unusually long and slender.....**III**
- Pubescence dual, consisting of very small short confusedly matted and densely-placed hairs near the surface, with fine long erect and much more sparsely-placed hairs interspersed. Scutellum very small, equilatero-triangular, or very nearly so. Prosternum grooved. Crural edge of hypomera acute and cariniform .....**IV**

The minute reticulation or granulation, especially visible at the sides of the pronotum and on the hypomera and abdomen of groups I, III, and IV, is totally obsolete in group II, and constitutes an important differential character of this section of the genus.

As a generic character, it should be stated that the epipleuræ are, near the apex, deeply grooved; this is more evident in the first three groups, and becomes very feeble or nearly obsolete in group IV.

The species may be distinguished as follows:—

#### Group I.

##### EULIMNICHUS n. subgen.

Pronotum finely reticulate or granulose and more or less alutaceous at the sides.

Elytral punctures rather coarse, deep and very distinct, separated by from once to twice their own diameters.

Prosternal episterna almost attaining the apex .....**analis**

Prosternal episterna shorter.

Abdomen very minutely, sparsely and feebly punctate, not appreciably more coarsely so near the sides; median groove of pronotum fine but distinct, rather long and terminating at equal distances from base and apex .....**obscurus**

Abdomen sparsely but more coarsely punctate, very coarsely and deeply so near the sides; pronotal groove very short and nearer the base

**californicus**

Elytral punctures extremely fine and sparse, separated by from three to five times their own diameters.

Elytra and abdomen alutaceous, the latter excessively feebly, minutely punctate, the punctures very sparse, scarcely visible and not appreciably more distinct laterally; elytral pubescence very minute and sparse.

**montanus**

Elytra and abdomen strongly shining, the latter very minutely but rather distinctly punctate, the punctures sparse, very slightly larger near the apex, and less distinctly so near the sides.....

**perpolitus**

Pronotum highly polished throughout and perfectly devoid of reticulation at the sides.

Punctuation of elytra denser, deeply impressed and very distinct.....

**ater**

Punctuation sparser and very feebly impressed, almost invisible near the sides and suture .....

**nitidulus**

Group II.

LIMNICHITES n. subgen.

Abdomen densely, coarsely cribrate; punctures of the pronotum very dense.

Larger species, oval; sides distinctly arcuate; punctures of the elytra slightly separated .....

**punctatus**

Smaller species, more oblong, with the sides nearly straight in the middle; punctures of the elytra larger, polygonally crowded .....

**nebulosus**

Abdomen densely, coarsely cribrate toward the sides, but sparsely and much more finely punctate toward the middle and base; punctures of the pronotum fine in the middle, sparse, those of the elytra rather fine, separated by distinctly more than their own diameters .....

**olivaceus**

Abdomen more sparsely punctate; punctures of the pronotum toward the middle sparse and fine; punctures of the elytra very narrowly separated.

**perforatus**

Group III.

LICHMINUS n. subgen.

Ovate, pointed behind; pubescence rather fine, recumbent, moderately dense, dark brown in color.....

**tenuicornis**

Group IV.

LIMNICHODERUS n. subgen.

Abdomen completely devoid of punctures;<sup>1</sup> each elytron with a subapical and two lateral submedian indefinite patches of paler pubescence.

**naviculatus**

<sup>1</sup> In this subgenus the abdomen is always rendered more or less dull by an extremely minute rugose reticulation. The punctures here referred to are entirely distinct from this; they are deep and perforate, and distributed generally somewhat unevenly over the surface.

Abdomen very finely and sparsely punctate.

Elytral punctures coarse, denser, the pubescence extremely dense and the lustre dull ..... **lutrochinus**

Elytral punctures finer, more sparse, the surface much more shining.

Elytral pubescence very short, even; abdominal punctures visible throughout the width, equal and very sparse throughout..... **seriatus**

Elytral pubescence longer and more shaggy; abdominal punctures completely absent toward the sides of the last three segments, very fine and sparse but visible in the middle toward base; abdomen rather less dull.

**ovatus**

Abdomen coarsely and densely punctate, especially toward the sides, the punctures rather sparser toward the middle; black, polished; pubescence very easily abraded, less dense..... **punctiventris**

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**L. analis** Lec.—Bull. U. S. Geol. Surv., 1879, V, p. 515.—Oval, strongly rounded behind, nearly twice as long as wide, widest at the middle, black throughout, shining; pubescence somewhat dense, moderate in length, sub-recumbent, evenly distributed, feebly mottled cinereous and fulvous, the hairs robust and strongly aciculate. *Head* strongly and deeply punctate; punctures longitudinally coalescent, forming fine strong somewhat interlacing rugæ; lateral supraorbital ridges fine and strong. *Prothorax* more than twice as wide as long; sides straight, strongly narrowed from base to apex, the latter two-thirds as wide as the former; basal lobe strong, truncate; surface nearly as in *californicus*, the punctures slightly denser. Scutellum three-fourths longer than wide, flat, finely, sparsely punctate; sides and base broadly areuate. *Elytra* four times as long as the prothorax and scarcely one-fourth wider; surface shining, very obsoletely reticulate; punctures moderate, deep but variolate, separated by about one and one-half times their own widths. *Prosternum* shining, finely and very sparsely punctate, the punctures larger and nearly twice as dense anteriorly; median impressed groove strong, obsolete at anterior fifth; episterna clearly limited within throughout their length, almost absolutely attaining the apex; hypomera flat, not perceptibly impressed at the inner angle, minutely, strongly reticulate, alutaceous, very finely, sparsely punctate. *Abdomen* rather sparsely punctate, finely, strongly granulato-reticulate laterally and toward base, the segments polished toward apex, the fifth polished, deeply, coarsely cribrate, impressed and densely pubescent near the apex. Length 2.3 mm.

Texas; Arizona; California.

The largest species of the genus, related somewhat to *californicus*, but differing in its denser pubescence and punctuation, and in the extent of the prosternal side-pieces; the prothorax at base is relatively wider, the elytra at the humeri not being rather abruptly wider and somewhat prominent as in *californicus*.

**L. obscurus** Lec.—Proc. Acad. Nat. Sci. Phila., VII, p. 116.—Evenly oval, strongly rounded behind, widest near the middle, convex, shining; pubescence sparse, fine, subrecumbent, short and moderately robust; color black throughout. *Head* finely, longitudinally rugulose, the rugæ rather feeble and confusedly interlacing, the intervals minutely granulose and finely punctate; supra-orbital carinae very feeble, depressed below the general surface of the front. *Prothorax* much more than twice as wide as long; sides very feebly arcuate; apex nearly three-fourths as wide as the base, the latter broadly and moderately sinuate at each side of the median lobe, the latter moderately prominent; surface minutely reticulate, feebly so in the middle, strongly so and almost granulose laterally, rather distinctly and sparsely punctate. Scutellum of the usual form. *Elytra* with the sides evenly, feebly arcuate and perfectly coarctate with the sides of the prothorax; sculpture nearly as in *montanus*, each puncture surrounded by a series of distinct reticulations, shining; punctures small, not deeply impressed, separated by more than twice their own widths. Prosternum sparsely punctate, the median groove wide, deep and approaching the apical margin to within one-sixth or one-seventh the entire length; episterna clearly limited within throughout, approaching the apex to within one-half their own length, not visibly punctate; hypomera nearly flat, finely reticulate and alutaceous throughout, very finely and sparsely punctate. *Abdomen* finely reticulate, finely and sparsely punctate, the fifth segment impressed and densely pubescent near the apex. Length 2.1 mm.

New York. Cab. LeConte.

Greatly resembles *montanus* in outline and sculpture, but differing in its coarser punctuation, longer and coarser pubescence, and very much longer and wider prosternal groove. It cannot be classed at all with *ater*, with which it was united by LeConte, differing in size, form, sculpture, punctuation and pubescence to a very marked degree.

**L. californicus** Lec.—Bull. U. S. Geol. Surv., 1879, V, p. 515.—Elliptical, nearly twice as long as wide, strongly rounded at apex, widest at the middle, black, rather strongly shining. *Head* very deeply and rather coarsely punctate, the punctures completely coalescent longitudinally, forming deep and almost regular rugæ. *Prothorax* nearly two and one-half times as wide as long; sides convergent from base to apex and nearly straight; median basal lobe strong, truncate; disk finely granulo-reticulate, strongly so and alutaceous near the sides, very feebly so and polished toward the middle; punctures fine and sparse throughout; median impression feeble, only visible in the basal half. Scutellum nearly two-thirds longer than wide, flat, pointed; sides and base feebly arcuate. *Elytra* nearly four times as long as the prothorax, and, at basal third, nearly one-third wider, polished; reticulations almost obsolete throughout; punctures impressed, moderate in size, distinct, separated by fully twice their own widths. Prosternum finely, very sparsely

punctate, having a wide deeply-impressed groove which becomes obsolete at anterior third; episterna not attaining the apex by nearly one-half their own length, clearly limited within throughout; hypomera flat, strongly reticulate, alutaceous, finely and sparsely punctate, the inner polished marginal bead moderate in width. *Abdomen* finely reticulate, shining; punctures moderate, sparse; pubescence short, setose and sparse, the last segment flat, with a densely pubescent median area. Length 1.7-1.9 mm.

California (Mendocino, Santa Clara and Los Angeles Cos.).

The pubescence is rather short, sparse, pale fulvo-cinereous in color, robust, acutely pointed and subrecumbent. This is a very common species throughout western California.

**L. montanus** Lec.—Bull. U. S. Geol. Surv., V, 1879, p. 514.—Almost evenly oval, strongly rounded at apex, a little less than twice as long as wide, black throughout, subalutaceous; pubescence very short, subrecumbent, very sparse, cinereous, apparently easily abraded, not conspicuous. *Head* with fine longitudinal rugæ, the concave intervals more minutely and feebly rugulose, and with small distant punctures; lateral carinæ fine but strong. *Prothorax* more than twice as wide as long; sides very feebly arcuate; apex about two-thirds as wide as the base, the basal lobe strong, with the apex sinuous, fitting the base of the scutellum; surface finely granulose laterally, more polished in the middle, rather finely and sparsely punctate; median groove very fine, short. Scutellum one-half longer than wide; sides and base very distinctly arcuate, the surface very minutely and sparsely punctate. *Elytra* rather less than four times as long as the prothorax, and, at basal third, about one-fifth wider; sides very distinctly, evenly arcuate and coarctate with the sides of the prothorax; surface finely, sparsely punctate; punctures round, shallow, not impressed, separated by at least three times their own widths. Prosternum polished, very finely and sparsely punctate, slightly more coarsely and closely so anteriorly; median groove narrow, very deep posteriorly, becoming more feeble anteriorly and obsolete at apical fourth; episterna distinctly limited within throughout, not attaining the apex by about one-third of their own length; hypomera flat, not impressed at the inner angle, finely, strongly reticulate, alutaceous, minutely, sparsely and not distinctly punctate; inner bead strong. *Abdomen* very finely, densely reticulate throughout, minutely and very sparsely punctate; fifth segment with a very small impression just behind the apical margin, the pubescence of the central area coarse, short and not very dense. Length 2.0 mm.

Colorado (La Veta). Mr. Schwarz. Cab. LeConte.

The sculpture of the elytra is peculiar, although merely an intensification of the normal sculpture in this section of the genus. Each puncture is surrounded by a series of six flat reticulations, the series contiguous externally, the outer bounding lines being hexagonal. This is a remarkably distinct species.



**L. perpolitus** n. sp.—Almost evenly elliptical, rather pointed behind, almost twice as long as wide, black throughout, highly polished. *Head* strongly, longitudinally rugose, the intervals finely, sparsely pubescent and punctate; cariniform upper margins of the eye pronounced, the small dorsal fovea immediately before the eye very deep. *Prothorax* much more than twice as wide as long; sides nearly straight; apex two-thirds as wide as the base, the latter strongly sinuate at each side of the median lobe which is well developed; surface polished, excessively obsolete reticulate in the middle, strongly so and slightly alutaceous at the sides; median groove short, feeble, broadly impressed; disk very minutely, sparsely punctate and pubescent. Scutellum nearly one-half longer than wide, minutely, sparsely punctate; sides and base arcuate. *Elytra* not quite four times as long as the prothorax; sides very evenly and distinctly arcuate and coarctate with the sides of the prothorax, the humeri not in the least prominent; surface very highly polished; punctures very minute and feebly impressed, separated by from four to five times their own widths; pubescence very fine, short and sparse, silvery-cinereous throughout, not conspicuous. Prosternum finely, very sparsely punctate; median impressed groove nearly equal in width throughout, obsolete at apical fifth or sixth; episterna distinctly limited within throughout, almost attaining the apex; hypomera transversely, feebly convex, finely reticulate, not impressed, very finely, feebly and sparsely punctate throughout, the polished bead forming the inner margin very strong. *Abdomen* finely reticulate laterally toward base, not at all reticulate and polished at apex, finely, sparsely punctate, a small pubescent area near the apex of the fifth segment densely and deeply punctate, not impressed but with the apical edge reflexed. Length 1.7–1.9 mm.

Texas (Austin); New Mexico (Albuquerque). Mr. Wickham.

A very distinct species in its extremely minute, sparse punctuation and pubescence, and highly polished upper surface.

**L. ater** Lec.—Proc. Acad. Nat. Sci. Phila., VII, p. 117.—Oval, about two-thirds longer than wide, widest near the middle, rather acutely pointed behind, black, polished; pubescence coarse, rather long, subrecumbent, moderately dense, in great part fulvous. *Head* with fine, rather feeble, longitudinal rugae; intervals finely punctate; pubescence abundant, suberect. *Prothorax* about two and one-half times as wide as long; sides nearly straight; apex two-thirds as wide as the base, the latter deeply sinuate at each side of the moderate median lobe; surface highly polished throughout, without trace of granulation or reticulation even near the sides, rather coarsely and sparsely punctate. Scutellum one-half longer than wide. *Elytra* at the humeri rather abruptly but slightly wider than the prothorax, about four times as long as the latter, and one-fourth wider; sides evenly arcuate; surface rather coarsely and deeply punctate, the punctures impressed and separated by nearly their own widths. Prosternum somewhat coarsely and sparsely punctate, the median groove rather feeble, vanishing at apical fourth; episterna small, deeply, coarsely punctate, not clearly limited within anteriorly, and coming very far

from attaining the apex, the distance thence being equal to their own length; hypomera nearly flat, finely but rather feebly reticulate, polished near the exterior margin, rather coarsely, deeply and somewhat densely punctate, the punctures becoming much finer and sparser near the external margin. *Abdomen* somewhat shining, very finely and sparsely punctate; fifth segment not visibly impressed, the pubescence fine and dense in the middle. Length 1.8 mm.

North Carolina; Florida; Louisiana.

This species very greatly resembles *californicus* in size and outline, but differs conspicuously in the pubescence, which is much longer and more robust; it is also more coarsely and closely punctate, and the sculpture of the pronotum is very different—its strong polish, without granulation, near the sides being a very decisive character.

**L. nitidulus** Lec.—Proc. Acad. Nat. Sci. Phila., VII, p. 117.—Evenly oval, widest in the middle, nearly twice as long as wide, rather acutely pointed behind, black throughout; pubescence long and robust, subrecumbent, somewhat sparse but conspicuous. *Head* with fine longitudinal rugæ, rather densely pubescent: lateral ridges slightly prominent. *Prothorax* polished throughout, not reticulate near the sides, sparsely and somewhat coarsely punctate; punctures in the middle separated by from two to three times their own widths; median groove very short and feeble. *Scutellum* small, about one-third longer than wide, highly polished and very minutely, feebly and sparsely punctate. *Elytra* not quite four times as long as the prothorax, about one-third wider; sides strongly arcuate, coarctate with the sides of the prothorax; surface polished; punctures rather large but feeble, separated by about twice their own widths. *Prosternum* rather sparsely punctate, coarsely so anteriorly, finely posteriorly; median groove strongly impressed, obsolete at anterior fourth; episterna abruptly limited within throughout, approaching the apical margin to within one-half their own length; hypomera flat, not impressed, finely, strongly reticulate, with a few coarse punctures near the inner marginal bead, elsewhere finely, sparsely punctate. *Abdomen* finely reticulate, finely, sparsely pubescent; punctures moderate in size, rather deeply impressed, somewhat sparse, dense on the last segment which is not impressed, and with the pubescent area not well marked. Length 1.6 mm.

Georgia. Cab. LeConte.

A small species, remarkable for its relatively long, very coarse pubescence, and polished surface. The punctures of the fifth ventral segment are, as usual, very deep and perforate.

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**L. punctatus** Lec.—Proc. Acad. Nat. Sci. Phila., VII, p. 116.—Oval, strongly rounded behind, about three-fourths longer than wide, widest in the middle; sides distinctly arcuate; black, densely pubescent in feeble mottling

of cinereous and fulvous; integuments polished. *Head* coarsely, very densely, evenly cribrate; supra-orbital carinae almost completely obsolete. *Prothorax* much more than twice as wide as long; sides feebly, evenly arcuate; apex nearly three-fourths as wide as the base, the latter sinuate at each side of the wide and prominent median lobe; surface polished, not at all reticulate at the sides, coarsely, deeply, very densely punctate; hairs very robust, not growing from the punctures but each attached at the margin of a puncture; median groove fine, distinct, slightly nearer the base than the apex. *Scutellum* moderate, very slightly longer than wide, pointed, densely punctate; sides and base strongly arcuate. *Elytra* about three and one-half times as long as the prothorax and scarcely one-fifth wider; sides coarctate with those of the prothorax; surface polished, very coarsely and densely punctate; punctures very deep, perforate and separated by less than one-half their own diameters. *Prosternum* polished, coarsely punctate, the punctures separated by about twice their own widths; median groove long and strong; episterna not distinctly defined anteriorly; hypomera polished throughout, coarsely, very densely punctate, deeply impressed near the inner obtuse angle; inner marginal bead distinct; inner posterior edge forming the margin of the erural excavation abrupt, acute and cariniform. *Abdomen* polished throughout, coarsely, very densely and deeply punctate, the punctures polygonally crowded; fifth segment convex, not impressed, more densely pubescent in the middle; pubescence throughout rather long, fine, and pale silvery-cinereous. Length 1.8 mm.

Pennsylvania—Cab. LeConte. Texas.

A well-marked species of wide distribution, varying considerably in size, but not otherwise to any noticeable extent.

**L. nebulosus** Lec.—Bull. U. S. Geol. Surv., V, p. 515.—Oblong-oval, strongly rounded behind; sides nearly straight in the middle; black, polished throughout; pubescence rather long, subrecumbent, very robust, somewhat dense, confusedly mottled cinereous and fulvous. *Head* extremely coarsely and densely cribrate, the punctures very deep and polygonally crowded; supra-orbital ridges entirely obsolete. *Prothorax* much more than twice as wide as long; sides distinctly although feebly arcuate; apex nearly three-fourths as wide as the base, the latter sinuate on each side of the median lobe which is moderate; median groove very short, feeble; surface extremely densely, coarsely cribrate, the punctures polygonally crowded, and only two-thirds as wide as those of the elytra. *Scutellum* moderate, very slightly longer than wide, densely, coarsely cribrate, slightly convex; sides and base arcuate. *Elytra* but very slightly wider than the prothorax, extremely densely cribrate, the punctures very coarse and deep, polygonally crowded, the lines of separation being but one-fourth or one-fifth as wide as the punctures. *Prosternum* coarsely but much more sparsely punctate, the median groove very wide and deeply excavated, extending almost to the apical margin; episterna not at all defined toward apex internally, polished, impunctate; hypomera extremely deeply impressed or excavated near the inner obtuse angle, polished, very coarsely, deeply and densely punctate; inner marginal bead very strong

throughout; outer acute edge very feebly and gradually reflexed near the apex. *Abdomen* coarsely, very densely cribrate, the punctures polygonally crowded; pubescence very fine, not conspicuous, that of the pubescent area of the last segment very short and fine, the same segment convex, not impressed. Length 1.7 mm.

California (San Bernardino), LeConte; Texas (Austin) Auct.

The exceedingly coarsely and densely cribrate upper surface, and coarse mottled pubescence will at once distinguish this very interesting species.

**L. olivaceus** Lec.—Proc. Acad. Nat. Sci. Phila., VII, p. 116.—Oval, convex, in form and color nearly as in *punctatus*; pubescence confusedly mottled cinereous and fulvous, rather sparser than in *punctatus*; integuments polished. *Head* rather coarsely, very deeply and evenly punctate, the punctures dense but distinctly separated. *Prothorax* rather more than twice as wide as long, the basal lobe narrow but well developed, truncate; sides feebly, evenly arcuate; median impressed groove distinct but not extending much in advance of the centre; punctures equal in size to those of the elytra and equally sparse. *Elytra* nearly four times as long as the prothorax; sides distinctly, broadly arcuate, toward base coarctate with those of the prothorax; apex rather acute; surface very evenly, rather sparsely punctate, the punctures round, deep and perforate, separated by one-half more than their own diameters. Prosternum shining, deeply grooved, strongly punctate, the punctures separated by their own widths; femora very coarsely, deeply punctate, the metasternum much more sparsely so. *Abdomen* coarsely and very densely punctate toward the sides, much more finely so—the punctures separated by more than three times the distance—toward the middle and base. Length 2.1 mm.

Michigan (Detroit). Mr. Schwarz.

The form described by LeConte as *olivaceus* has given rise to more or less divergence of opinion. Henshaw in his list of the species described by J. L. LeConte (p. 230), states that it is a valid species. Dr. LeConte in his most recently published table of the genus (Bull. U. S. Geol. Surv., V, 1879, p. 515) unites it in synonymy with *punctatus*, and Henshaw in his check-list of North American Coleoptera, appears to coincide with this opinion. I have personally examined the specimen in the cabinet of LeConte which bears the type label, and find that it is absolutely identical with the type of *punctatus*, the punctuation being fully as dense as in that species. Schwarz has taken in abundance at Detroit, Mich., a species—described above—which is allied to, but certainly distinct from, *punctatus*, having the elytral punctuation decidedly sparser but not quite as coarse; it is the opinion of Mr. Schwarz that this is the true *olivaceus*.

I leave this subject, therefore, with the opinion that the specimen labeled *olivaceus* in the cabinet of LeConte, is not the original type, and further that the specimens from Detroit may fairly be assumed to represent that species; the latter seems, at least, a better course to pursue than to give this undoubtedly valid species a new name, based upon an uncertainty of identification.

**L. perforatus** n. sp.—Form oblong-oval, strongly rounded behind, rather less than twice as long as wide; sides nearly straight in the middle; black; pubescence very coarse, somewhat dense, feebly mottled cinereous and fulvous; integuments polished throughout. *Head* very coarsely, deeply and densely punctate, the punctures on the flat vertical front tending to coalesce in a subtransverse, slightly posterior direction from the median line. *Prothorax* more than twice as wide as long; sides feebly, evenly but very distinctly arcuate; apex more than two-thirds as wide as the base, the basal lobe moderate in width, prominent; median groove short, broadly, feebly impressed and not very distinct; surface rather finely, sparsely punctate, the punctures much less than one-half as wide as those of the elytra, and separated by twice their own widths, coarser and denser toward the sides. *Scutellum* moderate, slightly convex, just visibly longer than wide; sides very strongly arcuate; base feebly so; basal angles rounded; surface rather sparsely and finely punctate. *Elytra* but slightly more than three times as long as the prothorax and scarcely perceptibly wider, very coarsely, deeply and densely punctate, the punctures separated by one-half their own widths. *Prosternum* polished, extremely finely and sparsely punctate throughout; median groove narrowly but deeply impressed, continuous almost throughout the entire length; episterna approaching the apex within two-thirds their own length, abruptly limited within except near the anterior angle, impunctate; hypomera very strongly impressed near the inner angle, polished, rather coarsely punctate, the punctures separated by about twice their own diameters; inner bead strongly developed. *Abdomen* in the middle not very coarsely punctate, the punctures separated by twice their own widths, coarser and slightly closer near the sides, polygonally crowded on the last segment which is not impressed and with the pubescence dense in the middle. Length 1.7 mm.

California (Santa Clara Co.).

This species is distinguished by its remarkably sparse and fine punctuation of the prothorax, above and beneath, for this section of the genus, and contrasting remarkably with the very coarse dense punctuation of the elytra. The abdomen is much more sparsely punctate than in any of the other species of this subgenus.

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**L. tenuicornis** n. sp.—Ovoidal, pointed behind, about three-fourths longer than wide, widest near the middle, black, moderately shining; pubes-

cence moderate in length and density, uniformly dark fulvous throughout. *Head* finely and strongly granulato-reticulate, feebly convex, finely, feebly, somewhat sparsely and not distinctly punctate; epistoma more coarsely and densely so; epistomal suture fine; lateral antennal emarginations deep, exposing the entire basal joint of the antennæ which is large. *Prothorax* much more than twice as wide as long; sides very feebly arcuate; apex two-thirds as wide as the base, the latter sinuate at each side of the basal lobe which is broad and feeble; median groove entirely obsolete; surface minutely reticulate, very strongly so near the sides, excessively obsoletely so in the middle; punctures very fine and sparse. Scutellum large, equilatero-triangular; sides and base straight. *Elytra* scarcely four times as long as the prothorax and about one-third wider; sides strongly arcuate and coarctate with those of the prothorax; surface finely but rather feebly reticulate, the reticulations forming polygonal rings about the punctures, the latter very minute, each in the centre of a small reticulation, and entirely filled by the hair arising therefrom, rather sparsely and evenly distributed. Prosternum transversely convex, without trace of impressed groove, very minutely, sparsely punctate, reticulate laterally; episternum small, not approaching the apex by its own length, very abruptly and clearly limited; hypomera flat, reticulate, not impressed, very minutely sparsely punctate, without trace of inner marginal bead. *Abdomen* finely and strongly reticulate throughout, finely, sparsely punctate, the last segment more densely so; pubescence rather long, coarse and sparse, denser in the middle of the last segment which is not at all impressed, the apex with a broad shallow emargination. Length 1.8 mm.

California (Hoopa Valley, Humboldt Co.).

For the present this species may be considered the type of a sub-genus of *Limnichus*, but it is almost unquestionably of higher value, the unimpressed prosternum, long antennæ, and large equilateral scutellum distinguishing it at once from any of the others. If it is considered generically distinct, however, the *lutrochinus* group must also be separated on other, but equally decisive characters.

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**L. naviculatus** n. sp.—Almost evenly oval, about three-fourths longer than wide, acutely rounded but not pointed behind, convex, rufo-castaneous above, slightly paler rufo-ferruginous beneath, feebly shining. *Head* rather convex, excessively minutely, moderately densely punctate. *Prothorax* small, fully two and one-half times as wide as long; sides straight; apex nearly three-fourths as wide as the base; basal lobe rather short and feeble; disk extremely minutely and moderately densely punctate, the median groove completely obsolete. Scutellum small, flat, equilatero-triangular. *Elytra* fully four times as long as the prothorax and one-third wider; sides strongly, evenly arcuate and coarctate with those of the prothorax; surface polished, not reticulate, the larger punctures—bearing the longer hairs—small, perforate, separated by from four to five times their own diameters, the minute

recumbent pubescence easily removable, and leaving merely a minute superficial scar. Prosternum not distinctly punctate, minutely, feebly scabrous and alutaceous, the median groove deep but narrow; episterna transverse, short, the inner marginal line distinct, broadly arcuate; metasternum with the perforate punctures about equal in size to those of the elytra, and separated by about three times their own widths. *Abdomen* dull, excessively minutely, densely pubescent, the perforate punctures completely wanting. *Legs* moderate; intermediate tarsi short, about one-half as long as the tibiæ, but with the second joint rather longer than wide. Length 1.5 mm.

Texas. U. S. National Museum.

In its entirely impunctate abdomen this species differs from any other of the subgenus; it somewhat resembles *ovatus*, but differs in its more elongate form and in its coarser elytral punctures, these being about twice as large as in that species. The longer hairs of the elytra in *ovatus* are longer than in *naviculatus*, and the short appressed ones much sparser. In *ovatus* there is no trace of maculation, whereas in the present species the pubescence is paler at three indefinite lateral spots on each elytron, giving, under extremely low power, the appearance of three imperfect transverse fasciæ; in the former the intermediate tarsi are nearly two-thirds as long as the tibiæ.

**L. lutochinus** Lec.—Bull. U. S. Geol. Surv., V. p. 515.—Ovoidal, gradually pointed behind, nearly twice as long as wide, widest near the middle, piceous-brown, very densely pubescent; integuments shining. *Head* finely and very sparsely punctate. *Prothorax* more than twice as wide as long; sides straight; apex two-thirds as wide as the base; median lobe small, distinct; median groove obsolete; surface shining, very feebly reticulate near the sides, not very coarsely, very sparsely punctate, with the interspaces much more minutely, densely punctate. *Scutellum* small, slightly longer than wide, feebly convex, densely pubescent; sides and base feebly arcuate. *Elytra* about three and one-half times as long as the prothorax; sides distinctly arcuate and nearly coarctate with those of the prothorax, the humeri almost impunctate and slightly, longitudinally tumid; surface rather coarsely, sparsely punctate; punctures perforate and separated by from three to four times their own diameters; interspaces polished, the minute recumbent hairs not arising from definite punctures. *Prosternum* shining, minutely and not very densely punctate, much more densely punctate and alutaceous anteriorly; median groove fine, extending nearly to the apex; episterna short, broadly triangular, clearly limited within throughout, the inner margin arcuate; hypomera flat, not impressed, minutely, densely reticulate, dull, minutely, densely pubescent, not visibly punctate; inner bead wide, flat, polished; edge of the crural cavity acute and cariniform. *Abdomen* very dull, rather finely, very sparsely punctate, the interspaces excessively minutely, densely punc-

tate and pubescent; last segment not impressed, having longer and more conspicuous pubescence. Length 1.5 mm.

Texas. Cab. LeConte, Belfrage and Schwarz.

The dual nature of the pubescence has been referred to as a group character, and has not been mentioned in the description. The longitudinal groove in the elytral epipleuræ near the apex is very fine, and less developed than in group I.

**L. seriatus** n. sp.—Oval, convex, about three-fourths longer than wide, rather gradually pointed behind, castaneous above, rufo-ferruginous beneath, feebly shining. *Head* convex, extremely minutely and rather densely punctate. *Prothorax* a little more than twice as wide as long; sides nearly straight; apex fully three-fourths as wide as the base; basal lobe small, rather feeble; disk excessively minutely, feebly, rather densely punctate, the median groove completely obsolete. Scutellum very small, slightly longer than wide, acutely pointed; sides straight; surface minutely, feebly reticulate. *Elytra* four times as long as the prothorax and nearly two-fifths wider; sides feebly arcuate anteriorly and not coarctate with those of the prothorax, the width at the humeri being distinctly greater than the base of the latter; surface polished, not reticulate, very minutely punctate, the punctures about as large as those of *ovatus*, and separated by from four to five times their own diameters, somewhat unevenly distributed. Prosternum rather dull but not punctate, the median groove fine but deep and distinct; metasternum strongly and sparsely punctate, the punctures decidedly larger than those of the elytra, and separated by about three times their own widths. *Abdomen* finely, sparsely punctate, the punctures perforate, scarcely as large as those of the metasternum, but rather larger than those of the elytra, separated by from four to five times their own widths; fifth segment entirely impunctate, except a single line of punctures along the base. Intermediate tarsi nearly two-thirds as long as the tibiæ, the joints two to four very short, transverse and oblique, almost exactly equal. Length 1.2 mm.

Florida. Mr. Schwarz.

The large hairs of the elytra are but slightly longer than the fine short subappressed ones, and are entirely inconspicuous; there are, however, on each elytron four series of long erect white setæ which are very widely spaced; these contrast strongly with the general vestiture, when viewed under light coming horizontally along the axis of the body and from the front. I have not noticed these setæ in any other species, although they probably exist, and are simply more prominent in the present case because of the extraordinary shortness of the general pubescence. This last character will easily distinguish *seriatus* from *ovatus*. The elytral pubescence is fulvous in color and entirely devoid of maculation.



**L. ovatus** Lec.—Proc. Acad. Nat. Sci. Phila., VII, p. 117.—Evenly ovate, rather acutely pointed behind; sides strongly arcuate; piceous-black above, slightly paler, piceous, beneath; legs and antennæ dark rufo-testaceous; integuments polished throughout above; pubescence very conspicuous, pale brown. *Head* convex, very finely, sparsely punctate, polished; epistomal suture deep and strong; epistoma scabrous and dull. *Prothorax* two and one-half times as wide as long; sides straight; apex rather more than two-thirds as wide as the base; basal lobe small and feeble; surface polished, slightly scabrous and reticulate at the sides near the apical angles, finely, sparsely punctate, the intervals excessively minutely and feebly punctate; median groove obsolete. *Scutellum* very small, equilatero-triangular, flat; sides and base straight, the former arcuate near the base. *Elytra* nearly four times as long as the prothorax and one fourth wider; sides evenly rather strongly arcuate and coarctate with those of the prothorax; humeri not distinctly tumid; surface polished, very finely, sparsely punctate; punctures perforate, distant by from four to six times their own diameters; interspaces as in *lutrochinus*. *Prosternum* shining behind, dull near the apex; median groove fine, distinct, attaining neither the anterior nor posterior margin; episterna very short and broad, polished, clearly limited, the inner margin strongly arcuate; hypomera flat, not impressed, dull, not visibly punctate, inner polished bead flat, short, the margin of the crural excavation finely acute and cariniform, and much longer than the beaded side. *Abdomen* strongly opaque, minutely, sparsely punctate; last segment with scarcely denser pubescence. Length 1.3 mm.

Southern States. Cab. LeConte.

The systematic relationship of this small species may readily be seen from the table; it is more convex and less oblong than *seriatus*, with the sides more strongly arcuate, and the prothorax relatively narrower and more strongly narrowed from base to apex.

**L. punctiventris** n. sp.—Evenly oval, two-thirds longer than wide, convex, black above, dark rufous beneath, rather strongly shining. *Head* convex, extremely minutely, somewhat densely punctate. *Prothorax* small, more than twice as wide as long; sides nearly straight; apex three-fourths as wide as the base, the basal lobe small, not very prominent; surface very minutely, feebly punctate; pubescence rather sparse; median groove obsolete; along the apical margin there is a series of minute granulations, in advance of which the marginal surface is thin, semicoriaceous and polished. *Scutellum* small, equilatero-triangular; sides straight; surface polished. *Elytra* fully four times as long as the prothorax; sides distinctly arcuate and almost coarctate with those of the prothorax, the humeri being but just visibly prominent; disk very minutely punctate, the punctures unevenly distributed, and separated by from three to six times their own widths, but generally about four, becoming much coarser but not denser toward the sides; minute pubescence rather long, coarse and not extremely dense, the longer hairs sparse, although decidedly longer. *Prosternum* feebly shining, more polished poste-

riorly ; median groove very fine but distinct and almost entire ; metasternum shining, very finely, sparsely punctate, the punctures perforate, not larger than those of the sides of the elytra, but rather coarser and denser laterally, separated by from three to five times their own widths. *Abdomen* more coarsely and very deeply punctate, the punctures very dense laterally, where they are separated by about their own widths, rather finer and distinctly sparser toward the middle, the fifth segment almost completely impunctate except near the base. Length 1.3 mm.

Florida. Mr. Schwarz.

The rather shining surface, black color and coarser, very dense abdominal punctuation will render the identification of this species very easy. The series of longer coarser setæ on the elytra, mentioned under *serialus*, are represented here by the marginal series only, the others being not distinctly traceable.

#### PHYSEMUS Lec.

Regarding the relationship of the three genera *Bothriophorus*, *Physemus* and *Ditaphrus*, the following observations may prove interesting.

In the remarks appended to the original description of *Ditaphrus* (Bull. Cal. Acad. Sci., II, pp. 250-253), the reasons were given for the separation of the genus from *Physemus*; they were based solely upon the original description of the latter as given by Dr. LeConte. After the publication of *Ditaphrus* the suspicion of its identity with *Physemus* continued to grow upon me, until I determined to discover the truth if possible by actual observation. I accordingly made a journey at considerable expense from San Francisco to Yuma, incidentally for the purpose of collecting Coleoptera, but especially to rediscover the species *Physemus minutus*. Knowing the haunts of *Ditaphrus scymnoides* in Texas, I did not have to search long before finding LeConte's species in numbers, moving slowly over the surface of moist adobe mud, under débris of fallen leaves. An examination at once revealed the fact—as I had anticipated—that the two genera are identical in every point of structure, and that the species also are the same, although presenting very slight differences in size and vestiture.

Wishing to carry the investigation a step further I have procured from M. Desbrochers des Loges, a specimen of the European *Bothriophorus* Muls., and find on examination that, while resembling *Physemus* very closely, it differs decidedly in antennal structure.

If the student will have before him the figure of the antenna of *Physemus* (l. c. plate), he can more readily appreciate the differences as indicated in the following description:—

First six joints somewhat similar to the same in *Physemus*. Seventh joint slender, cylindrical, nearly twice as long as wide; eighth just visibly wider than the seventh and one-half as long, triangular, the vertex of the angle directed anteriorly, the posterior side straight; ninth triangular, transverse, the angle on the anterior side, the posterior side nearly straight, scarcely longer and one-half wider than the eighth; tenth almost evenly obtuse-trapezoidal, scarcely longer than the ninth but distinctly wider, two-thirds wider than long, closely joined to the eleventh throughout the width; eleventh ovoidal, pointed, slightly wider than the tenth, two-thirds longer than wide, slightly longer than the two preceding joints combined and more densely pubescent.

It will be seen, therefore, that the two genera are quite distinct in antennal structure, the one having a two-jointed, and the other a three-jointed club.

The species—*B. atomus* Muls.—is somewhat smaller and more finely and very much more feebly punctate than *Physemus minutus* Lec.

## PARNIDÆ.

### **THROSCINUS** Lec.

Elongate-elliptical, convex, punctate, pubescent. Head deflexed; eyes and labrum visible in repose; epistomal suture fine, straight; epistoma transversely truncate at apex; labrum large, transverse, convex, broadly, feebly sinuate at apex; antennæ inserted at the sides of the front, base not concealed, 11-jointed; basal joint twice as long as the second and much more robust; last six joints broader, forming a very elongate, slender, perfoliate club; last joint of the maxillary palpi elongate, slender, acuminate, with a minute apical process. Prosternum large, truncate anteriorly; process very wide, with two fine lateral carinæ which extend diverging anteriorly for more than one-half the distance from the coxæ to the anterior margin, not grooved in the middle, the apex broadly arcuate, received in a very broad shallow emargination of the mesosternum; the latter very short, widely separating the coxæ; metasternum large; episterna narrow; posterior coxæ widely separated, flat above, sulcate beneath, triangular, prominent internally, only extending to the metasternal epimera. Anterior and intermediate legs rather short, simple; tarsi all moderate in length, free, slender; four basal joints short, subequal; fifth as long as the three preceding together. Epipleuræ very narrow posteriorly, broader, flat and sinuous toward base, not at all excavated or impressed for the intermediate femora, the basal margin closely fitted throughout its width to the hypomera; the latter wide, flat, separated from the prosternal side-

pieces, the coxæ and trochantin by a fine, nearly straight suture which, anteriorly, becomes a deep groove for the reception of the antennæ, and which is the posterior prolongation of deep grooves beneath the eyes. Prothorax fitted to the elytra throughout the width of the latter, with the basal angles acute and slightly produced posteriorly.

This genus was founded by LeConte upon the Californian representative *T. Crotchii*, which is more slender than the present, more finely and much more densely punctate and pubescent, the hairs being somewhat confusedly matted as in *Heterocerus*. The above diagnosis was drawn from the Texan species which seems to be identical in generic characters.

**T. politus** n. sp.—Black above; legs and under surface rufo-piceous; abdomen paler; antennæ black; integuments subalutaceous beneath, very highly polished above, rather coarsely and sparsely pubescent; hairs short, erect, denser and finer on the head. *Head* moderate in size, deeply seated in the prothorax; front vertical in repose, feebly, evenly convex, very finely and feebly punctate; eyes large, rather prominent, entirely exposed, on the sides just before the prothorax; antennæ slightly longer than the width of the head, slender; joints three to five very slender, the third almost as long as the fourth and fifth together. *Prothorax* widest at the base, where it is two-thirds wider than at apex; sides evenly, feebly arcuate; base transverse, rather abruptly and strongly arcuate in the middle third; posterior angles very acute, slightly produced; apex broadly, feebly arcuate; disk nearly twice as wide as long, broadly, very evenly convex, finely, sparsely punctate, the interspaces extremely minutely and feebly punctate. Scutellum very distinct, flat, polished, impunctate, ogival, pointed, as long as wide. *Elytra* at base equal in width to the prothorax; sides parallel, feebly arcuate for two-thirds the length from the base; together gradually rounded behind, acute at the apex; disk evenly convex, nearly three times as long as the prothorax, very coarsely and strongly punctate; punctures impressed, evenly distributed, obsolete at base; interspaces more than twice as wide as the punctures, not at all punctate. Under surface very finely, densely pubescent, the hairs short and closely recumbent; abdomen extremely minutely granulose, not punctate; segments decreasing very slightly in length to the fourth, fifth slightly longer; surface convex; sutures feeble, straight. Length 1.7–2.0 mm.

Texas (Galveston).

A very good series of this interesting species was obtained from the vegetable detritus, covering the interior line of sand dunes, along the ocean beach.

## LUCANIDÆ.

**PLATYCERUS** Geoff.

A sexual character, which seems to have escaped observation, exists in perhaps its greatest development in *quercus*. It will be seen that in this species, the posterior tarsi of the female are much shorter than in the male. In *oregonensis* the same condition holds, but to a less-marked degree, and in *Agassii* the character completely disappears, the tarsi in both male and female being very long and slender, with the fourth joint twice as long as wide. The type of *californicus* is a female, and, as the posterior tarsi are extremely short, relatively more abbreviated even than in the female of *quercus*, with the fourth joint fully as wide as long, it is probable that the male, also, has a shorter tarsus than *Agassii*, and that the species is to be associated with *quercus* and *oregonensis*, rather than with *Agassii*.<sup>1</sup>

Through the kindness of Mr. J. J. Rivers of Berkeley, California, who has made the study of this genus somewhat of a specialty, I have been permitted to examine a larger series than has been hitherto available to me, and find that there are several species similar to *Agassii* in having the mandibles small and inconspicuous in the males, and the hind tarsi nearly as long as the tibiae. The series alluded to affords sufficient material for a tolerably complete study, and consists of twelve specimens of *Agassii*, three of *pacificus*, and two of *parvicollis*. These three species may be defined as follows, the characters given referring to the male only:—

Sides of the prothorax—viewed vertically—distinctly subangulate.

Pronotum finely, densely punctate; antennal club much longer than the funicle, the last joint strongly asymmetric, the longest dimension being in a direction oblique to the axis of the club, and very much exceeding the width; sixth joint of funicle strongly produced anteriorly; fifth joint of hind tarsi as long as the first and second combined; elytra equal in width to the prothorax.....**Agassii**

<sup>1</sup> I have recently had occasion to inspect the original female type of *Agassii* in the museum at Cambridge, Mass., and find that the specimens heretofore regarded by Mr. Fuchs and myself as representing that species, were correctly identified. The type, apart from its slightly paler color due to immaturity, does not differ in the slightest degree from the average female, and the punctation of the pronotum is equally dense.

Pronotum much more coarsely and sparsely punctate; antennal club equal in length to the funicle, the last joint much less, although distinctly, asymmetric, slightly longer than wide; sixth joint of funicle just visibly more prominent anteriorly; fifth joint of hind tarsi distinctly longer than the first two combined; elytra at apical two-fifths fully one-fourth wider than the prothorax; color pale, brown.....**parvicollis**

Sides of prothorax—viewed vertically—broadly, evenly arcuate, subangulate when viewed laterally, the surface much more convex and declivous at the sides; pronotum finely and very sparsely punctate; antennal club slightly but distinctly longer than the funicle, the last joint wider than long; sixth joint of funicle not at all prominent anteriorly; elytra equal in width to the prothorax; surface highly polished; color deep black.....**pacificus**

**P. parvicollis** n. sp.—Form slender, rather depressed; sides parallel; dark reddish-brown, somewhat bronzed; head and pronotum darker; legs throughout dark brown; integuments polished. *Head* rather small, coarsely, deeply and rather densely punctate; front with several long coarse fulvous setae; mandibles small; antennal club about equal in length to the funicle; last joint very slightly oblique, slightly longer than wide. *Prothorax* small, widest very near the middle where it is nearly twice as wide as long, and where the sides are distinctly angulate from above, the angle narrowly rounded; apex broadly, very feebly emarginate, slightly narrower than the base; the latter transversely truncate; angles slightly prominent, acute, not at all rounded; sides nearly straight anteriorly and posteriorly, rather strongly convergent in both senses, feebly sinuate near the base; disk broadly, feebly convex, rather broadly but not strongly reflexed at the sides, coarsely and strongly punctate, the punctures rather sparse in the middle, with a narrow, incomplete, impunctate median line, dense toward the sides, except in the reflexed portion, where they are very sparse and coarser. Scutellum much wider than long, parabolic, very sparsely, coarsely punctate at base. *Elytra* at base fully as wide as the prothorax; sides parallel, distinctly arcuate behind, nearly straight and feebly divergent in the basal fourth; together evenly and rather strongly rounded behind; disk transversely and moderately convex, four-fifths longer than wide, three and one-third times as long as the prothorax, widest at two-fifths the length from the apex where it is one-fourth wider than the latter; striae nearly equidistant, feebly impressed, rather finely, deeply punctate, the punctures closely approximate; intervals feebly convex, sparsely creased, finely, unevenly and sparsely punctate. *Legs* slender; posterior tarsi just visibly shorter than the tibiae. Length 10.3 mm.; width 4.0 mm.

California.

Readily distinguished from *Agassii* and *pacificus* by the pale color, small prothorax which is here much narrower than the elytra, and by the great relative length of the latter. The type is a male; the antennal club being relatively very much shorter than in either of the species mentioned. In *Agassii* the funicle is three-fifths as

long as the club, in *pacificus* three-fourths, and in *parvicollis* about equal in length, the comparisons being made from males. In the female of *Agassii* the club is small and very distinctly shorter than the funicle.

**P. pacificus** n. sp.—Oblong, rather convex, polished, black; sides parallel and nearly straight. *Head* moderate in size, sparsely, coarsely punctate; antennal club distinctly longer than the funicle, last joint almost symmetrical, distinctly wider than long. *Prothorax* widest at one-third the length from the base, where it is two and one-half times as wide as the head, and two-thirds wider than long; sides—viewed vertically—broadly rounded, sinuate near the basal angles which are acute, not rounded, and slightly prominent; apex slightly narrower than the base, broadly and feebly emarginate, the latter transversely truncate; disk broadly convex, rather broadly and strongly reflexed at the sides, very sparsely, finely punctate in the middle with an impunctate median line; punctures much denser laterally; in the reflexed portion along the margin they are again sparser but much coarser. *Scutellum* ogival, slightly wider than long, punctate at base, impunctate in the apical half. *Elytra* at base about as wide as the prothorax; sides parallel, distinctly arcuate posteriorly, straight in the basal third or fourth; together broadly rounded behind; disk transversely, rather strongly convex, two and three-fourths times as long as the prothorax; striæ feeble, rather closely punctate, equidistant; intervals very feebly convex, creased, more finely and very sparsely punctate. *Legs* black; tarsi very slightly paler toward apex, the posterior nearly as long as the tibiae. Length 10.0 mm.; width 4.2 mm.

California.

This species is easily distinguished from *Agassii* by its very sparse punctuation and form of the prothorax, the sides of the latter being much more broadly rounded, when viewed vertically, than in *Agassii*, although when viewed obliquely they are sub-angulate.

## SCARABÆIDÆ.

### **ACOMA** n. gen. (Melolonthinæ).

*Clypeus* rather prolonged, concave; apex with a small median notch and feebly bidentate, strongly inflexed for a great distance beneath, the labrum entirely connate and obsolete, not visible except as a minute reflexion of the infraclypeal surface. *Mentum* minute, very narrow, elongate, nearly flat. *Maxillæ* large, the palpi rather large; basal joint small; second and third subequal, longer than wide; fourth as long as the preceding together, wider, elongate-oval, with a broad shallow groove on the outer face throughout the length, the apex with a minute oval impressed area. *Labial palpi* very minute. *Eyes* large; inferior portion much larger than the upper, separated

beneath by much less than their own width. Antennæ nine-jointed; basal joint as long as the next three together, slender at base, strongly inflated toward apex, the apical margin fringed with a single row of long erect setæ; second wider than long, narrower than the first, strongly narrowed at base; third to fifth subequal in length, longer than wide, subcylindrical and sub-anchylosed; sixth very short, strongly transverse, slightly wider; seventh to ninth forming a very large club, twice as long as the stem—measured in a direction perpendicular thereto—strongly arcuate toward apex, and, in shape and relationship with the stem, exactly as in *Polyphylla*. Vertex with a fine longitudinal ridge over each eye; clypeal suture obsolete except near the sides where it is fine and transverse. Anterior margin of the pronotum with a broad flat bead throughout; posterior margin with a very much finer one, which becomes abruptly very fine in the middle and also laterally. Scutellum rather large, ogival. Elytra projecting well behind and partially concealing the pygidium. Anterior coxæ large, transverse, strongly conical and prominent internally; prosternum very short before them, the anterior margin broadly bisinuate between the strongly advanced and acute anterior angles of the pronotum; hypomera rather wide, nearly flat and almost horizontal; femora large, broad, flattened, posterior very large; anterior tibiæ with a small acute internal spur near the apex, two external obtuse teeth, and a prolonged apical process which is slightly dilated toward apex; middle and posterior tibiæ robust, festooned in the middle with an oblique girdle of spinules, obliquely truncate and dilated at apex, with a fringe of short robust spinules, and two long terminal spurs; tarsi very long and slender, twice as long as the tibiæ; joints very long, slender and cylindrical; basal joint longest; claws very slender, long, finely acuminate, very feebly arcuate, equal and very minutely carinate internally at base. Metasternum very obliquely truncate at the sides behind, in the middle longer than the abdomen; episterna short and broad. Abdomen extremely short in the middle, broad, consisting of five segments; sutures distinct throughout the width; first segment almost completely covered by the very large posterior coxæ. Pygidium moderate, about as long as wide, feebly convex, rounded at apex, very feebly and inwardly oblique.

The very long slender tarsi and nine-jointed antenna seem to point at first to a relationship with *Macrodaetylus*, but the very large mentum, feebly inflexed clypeus and abdominal structure of the latter prohibit any such association. From the *Sericini* it differs in its very minute elongate mentum, this organ in that group being large and transverse. From the *Dichelouchini* it differs in its minute mentum and obsolete labrum, and from all these in the form of the labial palpi. The latter are extremely minute, scarcely visible, and closely approximate, the two basal joints very small, sub-globular, the third longer than the first two together, elongate-oval.

In the genus *Podolasia* the clypeus is formed nearly as in *Acoma*, but is slightly more developed above, and inflexed for a much shorter



distance beneath. The labial palpi are large and very evident; the antennæ are nine-jointed, with a small robust three-jointed club, and with the second joint large and globular; the anterior tibiæ are devoid of internal spine, and the long apical process is acute and strongly excurvate. The claws are long and slender, with a small longitudinal carina internally at base, but not properly toothed. The first four abdominal segments are connate, the sutures excessively feeble in the middle, but not entirely obliterated, the fourth suture wide and membranous.

I think, therefore, that this interesting genus may be placed for the present near *Podolasia*, but with the assumption that it constitutes a connecting bond with some other group in its almost perfectly free abdominal segments, extremely minute labial palpi, and greatly developed antennal club of the male.

In *Chnaunanthus* the ventral sutures are absolutely obliterated in the middle, and this genus is therefore a more highly specialized representative of the group *Oncerini*, than either *Podolasia* or *Acoma*.

**A. brunnea** n. sp.—Form oblong, the sides nearly parallel, moderately convex, dark reddish-brown throughout; head and prothorax almost glabrous, but rather densely fimbriate with long erect hairs at the sides; elytra sparsely clothed with rather long erect hairs, which are longer and more conspicuous at the sides; under surface bristling with long slender sparsely placed hairs, especially conspicuous on the fimbriate femora. *Head* coarsely, very densely and deeply rugoso-punctate, the clypeus, which is nearly as long as the remainder of the head, coarsely, deeply and sparsely punctate. *Prothorax* four-fifths wider than long; sides strongly rounded just behind the middle, thence convergent and feebly sinuate to the acute apical angles, broadly rounded to the base, the basal angles being broadly rounded and obsolete; base broadly, very feebly arcuate, abruptly distinctly and more strongly so opposite the scutellum; apex broadly emarginate, bottom of emargination broadly bisinuate; disk moderately convex, polished, feebly impressed along the median line except near base and apex, finely, sparsely punctate; punctures entirely wanting in a broad median line, and also along the basal margin. Scutellum almost impunctate. *Elytra* widest in the middle, slightly longer than wide, very slightly wider than the prothorax; sides parallel, feebly arcuate, together broadly, obtusely rounded behind; humeri slightly prominent; disk feebly convex, strongly so at the sides, finely, feebly and unevenly striate; striæ more approximate and very much confused at the sides, where the surface is distinctly rugulose; striæ very finely and approximately punctate; intervals each with a very uneven single line of larger, more distant punctures. Length 5.0–5.5 mm.

Texas (El Paso). Mr. G. W. Dunn.

This very anomalous little beetle apparently lives in flowers or on plants; the three specimens before me are males; I have not seen the female.

### POLYPHYLLA Harris.

The American species of this genus appear to agree very well with the European, and differ principally in their shorter, more robust legs. The following species belongs near *decemlineata*, and may be at once interpolated in the table given by Dr. Horn (Trans. Am. Ent. Soc., IX, p. 73).

**P. speciosa** n. sp.—Elongate-oval, convex; prothorax trivittate; lateral vittæ interrupted.

*Female*.—*Head* much wider than long; clypeus two and one-half times as wide as long; sides parallel, feebly arcuate; apex broadly and very feebly bisinuate, the lateral angles acute, more prominent and more strongly reflexed; front coarsely and very densely punctate, rather sparsely clothed with short erect hairs, and squamose with large pointed scales toward the eyes and along the margins of the clypeus; antennæ rather robust; basal joint pyriform, robust, as long as the next two together; second and third elongate, the latter much the longer, fourth obconical, slightly produced inwardly at apex, feebly transverse; club feebly arcuate, six-jointed, first narrower and more acuminate than the others, pointed, and but little more than one-half as long, remaining joints equal in length and nearly as long as the entire stem including the basal joint. *Prothorax* widest just behind the middle, narrowed rather rapidly thence to the apex, the latter about two-thirds as wide as the base, broadly emarginate and feebly bisinuate; base broadly arcuate, more strongly so in the middle; sides subangulate, angle narrowly rounded, thence just visibly arcuate to the apical angles, and extremely feebly sinuate to the base, broadly and very feebly subcrenulate throughout; basal angles obtuse, not at all rounded; disk convex, with a very small feeble impression near each lateral edge at the middle of the length; vittæ white, very dense, the lateral interrupted anteriorly, remainder sparsely covered with large elongate pointed yellow scales, which are denser near the basal margin except in the middle; surface anteriorly with a very few short erect hairs; punctures large, shallow, round and variolate, rather densely but unevenly distributed, each enclosing a scale. *Scutellum* broadly parabolic, vittate. *Elytra* three-fifths longer than wide, in the middle one-third wider than the prothorax; sides parallel and feebly arcuate, subtruncate behind; humeri slightly tumid; apical umbones large and feeble; each elytron with three broad dense white vittæ, and a fourth very narrow and interrupted between the second and third from the suture; third vitta abruptly terminating near the apex, feebly and evenly arcuate throughout, first and second meeting on the apical umbo, the first irregular toward base; suture narrowly vittate, the vitta continuing

to the apex; intermediate surface finely, sparsely punctate, and covered sparsely with moderate pointed yellow scales. *Pygidium* slightly wider than long, triangular; sides equally arcuate; surface feebly convex, slightly impressed at the sides, sparsely clothed with elongate whitish scales which are dense along the base, and much sparser in a very narrow median line; surface also very sparsely and finely pubescent. *Abdomen* with small robust whitish scales, much denser along the apical margins of the segments, and also with very sparse erect pubescence. Length 36.0 mm.

Colorado (exact locality unknown—♀); New Mexico—♂.

This fine species is easily distinguishable by its antennal structure from any other in the genus. The last joint of the maxillary palpi is very feebly lunate, and is pointed at apex. The anterior tibiæ are robust, the outer teeth strong, the one nearest the base very broad, obtuse, and feebly developed.<sup>1</sup>

<sup>1</sup> I take the present opportunity to describe an interesting new species, received a short time since from Central America. The description refers to the female.

**P. concurrens** n. sp.—Form nearly as in *decemlineata*, pale brownish-rufous. Clypeus truncate, broadly arcuate in the middle; angles right, not rounded, but also not prominent, its surface feebly and very narrowly reflexed at the apical margin, having a few widely scattered, coarse, squamigerous punctures; front immediately behind the suture abruptly, coarsely, extremely densely and deeply punctate, the punctures in mutual contact, the occiput again abruptly totally impunctate; antennæ moderate, club as long as joints two to four combined; sixth joint rather less than one-half as long as the remainder, which are equal. *Prothorax* nearly as in *decemlineata*, but very much more sparsely punctate, the median line very deeply impressed, and the vittæ narrow; scales large and robust. Scutellum polished, with a narrow median vitta. *Elytra* with ten very narrow, densely squamose vittæ, the second from the lateral margin long, extending to apical third, but very widely interrupted; intervals extremely sparsely squamose, the scales smaller and narrower than those of the vittæ. Length 25.0 mm.; width 11.0 mm.

Honduras. (One specimen.)

Although resembling *decemlineata*, this species is smaller, less robust, and differs greatly in the form of the pygidium, which is slightly longer than wide, transversely convex, and extremely sparsely squamose, a narrow median line entirely glabrous. The anterior tibiæ are tridentate, the basal tooth very broad and feebly developed. The front and vertex in this species, and also in *speciosa*, are very much more densely and coarsely punctate than in *decemlineata*, where the punctures are separated by their own widths. All comparisons have been drawn from the female, which is the more constant sex.

**THYCE** Lec.

The single species, which has been regarded as the type of this genus, has hitherto been represented by a single female, and the recent discovery of the male by Mr. Dunn at El Paso, Texas, indicates the absence of generic difference between it and most of the Californian species separated as *Plectrodes*.<sup>1</sup> The structure of the anterior coxæ is identical, and the teeth of the tarsal claws are quite plainly unequal, to fully as great a degree in fact in *T. squamicollis*, as in many of the recognized species of *Plectrodes*. Our species may be separated as follows, the characters referring to the males:—

Fourth joint of the maxillary palpi one-third as long as the antennal club.<sup>2</sup>

**Carpenteri**

Fourth joint three-fifths as long as the antennal club; elytra nearly glabrous.

**squamicollis**

Fourth joint three-fourths as long as the antennal club.

Elytra moderately densely pubescent; last palpal joint oval, with the groove almost evenly elliptical<sup>3</sup>.....**palpalis**

Elytra extremely densely clothed with very minute, recumbent, squamiform hairs; last palpal joint robust, the groove widening toward base.

**pulverea**

Fourth joint just visibly shorter than the antennal club, the apex acute and deflexed.....**fossiger**

Fourth joint two-thirds longer than the antennal club.....**Harfordi**

In *Carpenteri* and also in *Plectrodes pubescens* the excavated groove in the fourth palpi joint is narrow, shallow and feeble, and is much shorter than the joint; in the remainder it is narrow, very deep, and extends throughout the length.

The females are much less abundant than the males, and differ considerably. The fourth palpal joint is small and more uniform in size with reference to the antennal club, and, although impressed externally, the groove is shallow and only partial, even in the

<sup>1</sup> The genus *Plectrodes* is represented only by the original *P. pubescens* of Horn. In this species the anterior coxæ do not differ in form from the same members in *Thyce*, but the abdominal segments are much shorter, and are almost completely free, requiring but slight force to break them asunder. In all the other species the ventral segments are long and connate, to absolutely the same degree as in *Thyce squamicollis*, being indicated only by feebly impressed lines. The genus *Plectrodes* should therefore be placed in the Melolonthini, where it will constitute one of the transitions to the Macrophyllini.

<sup>2</sup> Horn, Trans. Am. Ent. Soc., VIII, p. 146, and Pl. III, fig. 7. <sup>3</sup> *Ibid.*

females of such strongly developed forms as *pulverea* and *Hartfordi*. The antennal club is much shorter, more compact and oval. The anterior tibiæ are stouter and with more strongly developed external teeth. The vestiture is very much shorter, finer, and sparser, so that the general color is darker.

The species of *Thyce* are nocturnal, being abundantly attracted by bright lights at certain seasons of the year.

*T. squamicollis* Lec.—The female of this species is much larger than the male, but is almost precisely similar in vestiture. The pronotum in both sexes is very sparsely clothed with small, closely recumbent, squamiform hairs which are slightly denser along a narrow median line, as is usual throughout the genus; the lateral vittæ are, however, not definite. The name is therefore somewhat inappropriate. In the male the antennal club is nearly three-fourths as long as the stem, and in the female only one-half as long as the latter, oval and more compact.

Although the upper surface is more than usually glabrous, the long dense silken pubescence of the under surface is as well developed as in any other species.

**T. pulverea** n. sp.—Form elongate-oval, convex; elytra and abdomen dark reddish-brown; head and prothorax darker, piceous, the latter clothed moderately densely with small robust recumbent hairs, and longer erect pubescence; elytra and abdomen very densely covered with minute, recumbent, squamiform hairs; remainder of the under surface with long very dense silky pubescence; mesosternal parapleuræ, hypomera, and exposed surface of maxillæ devoid of long erect pubescence, but having whiter, dense and recumbent, squamiform hairs, a small indefinite spot at the sides of each abdominal segment also whiter and denser, remaining vestiture cinereous. *Head* wider than long; clypeus concave, truncate and very feebly sinuate in the middle, the angles slightly rounded, the base very slightly narrower; antennal club as long as the stem; last joint of the maxillary palpus nearly one-half longer than the preceding together, and fully three-fourths as long as the antennal club, rather robust, apex oblique but not deflexed and with a small circular truncation, the groove very deep, widening toward base, entire. *Prothorax* one-half wider than long; sides broadly angulate, the angles rounded; basal angles obtuse and rounded, apical obtuse but not rounded; apex very feebly emarginate, one-half as wide as the base, the latter broadly angulate, the angle broadly rounded; disk convex, finely, feebly and densely punctate. Scutellum white, more densely pubescent. *Elytra* nearly one-half longer than wide, widest near the middle, nearly one-third wider than the prothorax; sides very feebly arcuate; apex broadly sinuate; humeri slightly tumid; apical umbones very feeble; disk with the most feeble and indefinite traces of fine costæ, very finely, feebly and densely punctate. *Pygidium* one-third wider

than long, feebly convex, very minutely and densely punctate and pubescent. *Legs* moderate; femora fringed with fine erect pubescence, the flat surfaces with very small, recumbent, squamiform hairs not very densely placed; tarsi as long as the tibiae; claws arcuate, finely attenuate; tooth of anterior claw of anterior tarsi erect, near the base, slightly arcuate, stout and scarcely one-third as long as the remainder; tooth of the posterior claw, less than one-half as large, projecting but slightly above the basal carina; proportions in the other claws nearly similar, the tooth of the posterior claw of the hind tarsi, on its outer edge, nearly one-fifth the internal length of the remaining portion; corresponding ratio of the anterior claw one-third. Length 22.0 mm.

California (Los Angeles Co.).

The diagnoses here given are taken from the male; in the female of the present species the tarsal claws are rather smaller, the teeth more nearly equal, the greatest difference being in those of the anterior tarsi, the posterior being almost absolutely equal.

In *Thyce* the fourth palpal joint is received at base in a broad excavation in the apex of the robust transverse third joint, and the latter in turn is similarly connected with the second.

The proportional length of the fourth palpal joint in *pulverea* is the same as that given for *palpalis*, but the two species can be distinguished by the apparently denser pubescence of *pulverea*, by the more robust palpal joint in which the groove, according to the figure given by Dr. Horn, is differently shaped, and by the claws of the posterior tarsi, in which the teeth are said to be very nearly equal in *palpalis* (Trans. Am. Ent. Soc., VIII, p. 147).

**T. fossiger** n. sp.—Form rather broadly oval, convex, castaneous; head and prothorax piceous; vestiture throughout nearly as in *pulverea*, but slightly coarser, and with the erect hairs of the pronotum decidedly longer. *Head* small, wider than long; clypeus concave, truncate; angles narrowly rounded; sides parallel, strongly arcuate; antennal club slightly shorter than the stem and but very slightly longer than the fourth palpal joint, the latter elongate, rather slender, the apex distinctly deflexed, and with the usual minute circular truncation, one-third longer than the three preceding together; external groove entire, very narrow and deep, slightly enlarged near the base, and again much more feebly so near the apex. *Prothorax* two-thirds wider than long; sides laterally strongly angulate, the angle rounded; sides very feebly sinuate anteriorly, feebly arcuate toward base and nearly coarctate with the latter, the basal angles being very obtuse and broadly rounded; apical angles right, not rounded; apex very feebly emarginate, one-half as wide as the base, the latter broadly, feebly angulate, the angle broadly rounded; disk convex, even, finely, feebly and densely punctate. *Elytra* two-fifths longer than wide and two-fifths wider than the prothorax; sides feebly arcuate; apex broadly angularly emarginate; humeri very feebly tumid; disk with

very feeble traces of costæ, very minutely, feebly and densely punctate. *Pygidium* one-third wider than long, feebly convex, punctured, and very densely pubescent like the elytra. *Legs* moderate; tarsi as long as the tibiæ; claws nearly as in *pulverea*. Length 20.0 mm.

California (Los Angeles Co.).

This species is closely allied to the last, but differs in its shorter, more robust and flattened form, its shorter, more transverse prothorax with more angulate sides, which are more rapidly convergent toward base when viewed vertically, and in the structure of the antennæ and palpi. The pubescence of the elytra is more densely placed, and the pygidium more nearly vertical.

**T. Harfordi** n. sp.—Oval, convex, piceous-black throughout; vestiture yellowish-cinereous; silky hairs of under surface very long and dense; abdomen moderately densely covered with small robust recumbent hairs, each segment with a paler spot of denser pubescence at the side near the apex; maxillæ, hypomera, mesosternal parapleuræ, and metasternal epimera whiter and with short stout recumbent pubescence; vestiture of the elytra dense, the hairs robust, recumbent and rather long, sparser on the pronotum, the fine erect hairs of the latter long, dense and conspicuous. *Head* small, but very slightly wider than long; clypeus concave, broadly, feebly sinuate, the angles narrowly rounded and the sides parallel and feebly arcuate; antennal club robust, oval, much shorter than the stem and scarcely more than two-thirds as long as the fourth palpal joint; the latter greatly developed, more than one-half longer than the preceding joints together, elongate, and but moderately robust when viewed laterally, with the lower edge straight, the upper broadly arcuate, the apex scalpellate, the lower point of the apex not deflexed, and with an exceedingly minute circular truncation, having externally, an entire groove which is wide, elongate, elliptical, and extending fully one-half through the joint. *Prothorax* two-thirds wider than long; sides rather strongly angulate, the angle rounded; sides near it straight; basal angles obtuse and moderately rounded; apex very feebly emarginate, scarcely one-half as wide as the base, the latter broadly and rather strongly angulate, the angle broadly rounded; disk convex, very narrowly and feebly impressed along the median line, rather finely, feebly and densely punctate. Scutellum with a very fine subdenuded median line. *Elytra* two-fifths longer than wide and nearly two-fifths wider than the prothorax, with very feeble traces of broad costæ, together broadly, angularly emarginate at apex when viewed longitudinally; sides parallel and feebly arcuate; disk minutely, feebly and densely punctate. *Legs* moderate; tarsi about as long as the tibiæ. Length 19.0-20.0 mm.

California (Alameda Co.).

The claws are nearly as in the preceding species, but the teeth are slightly more slender and acute. The pygidium is but one-fourth wider than long. This species is very distinct in its strongly

developed palpi and correspondingly smaller, more robust and oval antennal club; it was taken very abundantly at night in the suburbs of Alameda, Cal., and is dedicated to an enthusiastic friend of entomological science—Mr. W. G. W. Harford, of Oakland, Cal.

### **DINACOMA** n. gen. (Melolonthini).

Clypeus concave, parallel, subtruncate. Mentum moderate, subquadrate, concave. Maxillæ moderate, the palpi well developed; first joint very small, narrow, obconical; second and third longer than wide, the former the longer, both obconical and obliquely truncate; fourth slightly shorter than the preceding three together, pointed, deeply impressed or excavated on its outer face. Labial palpi very small; third joint ovoidal, obtusely acuminate, as long as the two preceding together. Labrum short, transverse, free, impressed in the middle. Antennæ ten-jointed; middle joints of stem subanchedylosed, short; club three-jointed, very long and arcuate in the males. Anterior coxæ transverse, but slightly prominent. Metasternal episterna moderate in width. Abdominal segments connate, the sutures fine but not entirely obliterated, rendered distinct by the disposition of the vestiture. Metasternum well developed. Legs rather short and slender; tarsi short, the posterior much shorter than the tibiæ; claws moderate, evenly and strongly arcuate, toothed near the base, the teeth distinctly unequal.

The above characters indicate a genus intermediate in many characters between *Polyphylla* and *Thyce*. It is founded upon *Thyce marginata* Casey (Bull. Cal. Acad. Sci., II, p. 39). The deep excavation of the fourth palpal joint, which is present in this genus in common with *Thyce*, is by no means confined to this group of genera, as it is a common character in *Diploptaxis*, although generally less developed.

The characters agreeing with *Thyce*, reside in the structure of the palpi and tarsal claws, and those which ally it most directly with *Polyphylla*, are found in the greatly developed male antennal club, and the short tarsi.

## TENEBRIONIDÆ.

### **EDROTES** Lec.

The four species of this genus may be separated as follows:—

Pubescence long and erect.

Pubescence more condensed in several narrow widely distant lines on each elytron; surface highly polished, very minutely and sparsely punctate,



the punctures more dense—but still confused—along the more densely pubescent lines, strongly convex.....**ventricosus**  
 Pubescence denser, without trace of serial arrangement.  
 Lustre rather dull; form strongly convex; punctures dense, very large and deeply impressed; antennæ rather robust .....**rotundatus**  
 Polished, subdepressed above, more abruptly and strongly convex at the sides; punctures small, sparse and perforate; antennæ longer and very slender, less capitate .....**nitidus**  
 Pubescence very short, subrecumbent, not definitely arranged.....**globosus**

**E. nitidus** n. sp.—Broadly-oval, black; legs piceous; antennæ dark rufous. *Head* distinctly narrower than the prothorax; median lobe of epistoma strong, much wider than long, truncate, dilated at apex; outer face of mandibles very coarsely and densely punctate, the punctures distinctly separated. *Prothorax* fully four times as wide as its median length; apex broadly emarginate in circular arc, the apical angles strongly, anteriorly produced and acute; sides very feebly convergent from base to apex, extremely feebly sinuate toward apex; base truncate; lateral acute edge obsolete except at the apical angles; disk finely very sparsely punctate in the middle, the punctures becoming much larger, dense and subasperate laterally. *Elytra* widest just before the middle; sides strongly, evenly arcuate, the apex from above very broadly rounded; disk somewhat flattened above, nearly six times as long as the median pronotal length, and about one-third wider than the prothorax, finely, sparsely punctate, the punctures generally separated by from four to five times their own diameters. Length 7.5 mm.

California (Mojave Desert, Kern Co.).

This species is quite distinct from any of the others; the pubescence is long and somewhat coarse, evenly distributed over the elytra, a little shorter, sparser and coarser than in *rotundus*, and distinctly shorter, more matted and slightly coarser than in *ventricosus*; the latter is larger and much more minutely punctate.

**E. globosus** n. sp.—Very broadly oval and strongly convex, black throughout; legs and antennæ slightly piceous; pubescence very short, cinereous, abundant and depressed. *Head* moderate; median lobe of epistoma wider than long, feebly constricted at base, the angles rounded and apex truncate; punctures of outer face of mandibles coarse, deep and dense, polygonally crowded. *Prothorax* very strongly transverse, broadly, very feebly emarginate in circular arc at apex; lateral edges completely obsolete and broadly rounded, the apical angles alone acute and prominent; disk polished, very finely and sparsely punctate in the middle, abruptly coarsely, deeply and very densely so at the sides, the punctures mutually contiguous. *Elytra* subglobose, very strongly convex, rather coarsely, densely and evenly punctate throughout the disk, the punctures separated generally by rather more than their own diameters. Length 5.5 mm.

Colorado (Greeley).

A very interesting form, quite isolated by reason of its small size, convex subglobose elytra, and very short subrecumbent pubescence. It is one of the many interesting discoveries of Mr. H. F. Wickham.

#### USECHUS Mots.

Two species of this genus are now known; they may be distinguished as follows:—

Median impressed area of pronotum fusiform, entire, more or less coalescent with the basal fovea, the latter narrow and elongate; elytral punctures very large, widely separated in the rows; pubescence very sparse; color blackish-piceous .....	<b>lacerta</b>
Median impressed area feeble, the subcariniform sides nearly straight and parallel, entirely obsolete just behind the middle; basal fovea larger, rounded, always deep, distinct and isolated; elytral punctures smaller, more closely placed; pubescence denser and rather longer, more densely and conspicuously nucleated in twelve small spots on the elytra; color paler, brown; size smaller.....	<b>nucleatus</b>

The species above defined as *lacerta*, has been identified from the somewhat unsatisfactory figure given by Motschulsky.

**U. nucleatus** n. sp.—Of the same form as *lacerta*; pubescence pale flavate, rather sparse but denser and conspicuous on the elevated ridges, and in twelve spots on the posterior two-thirds of the elytra, disposed on each elytron as follows: one just before the centre, three in an oblique line at posterior third, and two in a line nearly parallel to the suture, rather indistinct, and very near the apex. *Head* small, rather coarsely and sparsely punctate. *Prothorax* as wide as long; posterior angles small, acute and prominent; base four-fifths as wide as the disk; surface finely tuberculate, each tubercle with a small lateral puncture bearing a stiff subrecumbent seta. *Scutellum* extremely minute, twice as long as wide, pointed, slightly tumid. *Elytra* with fine feeble costae, the intervals deeply punctate, the humeral costa very strong toward base, the base also very strongly tumid at one-third the width from the suture to the sides, the posterior densely pubescent spots also slightly tumid. Length 3.0–4.2 mm.

California (Humboldt Co.).

Occurs in great abundance in the Hoopa Valley, and may be distinguished at once from *lacerta*, not only by the characters given in the table, but by the form of the smooth and impunctate furrow which extends along the lateral edges of the pronotum behind the antennal excavations. In the present species this furrow extends nearly in circular arc from the excavations, past the basal angles,

and terminates at the rounded median basal fovea, while in *lacerta* it is narrower and deeper, and terminates at the basal angles; this character is comparatively constant. In *lacerta* the densely pubescent spots referred to as a prominent character of *nucleatus*, are also visible and in nearly the same positions, but they are always feebler; the length of *lacerta* is 4.0–5.0 mm.

### CELOTAXI Horn.

The form of the body in this genus somewhat resembles that of *Coniontis*, but is as a rule rather more broadly and evenly elliptical, the prothorax being more strongly narrowed from base to apex. The sculpture is stronger and denser, and the setæ, which are seldom prominent and nearly always recumbent in *Coniontis*, here become much denser and more erect, in this latter respect resembling those of the aberrant *Coniontis obesa* Lec. The species are entirely confined to the small island of Guadalupe, off the coast of Lower California.

Most of the material before me has been recently collected by Mr. G. W. Dunn; the series is very extensive, amounting to about forty specimens, and indicates three species which may be distinguished as follows:—

Form broadly elliptical; sides arcuate.

Punctuation of elytra sparse, not muricate; surface shining; setæ fine, easily removable ..... **punctulata**

Punctuation of the elytra distinctly muricate; setæ coarse, very persistent, always present on the elytra ..... **muricata**

Form narrow, oblong; sides parallel and nearly straight; surface dull, densely, coarsely muricate ..... **angustula**

**C. angustula** n. sp.—Oblong, moderately robust; sides parallel and nearly straight; color above dark brownish-ferruginous, beneath slightly paler and more rufous; legs concolorous; lustre dull. *Head* slightly wider than long; median impression very small and nearly obsolete; punctures rather coarse, deep, very dense, sparser on the occiput; a small median area at the base impunctate. *Prothorax* transversely, strongly convex, fully twice as wide as the median length; sides feebly convergent from base to apex and feebly, evenly arcuate; apex broadly emarginate; base nearly straight, except at the sides where it becomes distinctly sinuate; basal angles distinctly produced posteriorly, right when viewed laterally, not rounded, apical very narrowly so; disk very narrowly reflexed at the sides, coarsely, very deeply and densely punctate, most densely so at one-fourth the width from the sides, where the punctures tend to coalesce longitudinally, more sparsely so near the edges. *Elytra* at base as wide as the prothorax; sides parallel and nearly

straight for two-thirds the length from the base, thence together rather acutely rounded behind; disk transversely, strongly convex, rather coarsely, densely and asperately punctate; interspaces dull; pubescence fine, rather long and dense. Length 7.5-9.0 mm.; width 3.8-4.7 mm.

Guadalupe Island.

The present species, which is represented by a series of eight specimens, is immediately distinguishable from the others by its narrow subcylindrical form, parallel and much more rectilineal sides, and generally coarser pronotal punctuation.

*C. muricata* Horn.—Represented by a good series showing slight variation, especially noticeable in the size and density of the pronotal punctuation. The color varies from dark brownish-ferruginous to piceous-black. One specimen differs in its more broadly oval form.

Length 8.0-10.5 mm.; width 4.3-5.5 mm.

*C. punctulata* Horn.—This species is represented by a homogeneous series of twelve specimens. The color varies from rather pale rufo-ferruginous to piceous-black.

Length 9.5-12.0 mm.; width 4.8-6.0 mm.

All the species of this genus have a narrow, more or less incomplete, median pronotal line which is impunctate.

#### COELUS Esch.

The genus *Cœlus* is peculiar to the coast regions of California, and is found in abundance in the sand dunes which line the seashore. The species are somewhat closely allied, but scarcely to so great a degree as in *Cœlotaxis* and *Coniontis*. They may be recognized by the characters given in the following table:—

Anterior angles of epistoma distinctly prominent; size large .....	<b>grossus</b>
Anterior angles not at all produced, broadly rounded.	
Form narrowly oval; pronotal punctuation very fine and sparse, unevenly distributed .....	<b>ciliatus</b>
Form broadly oval; pronotal punctuation coarse and deep.	
Punctures sparse .....	<b>arenarius</b>
Punctures dense, evenly distributed, sometimes semicoalescent.	
	<b>globosus</b>

These species vary considerably in size, but the general outline and punctuation are quite constant, so that there can be no difficulty in identifying the forms here described.

**C. grossus** n. sp.—Form rather broadly oval, very convex; dark castaneous to piceous-black, shining, minutely and sparsely setose above, more densely

so near the sides, the latter ciliate with long erect setæ; under surface and legs but slightly paler. *Head* much broader than long, coarsely and densely punctate; sparsely punctate near the base, very convex, strongly declivous to the clypeal suture, which is well marked; clypeus feebly convex, very broadly and strongly sinuate anteriorly; labrum large, rufous in color; near the clypeal suture there are several coarse flavate setæ. *Prothorax* slightly more than twice as wide as long, transversely, strongly and evenly convex; sides feebly convergent from base to apex, distinctly and evenly arcuate; base transversely truncate; angles—viewed laterally—very slightly obtuse and scarcely at all rounded; apex strongly emarginate, fringed with flavate setæ; angles evenly and rather narrowly rounded; disk irregularly punctate; punctures rather sparse in the middle, coarser and slightly denser near the sides; base having a fine coriaceous or semimembranous margin. *Scutellum* minute. *Elytra* slightly longer than wide, slightly more than twice as long as the prothorax; sides parallel and feebly arcuate for three-fifths the length from the base, together thence evenly and somewhat parabolically rounded behind; disk very strongly convex, finely rugulose, rather coarsely and not densely punctate; punctures evenly distributed, slightly coarser and sparser than those of the pronotum, slightly asperate. *Legs* rather short and robust; tarsi slender, first joint of the anterior produced beneath the next three and the basal portions of the fifth. Length 8.8–12.5 mm.

California (Monterey; San Pedro).

The distinguishing features of this species are its large size and peculiarities of pronotal sculpture. In *ciliatus* the punctures of the pronotum are fine and nearly evenly distributed over the entire disk, while in *grossus* they are slightly coarser, and are almost entirely wanting in a broad band, crossing the disk at about one-third its length from the apex, but not attaining the lateral margins. This character is quite constant throughout a series of ten specimens which I have before me.

*C. globosus* Lec.—I obtained two specimens of this species at San Diego, California. It may be distinguished from *ciliatus* and *grossus* by the very coarse and much denser pronotal punctuation, and the broadly oval form, being even more dilated than *grossus*. From *arenarius* it differs in its much denser punctuation and slightly broader form.

**C. arenarius** n. sp.—Form rather broadly and evenly elliptical, convex, shining, piceous to piceo-castaneous. *Head* much broader than long; clypeus broadly and feebly sinuate at apex; lateral angles broadly rounded; suture deep, straight; surface rather coarsely, densely punctate. *Prothorax* widest slightly before the base, more than twice as wide as long; sides strongly convergent from base to apex, rather strongly arcuate; basal angles slightly rounded; apex broadly emarginate; disk convex, coarsely, sparsely and

somewhat unevenly punctate; punctures denser toward the lateral edges, where also they are intermingled with finer punctures. *Elytra* as wide as the prothorax, broadly rounded behind, but very slightly longer than wide, slightly more than twice as long as the prothorax; surface convex, coarsely, deeply, rather sparsely and asperately punctate; punctures slightly denser and more strongly granulose toward apex. *Legs* short. Length 6.5–8.5 mm.

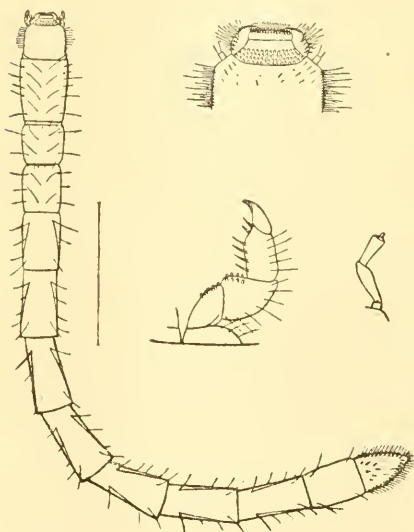
California (San Pedro, Los Angeles Co. 2).

This species somewhat resembles the smaller forms of *grossus*, but may be known by the broadly rounded clypeal angles, these being narrowly rounded and distinctly produced anteriorly in that species.

*C. ciliatus* Esch.—This species is very abundant about San Francisco. The series of thirty specimens before me indicates but slight variability except in size, the specimens ranging from 4.8 to 8.0 mm. in length.

#### LARVA.

The following description will serve for the identification of the larva of *Caelus ciliatus*. The specimens upon which the description is based were found in a small sandy tract, in which the imago was more than usually plentiful, and undoubtedly represent the true larva.<sup>1</sup>



*Body* very elongate, slender, cylindrical. Surface shining, having a few very long fine setae, herissate with stiff fulvous setae at the apex and sides of the head, and beneath the latter and the thoracic segments. Integuments coriaceous, pale luteo-testaceous; head, prothorax and anal segment subcorneous, darker, rufo-testaceous.

*Head* as wide as the prothorax, as long as wide. Post-epistomal region slightly wider than long; sides parallel, nearly straight;

<sup>1</sup> The figure on the left represents the entire body; that to the right and above, the anterior portion of the head, more highly magnified. Of the two

base transversely truncate; apex very broadly, feebly emarginate in the middle three-fifths, receiving the base of the epistoma; surface shining, with a few erect dorsal setæ, feebly and sparsely creased, having two oblique lines of coarse feeble punctures in front of the middle, and three in the middle near the epistomal margin; side margin bristling with erect setæ. Epistoma trapezoidal, transverse, feebly declivous; apex transversely truncate; apical two-fifths glabrous, shining, very feebly rugulose; basal three-fifths densely covered with small, robust, spiniform tubercles. Labrum strongly transverse, truncate at apex, having a loose fringe of short porrected setæ along the apex; surface broadly, very feebly convex, polished, glabrous, with a double line of small, erect, very robust spines near the apex. Mandibles not prominent, visible laterally; surface flat; outer margin broadly bilobed; anterior lobe with an elevated margin; posterior with a double line of coarse, erect spines near the lateral margin; outer face bristling with erect, coarse setæ. Antennæ short, rather slender, four-jointed; third joint obconical, shorter than the second; fourth small, subulate, enlarged and bulbous at base, the enlargement enclosed by the apex of the third joint. Maxillæ well developed; base very large and prominent. Maxillary palpi rather slender, not compressed, with three free joints, the basal being very short, broad, and anchylosed to the supports; first free joint slightly longer than wide, truncate at apex, slightly obconical; second fusiform, distinctly longer than wide, broadly truncate at base and apex; third small, oblique, sides nearly parallel, twice as long as wide, two-thirds as long as the second, apex truncate. Mentum longer than wide, rather small, transversely, strongly convex; surface setose, granulose, also coarsely asperate; gular peduncle trapezoidal, well marked. Ligula slender, projecting far beyond the mentum. Labial palpi small, apparently of two joints, terminal slender, oblique, much longer than wide. Eyes wanting.

*Prothorax* much longer than wide, slightly narrowed from apex to base; sides very feebly arcuate; apex and base broadly, transversely truncate; surface cylindrical, having a double row of four small setigerous punctures near the middle and extending from base to apex; lateral suture inferior; under surface behind the coxæ conical, ascending upward from the base, shining, glabrous anteriorly, setose toward base. Legs far before the middle, short, robust, compressed; coxæ approximate, short; basal joint triangular, with a few short robust tubercles near the apex interiorly; second larger, triangular, with a double row of small tuberculiform spines along the inner apex; third as long as the second, longer than wide, with a row of long, erect, very strong spines along the inner edge; terminal claw very large, acuminate at apex.

*Mesothorax* short, scarcely longer than wide, cylindrical, constricted at apex; surface with a few setigerous punctures anteriorly near the constriction, and a more widely distant row near the base. Legs at the middle of the segment, very small, rather robust. Surface before the coxæ carinate in the middle;

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remaining the one on the left represents the anterior leg with its coxa, and that on the right the antenna.

that behind them convex at the sides, the convexities being separated by two divergent, impressed grooves.

*Metathorax* longer than wide, nearly cylindrical. Legs slightly behind the middle. Surface nearly as in the mesothorax.

*Abdominal segments* longer than wide, subcylindrical behind, more conical near the middle. Each segment having on the flanks a fine, impressed, very obliquely descending groove beginning before the middle; lines of juncture of the dorsal and ventral surfaces far inferior, straight, divergent from apex to base, strongly impressed.

*Anal segment* longer than wide, pointed, ogival, convex above, herissate with coarse, erect, fulvous setæ more sparse dorsally, with a few dorsal spines and a row of erect spines parallel to and very near the edge extending from base to apex. Lower surface with two large tumid processes covered with short erect spines, arranged transversely near the middle and just before the anal orifice; the latter closed by a small complicated fold which is not prominent; surface thence to the apex on a superior plane, smooth.

Length 18.0 mm.; diameter 1.1 mm.

#### **CÆLOMORPHA** n. gen. (Coniontini).

Body oval, convex, sparsely and minutely setose above, ciliate at the sides. Head inserted in the prothorax to the middle of the eyes, short, broad; clypeus rounded at the sides, broadly sinuate anteriorly; mentum moderate, obtrapezoidal; maxillæ broadly exposed at the sides; maxillary palpi well developed, third joint small, obconical, one-half as long as the second, fourth as long as the preceding two together, elongate, moderately dilated, cylindro-ovoidal, obliquely truncate within at apex; labial palpi small, third joint feebly dilated, cylindro-ovoidal, acuminate at apex; antennæ very short, incrassate, 10-jointed, first joint short, inserted in front of the coarsely granulated eyes and under the overhanging sides of the clypeus. Legs rather slender, spinulose; posterior tarsi slender, basal joint elongate; anterior tarsi scarcely as long as the tibiæ, first joint large, produced beneath the second and third joints; tibiæ not sensibly produced exteriorly at apex, terminating in two short spurs and several small spinules. Epipleuræ broad, rapidly diminishing in width toward the elytral apices which they attain. Scutellum minute, triangular.

This genus is well distinguished from *Cælus* by its 10-jointed antennæ and broad epipleuræ, also by the form of the prothorax.

The labrum is strongly retractile, and in three of the four specimens examined is completely invisible, the mandibles being fully exposed from above; the organ is indeed so fully retracted that merely the apex can be seen, even by looking far under the clypeus, which is separated from the mandibles by considerable intervening space. The fourth specimen is paler in color, and has the labrum protruded, showing this to be rather large and as usual broadly



sinuate at tip. The labrum is freely retractile in a great many other genera of Tenebrionidæ.

The genus *Cœlus* is a highly specialized form of the group Coni-ontini, which embraces two distinct types, distinguished primarily by antennal and tarsal structure, and represented by *Cœlus* and *Coniontis*. The genus *Cœlotaxis* is the connecting bond between the two sections, since it possesses the long slender antennæ of *Coniontis*, and, in a rudimentary degree, the tarsal structure of *Cœlus*. *Eusattus* is closely related to *Coniontis*. *Cœlomorpha*, on the other hand, while exhibiting a decided relationship with *Cœlus*, is a still more highly specialized and extreme form, and perhaps may be considered a transition toward a group or genus now extinct or not as yet discovered. This view is principally based upon the broad epipleuræ and the form of the basal portions of the prothorax.

The prolongation of the basal joint of the anterior tarsus, which is most highly developed in *Cœlus* and *Cœlomorpha*, is very moderate in *Cœlotaxis* and nearly obsolete in *Coniontis*, although in the latter a distinct tendency to prolongation may be perceived, the joint being very obliquely truncate at apex. In *Eusattus* the basal joint is much longer and more slender, and nearly every vestige of the prolongation is lost. If, therefore, the group be arranged systematically in accordance with this character, the genera would stand in the following sequence: *Cœlomorpha*, *Cœlus*, *Cœlotaxis*, *Coniontis*, and *Eusattus*.

As a general rule in this group the basal angles of the prothorax are prominent and produced posteriorly, and, although in *Cœlus* and a few species of *Coniontis* this character is nearly obsolete and the base of the prothorax almost straight and transverse, we can even in these cases clearly perceive the tendency to posterior prolongation. In *Cœlomorpha*, however, this character is completely reversed, for the base of the prothorax becomes evenly and posteriorly arcuate throughout its width, the basal angles being broadly rounded and gradually coarctate with the sides.

**C. maritima** n. sp.—Rather broadly oval, convex, shining, piceous to pale ferruginous; under surface and legs slightly paler. *Head* scabrous, herissate with coarse erect setæ; antennæ very short, gradually and strongly incrassate, slightly compressed, scarcely two-thirds as long as the head; eyes very coarsely granulate. *Prothorax* distinctly more than twice as wide as long, broadly convex, margined along the base, which is broadly and evenly arcuate,

with a thin membranous border, broadly emarginate at apex; sides feebly convergent from base to apex, distinctly and evenly arcuate; basal angles broadly rounded, apical much more narrowly so; disk with a few widely and irregularly scattered punctures in the middle, which are coarse and excessively feebly impressed; near the sides the punctures are much more dense, stronger and distinctly scabrous or subasperate. *Elytra* connate, very convex; sides parallel and distinctly arcuate for three-fourths the length from the base; together broadly rounded behind when viewed vertically, acute with the sides straight when viewed longitudinally; disk excessively minutely subgranulose, finely rugulose, with fine, not dense, scabrous or subasperate punctures. Under surface moderately shining, finely, not densely and subasperately punctate. Epipleuræ nearly flat, finely subrugulose and asperate. Length 2.9–4.0 mm.

#### Lower California.

The species above described is the smallest member of the group. Several specimens were secured by Mr. G. W. Dunn, who informs me that its habits are entirely similar to those of *Cœlus*.

#### **ULOPORUS** n. gen. (Tenebrionidæ).

Head short, broad, subdeflexed. Clypeus broadly rounded, not obliquely elevated at the sides. Eyes convex, moderate, coarsely faceted, extending slightly further beneath than above, neither divided nor emarginate. Antennæ inserted under the acute lateral edges of the clypeus, almost adjoining the eye, moderate in length, very slender, the last three joints abruptly larger forming a distinct oblong club; first and second joints elongate-oval, slightly more robust, the first slightly the longer and wider; third very slender, three times as long as wide, rather distinctly longer than the fourth; eighth obconical, fully as long as wide; ninth abruptly much wider, subtriangular, wider than long; tenth obtrapezoidal, twice as wide as long; eleventh as wide as the tenth, oval, slightly wider than long. Labrum very short, strongly transverse, truncate, the membranous band separating it from the clypeus fully as long as its exposed portion. Maxillæ large, greatly exposed and prominent; palpi well developed; second joint long and slightly clavate; third short; fourth very large, strongly securiform. Ligula short, indistinct; palpi rather small, not very robust; third joint rather longer than the second, feebly conical, twice as long as wide. Mentum small, slightly elongate, distinctly narrowed from apex to base and supported on a moderate peduncle. Prothorax short, wider from apex to base, the sides coarctate with those of the elytra, the sides of the pronotum margined with an elevated bead, the apex and base not margined, the latter fitted closely to the elytra. Prosternum short in front of the coxæ, rather widely separating the latter, the process very largely developed behind the coxæ, the apex angulate and received in a deep impression of the mesosternum; development behind the coxæ—near their inner margins—as great as before them in the same longitudinal line.

Mesosternum very short; coxæ widely separated, having a distinct trochantin. Metasternum moderate, the episterna moderate in width; posterior coxæ almost contiguous, just visibly separated. Legs short; femora moderately robust; tibiæ short, having two sets of terminal spurs, one at the inner and one at the outer edge; spurs short and rather slender; tarsi moderate in length, densely pilose beneath; first joint elongate, penultimate very small, the basal joint of the posterior about as long as the entire remainder, the second obliquely and distinctly lobed beneath. Scutellum rather small, strongly transverse, strongly rounded behind. Epipleuræ moderate in width, entire, horizontal behind, slightly broader and feebly inflexed toward base. Body evenly elliptical, moderately and evenly convex.

The posterior margins of the second and third ventral segments being finely coriaceous, determines the position of this rather puzzling genus to be in the Tenebrioninæ, and the eyes being more prominent than the sides of the front, together with other characters above given, seems to indicate that it should be associated with the Diaperini, where for the present it may be placed near *Platydema*.

**U. ovalis** n. sp.—Evenly elliptical, moderately convex, somewhat strongly shining, rather densely pubescent, the pubescence very fine and extremely short; piceous, legs and antennæ dark brownish-rufous. *Head* retractile, very feebly, evenly convex, not in the least tuberculate, very finely and densely punctate. *Prothorax* nearly twice as wide as long; apex about two-thirds as wide as the base, the latter transverse with a broad very feebly arcuate median lobe; basal angles—viewed laterally—nearly right, not rounded, apical rather broadly rounded, not at all prominent; disk finely, very deeply and densely punctate. *Elytra* rather more than twice as long as the prothorax; sides arcuate; apex broadly rounded; surface very finely, densely punctate, with vaguely defined series of slightly larger, widely distant punctures, the series without the slightest trace of impressed striæ. Length 1.7 mm.

Texas (Columbus).

This species is widely diffused throughout the States bordering the Gulf of Mexico. I owe the specimen serving as the type of the above diagnosis, to the kindness of Mr. E. A. Schwarz, who discovered it in considerable abundance in the locality indicated.

## APPENDIX.

## CONTRIBUTIONS TO THE AMERICAN TERMITOPHILOUS FAUNA.

The species recently described in these Annals under the name *Termitogaster insolens*, was the beginning of a series of discoveries by Mr. J. Beaumont, in connection with certain studies in the life habits of *Termes* and its allied genera.

The specimens of the species named above, were found incidentally by Mr. Beaumont in the galleries of termites, and were transmitted by him, together with the neuropterous specimens serving in part as the basis of a recent paper by Mr. P. H. Dudley, which has just been published in the Transactions of this Academy. When the attention of Mr. Beaumont was called to the importance of his discovery, a more careful and systematic search was instituted, resulting in the capture of several very small specimens which have been placed in my hands for study by Mr. Dudley. These, as will be seen below, are found to represent two entirely new and very interesting genera, and, in addition, a new species of *Termitogaster*.

The coleoptera associated with the termites appear to be more specialized and more intimately connected with the life habits of their hosts than is the case with the more numerous myrmecophilous species, and their taxonomy is more difficult to a corresponding degree.

If any generalization can be made upon the little already known of these curious genera, it would appear that, having become so profoundly modified from the more usual types,—as seen for instance in *Spirachtha*, which is one of the most remarkable instances of adaptive development at present known,—it may be legitimate to suppose that the neuropterous termites are an older type geologically than the hymenopterous ants, whose coleopterous guests are generally less radically modified. This is of course under the supposition that the rapidity of evolution or adaptation has been approximately constant in the two cases, and that the coleoptera are either intermediate in age between the termites and the ants, or that they are the most ancient of the three. The truth is, probably,

that the more highly specialized forms such as *Spirachtha*, *Corotoeca* and *Termitogaster*, are very nearly contemporaneous in origin with the termites, while the less specialized forms such as *Philoterme*s and the genera here described, are intermediate in age between the termites and true ants, since the latter genera are scarcely more modified than the majority of myrmecophilous forms.

### TERMITOGASTER Casey.

In elytral structure the following species is an anomaly, and has scarcely a parallel in the entire order.

**T. fissipennis** n. sp.—Anterior parts slender, compactly joined, parallel and subcylindrical; abdomen strongly inflated; color pale brownish-flavate throughout, the exposed membranous portions white, the elytra slightly piceous; integuments slightly alutaceous, very sparsely setose.

*Head* scarcely as long as wide, not deflexed; sides short and parallel; basal angles narrowly rounded; base subtruncate, broadly arcuate, fitted into the apex of the prothorax almost throughout its width, the neck very wide; upper surface covered rather sparsely with minute subasperate points, very feebly convex, broadly, feebly impressed in the middle. *Eyes* rather large, almost evenly oval, very slightly longer than wide, convex and distinctly prominent, finely faceted, longer and slightly more prominent than the tempora. *Antennæ* about two-fifths as long as the body, rather slender, cylindrical, loosely articulated, strongly geniculate; basal joint subequal to the next three combined; two to four decreasing rapidly in length, the latter just visibly longer than wide, obtrapezoidal, the sides but very feebly oblique; four to ten almost exactly similar, the ninth as long as wide, the tenth just visibly transverse; eleventh cylindro-ovoidal, pointed, as long as the two preceding; all the joints sparsely setose and also finely pubescent, more densely so toward apex and almost glabrous toward base; basal joint inserted in a small rounded entirely dorsal fovea, adjacent to the antero-superior margin of the eye. *Front* before the antennæ advanced and strongly arcuate at apex, the surface just before the apical margin elevated in two broad approximate cariniform tubercles, immediately in advance of which the surface is very short and strongly declivous, the apical margin with a very minute deep rounded emargination, having the sides in the form of fine carinæ and with the apical projections extremely fine and acute, but not greatly advanced. *Labrum* distinct, transverse, broadly, strongly sinuate at apex, with the surface strongly impressed opposite the situation, separated from the front by a membranous sheath. *Mentum* large, longer than wide, broadly impressed; apex very slightly narrower than the base; sides parallel. *Ligula* very short, membranous, sinuate at apex—viewed dorsally—with a short cylindrical porrect process projecting from the bottom of the situation, the paraglossæ apparently entirely obsolete. *Labial palpi* very small, slender, the three joints decreasing uniformly and rapidly in width,

cylindrical, the last two subequal in length and together but slightly longer than the first. *Maxille* large, greatly exposed and prominent, especially toward base, the basal plate not in the least spinose; outer lobe<sup>1</sup> well developed, lunate, corneous, with the apex acute, the inner edge fringed with moderate setæ; inner lobe not made out. *Maxillary palpi* very large, conspicuous, sparsely setose and irregular; basal joint small, rather longer than wide, distinct; second extremely asymmetric, slightly transverse, feebly convex on the outer side, deeply excavated on the inner; third longer than wide, longer than the second, ovoidal, gradually pointed, convex on the outer side, broadly excavated on the inner, the fourth joint minute and spiniform, not oblique. *Mandibles* moderate, not made out, closed in the type.

*Prothorax* slightly wider than the head and a little wider than long; sides nearly straight and parallel; apex broadly strongly arcuate and rounded into the sides, the apical angles obsolete; base truncate throughout the width and very feebly arcuate, the basal angles nearly right and very narrowly rounded. *Pronotum* extremely feebly, evenly convex, not impressed, shining, excessively minutely, sparsely, subsparately punctate, each point bearing an excessively minute erect pale setiform hair; disk with two very widely distant subbasal setæ, and four, forming a trapezoid, in the apical half; viewed laterally the flanks are narrow and perpendicular, scabrous, the lower edge sinuate just behind the deflexed apical angles, which are acute and continued in front of the coxæ by the extremely short and almost lamellate ante-coxal prosternal piece. *Prosternum* extremely short, not one-third as long as the pronotum. *Anterior coxæ* very long, loosely attached in the large membranous cavities, finely scabrous, almost glabrous; femora long, the upper edge strongly arcuate, the tibiæ as long as the femora, coarsely, rather densely setose within, with two external rows of long slender widely-spaced setiform spines. The disk of the pronotum in the male is very slightly wider, and more distinctly longer, than the head; in the female the head is quite noticeably smaller, with the tempora not quite so prominent.

*Mesothorax* moderate in length. *Scutellum* rather large, transverse, ogival, in large part covered by the pronotum. *Parapleura* of the mesosternum finely scabrous, large and well developed. *Coxæ* very large, long, oblique, contiguous; trochanters moderate, with a short obtuse dentiform process within, the femora rapidly narrowed near the point of attachment on the trochanters, the tibiæ similar to the anterior but less densely setose within.

*Metasternum* well developed. *Elytra* equal in length and basal width to the corresponding dimensions of the pronotum; sides straight and parallel, each elytron distinct, the two separated by an interval, which at the apex is equal

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<sup>1</sup> In *insolens* the outer lobe is shorter, wide, arcuate, the apex truncate internally and bearing a row of short stiff spinules; the inner lobe is very short, adjacent to the outer, the base obliquely corneous, the remainder semimembranous, the apex with a row of short spinules almost continuous with those of the outer lobe. The disposition of the lobes is somewhat similar therefore to that of *Homalota* and *Euryusa*.

to their own width, the sides of the interval straight and feebly convergent anteriorly, abruptly terminating at a point just behind the scutellum, where it is about one-half as wide as at the apex; surface coarsely and strongly reticulate, scabrous on the vertical flanks, sparsely clothed with exceedingly short erect setæ, and each with two long setæ near the inner margin, one near the base and another behind the middle; flanks perfectly devoid of true epipleuræ. *Episterna* large, triangular, very wide behind, but covered by the elytra before attaining the humeri. *Coxæ* with the inner portions large, porrect, contiguous, longer than wide, truncate at apex, with the surface broadly convex; trochanters large, simple; femora irregular, the upper edge broadly angulate just beyond the middle, the edge thence broadly incurvate in circular segment to the point of attachment; tibiæ sparsely setose within, the spinose setæ of the two external rows stronger. *Hind wings* wanting.

*Abdomen* with six segments, widely inflated, in the female three times as wide as the elytra, with the sides strongly arcuate, in the male very slightly narrower, with the sides slightly straighter in the middle; integuments in great part chitinous, the white membranous portions but slightly exposed; upper surface feebly convex, each segment above and beneath with two transverse rows of setæ; lateral border deep and strongly reflexed; lower surface very convex, the setæ longer.

*Legs* rather long and slender. *Tibiæ* parallel, truncate, without terminal spurs. *Tarsi* 5-jointed, rather long, slightly compressed; first joint as long as the entire remainder—slightly shorter in the anterior;—fourth anchored to the fifth.

Length 2.8 mm.

Colombia (Panama).

The above description is rather comprehensive, and includes generic as well as specific characters in order that the numerous differential characters distinguishing it from *insolens* may be made more evident. The differences reside mainly in the structure of the elytra, front, convexity and prominences of the eyes, and irregularities of the trochanters and femora; in *insolens* the elytra are absolutely connate, and soldered so completely together that the suture is only indicated by a very feebly impressed line,—as great a divergence from the corresponding structure in *fissipennis* as could well be imagined. In both, the maxillary palpi are exceedingly irregular, but in the present species they differ greatly from those of *insolens*. The fact that the tarsi, antennæ and general habitus are similar or parallel to those of *insolens*, seems to indicate that they should not be generically separated, but the great and radical differences show at the same time that the genus is probably one of great age in a geological sense.

In the male, the sixth abdominal segment is evenly emarginate

throughout its width in broad circular arc, while in the female the same segment is angularly produced in the middle for a short distance. The remarkable modification of the palpi and legs is not a sexual peculiarity, being developed to precisely the same extent in the male and female. The same remark applies also to *T. insolens*; in this species the sixth segment is truncate in the male, and feebly, roundly lobed in the middle in the female. In *insolens* the two mandibles are similar; they are rather slender, feebly arcuate, having internally just behind the middle a large oblique squarely truncate tooth; the portion beyond this is very slender and has, just before the apex, a small oblique tooth.

**ABROTELES** n. gen. (Aleocharini).

*Body* rather robust, subparallel; abdomen slightly inflated.

*Head* nearly twice as wide as long, porrect, feebly convex; sides very short, parallel, feebly arcuate; base inserted slightly within the prothorax, not in the least constricted; basal angles not exposed; apex broadly arcuate between the eyes, the latter rather large, finely faceted, not at all prominent, rounded, slightly angulate above. *Antennæ* inserted in small foveæ on the vertical sides of the front adjacent to the middle of the anterior margin of the eyes, and just above the base of the mandibles, 11-jointed, very robust; first joint obconical, longer than wide; joints two to eleven forming an elongate cylindrical club, strongly tapering near the base and more feebly so near the apex, joined by a narrow point of support to the truncate apex of the basal joint at a point near its lower margin, the joints separated by transverse sutures, apparently mobile but each inserted far within the next preceding, subequal in length, about one-third wider than long, except the second which is obconical and but slightly wider than long, the third which is shortest and about twice as wide as long, and the eleventh which is pointed, slightly compressed and as long as the two preceding. *Epistoma* membranous, short, broadly trapezoidal, the apex broadly sinuate, not separated from the front by a suture, the chitinous portion of the front abruptly terminating at a broadly incurvate line between the bases of the antennæ. *Labrum* well developed, prominent, twice as wide as long; sides and apical angles continuously rounded; apex with a small very deep median sinuation. *Mandibles* very short and stout, arcuate, slender toward the acute apex, apparently with a large obtuse internal tooth at the middle. *Mentum* large, slightly longer than wide; base and sides continuously rounded; sides slightly convergent in apical third and nearly straight; apex truncate; surface flat, corneous in basal two-thirds, transparently membranous in apical third, the line of demarcation sinuate and without visible suture; chitinous portion with two long erect setæ near the centre, arranged transversely and nearly trisecting the width. *Ligula* moderate, membranous, with a short rounded simple median process, the paraglossæ small,



rounded and advanced as far as the apex of the median lobe. *Labial palpi* 3-jointed; basal joint slightly longer than wide, cylindrical; second much shorter, very small, cylindrical; third longer, subulate. *Maxille* moderate, not exerted; lobes small, the outer enveloping the inner, not hooked at apex, ciliate. *Maxillary palpi* nearly of the usual type, rather slender; second and third joints subequal; fourth subulate. Under surface of head without trace of lateral carinæ.

*Prothorax* rather short. *Pronotum* transverse; apex truncate; base just visibly arcuate; sides feebly arcuate and just perceptibly convergent from base to apex; basal angles nearly right and extremely narrowly rounded; flanks rather shallow, very strongly deflexed, the lower edge straight, the apical angles—viewed laterally—more broadly rounded than the basal. *Hypomera* very strongly inflexed, almost parallel to the pronotal flanks. *Prosternum* extremely short before the coxæ, the latter large.

*Mesothorax* short. *Scutellum* triangular, strongly transverse, the apex exposed. *Mesosternal parapleura* small, the epimera but partially developed, leaving a considerable extent of membrane exposed adjacent to the elytral humeri. *Coxæ* moderate and not greatly exerted, the cavities confluent.

*Metathorax* longer. *Elytra* transverse, truncate at apex, as wide as, and with the suture subequal in length to, the pronotum, not connate; suture not beaded; hind wings apparently not well developed; apical edge slightly inflexed and membranous; flanks without true epipleuræ, not beaded. *Metasternal episterna* very wide behind, their inner line tangent to the elytral humeri. *Coxæ* rather narrow, extending to the very wide episterna, contiguous.

*Abdomen* slightly wider than the elytra, the sides feebly arcuate, consisting of six segments. Upper surface flat, each segment with a single apical series of long stiff setæ; border wide, but not inclined. Lower surface convex, the setæ shorter and not definitely arranged.

*Legs* short and robust. *Femora* oblong, deeply excavated along the lower edge toward apex for the reception of the tibiæ, the latter nearly equal in length to the femora, parallel, truncate or slightly rounded at apex, more finely pubescent, entirely devoid of terminal spurs or spinules, but having several very long stiff setæ along the external edge. *Tarsi* short, rather robust, pubescent, 4-jointed on all the legs, the first joint of the posterior as long as the next two together and equal in length to the fifth. *Ungues* very small, arcuate. Anterior tarsi with a better defined tuft of long hair beneath each joint.

There is no described genus known to me with which the present can be compared. The robust compact cylindrical antennæ are characteristic of a number of termitophilous and myrmecophilous genera, but none of these appears to have the posterior tarsi four-jointed, as they very clearly are in *Abroteles*.

**A. Beaumonti** n. sp.—Pale piceo-testaceous; abdomen flavate; integuments polished, not perceptibly punctate. *Head* very finely, sparsely pubes-

cent; antennæ slightly shorter than the head, pronotum and elytra combined. *Pronotum* very slightly less than twice as wide as long, very feebly, transversely convex, not distinctly impressed, with a series of wide-spaced erect setæ along the apical margin and thence along the sides to the middle, where they abruptly terminate; disk extremely sparsely pubescent, the hairs subrecumbent, very minute toward the middle, longer and stiffer toward the sides, and posteriorly to basal fifth, where they abruptly terminate in a transverse line parallel to the base; surface thence to the base glabrous, except a few minute hairs along the fine paler semi-coriaceous posterior edge, extending anteriorly along the sides to about the middle. *Elytra* polished, depressed; sides straight, feebly divergent from base to apex, almost exactly similar in form to the pronotum, and almost imperceptibly longer, at base slightly narrower, very sparsely clothed with rather stiff subrecumbent hairs, evenly but not regularly disposed. *Abdomen* distinctly longer than the anterior parts combined, and distinctly wider than the elytra; sides arcuate; upper surface almost glabrous, except the wide depressed border which is very finely and indistinctly pubescent; under surface almost completely glabrous in the middle, but very finely pubescent laterally. Length 1.8 mm.

#### Colombia (Panama).

In the male, which appears to be much more abundant than the female, the sixth segment is very broadly rounded behind, the middle of the apical margin truncate or excessively feebly incurvate; in the female this segment is broadly and feebly produced in the middle in a wide broadly rounded lobe. The elytra also appear to be very slightly shorter in the female.

In dedicating this species to Mr. J. Beaumont, I wish to acknowledge a strong appreciation of the patience and scientific zeal on his part, which have led in so short a time to a decided advance in our knowledge of the interesting and apparently greatly diversified termitophilous fauna of Tropical America.

#### **PERINTHUS** n. gen. (Aleocharini).

*Body* nearly as in *Myllæna*, densely and very minutely pubescent.

*Head* small, strongly deflexed, deeply inserted in a rounded apical emargination of the prothorax; portion behind the antennæ much wider than long, not in the least constricted at base, the latter covered by the pronotum; surface evenly, moderately convex. *Eyes* large, finely faceted, minutely, rather densely setose, not prominent, rounded, occupying nearly the entire sides of the head and, in repose, partially overlapped by the pronotum. *Antennæ* inserted in small foveæ adjacent to the anterior margin of the eye on the abruptly inclined and concave apical portion of the front—epistoma—which is corneous and separated from the front proper by a transverse finely cariniform line, which is sinuate behind each fovea, and anteriorly arcuate and more

advanced in the middle, abruptly terminating at each side at the antero-superior margin of the eye; they are 11-jointed, moderate in length, very strongly flattened; when viewed on the compressed side the sides are parallel as far as the fourth joint, thence narrowed to the base of the third; first joint rather slender, longer than wide; second slightly narrower, much shorter, subcylindrical, longer than wide; third obconical, slightly longer than wide, compressed; fourth about as long as wide, obtrapezoidal; remaining joints subequal, truncate at base and apex, with the sides almost parallel, in close contact throughout the width, rather more than one-half wider than long on the compressed side, and very slender, fully one-half longer than wide on the edge, the eleventh joint slightly shorter than the two preceding. Apical margin of the epistoma membranous, truncate, the *labrum* large, prominent, wider than long, with the apical angles broadly rounded, the apex with a small feeble median situation. *Mandibles* small, arcuate, acute and simple at the immediate apex. *Mentum* large, equilatero-triangular, with the sides straight; surface flat; apex very narrowly truncate; basal half corneous, apical membranous, the dividing line feebly sinuate, not at all impressed. *Ligula* moderate, wider than the apex of the mentum, rather long, with a prominent deeply bifid median process, the paraglossæ not well developed. *Labial palpi* robust at base, the joints rapidly decreasing in thickness; third subulate. *Maxilla* moderate, feebly exerted; lobes small, ciliate. *Maxillary palpi* of the usual type, rather slender; second joint shorter than the third; fourth subulate. Lower surface without trace of infra-ocular ridge, the eyes approaching within a very short distance of the buccal cavity.

*Prothorax* strongly developed dorsally, very feebly so ventrally. *Pronotum* large, strongly, transversely convex, moderately narrowed from base to apex; basal angles evenly, somewhat obtusely rounded and slightly produced posteriorly, the base being incurvate and subtruncate between them. *Hypomera* very wide, extremely strongly inflexed, parallel to the strongly inclined flanks of the pronotum. *Prosternum* very small, extremely short in front of the coxæ, the latter large, conical and convex.

*Mesothorax* short. *Scutellum* invisible, completely concealed by the greatly overlapping free edge of the pronotum. Mesosternal side-pieces ample, entire; coxæ large, contiguous.

*Metathorax* moderate. *Elytra* truncate, apparently connate, very short and transverse, as wide as the prothorax, but slightly more than one-half as long, transversely convex; flanks strongly inclined, the epipleuræ very strongly inflexed and almost parallel to the flanks, deep; suture very fine but distinct. *Metasternum* wide; episterna narrow, parallel; coxæ moderate, contiguous, lamellate and transverse laterally.

*Abdomen* at base slightly narrower than the elytra, conical; sides rapidly convergent to the acute apex and nearly straight, consisting of six segments which are moderate in length, each having a single transverse series of long widely-spaced apical setæ above and beneath. Upper surface moderately convex, the border narrow, normal, moderately deep. Lower surface more strongly convex.

*Legs* short. *Femora* stout, the flanks produced beneath slightly at apex, forming a channel for the partial reception of the tibiæ. *Tibia* slender, short, cylindrical, truncate, without terminal spurs or spinules and devoid of long external setæ. *Tarsi* short, slender, cylindrical, densely pubescent, about two-thirds as long as the tibiæ, 4-jointed on all the legs; first joint of the posterior distinctly longer than the next two together and a little longer than the fourth. *Ungues* small and slender.

This genus is also somewhat isolated, harmonizing but remotely with any of the more usual forms of the great and composite group to which it is assigned. The extraordinary compressed, almost tape-like antennæ, deep flanks of the pronotum and elytra, which extend far below the plane of the lower surface, very short elytra, long conspicuous tactile setæ, and four-jointed tarsi, form a combination of characters for which it is difficult to find a fitting place in the series.

The sexual characters, also, are very singular. In the male the apex of the abdomen is not modified beneath, the sixth segment being evenly rounded behind, but dorsally, the posterior edge of the first segment is strongly emarginate in middle fourth, the bottom of the emargination being transverse. In the female the sixth segment is rounded as in the male, but the basal segment is entire.

**P. Dudleyanus** n. sp.—Piceous; abdomen slightly paler; under surface, legs and antennæ pale brownish-flavate; surface lustre alutaceous, the pubescence exceedingly short, fine, dense, slightly cinereous and conspicuous, the long tactile setæ very conspicuous, these consisting of six longitudinal series on the pronotum—counting those of the lateral edges—and a transverse series just before the middle of the elytra, the latter being simply the terminal setæ of the pronotal series, the setæ of the abdomen being a further continuation of the pronotal series. *Head* small, only the occiput visible from above, the anterior portions of the body appearing to be semicircularly rounded, much less than one-half as wide as the base of the prothorax; antennæ about as long as the head and prothorax together. *Prothorax* nearly one-half wider than long, narrowed from base to apex, subconical; sides very feebly arcuate. *Elytra* about equal in width to the prothorax, strongly transverse; sides parallel and nearly straight; disk scarcely perceptibly more than one-half as long as the pronotum. *Abdomen* distinctly longer than the anterior parts combined, conical, acute. Leng. h 1.4–1.7 mm.

Colombia (Panama).

Taken in considerable abundance by Mr. Beaumont. A good series has been given me by my friend Mr. P. H. Dudley, to whom it gives me great pleasure to dedicate this very interesting species.

In glancing through the plates of Schiödte's splendid work on coleopterous larvæ, we cannot resist drawing a few minor generalizations with reference to the great persistency of larval type which prevails throughout some families, as for instance the Scarabæidæ and Tenebrionidæ, and the enormous diversity of type exhibited by others, notably the Staphylinidæ, there being scarcely a corresponding diversity of imaginal type in the latter, although the imago is undoubtedly more heterogeneous than in either of the families before mentioned. Incidentally we may perhaps be warranted in inferring that the Scarabæidæ and Tenebrionidæ, being more homogeneous and less differentiated in both larval and perfect stage, are more recent in origin than the strongly differentiated Staphylinidæ; this is of course under the general premise that multiplication of species is due to differentiation from fewer and more synthetic ancestral forms, although I am aware that Dr. Sharp holds that there is but slight evidence of such divergence in the Dytiscidæ. The truth is, probably, that the Staphylinidæ constitute one of the most ancient types of coleoptera.

Regarding the curious object described below, it can only be said that if it be staphylinide, as there is some reason to suppose, it will add another notable element to the heterogeneity characterizing that interesting family. Or, conversely, its wide departure from the usual types of coleopterous larvæ will not, of itself, be an obstacle in the way of its assignment thereto. In this connection it is desirable to make the following observations:—

1. The specimens were received in two small tubes which, in one instance, contained besides only specimens of *Termitogaster insolens*, and in another, only *Perinthus Dudleyanus*. Mr. Beaumont seems to have been careful to isolate his material, and it may be very safely assumed that the larvæ and beetles were taken together from the same nest.

2. As far as its general nature is concerned, I believe it to be coleopterous, although in antennal structure it is exceedingly exceptional for that order, being approached in this respect, within my knowledge, only by *Cyphon*. The dense squamose vestiture, enormous development of the labial palpi and tarsal structure are also exceedingly peculiar.

3. Assuming it to be coleopterous, I am quite convinced that it cannot be related in any way to *Termitogaster*, but think that it may possibly be the larva of *Perinthus*, the long tactile setæ of the

upper surface, as well as the conical and attenuate form of the abdomen, reminding us forcibly of *P. Dudleyanus*.

Whatever future investigation may prove it to be, the following short description will serve to make known its most salient characters:—

Body fusiform, obtusely rounded in front, attenuate and acute behind—nearly as in *Lepisma*, but with the abdomen more strongly and evenly conical,—convex, and covered densely above and beneath with large pearly-white closely recumbent strigose scales; integuments soft, membranous and pure white throughout. The head is deflexed, densely squamose, devoid of eyes and ocelli, having the antennæ inserted on the front, approximate and separated by a narrow very feeble ridge, very perceptibly attenuate from base to apex, rather more than one-fourth as long as the body, cylindrical, 12-jointed, the subbasal joints short, closely approximate or subconnate, the outer more elongate and more loosely articulated, the joints annulated with fine impressed grooves, one to three in number. The maxillary palpi are moderate in length, cylindrical, 4-jointed, the last joint longest. The labial palpi are large and strongly developed, with the last joint very large, ovate, pointed at apex, concave without and convex within. The three segments of the thorax are distinct, the flanks thin and descending very noticeably below the plane of the lower surface, the pronotum as long as the mesonotum and metanotum combined, each of the dorsal segments, including those of the thorax, bearing a transverse apical series of long widely spaced tactile setæ. The six legs are short, the coxæ large, conical, the femora robust, the tibiæ robust, cylindrical, each with a large terminal spur; tarsi cylindrical, composed of two joints, the second twice as long as the first; claws two in number, minute, arcuate. The abdominal segments are ten in number, counting the small terminal segment, which bears a small axial anal style composed of seven or eight joints; there are also two short lateral anal stylets, composed of a few closely connate joints; the sutures between the abdominal segments almost concealed by the dense vestiture. The length of the largest specimen examined is 2.5 mm., the greatest width being 0.8 mm.

One of the most remarkable structures distinguishing this larva is a very large fleshy appendage projecting from the lower surface of the abdomen, just behind the fifth segment, and nearly as large as the entire abdominal vertex beyond it. It is mobile about its point of attachment, elongate-oval, longitudinally and very narrowly divided throughout the length, forming two thick elongate cylindro-conical lobes, which are densely, finely pubescent, and provided in addition with long sparse setæ, especially at the sides. The lobes are divided by transverse sutures into six segments, of which the three basal are very large, together occupying four-fifths of the length, the three last small and composing the rapidly acuminate

portion; at the apex of each there is a very short two-jointed styli-form process. This organ is held in repose in a long very deep excavation extending through the last four or five abdominal segments, so that when at rest it is not distinctly noticeable, its lower surface being continuous with the lower surface of the abdomen. It is apparently an auxiliary organ of locomotion, analogous to the infra-apical process characterizing many well-known staphylinide larvæ; but no such development as this has to my knowledge been observed before.

Another larva-like object, possibly of a coleopterous nature, was inclosed in the tube containing the only specimens of *Abroteles Beaumonti* which were obtained, but I am very doubtful of its connection in any way with that species; it seems to be too large and wide and to contain more matter than would suffice for the body of the insect mentioned.

The large well-developed eyes, large securiform maxillary palpi, and elongate 5-jointed tarsi are wonderful characters, almost irreconcilable with what we know of coleopterous larvæ. The following description will perhaps serve for its future recognition:—

Body evenly oblong-elliptical, depressed, with the upper surface broadly, feebly convex, broadly rounded before and behind. The upper surface is strongly reticulate, alutaceous, pale brownish-piceous in color, and covered sparsely with very short robust spinose setæ. The head is deflexed very strongly, reposing upon the under surface of the prothorax; it is rather large, triangular, the eyes at the sides convex, large, and composed of many coarse convex facets. The antennæ are inserted in very large widely distant foveæ on the front before the eyes, and are defective in the only specimen; there are four joints remaining, the outer deeply annulated, and showing that there has been at least a terminal process broken therefrom. The epistoma is large and separated by a distinct broadly sinuous suture. The labrum large, subquadrate. Maxillary palpi well developed, with the last joint very large and strongly securiform. The six legs are about equal, rather long and well developed; coxæ very long, conical, obliquely recumbent posteriorly, the posterior large flat; femora elongate, flattened; tibiæ long, cylindrical, with two strong well-developed distant terminal spurs; tarsi long, very slender, cylindrical, the posterior nearly as long as the tibiæ, distinctly 5-jointed on all the legs, the first and fifth joints elongate, the intermediate short; claws two in number, well developed, arcuate. The pronotum is much wider than long and longer than the other two parts of the thorax combined, it is finely canaliculate in the middle throughout the length. The abdomen consists of

nine very short segments, the sutures very deep and distinct, the apex with two pairs of very short anal stylets, but without median style. Length 2.4 mm.; width 1.0 mm.

It is possible that this may be an apterous larva-like female imago. The integuments are soft and membranous, the head and upper surface semicoraceous. The mandibles are short stout, alike, and deeply notched and bifid at apex.

The general form of the body somewhat approaches that of the larva of *Syntomium æneum* as figured by Schiödte, but is more elongate and with the sides more parallel.















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