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MEMOIRS  
ON THE  
COLEOPTERA

BY  
THOS. L. CASEY

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## I—FURTHER STUDIES IN THE CICINDELIDÆ

One of the more difficult problems confronting the taxonomist is the determination of relationship between the various groups of Coleoptera which are higher than the genus, and the manifold differences of opinion correspond with the uncertainties involved. Relationships formerly unsuspected, as for instance those affiliating many of the groups of the former Clavicornia with widely separated families of Caraboidea, Serricornia and Heteromera, have become generally recognized and have caused in several cases radical rearrangements of the series of families. Another point to be noted is the general tendency to increase the number of family groups, as well as the number of subfamilies constituting the older families. In the Carabidæ, as an example, groups which were given tribal designation by LeConte and Horn are now considered to be rather subfamilies than tribes, the latter term being used, very conveniently in most instances, to designate subordinate groups in such large complexes as the Harpalinæ. In view of these facts, the reduction of the long established and habitally isolated Cicindelidæ to the status of a subfamily of Carabidæ, seems inconsistent. In the opinion of the writer the Cicindelidæ should remain a distinct family group in the great superfamily or suborder Caraboidea, which will include, besides, many other groups of family weight, represented at the present time by subordinate groups, such for example as those based upon *Omophron* and *Pseudomorpha*, as well as *Amphizoa* and others already recognized as constituting families.

This leads naturally to a consideration of the meaning of the word species. There is a marked and seemingly increasing tendency, among a large and influential body of systematists, to enhance the value of the species, to such a degree in fact that in many cases what is termed a species is really a subgenus. This is not obligatory and, in most cases, positively contradicts the actual truth of nature as it is revealed to more careful observers. Since under the term species, with such artificially exalted scope, it is necessary to have

a retinue of subordinate forms, given various designations, such as subspecies, varieties and aberrations, the very convenient binomial nomenclature of Linné stands in grave danger of destruction. It should be added, furthermore, that when the species is made thus composite there is no definite limitation to the forms that may be included under a single specific name, giving rise to purely arbitrary and more or less inharmonious aggregates of greater or less extent according to personal whim or fancy. It would be far better and more in concordance with reality, to limit the word species to those forms which constantly exhibit the same peculiarities of structure and habitus, and which do not produce fertile hybrids with related forms, or, in the present state of knowledge, which appear to be incapable of so interbreeding. For example, in the genus *Omus* forms have been assigned subordinate rank when the male sexual apparatus is so constituted as in all probability to prevent even the act of copulation, and, if this be the case, there could be no better proof of complete specific isolation.

After an experience of a third of a century in collecting large series of many species, the writer can state with complete conviction that, aside from polymorphism and certain occasional accidental deformities, there is, as a rule, no such structural variation among the individuals of a species as is maintained by some of the present schools of systematists. There is before me, for example, as I write, a series of 275 specimens of *Saprinus lugens* taken in Arizona, and, except in size and a slight spreading or retraction of the suffused punctuation, there is no asexual variation that would be noticed anywhere in the series. In regard to the prevailing ideas of variation let us take the surface sculpture in *Pterostichus cristatus* Duf. In iridescent forms, such as *Loxandrus*, the iridescence is easily observed to be due to a set of very close-set transverse incised lines producing a diffraction grating, such as is used by physicists for producing a spectral image.\* A species not having this iridescence has sculpture of an entirely different kind, the fine lines on the sur-

\* The most remarkable natural diffraction grating known to me is that engraved upon the elytra of the Phalacrid genus *Lilolibrus* Shp. All the species have remarkably strong opalescence and the brilliant spot on the hemispherical elytra of *obesus* is a pure and perfect though short spectrum, with all the colors evident from red to violet. This grating is entirely unresolvable under a three-fourths inch objective and the parallel lines are probably fully as fine and close as in the celebrated Rowland diffraction grating.

face simply forming a reticulation; it is very unlikely therefore that a form having pronounced iridescence should be systematically subordinate to a form having no iridescence, and the assignment of such subordinate rank is consequently an error in most cases. This sometimes occurs, however, as shown by Méquignon in treating the so-called subordinate forms of *cristatus* (Ann. Soc. Ent. Fr., 1914, p. 79) and, although unknown to me in actuality, there is no doubt in my mind that *cantabricus* Schauf., and *pyrenæus* Chd., are distinct species, not only as between themselves, but in regard to typical *cristatus*, and also that *phæopus*, Chd., is a distinct species and not a subspecies.

Another case in point, and I have chosen these illustrations merely because of convenient reference, let us view Plate 1, Bull. Ent. Soc. Fr., 1915. The figures on this plate are drawn carefully by a disinterested artist and no doubt constitute a faithful portrayal of the facts; according to various authors they represent a species, *trisignata*, fig. 1, and a variety of that species known as *subsuturalis*, figs. 2 to 4. Mr. Clermont tells us that fig. 2 is an intermediate between fig. 4, the least marked form, and fig. 1, the true *trisignata*. So far as I am able to perceive there is no connection whatever between the form represented by figs. 2 to 4, which are mutually perfectly similar, excepting a slight and direct increase or decrease of the markings, and that represented by fig. 1. Fig. 2 is in no way intermediate between fig. 4 and fig. 1, and in fact I am utterly unable to trace the chief features of fig. 1 in fig. 2, even allowing for every degree of gradually retracted or undeveloped markings. In short it is demonstrated from these figures that there are two perfectly distinct species involved, *trisignata* and *subsuturalis*, for, although fig. 1 represents the female and figs. 2 to 4 the male, I know of no instance in *Cicindela* where male and female markings differ systematically to any manifest extent. If species are to be estimated by such indefinable criteria as this, one can scarcely wonder at the many subordinate categories which are found necessary to express distinct taxonomic entities, or that the binomial nomenclature of Linné should thereby stand in such real danger of annihilation. There is no valid reason whatever, or known evidence, for not considering *subsuturalis* to be a species, and there is nothing whatever gained by the hypothetical assumption that



it is related varietally; but, on the other hand, we have instead an unnecessary complication of nomenclature. Both of these forms breed true, they never intermingle and they have nothing in common in their color patterns, except a fancied resemblance due to superficial comparative study.

This case of *trisignata* and *subsuturalis* is certainly not parallel to that of our *dorsalis* in its maculate and immaculate stages; in the latter species the variations are due plainly to a mere advancing or contraction of the normal markings. I announced *obliviosa* as a subspecies of *latesignata* more as a concession to the assumption of early authors, that, because it was found apparently in company with *latesignata*, it must be a dimorphic form of that species. But there is no direct evidence of this known to me and, if *obliviosa* cannot be proved to be a dimorphic form of *latesignata*, it is unquestionably a distinct species. The markings are conspicuously different and are constant in each case.

One source of confusion is that the word variation is generally misunderstood and the differences due to environment so attributed. These latter divergencies do not by any means indicate variation in the proper meaning of that word, but the beginnings of separate species, at first as slightly different taxonomic forms and finally as true species. Such forms unless very distinct, as in the case of many *Omus* and *Brennus* modifications, can be designated as subspecies for convenience, when it is thought advisable to record them by name; it is not necessary to invent lesser categories in the present lack of full knowledge of the subject. The estimation of actual taxonomic weight of these related forms is of course a matter of individual judgment. In some of the cases above mentioned the specific status should be self-evident and other cases may be decided provisionally, with more or less precision, by any one accustomed to view the processes of nature, in any field, with moderate intelligence and discrimination.

Finally, there is a certain school of systematists, especially developed in Germany at present, that seems to have a very peculiar conception of the meaning and scope of the word synonym. If this particular school persists in its singularly erroneous notions concerning the meaning of this word, including as it does geographic modifications, which, as intimated above, are in

many cases known to be at least subspecific in degree of structural and habital divergence from the assumed typical form, it is not by any means furthering, but, on the contrary greatly retarding, the acquisition, by definite record, of knowledge which may ultimately prove very useful in solving some of the mysteries of evolution.\*

### Amblycheila Say

There are two rather distinctly circumscribed groups in this genus, represented by *cylindriciformis* Say and *baroni* Rivers, but, until more of the species are known, it would be better not to attempt the definition of subgenera. Their habits are nocturnal, which accounts for the present scarcity of material in collections. If the various forms were fully known we should probably have an extended series of species and subspecies available for study. The following is described at present as a subspecies but may have higher value:

**Amblycheila baroni** ssp. **enodis** nov.—Form very elongate and rather slender, deep black throughout, the integuments with alutaceous lustre; head almost as wide as the prothorax, rather longer than wide, smooth, with the anterior impressions moderately deep, the eyes rather convex, at nearly twice their length from the base; antennæ long and slender; prothorax somewhat wider than long, the broadly rounded sides oblique behind about apical two-fifths, feebly sinuate before the obtuse and slightly rounded basal angles; base arcuate, strongly beaded, three-fourths as wide as the apex, which is feebly arcuate, somewhat angulate at the middle; surface smooth, convex, finely striate along the middle, with a few moderate punctures at each side in line parallel with the margin, one of which at least, near the middle, bears a long seta; side margins very finely reflexo-beaded; scutellum broad, confined to the peduncle; elytra two-fifths wider than the prothorax, oblong-oval, more than three-fourths longer than wide, smooth, with small sparse asperulate punctures, less sparse and continuing to the apex laterally, the carina at the summit of the flanks fine and short, scarcely traceable behind the middle, the other carinæ wholly obsolete; legs long and slender. Length (♂) 20.0 mm.; width 6.8 mm. Arizona (Garces, Huachuca Mts., Cochise Co.).

The male type was received from Mr. Knaus; it represents a form allied to *longipes* Csy., but differing in its more slender form, abbreviation of the lateral carina of the elytra, absence of the shorter

\* At some time during last year a document ostensibly criticizing my treatment of the Cicindelidæ, but characterized chiefly by misrepresentation and bad manners, was extensively distributed by W. Horn of Berlin. The above general remarks constitute my only available answer to this strangely captious Hassgesang.

subbasal carina so distinct in that subspecies, smaller elytral punctures, which are in no part serial in arrangement, and in the rather elevated suture. From *baroni* Rivers, the type of which was taken on the Gila River, it differs in its much more elongate form, more elongate and less posteriorly narrowed elytra, the punctures of which are very much smaller, and in the more oblique sides of the prothorax. It differs from *piccolomini* Reiche, according to the description, in its much smaller size, more slender form, alutaceous surface and absence of coarse elytral punctures and of the inner carinules. *Longipes* also differs from *piccolomini* in its smaller size and opaque surface, but seems to resemble it in the coarse elytral punctures and the three inwardly decreasing carinae. These three species, or possibly in part subspecies, constitute the second subgeneric group of *Amblycheila*. *Schwarzi* W. Horn, belongs to the *cylindriciformis* section of the genus, as also does *piccolomini* Reiche.

#### Omus Esch.

There are some facts relating to *Omus* that remind us of *Brennus*. Both genera are very abundantly represented in, and confined to, the true Pacific coast fauna; both are nocturnal in habits and almost uniformly deep black in color. Both are comparatively recent geologically, which accounts for the local segregation of the numerous individuals into more or less slightly differentiated taxonomic elements. Some of these local developments have become specific in status, others must be viewed as having less value at present. Many of the latter category are doomed to early extinction, while others, thus still more isolated, will progress to the rôle of distinct species in conformity with the past history of these genera. It is singular, it may be said in passing, how large a proportion of the Coleoptera of the Pacific regions are black; even the few Scarabaeidae are mostly black; the great *Eleodes*, *Coniontis* and *Blapstinus* cohorts are of course black, as well as the larger part of the Carabidae. This lugubrious nature of the fauna is due to nocturnal or secluded habits, rendered necessary by peculiarities of climate, the hot dry dusty days of the long summer not being well fitted to support light loving and generally more highly colored types, in spite of the bright sunshine, while the fogs and coolness of the night result in adequate amounts of moisture.

In recent months I have received large and important accessions of material in *Omus* from Mr. Nunenmacher and Mrs. Charles Fuchs, collected in many parts of California and Oregon, resulting in very substantial increase of the known species and subspecies, particularly in the *horni* group.\* In distributing these new forms, the subgeneric and group divisions of my general revision (Mem. Col., V, pp. 1-2) are adhered to, excepting that group VII of *Omus* proper is divided to form two groups, having *lævis* and *horni* respectively as type forms. The nature of the elytral sculpture is so radically different as to demand this division, the usually very coarse punctures of the *horni* group always being accompanied each by a sharp anterior granule, which is entirely obsolete in the *lævis* group. The latter group is very isolated in the general series, but the *horni* group has marked affiliation with *sequoiarum* and related forms, so that it is difficult at times to assign species properly. The best general differential feature resides probably in the sculpture of the pronotum, there always being a distinct vermiculate rugulosity throughout in the *sequoiarum* group, sometimes almost as strong as in the sea-coast *californicus* group, which sculpture becomes either wholly obsolete or very feebly marked in the numerous allies of *horni*. Possibly *vandykei* should form another group, in which case the total number of groups would be nine.

#### Subgenus **Megomus** Csy.

*Omus dejeani* Rche., the type of this subgenus, differs very strongly in habitus from the multitudinous forms of *Omus* proper, as typified by *californicus*. No modifications of the *dejeani* type have been announced hitherto, but some feebly defined subordinates exist, of which I note the two following:

**Omus dejeani** ssp. **robustus** nov.—Form very stout, deep black, without metallic lustre; head and prothorax nearly as in *dejeani*, the elytra relatively shorter, less oval or with more marked humeri and simi-

\* Mrs. Fuchs was kind enough to allow me to purchase the set of *Omus* in the collection of her late husband, including the original type of *Omus ambiguus* Schpp. In comparing this type with my assumed representative of the species, I find complete concordance, which is very gratifying. I now have three examples of that species. The type of *O. intermedius* Leng, which I had been given to understand was in the Fuchs collection, could not be found; several different forms figured under that name, none however distinguished in any way as a type.

larly punctate, the punctures becoming gradually feebler and sparser internally, but with the large sparse foveæ less diffuse and more sharply marked; anterior tarsi (♀) short, stout, with many spiniform hairs, the second joint barely two-fifths longer than wide. Male unknown. Length (excluding mandibles) 19.0–20.5 mm.; width 7.6–8.0 mm. Washington State (Seattle).

Differs from *dejeani* as above stated; the surface lustre in *dejeani* is almost invariably piceo-subcupreous, but there is no trace of this in the subsidiary form, where the elytra also are broader and more shouldered.

***Omus dejeani* ssp. foveatus nov.**—Form narrower than in *dejeani* and rather smaller in size, the head and prothorax especially being notably smaller; surface lustre and general sculpture similar, except that the elytral foveæ are somewhat larger and deeper and the general punctures deep, more sharply defined and much less close-set; the elongate-oval form of the elytra, with obsolete humeri, is almost similar; anterior tarsi (♀) much more slender than in the preceding but not evidently more so than in *dejeani*. Male not much more slender than the female. Length 18.0–18.7 mm.; width 6.8–7.3 mm. Oregon (Bull Run, Clackamas Co.).

In *dejeani* the male is decidedly smaller and less stout than the female and the head and prothorax relatively much larger than in *foveatus*, being similar in this respect to *robustus*. *Dejeani* is moderately abundant from northern California apparently to Alaska; at least one example before me is labeled with the latter locality.

Subgenus ***Omus*** in sp.

Group I (*audouini*)

Since my last revision of this group a rather striking character distinguishing *Omus parvulus* as a species has come to light. The basal joint of the antennæ in both sexes is smaller and shorter than in any of the allied species and, on its posterior face, there is a large and nebulously defined bright testaceous area; this latter feature sometimes occurs in *audouini* however, in less definite degree and is also described in *vandykei*. There are numerous new forms in this group as follows:

***Omus audouini* ssp. brevicornis nov.**—Form rather slender, strongly convex, rather shining; head and prothorax as in *audouini*, except that the rugulosity of the former is rather less pronounced and the labral lobe more broadly and subevenly rounded; antennæ notably shorter and even more slender; elytra almost exactly as in *audouini* throughout, except that they are less elongate; anterior tarsi somewhat more broadly

dilated; copulatory spicule more abruptly bent downward, the apical part more elongate, the posterior outline without the obtuse angulation usually evident in *audouini*. Female unknown. Length 13.5 mm.; width 5.0 mm. California (Humboldt Co.).

Readily distinguishable from *audouini* by the shorter and very slender antennæ, smaller size, shorter form and by the structure of the male sexual spicule.

**Omus audouini** ssp. *æquicornis* nov.—Male much smaller and more abbreviated than in *audouini*; head and prothorax nearly similar, the eyes smaller and more convex, the antennæ much shorter, nearly as in *brevicornis* but less slender; labral lobe short, broadly truncate; elytra shorter and less convex than in *audouini*, the rather irregular punctures not so close, shallower and less well defined, the interspaces more alutaceous and with distinct fine sparse punctulation; anterior tarsi nearly similar; intromittent spicule gradually curved downward, the narrowed apical part much longer and more slender, much less abruptly deflexed than in *brevicornis*. Female notably larger than the male, even more obviously so than in *audouini*, the antennæ almost exactly as in the male, the head and prothorax relatively stouter than in that sex. Length (♂) 12.0, (♀) 14.0 mm., width (♂) 4.6, (♀) 4.9 mm. Oregon (Josephine Co.).

A small and delicate form, strictly of the *audouini* type, but there is a surprising divergence of structure in the copulatory spicule, even among these obviously related subspecies.

**Omus audouini** ssp. *tacomæ* nov.—Body elongate, less ventricose than in *audouini*; head, prothorax, labrum and antennæ nearly similar, but the sculpture of the head throughout is much deeper, the punctures at the middle of the front distinctly coarse, deep and more close-set; elytra narrower and relatively more elongate than in *audouini*, oval, the punctures larger and closer, subconfluent, the general surface rather more alutaceous; supplementary coriaceous abdominal segment of the female more deeply emarginate than in that species. Male unknown. Length 14.7 mm.; width 5.3 mm. Washington State (Tacoma).

The type is piceous, with rufous tarsi, evidently because of immaturity, though there is no distortion in drying. The species *parvulus* Csy., belongs immediately after *audouini* in a systematic arrangement.

**Omus audouini** ssp. *delicatulus* nov.—Body slightly smaller, narrower and less ventricose than in *audouini* and with a very feeble subviolaceous hue on the shining elytra; head moderately rugulose, the two impressions distinct, the front finely, sparsely punctate medially; labrum very broadly rounded and but feebly advanced medially; antennæ extending onto the base of the elytra, slender, the fifth joint three times as long as wide; prothorax as in *audouini*, alutaceous, very feebly rugulose; elytra fully

three-fourths longer than wide, oblong, the sides more rounding at base though broadly; margin very fine; punctures rather coarse, impressed, well separated, the scattered foveæ large but not very deep; anterior tarsi with the basal joint longer and narrower than the second, which is a fourth wider than long. Length ( $\sigma^7$ ) 12.7 mm.; width 4.5 mm. Oregon (locality unrecorded).

Differs from *audouini*, or any of its closely related forms, in the narrower and more elongate, somewhat metallic elytra, which are less deeply sculptured.

***Omus audouini* ssp. *distans* nov.**—Female smaller and more slender than in *audouini*; head subequal in width to the prothorax, shining, rugose, nearly smooth and with sparse punctures at the middle of the front, the impressions deep; labral lobe broadly advanced, truncate at apex; antennæ rather short and slender; prothorax nearly as long as wide, finely rugulose, generally as in *audouini*; elytra oblong, two-thirds longer than wide, widest near the middle, thence feebly narrowing to the rounded, evident humeri, gradually ogival apically; punctures small, impressed, everywhere very remote, the foveæ numerous, very deep and conspicuous; surface shining, though alutaceous; tarsi long and slender. Length ( $\varnothing$ ) 14.6 mm.; width 5.25 mm. Washington State (Seattle).

Differs from *audouini* in its smaller size and narrower form and from that, or any of its subspecies, in the very sparse elytral sculpture and very deep conspicuous foveæ.

*Ambiguus* Schpp., is a species of the *audouini* group, stouter in all its forms than *audouini* and with notably thicker antennæ; *solidulus* Csy., may be considered a subspecies, distinguished by the shallower elytral sculpture, broader and more conspicuous lateral lobe, more pubescent upper surface of the anterior male tarsi and slightly less ventricose outline. The following is another subspecies:

***Omus ambiguus* ssp. *humeralis* nov.**—Body rather short, stout and strongly ventricose, moderately convex and shining; front nearly smooth medially, with a few minute and remote punctures; labral lobe large, rounded and prominent; antennæ moderate in length, rather stout; prothorax nearly as in *ambiguus*; elytra much shorter and of very different outline and sculpture, being broader at base, with much more evident humeri, the punctures irregular, being moderate in size and notably sparse generally on the disk, becoming rapidly coarse, deep and very dense postero-externally. Male not known. Length 14.8 mm.; width 5.75 mm. California (Humboldt Co.).

I am by no means certain that this form should have a subordinate status, as its facies is so different from that of either *ambiguus* or *solidulus*, owing to the short shouldered elytra, having very peculiar sculpture as stated above.



**Omus thoracicus** n. sp.—Form moderately ventricose, rather strongly convex, moderately shining; head barely perceptibly narrower than the prothorax, rugose, the front smooth medially, with small sparse punctures; labral lobe broadly rounded and but slightly prominent; antennæ slender, moderate in length; prothorax peculiar, only very little wider than long, the slightly rounded sides very moderately oblique posteriorly and, near the anterior angles, feebly sinuate, the reflexed edge not attaining the base; surface more strongly and uniformly vermiculato-rugulose than in the other species of this group, resembling the *sequoiarum* group in that respect; elytra elongate-oval, wholly devoid of humeri, the punctures large but shallow, contiguous but irregularly crumpled in outline; male tarsi of the *audouini* type. Female unknown. Length 14.0 mm.; width 5.6 mm. Oregon (Klamath Co.).

This species has a very distinct appearance, owing to the exceptional form and sculpture of the prothorax and the irregularly crumpled shallow elytral punctures.

The following species and its several subordinate forms are distinguishable from *audouini* by the longer, slender antennæ and smoother prothorax, the lateral parts of the disk of which are less rapidly declivous; the rapidly declivous side surface is very distinctive of *audouini* and its subspecies:

**Omus shastanicus** n. sp.—Male but slightly ventricose, somewhat slender, dull in lustre, the elytra more shining; head moderate, very distinctly narrower than the prothorax, the vertex finely and feebly rugulose, the middle of the front finely and rather closely punctate; four supra-orbital setæ very long, the eyes strongly convex; labral lobe broadly rounded; antennæ slender; prothorax distinctly wider than long, the sides broadly, evenly rounded, oblique basally, the margin attaining the fine basal furrow; surface nearly smooth, feebly rugulose anteriorly and basally; elytra elongate-oval, without trace of humeri, strongly, subevenly and moderately closely punctate; anterior tarsi of the *audouini* type. Female broader and more ventricose than the male but otherwise nearly similar, the surface lustre rather less dull, the antennæ but little shorter. Length 14.0–14.7 mm.; width 5.4–5.7 mm. California (Shasta Co.).

To be known readily by the moderate head, semi-opaque surface, nearly smooth pronotum and almost regularly and rather deeply punctured elytra.

**Omus shastanicus** ssp. *cephalicus* nov.—Body larger and more elongate than in *shastanicus*, moderately stout, dull in lustre; head larger, finely and feebly rugulose, the front finely punctate, the impressions shallower; labral lobe prominent and transversely truncate medially; antennæ slender and rather long; eyes larger but less convex; prothorax similar in form but larger and more opaque, with obsolescent fine vermiculate

lines; elytra nearly similar but more convex, the rather coarse deep punctures more close-set, generally contiguous externally; coriaceous genital segment (♀) more deeply emarginate, the diverging corneous processes behind it larger. Male unknown. Length 16.5 mm.; width 6.3 mm. California (Shasta Co.).

The female type presents a distinctly different appearance from the female of *shastanicus*, having much heavier anterior parts and the truncate labrum, larger eyes and still longer antennæ are sufficiently distinctive.

***Omus shastanicus* ssp. *tenuiculus* nov.**—Much smaller and more slender than *shastanicus*, with smaller and smoother head, the rugulosity almost obsolete and the anterior punctures minute and remote; labral lobe prominent and evenly rounded; antennæ notably long and slender; eyes similar; prothorax smaller though distinctly wider than the head, similar in general form and in the nearly smooth opaculate surface, but more nearly as long as wide and differing in having its widest section much nearer the apex; elytra much narrower, elongate-oval, the humeri similarly very broadly rounded; punctures relatively even coarser, deep, well separated; interstices not punctulate and rather shining; anterior tarsi (♂) less dilated, the third joint much smaller and subquadrate. Female unknown. Length 13.0 mm.; width 4.8 mm. California (Shasta Co.).

This form is so distinct in its small anterior parts, especially small head and in the outline of the prothorax, form of the male tarsi, small size, slender form and in other ways, that its full specific status is more than probable, but I leave it as stated provisionally.

#### Group II (*californicus*)

I was rather surprised to find three very distinct new forms in this group, in the material from Mr. Fuchs' collection, and, also included, was an additional example of *mimus* Csy.; near *sculptilis* and the closely related *mimus* the following distinct form should be placed:

***Omus semilucens* n. sp.**—Male even narrower and more elongate than in *mimus*, the elytra very shining; head slightly narrower than the prothorax, very coarsely and deeply rugose, the impressions large, rather deep, the front medially rugose, not punctate; labrum truncate, feebly bisinuate; antennæ rather long, moderately slender; prothorax relatively rather large, wider than long, the sides rounded from apex to base, more converging basally; surface coarsely, deeply, vermicularly rugose; elytra nearly twice as long as wide, only a fourth wider than the prothorax, the sides evenly, very broadly rounded, not more rounding at the humeri; punctures moderate though deep, widely separated throughout, the foveæ not large but very deep and conspicuous; basal joint of the anterior tarsi not quite as long as wide, the second nearly one-half wider than long. Length (♂) 14.5 mm.; width 5.1 mm. California (San Francisco Co.).

Distinguishable at once from *californicus* by the much more elongate elytra, gradually narrowed basally and without humeri, and, from *sculptilis* (*mimus*), by the very much sparser elytral sculpture.

***Omus semilucens* ssp. *diminuens* nov.**—Male smaller and slightly more ventricose than in *semilucens*, the hind body less elongate; lustre rather shining; head scarcely narrower than the prothorax, less coarsely but deeply rugose, the labrum not truncate but with the broad median lobe distinctly produced, with its apex narrowly truncate; antennæ rather long, slender; prothorax formed and sculptured as in the preceding but relatively smaller and somewhat less transverse; elytra similarly elongate-oval, widest at the middle and without evident humeri, but only about three-fourths longer than wide and two-fifths wider than the prothorax; punctures still smaller and feebler, widely separated, the foveæ small, few in number, not deep and not very conspicuous; anterior tarsi with the three basal joints equal in length, the second not a fourth wider than long. Length (♂) 13.0 mm.; width 4.8 mm. California (Leona Heights, Alameda Co.).

Differs from *semilucens* in the more lobate labrum, more ventricose and shorter hind body, finer elytral punctures, less distinct foveæ and much less transverse second joint of the anterior male tarsi.

***Omus californicus* ssp. *latipennis* nov.**—Strongly ventricose, the elytra somewhat shining; head much narrower than the prothorax, very coarsely and strongly rugose throughout, the impressions small; labral lobe broadly rounded but distinctly advanced; antennæ rather long and slender; prothorax obtrapezoidal, the sides converging from apex to base and evenly, feebly arcuate; margin fine, prominent only basally; surface very deeply, vermicularly rugose, rather less deeply along the middle; elytra not one-half longer than wide and nearly two-thirds wider than the prothorax, gradually ogival behind, the sides rapidly rounded at base, the shoulders very pronounced; surface with very moderate, well separated punctures, the foveæ small and not very conspicuous; hind tarsi much longer than the tibiæ. Length (♀) 16.5 mm.; width 6.5 mm. California (Leona Heights, Alameda Co.).

The elytra are very much broader than in the female of *californicus*, less convex, with less coarse and rather more separated punctures and much more pronounced humeri.

***Omus sculptilis* ssp. *opacipennis* nov.**—Body unusually depressed, with the elytra subopaque, ventricose; head only slightly narrower than the prothorax, coarsely rugose, not punctate medially on the front, the labral lobe broadly, evenly rounded and distinctly advanced; antennæ notably long; prothorax wider than long, the sides parallel and but feebly arcuate before the middle, then rounding and converging, becoming straight to the base, the margins reflexed basally; surface strongly vermiculato-

rugose, with the transverse subapical line deep and conspicuous; elytra oblong-oval, rather flat above, evenly ogival in nearly apical half, the sides thence very feebly converging to the rapid and strong humeral arcuation; punctures rather small, only feebly impressed, well separated, a little coarser and subconfluent laterally; hind tarsi longer than the tibiæ. Length (♀) 17.5 mm.; width 6.3 mm. California (St. Helena, Napa Co.)

There can be no doubt that this must figure as a distinct subspecies of *sculptilis*, a female of which from Folker's Ranch, Sonoma Co., was also included in the Fuchs collection. The antennæ in the type of *opacipennis* are longer than in the female of *sculptilis*, among other differences.

#### Group IV (*intermedius*)

This group in my previous revision of *Omus* was designated *parvicollis*, but I find so many evidences, more or less positive, that the *intermedius* of Leng is a form allied to the one described by me under the name *parvicollis*, that the propriety of using *intermedius* as the group name becomes rather obvious. The *parvicollis* section of the *intermedius* group differs from the essentially more northern *blaisdelli* section, in the narrower bodily outline and relatively smaller anterior parts, as well as in the much finer and sparser elytral punctures. Not being sure that any one of the forms now constituting the *parvicollis* or *blaisdelli* sections is really identical with *intermedius*, I have maintained them all as distinct from the latter, especially as Mr. Leng himself was unable to identify it in my collection. The type may possibly be lost.

*Omus parvicollis* ssp. *ovipennis* nov.—Smaller and more abbreviated than *parvicollis* and with sparser elytral punctures. Male elongate, convex, rather smooth, alutaceous; head slightly narrower than the prothorax, strongly rugose, finely so on the front, which is not in the least punctate medially; labrum with a very broad and evenly rounded median lobe, which does not project evidently beyond the small lateral lobes; antennæ long, moderately slender; prothorax barely visibly wider than long, the sides subparallel anteriorly, thence arcuate gradually and converging posteriorly, the fine side margins rather strongly, subequally reflexed throughout, uniting with the basal bead; surface broadly convex, opaque, finely creased, more deeply so laterally, the transverse impressions moderate and equal, the median stria distinct; elytra very nearly twice as long as wide, widest at the middle, evenly oval and without humeri; surface convex, finely and sparsely punctate, a little less sparsely toward the sides; anterior tarsi with the basal joint somewhat longer than wide, much longer than the second, which is a third wider than long. Length

(♂) 16.0 mm.; width 5.4 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

Readily distinguishable from *parvicollis*, or any other of the more southern forms of the group, by its smaller size, less elongate form, still more finely punctured elytra and less evident sparse feeble foveæ; its more northern habitat, as a close ally of *parvicollis*, is to be noted.

#### Group V (*lecontei*)

It seemed probable at first that the following species might be the one described by W. Horn under the name *fuchsi*, but it differs in many ways as will appear:

**Omus lacertus** n. sp.—Female very stout for the *lecontei* group, the head and pronotum especially developed as in some of the Sierra forms, moderately shining; head large though distinctly narrower than the prothorax, strongly, rather coarsely rugose, the middle of the front nearly smooth and with only infinitesimal and remote punctulation; labrum medially produced and quadrilobate, the median sinuate part projecting beyond the small adjoining lobes; antennæ rather long and stout; prothorax transverse, fully a third wider than long, widest near apical third, but with the sides very evenly arcuate, strongly converging behind, the reflexed lateral margins strong throughout, more rapidly oblique at base, which it virtually attains; surface moderately and almost evenly convex, deeply, vermicularly rugose, the anterior sulcus fine and deep, the subbasal feeble, not quite attaining the sides, the median stria deep and conspicuous between the transverse impressions; elytra oblong-oval, two-thirds longer than wide, two-fifths wider than the prothorax, widest at about the middle, gradually ogival thence posteriorly, subparallel anteriorly to the gradually rounded and not very definite humeri; punctures rather small, somewhat aciculate in form, widely separated throughout, the foveæ moderate and in two somewhat definite series; hind tarsi but little longer than the tibiæ. Length (♀) 18.5 mm.; width 6.7 mm. California (Carmel, Monterey Co.),—Fuchs.

In comparing this with the female of *fuchsi*, as described by W. Horn, a number of irreconcilable differences become apparent. For example, it is said that the pronotum is flattened, the median stria almost obsolete, the elytral humeri broad and distinct, the greatest elytral width well before the middle—as in *lecontei*—and the antennæ rather short and slender in *fuchsi*. No one of these characters can be observed in the type of *lacertus*.

Group VI (*sequoiarum*)

The following is one of the more distinct and isolated forms of the subgenus:

**Omus laticollis** n. sp.—Body (♀) elongate, subparallel, rather shining; head distinctly narrower than the prothorax, strongly rugose and shining throughout, without frontal punctures, the labral lobe prominent, broadly rounded; antennæ moderate in length, rather thick; prothorax strongly transverse, only slightly narrower than the widest part of the elytra, obtrapezoidal, with subevenly rounded sides from apex to base, the lateral margin attaining the base; surface strongly and evenly vermiculato-rugose throughout; elytra about twice as long as wide, the sides parallel and almost straight, rounding at base, gradually arcuate and converging posteriorly; lateral margin distinctly reflexed basally; punctures rather coarse, deep, evenly close-set and cribrate, each attended by a minute anterior granule; larger sparse foveæ distinct; legs slender. Male slightly more ventricoid than the female but more slender, with much less transverse prothorax and rather feebler anterior rugulosity, the antennæ long and slender; elytra twice as long as wide, elongate-oval, with arcuate sides and less obvious humeri, the sculpture nearly similar; anterior tarsi with the first three joints subequal in size, the first narrowed basally as usual. Length (♂) 15.5 mm., (♀) 17.3 mm.; width (♂) 5.4 mm., (♀) 6.0 mm. California (Tuolumne Co.).

Sent to me under the name *intermedius* Leng, which very erroneous determination I am informed came from Dr. W. Horn of Berlin. It does not agree in any feature with *intermedius* as defined by Mr. Leng. The latter author, on recently viewing my material, stated that it was impossible for him, after so long an absence of the type, to be sufficiently certain concerning its general characters to identify it. The type is said to have been sent back to the late Mr. Fuchs many years ago, but the description given by Mr. Leng is fairly full and presumably accurate.

In the Fuchs collection, recently received, I was extremely glad to find the female of *Omus sierricola* Csy., agreeing perfectly with the male, even in the basally abbreviated lateral reflexed thoracic margin, which thus seems to be a constant character. It is labeled "Big Trees, Calaveras Co." So its Sierran habitat, which I surmised from its general habitus, proves to be correct.

Group VII (*horni*)

The sharp granule at the anterior margin of each elytral puncture is a marked feature of this group when compared with the *lævis*

group, and, from the *sequoiarum* group, which also possesses the character in common with most species of the subgenus, it may be known by the smooth or nearly smooth pronotum. *Temperatus* is a species quite distinct from *horni*, to which I formerly attached it:

***Omus temperatus* ssp. *difficilis* nov.**—Similar to *temperatus* in general form but with slightly less elongate antennæ and shorter, more strongly punctate elytra, somewhat distinctly ventricose, dull, the elytra rather shining; head feebly but distinctly rugulose, not punctate anteriorly, the labral lobe not very prominent though medially truncate; eyes very convex; prothorax obtrapezoidal, distinctly wider than long, much wider than the head, scarcely more than two-thirds as wide as the elytra, the sides evenly arcuate from apex to base, the fine side margin attaining the latter; surface less smooth than in *temperatus* and having distinct remnants of the verniculations of *sequoiarum*; elytra evenly oval, three-fifths longer than wide, the sides arcuate, widest at the middle, the humeri not evident; punctures much larger, deeper and less close-set than in *temperatus*; anterior tarsi (♂) with the first three joints very eccentric, the second much the widest. Female unknown. Length 14.0 mm.; width 5.8 mm. California (Mariposa Co.).

The elytral sculpture much more closely resembles that of *horni* than that of *temperatus*, where the punctures are smaller than in any other of the present group, but they are nevertheless smaller and shallower than in *horni*, finely lineate at the bottom and with more alutaceous interspaces.

***Omus temperatus* ssp. *mariposæ* nov.**—Larger, longer and less ventricose than in the preceding, with less oblique thoracic sides, opaculate, the elytra feebly shining; head distinctly narrower than the prothorax, rather strongly rugulose throughout; labral lobe large, almost evenly rounded; frontal punctures fine, barely visible at the middle near the apex; eyes strongly convex; antennæ slender, moderately long; prothorax feebly obtrapezoidal, barely a fifth wider than long, the sides feebly arcuate, the margin not quite attaining the base; surface with the verniculate incised lines almost as deep as in *sequoiarum* but with the rugæ flat; elytra oblong-oval, subparallel, narrowing behind the middle, the humeri broadly rounded; punctures rather coarse, impressed, not very close-set, their bottoms coarsely and briefly lineiform; anterior tarsi (♂) less inflated than in *difficilis* and with less eccentric joints, the second but little wider than the third. Female unknown. Length 15.0 mm.; width 6.0 mm. California (Mariposa Co.).

This form has more of the *horni* and less of the *sequoiarum* habitus than *difficilis*, but it is much narrower and more elongate than *horni*, with less coarse or deep elytral punctures and more elongate and more oblong hind body.



**Omus temperatus** ssp. *sparsellus* nov.—Body elongate and rather less convex, opaculate, the elytra rather dull; head much narrower than the prothorax, with very obsolete rugulosity and with very faint minute sparse frontal punctures at the middle; labral lobe narrower, prominent, truncate at the middle; eyes moderately convex; antennæ not very long or slender; prothorax obtrapezoidal, the sides more oblique than in *mariposa*, parallel in less than apical third, fully a fifth wider than long, the side margins attaining the base; surface smooth, the fine incised lines barely traceable on the disk; elytra evenly oblong-oval, widest at the middle, with evenly and moderately arcuate sides, rather obtuse apically; side margins sharply reflexed, especially near the humeri, which are narrowly distinct at base; disk two-thirds longer than wide, the punctures large but very shallow, well separated, the acute granules very conspicuous; the punctures become coarse, deep and contiguous postero-laterad; anterior tarsi ( $\sigma^7$ ) only very moderately dilated, the second joint markedly wider than the third, which is quadrate. Female unknown. Length 15.5 mm.; width 5.7 mm. California (Wawona, Mariposa Co.).

Evidently different from either of the two preceding or *temperatus* because of the elytral punctures and general form; in outline it is nearly as in *difficilis*; the prothorax is more nearly as in *sequoiarum* than *horni*.

The following is a remarkably isolated species belonging to the *horni* group in the vicinity of *temperatus*:

**Omus subsericeus** n. sp.—Elongate, convex, only moderately ventricose, alutaceous, the elytra slightly more shining than the anterior parts, the micro-reticulation very distinct; head nearly smooth, the impressions large but shallow, the median part of the front only sparsely and infinitesimally punctulate; labrum with the lobe broad, evenly arcuate and much produced beyond the sides; antennæ short, not stout; prothorax a fourth wider than long, widest near the apex, the sides very moderately converging and feebly arcuate thence posteriorly, more oblique and straight near the base; side margins very finely reflexed, more so basally, attaining the base, the basal groove coarse, interrupted medially, the median lobe strong; surface feebly convex, very smooth, with longitudinal wrinkles anteriorly and slightly rugulose basally, the transverse impressions feeble and extremely indefinite, the median stria fine but distinct, attaining the base; elytra three-fourths longer than wide, nearly a third wider than the prothorax, gradually obtusely ogival in about apical half, the humeri distinct but broadly rounded; punctures small, feeble and remote, stronger, deeper and somewhat confluent laterally, the foveæ few, rather large and distinct; every puncture has a distinct asperity. Length 16.0 mm.; width 5.8 mm. California (Kaweah),—Hopping.

Differs from *temperatus* in its more cylindrical form, feebler and sparser elytral sculpture and in the resulting peculiarities of habitus, among other characters.

*Collaris* Csy., is distinct from *horni* in its generally narrower and more elongate outline and usually stouter and sometimes much more elongate antennæ. In the elongate form of the body it resembles *temperatus* and allied forms, but the elytral punctures are always much coarser and closer. The following three may be regarded as subspecies of *collaris*:

***Omus collaris* ssp. *antennalis* nov.**—Male stout, but more parallel and less ventricose than in *horni*, rather shining; head slightly narrower than the prothorax, coarsely but very obsoletely rugulose, nearly smooth and not at all punctate anteriorly; labral lobe very broadly rounded, not prominent; antennæ notably long and rather thick; prothorax obtrapezoidal, a fourth wider than long, the oblique part of the sides nearly straight; thin side margins rather elevated, especially near the base, which they attain by rapidly curving inward; surface medially perfectly smooth, rugulose apically and basally and with transverse rugæ laterad; elytra more than two-fifths wider than the prothorax, with parallel and feebly arcuate sides, rapidly converging in apical two-fifths; punctures internally large but shallow, the granule of each small but very conspicuous; anterior tarsi broadly dilated and very eccentric, the third joint as large as the second; apex of the copulatory spicule long, straight and but feebly deflexed. Length 16.0 mm.; width 6.2 mm. California (Mariposa Co.).

This is a distinct modification of the *collaris* section in its unusually long and at the same time thick antennæ, somewhat as in *ambiguus*, almost evenly rounded labral lobe, more truncate apically in the female, and very strongly, subequally dilated anterior tarsal joints of the male. The male type was taken on July 2, 1905, by J. C. Huguenin and the female on June 12, 1914, by Nunenmacher. The female is similar to the male in every detail of sculpture and habitus, but is stouter and with more transverse prothorax; the antennæ are similarly stout but shorter.

***Omus collaris* ssp. *trapezicollis* nov.**—Male less heavily built than the male of *antennalis* and with more slender antennæ than in either that or *collaris*, the elytral punctures smaller and rather deeper than in either, the small acute granules therefore less differentiated though evident; lustre rather opaque, the elytra shining; head distinctly narrower than the prothorax, moderately rugulose throughout, obscuring the feeble anterior punctures; antennæ slender, only moderate in length; labral lobe large, prominent, feebly truncate medially; prothorax obtrapezoidal, a fifth or sixth wider than long, the oblique sides subsinuate medially, the acute side margins not quite attaining the base; surface centrally smooth but with fine and very obsolete anastomosing lines, rugulose peripherally; base bisinuate; elytra oblong-oval, two-fifths wider than the prothorax, gradually arcuately narrowing behind the middle; punc-

tures coarse, deep and confluent laterally, small and distinctly separated suturally, the larger foveæ obscure; anterior tarsi only moderately dilated, the third joint much narrower than the second. Length 14.8 mm.; width 5.7 mm. California (Mariposa Co.).

The type was taken by Mr. Nunenmacher on the twelfth of June, 1914, but the exact locality is not stated. This also is a very distinct taxonomic form.

**Omus collaris** ssp. **erraticus** nov.—Female no stouter than the male of *antennalis*, much narrower than the female of *trapezicollis* and slightly narrower than the female of *collaris*, somewhat shining, the pronotum dull; head distinctly narrower than the prothorax, moderately rugulose throughout, the anterior punctures evident but somewhat obscured by the sculpture; labral lobe prominent, truncate at tip; antennæ slender, moderately long; prothorax transverse, strongly obtapezoidal, with evenly and markedly arcuate sides from apex to base, the side margins not quite attaining the latter; surface with fine and anastomosing lines, the apical and lateral rugulosity very feeble, the basal a little more evident; base bisinuate; elytra oblong-oval, three-fifths longer than wide, a third wider than the prothorax, the punctures coarse throughout, deep and contiguous laterally, less deep, not quite so coarse and moderately separated suturally, the granules small but sharp; legs rather short. Male unknown. Length 14.6 mm.; width 6.0 mm. California (Tuolumne Co.)—Two examples.

Apparently this form, which is evidently different from any of the preceding allies of *collaris* in its more obtapezoidal prothorax, with arcuate sides, and deeper elytral sculpture, can always be recognized as differing from *horni* or any of the numerous related forms of that species by its more elongate outline.

The *horni* section comprises the shortest and stoutest forms of the entire subgenus, with very coarse and conspicuous elytral punctures, and, as a subgroup, they impress one at first glance as constituting a distinct species from either the *temperatus* or *collaris* sections. The various subordinate forms before me are so numerous that the differences are best expressed in a table as follows:

Oblique sides of the prothorax broadly, subevenly arcuate.....	2
Oblique sides straight to feebly sinuate submedially.....	5
2—Elytral foveæ distinct to conspicuous; pronotum very smooth.....	3
Elytral foveæ indistinct, the general punctuation closer; pronotum with fine anastomosing lines.....	4
3—Male strongly ventricose, shining; head and pronotum alutaceous, the former very obsoletely rugulose, impunctate anteriorly, the labrum only slightly prominent medially; antennæ moderately long, not very slender; prothorax a fifth wider than long, much narrowed	

posteriorly, slightly rugulose at apex and base, the sides with feeble transverse furrows; side margin attaining the base; elytra not quite one-half longer than wide, one-half wider than the prothorax, the sides rounded; the apex obtuse; punctures very coarse, deep, well separated internally, the granules distinct; anterior tarsi strongly dilated, the third joint slightly wider than long and not quite as wide as the second. Length ( $\sigma^7$ ) 15.0 mm.; width 6.0 mm. California (Wawona, Mariposa Co.).....**compositus** Csy.

Male narrower and less ventricose, smaller; lustre and sculpture nearly as in the preceding; labral lobe much more prominent; antennæ similar in length but more slender; prothorax shorter, a fourth wider than long, similarly distinctly wider than the head, the sculpture and sides nearly as in *compositus*; elytra short, scarcely one-half longer than wide, scarcely more than two-fifths wider than the prothorax, rapidly narrowed but more angulate apically, the coarse punctures well separated, the granules very strong, the foveæ larger and more conspicuous than in any other of the group; anterior tarsi less dilated, the third joint barely at all narrower than the second though somewhat wider than long. Length ( $\sigma^7$ ) 13.0 mm.; width 5.6 mm. California (Tuolumne Co.).....**brevis** n. subsp.

4—Antennæ short, the intermediate joints not three times as long as wide. Male rather shining, only very moderately ventricose, the hind body narrower than usual in this section; head slightly narrower than the prothorax, deeply and strongly rugose, the labral lobe only very slightly prominent; antennæ pale brown distally; prothorax short, much narrowed basally, the sides strongly arcuate, the margin attaining the base; entire disk with coarse and widely separated incised anastomosing lines; elytra three-fifths longer than wide, two-fifths wider than the prothorax, gradually arcuately acute posteriorly; punctures coarse and deep throughout, slightly separated internally, the granules rather feeble; anterior tarsi moderately dilated, the third joint but little smaller than the second. Length ( $\sigma^7$ ) 13.8 mm.; width 5.65 mm. California (Mariposa Co.—June 12, 1914).....**propinquus** n. subsp.

Antennæ longer, slender, the intermediate joints ( $\sigma^7$ ) more than three times as long as wide; body very stout. Male distinctly stouter than in the preceding, similar in lustre, the head more finely rugulose, the labral lobe and antennæ nearly similar; prothorax scarcely more than a fourth wider than long, the sides moderately converging posteriorly, the margin not quite attaining the base, the sculpture very nearly as in *propinquus*; elytra much more inflated and more obtuse at apex, almost similarly sculptured, except that the granules are more distinct; anterior tarsi strongly dilated, but with the third joint notably smaller than the second. Female larger, stouter, the hind body very obese, the apex rapidly and obliquely, subrectilinearly narrowed to the acute tip; other characters nearly as in the male, the prothorax more transverse, the antennæ similar. Length ( $\sigma^7$ ) 14.0 mm., ( $\text{♀}$ ) 15.8 mm.; width ( $\sigma^7$ ) 6.0 mm., ( $\text{♀}$ ) 6.7 mm. California (Mariposa Co.). Three examples...**horni** Lec.

5—Female less obese than in the preceding but stout, opaculate, the

- elytra shining and with the very coarse punctures irregularly distributed, deep, very strongly granuliferous and producing an asperulate sculpture; head much narrower than the prothorax, moderately rugose, not punctate anteriorly, the labrum less abbreviated than usual, the median lobe small, prominent and narrowly truncate, not separated from the lateral parts by the usual sinuses; antennæ moderately long, slender; prothorax a fourth wider than long, the sides moderately converging posteriorly, broadly rounding inward basally, the margin attaining the base; surface opaque, minutely lined, feebly rugose peripherally; elytra scarcely one-half longer than wide, oblong, arcuately pointed behind, the margins strongly reflexed, the humeri rather evident; legs notably short. Length (♀) 14.5 mm.; width 6.0 mm. California (Tuolumne Co.). Received from Mr. Harris. Male unknown. . . . . *asperatus* n. subsp.
- Female as in *asperatus* in stoutness, less obese than in *horni* or the two concluding, opaculate, the elytra more shining and with the coarse deep punctures not abruptly defined, contiguous and each with a strong acute granule; head feebly rugulose, the front nearly smooth medially and with some sparse punctures; labral lobe broadly triangular and prominent, with truncate apex, the lateral sinuses distinct as usual; antennæ slender, moderate in length; prothorax evidently though not greatly wider than the head, moderately obtrapezoidal, less than a fourth wider than long, the sides rapidly rounding inward basally, the margin attaining the base; surface opaque, the fine lines distinct, becoming gradually rugose apically and basally; elytra fully one-half longer than wide, not quite one-half wider than the prothorax, widest just before the middle, where the sides are subprominently rounded, thence gradually narrower behind to the rather obtuse apex; legs rather long, slender. Length (♀) 15.0 mm.; width 6.1 mm. California (Mariposa Co.,—June 2, 1914). . . . . *granosus* n. subsp.
- Female about as in *asperatus* in stoutness but with relatively smaller head and prothorax and more inflated hind body, opaculate, the elytra feebly shining, alutaceous; head very feebly rugulose, the impressions rounded, rather shallow; labral lobe strongly advanced, large, feebly truncate at apex; frontal suture bisinuate; prothorax not over a fifth wider than long, the sides evidently but not strongly converging from about apical third—the point of somewhat greatest width—nearly to the base, where they become more rounded and converging, distinctly sinuate just behind the middle; margin extremely fine apically, distinctly reflexed basally; surface nearly smooth, with some feeble creases, slightly rugose basally and with longitudinal furrows apically, the transverse impressions obsolete on the disk, the median stria extremely fine and feeble; elytra three-fifths longer than wide, about one-half wider than the prothorax, the basal margin abruptly much wider than the thoracic base and rectilinear, the humeri well exposed and obtusely subangulate; outline rapidly ogival in about apical half, subparallel basally to the humeri; punctures only moderately coarse and well separated, becoming deeper and contiguous toward the sides, the granules

moderate, the foveæ evident but not very conspicuous; side margins well reflexed, especially toward the humeri. Length (♀) 15.8 mm.; width 6.0 mm. California (Wawona, Mariposa Co.).

*sinuosus* n. subsp.

Female stout, nearly as in *horni*, the male more slender than in that form. 6—Female stout, subopaque, with more shining elytra as usual; head large, but narrower than the prothorax, rather strongly rugose, the anterior punctures obscured; labrum bisinuate, the lobe rather prominent, large, broadly truncate at tip; antennæ rather long, slender, not paler distally; prothorax moderately obtrapezoidal, the sides oblique at base, which the margin attains, fully a fourth wider than long; surface with fine anastomosing lines, rugulose apically and basally, the base distinctly bisinuate; elytra nearly one-half longer than wide, the sides evenly arcuate, the apex gradually acute; side margins fine; humeri rather evident; punctures coarse, deep, separated suturally, the granules distinct, irregular. Male smaller and much less stout but otherwise nearly similar to the female, the anterior tarsi well dilated but with the third joint smaller than the second, though wider than long. Length (♂) 14.0 mm., (♀) 15.5 mm.; width (♂) 5.6–5.8 mm., (♀) 6.4 mm. California (Tuolumne Co.).

Four examples.....*punctatus* n. subsp.

Female large and very stout, the lustre as in the preceding; head moderate, much narrower than the prothorax, rugulose throughout, the anterior punctures obliterated; labral lobe very prominent, narrowly truncate; antennæ slender, rather long; prothorax large, much less transverse than in *horni*, moderately obtrapezoidal, the sides very rapidly rounding inward basally, less than a fourth wider than long; surface as in the preceding, the base moderately bisinuate; side margins not attaining the base; elytra much inflated, less than one-half longer than wide, very nearly one-half wider than the prothorax, widest at the middle, the converging sides thence straighter basally, gradually very arcuate and converging posteriorly; humeri narrow at base but rather evident; punctures very coarse and close throughout, deep but broadly impressed, the granules small though evident; legs rather long and slender. Length (♀) 15.3 mm.; width 6.8 mm. California (Mariposa Co.,—June 18, 1914).....*farctus* n. subsp.

The three examples above included under the name *horni* seem to satisfy the original description very well, although the prothorax is more transverse than might be inferred from LeConte's description.\*

\* The very numerous forms characterized in the *horni* group, are all local and confined to various valleys and heights in the Mariposa-Tuolumne region of the Sierras. They form an extremely difficult study. A large number of them are easily recognizable, but I am free to admit that some others can only be identified certainly by actual comparison with the types, and even then only after some experience has been gained in the study of the genus. In publishing them therefore, it is with a feeling that I shall not be thanked by those who have to rely chiefly upon descriptions. But the types are accessible to all those who care to view them, and I trust that this will be the case as long as they exist. It is one of my chief enjoyments laboriously to work

*Omus marginalis* n. sp.—Male more slender than usual in this group, subopaque, the elytra shining; head but just visibly narrower than the prothorax, moderately rugulose, the front medially feebly rugulose, not punctate; labral lobe prominent, truncate; antennæ notably short, piceous distally; prothorax scarcely over a fifth wider than long, the sides moderately converging and very evenly arcuate from apex to base, which the side margins attain, the base very feebly bisinuate; surface feebly rugulose peripherally, the anastomosing lines feeble and widely separated discally in the type; elytra of peculiar form, two-thirds longer than wide, widest behind the middle, the sides thence feebly converging and scarcely at all arcuate to the humeri, which are basally exposed and distinct; side margins more strongly reflexed than in any other form, abruptly so as usual; punctures rather close, very coarse and deep, without granules except at base; basal region abruptly free from punctures; legs slender; anterior tarsi strongly dilated, the third just barely wider than long and distinctly narrower than the second. Length (♂) 13.7 mm.; width 5.35 mm. California (Tuolumne Co.,—May 29, 1914).

The peculiarities of this form as detailed above, entitle it to the specific status apparently without much doubt.

#### Group VIII (*lævis*)

The nature of the elytral sculpture is the chief feature separating this group from the *horni* and *sequoiarum* groups, the punctures sometimes, as in *lævis*, being completely wanting, and, where present, as in *tularensis*, displaying a form wholly unlike that seen elsewhere in the subgenus, being very feebly impressed, without trace of granules and gradually more and more obsolete basally. Parallel to the basal margin and considerably removed therefrom, there is usually an irregular series of fine granules representing the basal limit of punctures in other groups. The sparse foveæ are very shallow, but each bears the usual seta which, as usual, is very easily lost.

out—avoiding so far as possible the mistakes and pitfalls to which we are all liable—the various forms that have been evolved through processes of evolution, and, after completing this time consuming labor, it is natural to wish to render it permanent by assigning names to the various forms. The latter, though very closely allied among themselves as a rule, are constant within their restricted habitats and *are not synonyms*, except in the grotesque conception of a certain school of systematists, who imagine that they are thus simplifying what really cannot be simplified. Nature cannot be forced into simplicity; she loves the complex and, in order to record her truthfully, we have to become the chief *bête noire* of all, to those who find patient research burdensome. Incidentally it is distasteful to me to find my personality repeated so many times after these names as sponsor for them, but if others will not do their part someone must, even if he be accused thereby of suffering from aggravated “mihi itch.”



**Omus tularensis** ssp. **remissus** nov.—Shorter than usual and strongly ventricose, strongly alutaceous, the elytra more shining; color throughout dark red-brown in the type but probably from immaturity; head distinctly narrower than the prothorax, almost smooth, with some very obsolete minute frontal punctures; labral lobe very large, prominent, faintly truncate medially; antennæ moderately long and slender; prothorax very much smaller and more obtrapezoidal than in *tularensis*, being more nearly as in *gracilior*, a fourth or fifth wider than long, the sides feebly and unevenly arcuate, the side margin joining the basal bead, the base very broadly and feebly bisinuate; surface smooth, rugulose basally but scarcely at all so apically; elytra short and strongly convex, less than one-half longer than wide, nearly one-half wider than the prothorax, oblong-oval, parallel, rapidly obtuse apically, the humeri rather pronounced; punctures moderately small and very feeble indentations, gradually becoming altogether obsolete basally; legs moderate, the tarsi long. Male unknown. Length (♀) 16.0 mm.; width 6.0 mm. California (Colony Mill, Tulare Co., 5400 ft.),—Hopping.

Differs very much from either *tularensis* or *gracilior* in the abbreviated hind body, and, from the former, more especially in its much smaller and more basally narrowed prothorax.

The following is a rather distinct subspecies of *lævis* Horn, of which species I now have three perfectly homogeneous examples:

**Omus lævis** ssp. **peropacus** nov.—Male rather narrow and subdepressed, only feebly ventricose, densely opaque throughout the upper surface, more shining beneath; head only very slightly narrower than the prothorax, very obsoletely and obtusely rugulose, the impressions feeble but long and oblique, the middle of the front with extremely ill-defined sparse punctures; labral lobe broad, slightly advanced, with its edge undulated; antennæ rather long, moderately stout; prothorax only a fifth or sixth wider than long, the sides moderately converging and very evenly arcuate from apex to base, the side margins finely reflexed, a little more so basally, attaining the base, the basal bead coarse, only visible laterally; surface feebly convex, densely dull but in general perfectly smooth, slightly rugose at base, the anterior transverse impression broad and indefinite, more acute toward the sides, the subbasal very feeble, the median stria fine but distinct; elytra oblong, two-thirds longer than wide, not a third wider than the prothorax, widest at the middle, the sides parallel and broadly, evenly arcuate, more converging behind from near the middle, the humeri slightly evident though gradually broadly rounded; surface flat suturally, having very fine and remote, indefinite punctures, joined by a system of irregular and feebly impressed sublongitudinal creases; anterior tarsi with the three joints differing but little in width. Length (♂) 15.8 mm.; width 5.65 mm. California (Tulare Co.).

From the male of *lævis* this differs in its much more parallel hind body, more depressed and less smooth elytra and more nearly parallel three basal joints of the anterior tarsi.

*List of the Genus Omus*

In the following list of the taxonomic forms recognized thus far in this genus, species are printed in small capitals, subspecies, varieties, races, aberrations, systematic abnormalities and other categories occurring to the fancy of various authors, in indented Roman and synonyms in *Italics*:

<b>Omus</b> Esch.	OREGONENSIS C.
Sg. <b>Megomus</b> Csy.	XANTI Lec.
DEJEANI Rch.	*
robustus C.	EDWARDSI Cr.
foveatus C.	lobatus C.
	<i>lucidicollis</i> C.
Sg. <b>Omus</b> in sp.	MONTANUS C.
*	brunnescens C.
VANDYKEI W. H.	*
*	INTERMEDIUS Leng
AUDOUINI Rch.	BLAISDELLI C.
rugipennis C.	cribripennis C.
tacomæ C.	PARVICOLLIS C.
æquicornis C.	procerus C.
brevicornis C.	spissipes C.
delicatulus C.	ovipennis C.
distans C.	*
PARVULUS C.	LECONTEI G. H. H.
HUMEROPANATUS W. H.	elongatus C.
CYLINDRICUS W. H.	dunni C.
AMBIGUUS Shpp.	regularis C.
solidulus C.	maritimus C.
humeralis C.	FUCHSI W. H.
SHASTANICUS C.	LACERTUS C.
cephalicus C.	BOREALIS C.
tenuiculus C.	pronotalis W. H.
THORACICUS C.	nunenmacheri W. H.
*	*
CALIFORNICUS Esch.	SEQUIIARUM Cr.
<i>hornianus</i> W. H. (♂)	lugubris C.
vermiculatus C.	sierricola C.
latipennis C.	LONGITARSIS C.
SCULPTILIS C.	FRATERCULUS C.
opacipennis C.	PUNCTIFRONS C.
minus C.	degener C.
SEMILUCENS C.	confluens C.
diminuens C.	LATICOLLIS C.

*	
TEMPERATUS C.	compositus C.
difficilis C.	farctus C.
mariposæ C.	brevis C.
sparsellus C.	MARGINALIS C.
SUBSERICEUS C.	*
COLLARIS C.	TULARENSIS C.
erraticus C.	gracilior C.
trapezicollis C.	opacellus C.
antennalis C.	remissus C.
HORNII Lec.	LÆVIS G. H. H.
punctatus C.	peropacus C.
propinquus C.	Sg. <i>Leptomus</i> Csy.
asperulus C.	SUBMETALLICUS G. H. H.
sinuosus C.	
granosus C.	

The position assigned *xanti* above is doubtful. The locality of *xanti*—in the southern coast mountains—shows that it certainly cannot be the same as *californicus*, and the probabilities are that it does not belong to the same group of the subgenus.

#### Cicindela Linn.

The true and typical *longilabris* of Say, is the broader form occurring about Lake Superior and probably thence to the eastward in more or less pronounced color modifications. The Rocky Mountain forms are different and of brighter shades of bronze and green. The black forms, from more northern regions as a rule, constitute a different subgroup and include several distinct species, some, such as *spissitarsis*, having unique characters.

The *purpurea* group comprises, so far as known, these eight distinct species: **purpurea**, with subspecies or varieties *splendida*, *graminea*, *ardelio*, *inducta*, *auduboni* and *auguralis*; **limbalis**, with *transversa*, *amæna*, *awemeana* and *eldorensis* as subordinate forms; **ludoviciana**; **lauta**, with subordinates *franciscana* and *mirabilis*; **decemnotata**, with subspecies *albertina*; **cimarrona**; **denverensis**, with subspecies *pugetana*, *parallelonota*, *oreada* and *conquisita* and **sierra**. This last species was attached by Mr. Leng to the *tranquebarica* group, but it is at least an annectent form in the direction of the *purpurea* group, and I should prefer to place it there. There can be but little doubt that *ludoviciana* Leng is also a distinct species and not a variety, the hind body is shorter and broader than in any other form of the *purpurea* group, the outline in fact being

almost exactly as in the *scutellaris* group; it evidently could not interbreed with any other species.

In the *formosa* group, *formosa*, *generosa* and *manitoba* are manifestly slight varietal forms of a single species, but *luxuriosa* is constantly different in the very much narrower markings, though having a similar stout outline; it is a distinct subspecies and I have recently received additional material from Yuma in north-eastern Colorado. *Admiscens* is a very remarkable species, having the broad and characteristic markings of the *formosa* group, with a short labrum, exactly as in the *tranquebarica* group; it might therefore be considered either an annectant form between the two groups, as a separate group by itself or as an aberrant species in the *tranquebarica* group; the last seems to be the best course to recommend.

In the *tranquebarica* group the distinct species are: **tranquebarica** with synonyms *horiconensis* and *turbulenta* and subspecies *vibex*, *kirbyi*, *wichitana*, *crinifrons*—this being the same as *minor* Leng, of the list, which however was not formally defined, being merely mentioned in the text without authorship or description,—*lassenica* and *viridissima*; **moapana**, **plutonica**, **bellissima** and **diffracta**. *Viridissima* occurs under two forms, one having a nearly complete humeral lunule and the middle band extending to the sides, occurring in Kern Co., California, the other with only the posterior inner part of the lunule and the middle band widely isolated from the margin, occurring in Tulare Co.

In the *repanda* group the forms near *ancocisconensis* require revision. Mr. Harris was kind enough to give me a typical specimen of that species, taken in the type locality, and this proves to be the key to the situation. I at first thought that *dowiana* was identical, but, as Mr. Harris wrote me that in his opinion it was not the same, a more careful observation shows me that, although having likewise a notably elongate form of body, it is probably a distinct and still more slender modification. My two examples of *dowiana* are both females but are, if anything, narrower than the single male of *ancocisconensis* at hand. The following are two very well differentiated subspecies of *ancocisconensis*:

**Cicindela ancocisconensis** ssp. *carolinæ* nov.—Smaller and still narrower than *ancocisconensis*, similar in color, markings and sculpture, except that the coarser elytral punctures toward base are almost obsolete, the humeral lunule not quite so long and the prothorax much shorter and

more transverse. Length (♀) 12.5 mm.; width 4.85 mm. North Carolina.

The elytral punctures are slightly denser than in *ancocisconensis* and the attendant small shining granules are still smaller.

*Cicindela ancocisconensis* ssp. *eriensis* nov.—Form shorter and with more abbreviated hind body than in *ancocisconensis*, smaller in size and with relatively much smaller, though otherwise similar, prothorax; color, markings and sculpture similar, except that the humeral lunule is much shorter, being as in *repanda*. Length (♂ ♀) 12.0–12.5 mm.; width 4.72–5.0 mm. A single pair from Western New York (Buffalo); the hind body of the male is narrower than in the female.

The sexually different form of the anterior and middle femora, characterizing most of the Cicindelids, is very striking in *ancocisconensis*, the male femora being notably stout and very gradually tapering distally, while those of the female are as slender as the posterior femora.

The following is a distinct species of the *repanda* group:

*Cicindela hudsonica* n. sp.—Rather large in size and broad, very dull coppery-brown in color, the pronotal sulci blue, the hind angles cupreous; head not wider than the prothorax, very closely and minutely strigose and with coarse sparse whitish hairs, the frontal swelling distinct; eyes smaller than usual; lateral labral teeth represented by feeble, broadly rounded projections; prothorax fully one-half wider than long, subparallel, feebly inflated anteriorly, the basal angles tumid; surface minutely and closely granulo-rugulose, sparsely hairy at the sides; elytra oblong, parallel, with feebly arcuate sides, very broadly and obtusely rounded at apex, barely one-half longer than wide, four-fifths wider than the prothorax, the humeri broadly exposed at base, the punctures moderate, each attended by a distinct shining granule; markings subobliterated, the humeral lunule represented only by a small humeral spot and a minute posterior discal point, the middle band only feebly traceable from the angle and thence gradually obsolete posteriorly, the apical lunule widely disintegrated, the anterior spot and transverse line at apex, however, rather well developed; under surface shining green and coppery and with long loose pubescence toward the sides, the abdomen blue throughout and with sparse hairs laterad. Length (♀) 13.5 mm.; width 5.7 mm. Hudson Bay Territory.

This species should follow *duodecimguttata* in the list, though having but little resemblance, differing in its larger, broader, and more oblong hind body, stronger sculpture and nearly obsolete maculation.

In the *hirticollis* group there are some peculiarities affecting the typical species. The form occurring in New Jersey, for example, is constantly smaller than that found in Rhode Island, and in the

latter region there is one of those singular obliterations of the maculation, similar to that of the Californian *pacifica*, the pale spots and lines being almost completely undeveloped for some reason not now known; this was called *nigrita* by Mr. Davis. The region about Narragansett Bay seems to have some qualities of climate leading more especially to gigantism it would seem. Not only is the New Jersey *hirticollis* represented by a much larger variety, but the same is observable in *dorsalis*, where the Rhode Island form, which I named *munifica*, is notably larger than the New Jersey typical form. In this region occurs also a rather remarkable olive green form of *tranquebarica* and I have a male collected by Mr. Calder, which apparently belongs to *nigrita* but with bright subcupreous coloration—in fact of the prevailing ground color of this large Rhode Island form of *hirticollis*. As *nigrita* is not more than a racial form of the latter, the name might very well be used therefore for this large Narragansett *hirticollis* in a general sense, although the name does not represent the usual ground coloration.\*

The following is an altogether distinct species of the *hirticollis* group, quite isolated in form and sculpture:

*Cicindela shermani* n. sp.—Form rather slender, moderately shining, blackish-bronze in color, beneath shining greenish, moderately pubescent, broadly laterad and gradually cuprascent toward the sides, except on the abdomen; head barely as wide as the prothorax, very minutely, closely

\* The name *nigrita* is preoccupied by Dejean for a valid taxonomic form, now considered subordinate to the European *campestris*, and should therefore be replaced by another name. In the catalogue of W. Horn (D.E.Z., 1905) that author seems to assume as a principle that a name allotted to a form subordinate to a species, does not invalidate the name if subsequently given another species or subordinate form thereof, and he himself has, under this assumption, given names for new forms which were known by him to be preoccupied elsewhere in the genus. This is a procedure open to strenuous condemnation if the stability of nomenclature is to be maintained, for the older name, now given to a subordinate, may be considered by some subsequent systematist as pertaining not to a subordinate form but to one valid specifically, which would of course automatically invalidate the newer name; disturbances of this kind would certainly occur. I hold it better not to repeat any name in a genus, even though the older name be set down at present as a synonym. If the form to which the older name is attached be really a synonym, beyond a doubt arising from personal opinion, the name assuredly would be available for subsequent use, but it is not desirable to incur that risk, in view of the misleading position now assumed by a certain school in its estimation of synonymy.

NOTE.—Since this footnote was written Mr. E. E. Calder (J. N. Y. Ent. Soc., 1916, p. 93) has proposed a new name—*rhodensis*—for this form, called *nigrita* by Mr. Davis.

strigose, with sparse erect white hairs, the eyes well developed; labrum obtusely prominent medially, minutely unidentate; antennæ moderate; prothorax fully a third wider than the median length, subparallel, with nearly straight sides, the apex only just visibly wider than the base, peculiarly and strongly lobed at the middle; surface minutely and very feebly rugulose, pubescent laterally, the sulci blackish, not differently colored; elytra subparallel, more than one-half longer than wide, four-fifths wider than the prothorax; sides feebly arcuate behind basal third, at apical fifth becoming rapidly oblique and nearly straight to the very acute apex, which is minutely denticulate; serrulation very minute; humeral lunule slender, abruptly becoming transverse at basal fifth, extending inward rectilinearly to the middle; median band slender, posteriorly arcuate to the middle, there very abruptly bent posteriorly, curving inward and disappearing near the suture before apical fourth, connected externally with a fine white margin extending from basal to apical third; apical lunule slender, equal, abruptly bent inward at its anterior end; sculpture peculiar, dense, strongly asperulate, the punctures more or less coalescent and very shallow, definable chiefly by the very strong granules. Length (♂) 12.5 mm.; width 4.6 mm. Michigan (Marquette),—John D. Sherman, Jr.

The peculiar form of the markings shows that the present species is a normal member of the *hirticollis* group, but, apart from this, there is scarcely any resemblance to the other forms; the rather greater development of the anterior median lobe of the prothorax, sombre coloration and remarkable sculpture are singular features, besides the sharply angular elytral apex and small size.

In the *marginata* group there are two rather distinct forms that should be characterized as follows:

*Cicindela macra* ssp. *topekana* nov.—Larger in size and of stouter form than *macra*, similar in coloration, sculpture and maculation, also in the conformation of the elytral apices in both sexes, differing in the head, which is larger, with still more prominent eyes, in the shorter and more transverse prothorax of the female, that of the male being as in *macra*, and in the more obscure trochanters and tibiæ. Length (♂ ♀) 11.6–13.5 mm.; width 3.9–4.4 mm. Kansas (Mt. Hope). Three examples.

The small series when compared with a large series of *macra* in my collection, displays a very positive difference in size and stoutness of the body and in the large head. The short white hairs of the head and prothorax are similarly disposed. The elytral punctures in both *macra* and *topekana* are very much smaller than in the *cuprascens* series, which is made up of that species, *mercurialis*, *annicola*, *mundula* and *puritana*. In *knausi* and the following, the punctures again become much smaller and they differ besides, from

all those mentioned, in the absence of a basal white spot on each elytron:

*Cicindela lincolniana* n. sp.—Rather stout, the hind body relatively still broader than in *knausi*, blackish-brown, the anterior parts faintly subcupreous; under surface black, sometimes with faint metallic lustre, rather conspicuously broadly albido-pubescent toward the sides, all the trochanters testaceous; head moderate, very finely strigilate, sparsely pubescent, the eyes very prominent; labrum with a short and small but evident median tooth; prothorax small and about as long as wide ( $\sigma^7$ ), or larger and slightly transverse ( $\varphi$ ), narrower than the head, parallel, with nearly straight sides; surface minutely rugulose, sparsely puberulent toward the sides and along the middle; elytra large, more than twice as wide as the prothorax, subparallel, the sides feebly arcuate, obliquely arcuate at apex, with outer just visible sinuation ( $\sigma^7$ ), or with the outer sinuation deep and defined anteriorly by an obtuse but very sharp projecting angle ( $\varphi$ ), the combined apex acute and minutely denticulate in both sexes, the serrulation obsolete or very nearly so; surface alutaceous, rather finely, loosely and smoothly punctate, the foveæ few in number and minute; the white markings are an oblique humeral lunule, a small isolated discal spot on the median line near basal fourth, wholly disconnected from the lunule in both sexes, a slender and abruptly flexed transverse band, the hinder part of which is long, extending almost to apical fourth, a slender apical lunule, abruptly flexed inward anteriorly, and a slender and almost entire marginal line. Length ( $\sigma^7 \varphi$ ) 10.0–13.0 mm.; width 3.8–5.0 mm. Nebraska (Lincoln),—Harris.

Mr. Harris informs me that this species was identified by W. Horn as *nevadica* Lec., and that *knausi* Leng is a subspecies according to the catalogue (D. E. Z., 1905), all of which is radically wrong. Even on general principles it might be surmised that a local form occurring nearly a thousand miles from another form and separated therefrom by a vast mountain system, would be different to a marked degree. This surmise is confirmed by the original description of *nevadica* (Tr. Am. Ent. Soc., 1875, p. 159), which is accompanied by an apparently good figure. From this description it becomes evident that the above *lincolniana* differs from *nevadica* in the broadly separated posterior branch of the humeral lunule, very much longer posterior branch of the middle band and in the subentire lateral white margin; it further differs in the evidently though minutely toothed labrum and in the large sharp outer angle of the elytral apices in the female, this being "obtuse and rounded" in *nevadica*. In comparing this Nebraskan species with *knausi*, the error is still more unaccountable, for in the female of *knausi* the combined elytra form a very large and broadly



obtuse apical lobe, of which there is no trace in the female of *lincolniiana*, the apex in the latter being almost exactly as in *macra* and even more distinctly acute than in *sperata*.

In the *punctulata* group it would be better to regard *boulderensis* as one of the subordinate forms of *chihuahuæ*; it has scarcely any metallic coloration above however, being as in *punctulata* in that respect, and it differs further in having the row of foveæ, forming so marked a feature in *chihuahuæ*, obsolescent and barely discoverable behind basal fourth; the elytral punctures, however, are lustrously burred as in that species. In the two following, which I believe to be species, the elytral punctures are not burred. In *chihuahuæ* the elytra vary from pale green with subcupreous reflection, to a very deep and rich violaceous-blue; in *boulderensis* this becomes blackish as in the following:

***Cicindela prolixa*** n. sp.—Form very elongate, rather convex; color blackish-brown, with faint subcupreous lustre above, shining and very dark steel-blue beneath; pubescence throughout as in *chihuahuæ*; head and labrum as in that species, the eyes rather more prominent and the antennæ a little longer; prothorax similar in general form and sculpture but less abbreviated, being nearly as long as wide even in the female; elytra very much more elongate and much less obtuse at apex, parallel, feebly arcuate at the sides and not quite twice as wide as the prothorax, being relatively much more slender than in *chihuahuæ*, the punctures differing radically, being perforate, smaller in size, sparser and without anterior burring, the row of foveæ entire and conspicuous throughout, the foveæ bright green; maculation almost obsolete, the humeral lunule represented by two small points, the transverse band by a small obsolescent discal spot, the marginal spot at apical third not distinct and the apical lunule very slender, reflexed anteriorly or not. Length (♀) 12.0–13.5 mm.; width 4.1–4.35 mm. Colorado (Akron).—Shantz.

The very narrow elongate hind body, even in the female, gives this species a very different habitus from *chihuahuæ* and the prolonged apex and different sculpture also seem to point toward a true specific status.

***Cicindela fontinaria*** n. sp.—Outline very much as in *chihuahuæ*, dark cupreous-brown, the pronotal sulci blue, the elytra pale greenish, becoming brown internally and with a still darker brown streak along the entire line of large and shallow, bright blue foveæ; head nearly as in *chihuahuæ*, the labral tooth very feeble; prothorax small, slightly transverse, much narrower than the head, minutely rugulose, shining and punctured at the sides, the sulci deep; elytra in form, sculpture and maculation nearly as in *chihuahuæ* but with the elytral punctures scarcely burred, more rapidly coarse and close laterally, and with an entire pale

humeral lunule. Length ( $\sigma^7$ ) 10.5 mm.; width 3.5 mm. New Mexico (Jemez Springs),—Woodgate.

My chief reason for separating this form specifically from *chihuahuae*, is, besides coloration, the entire and rather uniformly wide humeral lunule. In no one of a great many specimens of *chihuahuae* which I have seen, is there the faintest trace of more than two small spots representing the anterior and posterior limits of the lunule. The prothorax also is somewhat smaller and the habitus quite different.

Mr. Leng (Bull. Am. Museum, XXXIV, p. 562) refers to the probability of my *Cicindela extenuata* being an "absolute synonym" of *scabrosa* Schpp., and intimates that Schaupp's published length of 10.5 mm. is unaccountable, but that he himself has a specimen 10 mm. in length. I very much doubt the absoluteness of the synonymy proposed. Individuals in *Cicindela* vary as a rule only to a moderate degree in size of the body and their constancy in this respect is indeed rather notable on the whole. The most variable in size, as shown by the material in my collection, are *punctulata*, *chihuahuae*, *knausi* and the *lincolniana* described above. Measuring the smallest and largest specimens in these four species, I find for *punctulata* 10.0 and 12.5 mm., for *chihuahuae* 9.6 and 12.5, for *knausi* 9.5 and 11.3, and for *lincolniana*, as stated above, 10.0 and 13.0 mm. That is, the ratio of the largest to the smallest in these four cases is in succession 1.25, 1.30, 1.19 and 1.30. Now my smallest *extenuata* is 7.5 mm. in length and Mr. Leng's largest is 10.0 mm. The ratio of the largest to the smallest in this case would be 1.33, and if we take Schaupp's 10.5 mm., the ratio would be 1.4; so it can be seen that in Mr. Leng's specimens of *scabrosa*, the variation in length of body must be greater than in any other Cicindelid species, so far as I can judge by accessible material. The chances against this are rather weighty, and I think the rightful conclusion is that *extenuata* should be considered, at any rate, as a variety or subspecies of *scabrosa*, which I am glad to see Mr. Leng admit as a completely valid species. It is a type confined to the warmer parts of Florida, where offshoots in the form of varieties and races have probably developed.\*

\* The name *extenuata* was not chosen because of any "extenuating circumstances," and I had no thought of any such thing by innuendo or otherwise. The Latin word *extenuatus* means weak or weakened and, figuratively, small, insignificant or slight, and it means nothing else. Its suitability is evident in this case.

## II—SOME RANDOM STUDIES AMONG THE CLAVICORNIA

The families touched upon in the following paper are the Phalacridæ, Monotomidæ, Ostomidæ, Cucujidæ, Endomychidæ, Erotylidæ, Mycetophagidæ, Byturidæ, Dermestidæ and the Histeridæ in part. It was my desire and intention to overhaul nearly all the small families of clavicorns, as well as some others allied thereto, but time failed me, owing to the great amount of work involved in mounting and preparing for my collection large masses of material, some of which had been received in the rough years before. In order that specimens may best be fitted for discriminative observation, careful mounting is a prime necessity, but this absorbs a very large proportion of all the time available for such studies in the daily routine of life, which flows along and ebbs away with ever increasing speed.

### PHALACRIDÆ

Only two American species of this much neglected family have been described since my revision of 1890 (Ann. N. Y. Acad., V, p. 89). In the twenty-five years intervening my material in the family has increased prodigiously, by acquisitions through purchase or by voluntary gifts of numerous friends, as well as much personal collecting. It seems desirable to incorporate this material with that which served for the revision mentioned, and I have therefore drawn up new tables for most of the genera.

#### **Phalacrus** Payk.

The large majority of species in the Phalacridæ are characterized externally by a peculiar monotony of appearance, and of no genus is this truer than of *Phalacrus* itself. There are seldom any striking differences observable within the genus affecting special organs or parts of the body, such as are usually available to the systematist in other genera of the Coleoptera, and reliance has to be placed principally upon sculpture and certain general characters of form and size. This sculpture of the elytra, although minute and feeble

as a rule, possesses positive and constant features which are easily grasped when under adequate optical power, and it may as well be stated here that, as in the case of other minute Coleoptera, the binocular microscope with powers of 25 to 45 diameters, as given by 1.5 or .75 inch objectives, is virtually essential as the chief working tool in the study of the Phalacridæ. The hand lens is almost useless, except in forming a general idea of bodily form or color and other such general characters; a conception of outline is best conveyed by a large lens of very small power.

The numerous species of *Phalacrus* are uniformly shining black throughout above, and so this character will not be repeated in the descriptions. They generally have a stout convex body, and the apically descending prosternal process and moderate hind tarsi, with the moderately elongate second joint longer than the first, as in *Olibrus*, but the genus is distinguished primarily from *Olibrus* by its stouter build, more developed head in many cases, blacker coloration on the whole, different character of elytral punctuation and, especially, by the very large scutellum. The elytra have more or less evident series of feeble punctures, which are always at least to some degree transversely lunate postero-laterad, but have only a single discal stria, which is near the suture and abbreviated basally. Impressed striiform lines are frequently observable in certain species, but I am unable to say whether this is always an adventitious characteristic or not, though it is so treated below. The species in my collection are the following:

Elytra polished and devoid of reticulation throughout.....	2
Elytra polished basally, reticulate posteriorly.....	15
Elytra with minute reticulation of very fine lines throughout, this ground sculpture never however producing more than a very feeble alutaceous lustre.....	16
2—Elytral punctures very small throughout, never more than feebly dilated postero-laterad.....	3
Elytral punctures small and feeble discally, but becoming broadly lunate postero-laterad.....	11
3—Species of the Atlantic regions.....	4
Species confined to the Rocky Mountain system.....	5
Species occurring only west of the Sierras in California.....	7
4—Form broadly oval, slightly tapering posteriorly, very convex, with a varnish-like polish throughout above, the entire under surface and legs black, the antennæ black, with a feeble piceous tinge, the two basal joints obscure testaceous; funicle rather long; third joint fully as long as the next two, which are each fully twice as long as wide;	

head minutely punctate, well developed; prothorax still more minutely and sparsely punctate, slightly more than twice as wide as long, with rounded converging sides and the usual medio-basal flat bead; elytra finely, sparsely punctate, almost punctureless throughout basally, the intermediate series posteriorly less distinct than the regular series; sutural stria fine, continuing along the scutellum and base to the sides, the discal stria coarse posteriorly, abbreviated and finer basally; under surface sparsely punctate, the hairs obscure; metasternal process broad, moderately rounded and strongly beaded at apex, not extending beyond the coxæ. Length 2.4 mm.; width 1.5 mm. North Carolina.....**vernificatus** n. sp.

5—Body evenly elliptic, small in size, the head relatively smaller, much less than half as wide as the prothorax, polished; under surface piceous, the legs obscure rufous; antennæ slender, obscure rufous, the club as long as the funicle, which is of the usual structure; eyes very moderate; head and prothorax very minutely, sparsely punctulate; elytra short, barely at all longer than wide, very obtuse at tip, the punctures all very small, sparse, those of the intermediate series extremely minute; the punctures postero-laterad become slightly lunate, though very feeble, and in no sense of the very broadly lunate form characterizing *simplex* and allied species; bead-stria of the suture extremely fine and close but entire as in the preceding, the discal stria very fine, basally abbreviated as usual; beading of the metasternal lobe very fine. Length 1.6 mm.; width 0.8–0.9 mm. New Mexico (Coolidge).....**sayi** Csy.

Body larger, the head relatively much larger, half as wide as the prothorax or very nearly.....6

6—Form very broad, oblong-oval, not narrowed posteriorly, the apex very obtusely arcuate in both sexes; under surface, legs and antennæ black or nearly so throughout, the antennæ slender, with the third joint unusually long, exceeding the next two combined, the club not quite as long as the funicle, the last joint with a transversely oblique pseudo-suture just beyond the middle and not extending entirely across; punctures of the head and prothorax extremely fine and sparse, the sides of the latter strongly rounded; elytra not longer than wide, with fine discal stria, the punctures of the series fine, becoming very slightly lunate postero-laterad, the intermediate series still finer and feebler; legs broad; abdominal punctures rather strong, subsperate as usual and bearing stiff palish hairs; metasternal process very broad, extremely finely beaded. Length 1.9–3.0 mm.; width 1.3–2.0 mm. Colorado (Boulder Co.), New Mexico (Coolidge) and Arizona (Walnut and Grand Cañon of the Colorado).

**penicillatus** Say

Form less broad, though similarly very convex and perceptibly narrowed behind about the middle, somewhat as in *ovalis*, the combined apex only moderately broadly rounded; above highly polished, the under surface and legs black, the antennæ piceous-black, the funicle less elongate than in the preceding; third joint notably shorter, not longer than the next two, the club almost as long as the funicle; punctures of the head very fine but rather close-set and distinct, those of the

- pronotum excessively minute and very sparse, the sides of the prothorax broadly arcuate and converging from base to apex as usual; elytra barely longer than wide, sculptured nearly as in *penicillatus*, except that the series postero-laterad become more close-set and composed of punctures which are deeper, though even still less lunate in form, almost rounded; under surface and legs nearly as in the preceding, the metasternal process broad, with the tip broadly rounded and minutely beaded. Length 2.3-2.4 mm.; width 1.5-1.6 mm. Wyoming. Two examples . . . . . **rupimontis** n. sp.
- 7—Head unusually large even for the present genus, more than half as wide as the prothorax. Body very stout, oval, evidently though slightly narrowed behind, the apex broadly obtuse; surface extremely convex, highly polished, beneath black throughout, the legs and antennæ concolorous, the club of the latter obscure testaceous; funicle long, much longer than the club; third joint very long, exceeding that of *penicillatus* and much longer than the next two combined, each of which is more than twice as long as wide; head minutely but distinctly punctate, the pronotum very minutely and sparsely, of the usual outline; elytra as wide as long, less than twice as long as the prothorax; serial punctures as usual, broadly wanting basally, everywhere extremely minute and inconspicuous, those of the intermediate series equal to the others; postero-laterally they are a little less minute and deeper though barely at all dilated; metasternal process very long, extending well beyond the coxæ, the apex rounded and finely though strongly beaded. Length 2.9 mm.; width 1.9 mm. Southern California, without more accurate record of locality . . . . . **capax** n. sp.
- Head relatively less developed, about one-half as wide as the prothorax. . . . . 8
- 8—Elytral punctures as in *penicillatus*, very fine, feeble and widely separated throughout, those of the intermediate series as distinct as the others; postero-laterally they are still very small and barely at all dilated. Form stout, very convex, slightly narrowed posteriorly, with moderately obtuse apex, less so in the female, where the apex is broader; head and pronotum sculptured as usual; antennæ rather long, slender, the funicle very much longer than the club; third joint very much shorter than in *capax*, apparently in the same sex of each, and not longer than the next two, each of which is evidently more than twice as long as wide; scutellum much less transverse than in *capax*, being only about three-fifths wider than long; elytra (♂) slightly longer than wide, or much broader and fully as wide as long (♀); metasternal process extending slightly beyond the coxæ, strongly rounded and with the thick convex bead obsolescent at the sides. Length 1.7-2.8 mm.; width 1.2-1.8 mm. Coast regions of California from San Diego (the type locality) to Sonoma, also one each from the Mojave Desert and San Bernardino Mts. [*P. penicillatus* Csy. nec Say, pars, olim]. . . . . **ovalis** Lec.
- Elytral punctures very fine as in the preceding but, postero-laterally, becoming sensibly dilated and lunate, though not so greatly as in the *simplex* section; metasternum shorter and more truncate. . . . . 9
- 9—Punctures of the intermediate series as large and evident as those of the

- regular series in outer half posteriorly. Body oval, slightly narrowed posteriorly and elliptical around the apex; under surface black, the legs and antennæ barely less than black; head with small but distinct punctures; prothorax much more than twice as wide as long and much less than half as long as the elytra, the latter distinctly longer than wide, the surface even, without trace of impressed lines, the stria as usual, the punctures distinct and not very widely spaced in the series postero-laterad; antennæ with the funicle slender and much longer than the club; third joint equal in length to the next two, which are each much elongated; metasternal process convex, its apex not beyond the coxæ, truncate and with a strongly elevated bead, thick laterally but thinner medially; abdomen in great part rather strongly and coarsely asperato-punctate. Length 2.1 mm.; width 1.33 mm. California (Riverside, May 17). *californicus* n.sp. Punctures of the intermediate series extremely minute, very much smaller than those of the regular series over most of the posterior part of the elytra. . . . . 10
- 10—Form oblong-oval, short, very obtuse behind; under surface, legs and antennæ black or nearly so, the abdomen shining and scarcely punctate except medially; head distinctly punctured; antennæ slender, the third joint as long as the next two, the funicle much longer than the club; prothorax large, rather more than half as long as the elytra, the latter nearly as wide as long, with the series almost attaining the base, having the punctures moderately separated in the series and, throughout the width in the type, there are coarsely impressed lines, which in a second specimen are represented only by fine and very feebly impressed lines; metasternal process broad, truncate and strongly beaded, the bead broader at the sides, the prosternal process also beaded at the sides and broadly at the descending apex. Length 1.75–2.0 mm.; width 1.2–1.33 mm. California (Mokelumne Hill, Calaveras Co. and also at Pomona, Los Angeles Co.). . . . . *atrolucens* n. sp.
- Form narrower, oval, the sides rather abruptly oblique near the apex; under surface black, the legs, and antennæ basally, obscurely rufescent; head moderately punctulate, the antennæ shorter than in the preceding, the third joint rather shorter than the next two combined, the funicle but little longer than the club; prothorax shorter, much less than half as long as the elytra, which are slightly elongate, narrowly parabolic at tip and having all the punctures very small and feeble, those of the intermediate series extremely minute, the surface not grooved; metasternal process arcuato-truncate and finely beaded, the prosternal process apparently without the thick bead-like margins of *atrolucens*. Length 1.7 mm.; width 1.05 mm. California (Riverside, April 5). . . . . *jejunus* n. sp.
- 11—Head well developed, at least half as wide as the prothorax. . . . . 12
- Head relatively small, less than half as wide as the prothorax; species very small in size. . . . . 14
- 12—Metasternal process extending well beyond the coxæ, its apex truncate, with broadly rounded angles and moderately and subevenly beaded; third antennal joint not quite as long as the next two com-

bined. Body rather narrowly oval, very convex, not much narrowed posteriorly, the apex broadly parabolic; legs and antennæ dark rufous, the latter piceous distally; head three-fifths as wide as the prothorax, very minutely, sparsely punctulate; antennal club long, the eleventh joint about twice as long as wide; prothorax less than half as long as the elytra, which are slightly elongate, having series of transversely lunate but everywhere excessively feeble and shallow punctures, and with very feebly impressed lines in the type, these lines toward apex becoming extremely feebly reticulate; abdomen sparsely and feebly punctulate. Length 1.65 mm.; width 0.9 mm. Texas (the locality unrecorded).....**obsidianus** n. sp.

Metasternal process similarly long, extending well beyond the coxæ, but with its apex evenly and circularly rounded and evenly beaded; third antennal joint fully as long as the next two combined, the eleventh joint not quite so elongate as in the preceding. .... 13

13—Form oval, moderately narrowed behind, the apex parabolic; under surface black, the legs nearly black, the antennæ throughout piceous-brown; head distinctly more than half as wide as the prothorax, very finely and not conspicuously punctate; antennal club very large, rather broad and almost as long as the entire funicle, the eleventh joint with a rather deep entire pseudo-suture well beyond the middle; prothorax large but not quite half as long as the elytra, which are distinctly longer than wide, the impressed lines very fine and barely traceable, the very feeble lunate punctures rather narrow discally but rapidly becoming broad laterally, irregularly crowded near the postero-lateral edges; prosternal process unusually broad posteriorly, the metasternal broad, the circularly rounded tip even and rather finely beaded. Length 1.65–2.3 mm.; width 1.05–1.3 mm. Iowa, Texas (El Paso), Colorado (Golden and Colorado Springs), New Mexico (Jemez Springs) and Utah (St. George). A rather common species, in no example of which is the medio-basal margination of the pronotum invisible, though it is frequently feeble. Kansas—LeConte.

**simplex** Lec.

Form more narrowly oval, more strongly and arcuately narrowed behind about the middle, the combined apex rather acutely parabolic in the type; under surface black, the legs and antennæ obscure rufous; head about half as wide as the prothorax, very finely punctate; antennæ rather long, the funicle longer than the club, which is narrower than in the preceding species; prothorax well developed, scarcely more than twice as wide as long, though distinctly less than half as long as the elytra, the latter much longer than wide, with broad, feebly impressed lines in the type, which however do not become reticulate posteriorly, the very shallow punctures widely lunate and close-set broadly on the flanks posteriorly; metasternal bead fine, the apex broadly rounded. Length 1.55–1.7 mm.; width 0.78–1.0 mm. Colorado (Boulder Co.).....**subacutus** n. sp.

Form much shorter and relatively broader than in the preceding, oval, the entire elytral outline that of a regular parabola; legs dark rufous; head large, three-fifths as wide as the prothorax, extremely minutely, sparsely punctate, the antennæ rather slender, the funicle longer



than the club, the latter as in *subacutus*, the oblique pseudo-suture of the eleventh joint, beyond the middle, deep and distinct; prothorax shorter than in either of the preceding, much more than twice as wide as long, much less than half as long as the elytra, which are unusually short, barely longer than wide, without distinct impressed lines, the very shallow lunate punctures everywhere widely separated, serial and broad but well separated laterally; metasternal process circularly rounded at tip, the bead rather flat and even but broader than in the preceding species. Length 1.35-1.63 mm.; width 0.8-1.0 mm. New Mexico (Luna). Erroneously placed with *simplex* formerly by the writer. . . . . **validiceps** n. sp.

- 14—Body rather broadly oval in outline, narrowly parabolic behind, the legs and antennæ obscure testaceous; head very minutely, sparsely punctulate; antennæ only moderate in length, the third joint not quite as long as the next two combined, the club as long as the entire funicle; prothorax rather short, evidently less than half as long as the elytra and much more than twice as wide as long; scutellum a third wider than long; elytra barely at all longer than wide, the punctures extremely shallow and feebly marked, broad and somewhat confused postero-laterad; metasternal process scarcely extending beyond the coxæ, broad, circularly rounded and finely, evenly margined throughout at tip. Length 1.55-1.7 mm.; width 0.95-1.0 mm. Colorado (Boulder Co.). Two examples. . . . . **mediocris** n. sp.

Body less broadly oval, strongly convex, very small in size, not very narrowly parabolic behind, the legs and antennæ piceous; head finely sparsely punctulate; antennæ moderate, the club long, rather less dilated than usual; prothorax short, very much more than twice as wide as long; elytra slightly elongate, much more than twice as long as the prothorax, the punctures extremely feeble, not quite so broad as in the preceding and more clearly separated postero-laterad; metasternum broad, extending rather beyond the coxæ, the apex circularly rounded, moderately beaded. Length 1.33 mm.; width 0.78 mm. Northern Illinois (Highland Park). . . . . **illini** n. sp.

- 15—Form broadly oval, very obtuse behind; legs and antennæ piceous, the latter with the third joint about as long as the next two, the club as long as the funicle; head finely and sparsely but rather deeply punctulate, well developed, half as wide as the prothorax, which is rather large and but little more than twice as wide as long; scutellum three-fifths wider than long; elytra barely at all longer than wide and scarcely twice as long as the prothorax, the reticulate ground sculpture traceable to the base but becoming subobsolete, the series composed of small and very shallow, lunate punctures, less feeble and larger laterally toward tip, the serial punctures extending to base but becoming very minute; metasternal process extending rather beyond the coxæ, variable in width—perhaps sexually, rounded and beaded at tip. Length 1.28-1.65 mm.; width 0.75-1.05 mm. California (San Diego). Five examples. . . . . **conjunctus** Csy.

Form more elongate-oval, broadly parabolic apically, larger in size, very convex, the legs and antennæ piceous-black; head minutely, sparsely punctate, rather less than half as wide as the prothorax, the apex

truncate, the oblique sides nearly straight; antennæ rather long, the third joint fully as long as the next two, the club elongate and well-developed though evidently shorter than the funicle; prothorax much less than half as long as the elytra and much more than twice as wide as long; elytra obviously longer than wide, the series obsolete basally, the ground reticulation also wholly obsolete basally and, elsewhere, less pronounced in the lines of punctures than between them, the punctures shallow and lunate, becoming larger and decidedly deeper postero-laterad; metasternal process broad, circularly rounded at tip and not very coarsely beaded. Length 1.65–2.1 mm.; width 1.0–1.3 mm. Arizona (Sta. Rita Mts. and elsewhere). Many examples. . . . . **arizonicus** n. sp.

- 16—Elytral punctures of the usual type but narrower, more rounded and arranged in even series traceable almost to the basal margin; laterally they are not materially wider; the series are regular and with the punctures rather close-set, the general ground sculpture micro-reticulate throughout, though extremely feebly so, the reticulations relatively rather large, the surface very highly polished throughout. Legs piceo-rufous; head minutely but rather deeply punctate, distinctly less than half as wide as the prothorax, the antennæ well developed, the third joint equal to the next two, the club much shorter than the funicle but of the same type as in the preceding species; prothorax much more than twice as wide as long and much less than half as long as the elytra, the medio-basal margin finer and more bead-like than usual; scutellum three-fourths wider than long; metasternal process broadly arcuate and beaded at apex; general form of the body broad and oblong-oval, broadly rounded at apex. Length 1.9 mm.; width 1.33 mm. Colorado (Garland).

**seriatus** Lec.

Elytral punctures extremely shallow, lunate, becoming much wider but still more feeble postero-laterad, the general ground sculpture more minutely and strongly micro-reticulate throughout from apex to base. . . . . 17

- 17—Third antennal joint shorter than the next two combined. Body very small, the sculpture and general outline throughout nearly as in *politus* and also with the very broad metasternal process circularly rounded and broadly beaded at apex as in that species, but with the prosternal process narrower, not more than a third as wide as the metasternal; under surface piceous, the legs and antennæ testaceous-yellow; eleventh antennal joint but little longer than the two preceding together. Length 1.4 mm. Georgia—LeConte. Characters drawn from description of the writer (Ann. N. Y. Acad., V, p. 100). . . . . **pumilio** Lec.

Third antennal joint as long as the next two combined; metasternal process very broad, extending beyond the coxæ, its apex circularly rounded; prosternal process also wider than usual; eleventh antennal joint large and long, with a compressed apical lobe, the basal part alone fully as long as the two preceding joints combined; body generally larger, though very variable in size. . . . . 18

- 18—Metasternal process with the apical bead notably broad and nearly

flat. Body evenly oval in form, strongly shining, though with distinct micro-reticulation throughout the head, pronotum and elytra, the under surface black, the legs and antennæ piceo-rufous; head rather small, much less than half as wide as the prothorax, the latter distinctly more than twice as wide as long; scutellum not one-half wider than long; elytra barely at all longer than wide, obtuse at apex, about twice as long as the prothorax; discal stria extending to basal fifth or sixth. Length 1.5-2.2 mm.; width 0.8-1.35 mm. Rhode Island and New York to North Carolina and westward to Michigan, thence southward to Tennessee and Missouri; one, apparently not differing, is from Columbus, Texas. Very abundant. Fifty-two examples. . . . . **politus** Mels.

Metasternal process similar in its very broad, notably extended and circularly tipped form, but with the apical beading notably finer and more convex; head larger; species more tropical in distribution. . 19

19—Body larger, more oblong-elongate, the prothorax remarkably developed, scarcely twice as wide as long. Form oblong, equally obtuse anteriorly and posteriorly, black, the tibiæ, tarsi and antennæ dark rufous, the latter rather long, the fourth and fifth joints each between two and three times as long as wide, the funicle much longer than the club; upper surface micro-reticulate throughout, but feebly so anteriorly; the head and pronotum also very minutely, sparsely punctate; prothorax about twice as wide as the head; scutellum rather more than one-half wider than long; elytra but just visibly longer than wide, barely twice as long as the prothorax, the discal stria extending to basal fourth; series sometimes accompanied internally by feebly impressed lines; under surface shining, broadly almost impunctate toward the sides. Length 2.4-3.0 mm.; width 1.4-1.8 mm. Mexico (Tepehuanes, Durango),—Wickham. **\*obscurus** Shp.

Body smaller, more oval, the prothorax shorter, evidently more than twice as wide as long; pronotum in all cases distinctly margined medially at base as usual. . . . . 20

20—Scutellum scarcely one-half wider than long; discal stria of the elytra barely extending to basal third. Outline broadly, evenly oval, very obtuse behind, the upper surface very distinctly micro-reticulate throughout; under surface black, the legs dark rufous, the antennæ flavo-testaceous, the club not darker, shorter than in *obscurus* though similarly proportioned; head rather more than half as wide as the prothorax, the minute sparse punctures on the reticulate ground rather distinct; elytra about as wide as long, not quite twice as long as the prothorax, evenly parabolic in form, having a somewhat pearly lustre; metasternal process very broad and long, circularly rounded at apex. Length 2.0 mm.; width 1.3 mm. Texas (Brownsville) and Mexico (Durango),—Wickham. **subtropicus** n. sp.

Scutellum much more transverse, three-fourths wider than long; discal stria of the elytra longer, attaining basal fourth or fifth. Form not quite so abbreviated as in the preceding, evenly oblong-oval, very obtuse behind; entire upper surface micro-reticulate but more feebly than in the preceding, the lustre more polished; under surface black, the legs and antennæ piceo-rufous; head about half as wide as the

prothorax, very minutely, sparsely punctulate; antennæ nearly as in the preceding but with rather more dilated club; prothorax nearly similar; elytra longer, evidently not as wide as long, less evenly parabolic in outline, the very obtuse apex more rapidly rounded laterally, about twice as long as the prothorax, the punctures of the series excessively feeble, especially toward the sides, where however they become broad, as usual in this section; metasternum as in the preceding. Length 1.75–2.15 mm.; width 1.1–1.3 mm. Mexico (Cuernavaca in Morelos and Rio Balsas in Guerrero), —Wickham.....\**reticulosus* n. sp.

The form of the metasternal process is rather radically diversified in the *ovalis* group. In *capax* and *ovalis*, which are larger species, it is circularly rounded and evenly beaded at apex, in the former extending far beyond the coxæ, but in the latter more abbreviated, aligning with the anterior limits of the latter. In *californicus*, *atrolucens* and *jejunus*, which constitute a natural group, it is however transversely truncate, short and with the bead expanded at the lateral angles. *Atrolucens* is much broader and more oblong than either *californicus* or *jejunus*, and the latter two differ materially in the character of the elytral series of punctures, as well as in other features. The fine stria along the basal margin of the pronotum medially is evident in every American example that I have examined, even of *simplex*, the latter being especially distinguished by LeConte because of the obsolescence of this character, which faulty observation was probably due to the feeble optical enlargement formerly regarded as adequate for work among these and other minute insects. In regard to the absence of this margination recorded by Sharp of certain Central American species, I am unable to express any opinion, except to venture the suggestion that renewed observations be made. The side margins of the elytra are thin and slightly elevated, the fine edge being subsulcated by a series of short deep and subcontiguous grooves.

Neither *subtropicus* nor *reticulosus* of the table, can be the same as *rufipes* Shp., from Cordova, for, besides being smaller, they both have the marginal stria at the middle of the pronotal base well developed and, even supposing that the absence of this marginal stria, as recorded of *rufipes*, may be due to an error of observation, the latter differs in having the apex of the elytra and sides of the pronotum picescent.

**Olibrus** Erichs.

This is the largest genus of the family and, unlike *Stilbus*, the species are probably not quite so numerous in America as in Europe, where some forty-eight recognized species and subspecies have been made known. The American species are even more monotonous in general structure and sculpture than those of *Phalacrus*, in fact the very small and slightly elongate punctures of the elytra offer so little variety, that I have been able to make but little use of them systematically. Similarly, the antennæ display but few points of difference among the numerous forms, so that within the primary subdivisions made below, reliance has to be placed chiefly upon peculiarities of habitus residing in outline, size and coloration, to a large extent. The striation of the elytra—not the impressed lines occasionally seen but the true incised striæ—are not generically constant as they are in *Phalacrus*, but vary in a peculiar manner. Generally there are two discal striæ situated in the sutural region, which, as usual in the family, never attain the base, but in one important group inhabiting the southern Sonoran region, there is but a single stria, and in some species there may be one or two additional abbreviated and feebler true striæ behind the middle for a short distance and outside of the two regular striæ. This is an adventitious feature in *vittatus*, where a single short supplementary stria is visible in about a third of the examples at hand. In the types of *collucens* and *sternalis*, there are two additional short striæ on each elytron. The species in my collection are as follows:

Elytra each with two subsutural striæ.....	2
Elytra each with a single stria near the suture.....	17
2—Species occurring from the base of the Rocky Mountains eastward to the Atlantic.....	3
Species of the Rocky Mountain system and westward to the Sierras and the coast regions at San Diego.....	10
Species of the true Pacific coast fauna.....	16
3—Elytra dark in color, each with a broad testaceous nubilous vitta just outside of the median line, this paler color sometimes invading the entire disk. Body elongate-oval, polished, the entire under surface and legs pale ochreo-testaceous; head and pronotum piceous-brown, the former of moderate size and with sparse but very distinct punctures; prothorax about a third the length of the elytra, more than twice as wide as long, minutely and remotely punctate, the basal bead distinct, obsolete laterally as usual; elytra distinctly longer than wide, rather evenly parabolic, becoming more parallel basally, the punctures of the series very fine, the surface everywhere polished,	

very obsoletely subreticulate near the apex. Length 1.8-2.4 mm.; width 1.05-1.38 mm. New York, Illinois (Highland Park), Dakota (Bismarck) and New Mexico (Las Vegas and Jemez Springs). Sixteen examples. [*O. nigricollis* Lec.].....**vittatus** Lec.

Elytra black, each with an oval nubilous discal red spot behind the middle. Body shorter and more broadly oval than in the preceding, polished, the under surface and legs ochreo-testaceous; head much less than half as wide as the prothorax, the punctures fine and sparse; prothorax nearly as in the preceding, except that it is distinctly more than a third as long as the elytra and has the basal bead obsolete for some distance at the middle; elytra barely longer than wide, much shorter than in *vittatus*, the sculpture almost similar. Length 2.0-2.3 mm.; width 1.2-1.45 mm. Rhode Island, Massachusetts (Woods Hole), New York and Virginia (Fort Monroe). Four examples. [*O. bicolor* Lec. nec. Fabr.].....**lecontei** Csy.

Elytra uniformly testaceous to piceous throughout, the head and pronotum usually a little darker. Size minute, elongate-oval in outline, rather rapidly obtuse behind, the under surface and legs pale; head nearly half as wide as the prothorax, very minutely, remotely punctulate; antennæ rather short, the joints of the club increasing in width, the first two subequal in length and together much shorter than the last; prothorax evidently more than twice as wide as long, two-fifths as long as the elytra, the latter distinctly longer than wide, with very minute punctures and fine feeble striiform lines, polished but becoming feebly aciculate-reticulate posteriorly. Length 1.2-1.6 mm.; width 0.75-1.0 mm. Dakota (Bismarck),—Wickham. Six specimens.....**egenus** n. sp.

Elytra and entire upper surface concolorous.....4  
 4—Upper surface piceous-brown in color.....5  
 Upper surface black.....8

5—Elytra with fine striiform lines throughout. Body narrowly, evenly oval, very much smaller than in the following and with a smaller and less transverse, more triangular scutellum and shorter antennæ, the third joint being much shorter than the next two combined; head rather more than half as wide as the prothorax, very finely punctulate; prothorax slightly more than twice as wide as long, distinctly less than half as long as the elytra, the sides evenly converging and evenly arcuate from base to apex; elytra slightly elongate, parabolic in form, polished throughout, the apical reticulation obsolescent; metasternal process very wide, the mesosternum rather broadly developed at its sides, especially toward apex. Length 1.45 mm.; width 0.8 mm. New York (Willetts Point, Long Island).

**abstinens** n. sp.

Elytra with fine but distinct striiform lines throughout. Very convex, rather elongate, oval, gradually obtusely parabolic behind, polished throughout, feebly reticulate along the margins posteriorly; head well developed, about half as wide as the prothorax, very finely but not very remotely punctate; prothorax much more than twice as wide as long and about a third as long as the elytra, the basal bead strong; scutellum much wider than long; elytra much longer than wide, the

- punctures very minute in two series between every two of the fine impressed lines; antennæ and sterna moderate. Length 1.7–2.35 mm.; width 1.2–1.4 mm. Rhode Island, Middle States and Ontario. [*O. striatulus* Lec.].....**semistriatus** Lec.
- Elytra without striiform lines, except sometimes more or less evidently internally behind the middle.....6
- 6—Head less developed, not one-half as wide as the prothorax. Body rather stout, oval, obtusely parabolic behind, strongly convex and polished above; under surface and legs pale ochreo-testaceous; head very minutely, rather sparsely punctate, the antennæ moderate, the first joint of the club obtriangular and slightly longer than the second; prothorax transverse, the sides rather more arcuate anteriorly than posteriorly, the basal bead obsolescent at the middle; scutellum broadly ogival; elytra polished throughout, not distinctly reticulate even at apex, only slightly longer than wide, two and one-half times as long as the prothorax, very obtuse at apex, the fine punctures disposed in single series, the intermediate series barely traceable. Length 1.8–2.6 mm.; width 1.1–1.6 mm. Texas (Dallas and Columbus), New Mexico (Las Vegas) and Dakota (Bismarck). Fourteen examples.....**lubricus** n. sp.
- Head small, much less than half as wide as the prothorax. Body small in size, broadly suboblong-oval, very obtuse behind; under surface in considerable part darker than the legs; head with punctures larger than usual but excessively shallow, the front more abruptly produced medially than usual; antennæ well developed, the third joint fully as long as the next two combined; prothorax more than twice as wide as long, the sides evenly and moderately arcuate and not very convergent from base to apex, the basal bead distinct medially; scutellum evenly ogival, one-half wider than long; elytra slightly longer than wide, the arcuate sides gradually more rounded posteriorly, polished, micro-reticulate on the flanks behind; metasternum very wide, the bead everywhere very narrow, the apex broadly subtruncate. Length 1.7 mm.; width 1.0 mm. New York (Catskill Mts.),—H. H. Smith.  
**frustratus** n. sp.
- Head fully half as wide as the prothorax or more.....7
- 7—Form broadly and very evenly elliptic, convex, polished, the under surface and legs pale as usual; head fully half as wide as the prothorax, minutely and sparsely punctulate, the eyes only moderate in development; antennæ as usual, the club broad distally, the joints increasing in width; prothorax more than twice as wide as long, distinctly less than half as long as the elytra, the sides evenly and strongly converging and very moderately arcuate from base to apex, the basal bead rather narrow but strong throughout medially; elytra barely at all longer than wide, the outline broadly parabolic; punctures of the series very fine; surface reticulate apically; prosternal process having a distinct lateral, and broader flat apical, beading. Length 1.75 mm.; width 1.15 mm. Illinois (Highland Park).....**bullatus** n. sp.
- Form broadly oval, very convex, broadly obtuse behind, polished, reticulate only at the extreme tip of the elytra and not strongly; under

surface and legs ochreo-testaceous; head large, about half as wide as the prothorax, minutely and sparsely but rather deeply punctate, the front very broadly arcuate between the antennal sinuses; antennæ well developed; prothorax unusually long, barely more than twice as wide as long, the sides strongly converging and evenly, feebly arcuate from base to apex, the basal bead distinct medially; scutellum broadly, very obtusely ogival; elytra slightly longer than wide, only very little more than twice as long as the prothorax, the arcuate sides rounding more posteriorly; surface nearly even, the punctures sparse and inconspicuous; each elytron in the type has two short supplementary true striæ behind the middle, spaced like the first and second regular striæ; metasternal process broad, the mesosternum rather broad at its sides anteriorly. Length 2.8 mm.; width 1.6 mm. New York (Willets Point, Long Island).

*sternalis* n. sp.

8—Antennæ shorter, the funicle rather shorter than the club, the third joint strongly obconic and scarcely twice as long as wide. Body very small, not very broadly oval, obtuse behind, sometimes piceous in color, darker beneath, the legs pale; head half as wide as the prothorax, very minutely, remotely punctulate, the front trapezoidal between the eyes, which are coarsely faceted; prothorax short, much more than twice as wide as long, the sides rather strongly converging and arcuate, the basal bead moderately distinct; scutellum sharply ogival, scarcely one-half wider than long; elytra not quite three times as long as the prothorax, rounding obtusely at apex, polished though almost everywhere with excessively faint strigilato-reticulate sculpture, becoming coarser micro-reticulations at apex, the punctures of the widely separated series fine; metasternal process broad, extending rather beyond the coxæ, arcuato-truncate at apex and everywhere very finely beaded. Length 1.35–1.7 mm.; width 0.7–1.15 mm. Illinois (Highland Park) to New York (Lake Champlain). Twenty-one examples.....

*impotens* n. sp.

Antennæ less abbreviated, the funicle longer and more slender, the third joint much more than twice as long as wide and as long as the next two combined as usual.....9

9—Form rather broadly oval, obtuse behind, highly polished, the under surface dark, the legs pale; head rather small, not quite half as wide as the prothorax, the punctures fine but strong and not very remotely separated; front somewhat produced and trapezoidal between the eyes, which are coarsely faceted, the facets narrowly separated among themselves; prothorax somewhat more than twice as wide as long, the converging sides arcuate; basal bead moderately distinct; scutellum sharply ogival, three-fourths wider than long; elytra but slightly longer than wide, subparallel in about basal half, the surface smooth, becoming very finely and feebly strigilato-reticulate on the flanks posteriorly; metasternal process very broad, extending somewhat beyond the coxæ and very finely beaded throughout. Length 1.65–2.0 mm.; width 0.85–1.2 mm. Vermont, New Hampshire and New York (Lake Champlain). Nine examples...*neglectus* Csy.

Form broadly oval, very convex, polished, obtuse behind; under surface



fuscous, the legs pale; head moderate, not quite half as wide as the prothorax, sparsely and rather finely but deeply punctate, broadly trapezoidal, with rounded angles at apex, the eyes well developed, the facets smaller than in the preceding and mutually contiguous; antennæ rather long, the funicle slender; prothorax much more than twice as wide as long, with strongly arcuate converging sides from base to apex, the flat basal bead rather wide, distinct; scutellum ogival, only moderately transverse; elytra fully two and one-half times as long as the prothorax, broadly parabolic posteriorly, distinctly longer than wide, very highly polished and smooth throughout, barely at all reticulate even at the extreme tip, the punctures fine but evident, forming widely separated and very regular series; metasternal process very broad, arcuato-truncate at apex and very finely beaded, the mesosternum showing slightly on the anterolateral slopes. Length 1.8-2.7 mm.; width 1.1-1.45 mm. Rhode Island to Florida and westward to Duluth, Minnesota. One specimen from Colorado Springs seems identical. Extremely abundant and widely diffused, the series at hand including more than seventy examples. [*Phalacrus pallipes* Say].....**pallipes** Say

10—Elytra posteriorly, and especially on the flanks, having fine and close-set, short, irregularly longitudinal scratches, which become subreticuliform at the extreme tip. Body elongate-oval, gradually rather narrowly rounded behind, black, the under surface and legs ferruginous; head moderate, not one-half as wide as the prothorax, finely and sparsely but rather distinctly punctate, the antennæ normal, with the third joint equal in length to the next two; prothorax slightly more than twice as wide as long, the strongly converging sides somewhat strongly arcuate, the basal bead evident; scutellum rather broadly ogival, obtuse; elytra much longer than wide, two and one-half times as long as the prothorax; serial punctures very minute, the surface smooth; metasternal process broad, the mesosternum distinct at its sides anteriorly. Length 1.75-2.5 mm.; width 1.05-1.28 mm. Utah (southwestern),—Weidt. Seven examples.....**fallaciosus** n. sp.

Elytra polished as usual but, on the flanks, there are very short, fine and somewhat close-set sublongitudinal scratches, nearly as in *fallaciosus* but very much finer and more restricted to the flanks. Body smaller, narrowly oval, varying in color from piceous-brown to pale brownish-yellow above, always pale beneath; head about half as wide as the prothorax, of the usual form and with very minute sparse punctulation; antennæ well developed, of the usual form, the third joint nearly as long as the next two combined, the first joint of the club much longer than the second; prothorax unusually long, three-fourths wider than long, the converging sides feebly arcuate, the basal bead distinct; scutellum slightly transverse, sharply ogival; elytra much longer than wide, slightly more than twice as long as the prothorax, the apex moderately obtuse; second stria short, serial punctures extremely minute, becoming larger and slightly lunate very near the

sides; sterna of normal form Length 1.6–1.85 mm.; width 0.8–1.0 mm. New Mexico (Fort Wingate). Seven examples.

*irregularis* n. sp.

Elytra smooth throughout, never sculptured reticularly, except sometimes very obsoletely at the extreme tip. . . . . 11

11—Color pale ochreo-testaceous throughout above and beneath. Surface polished, the elytra not at all reticulate, broadly oval, strongly convex, broadly obtuse behind; head well developed, fully half as wide as the prothorax, finely, sparsely punctulate, the front broadly trapezoidal; antennæ moderate though with unusually long third joint, this being slightly longer than the next two combined; prothorax distinctly more than twice as wide as long, two-fifths as long as the elytra, the evenly converging sides feebly arcuate, the basal bead strongly marked; scutellum broadly ogival; elytra slightly elongate, parallel, circularly rounded in apical half, the punctures of the series minute but visible to the base; middle and hind femora broad; hind tibial spurs very stout. Length 1.8–2.2 mm.; width 1.15–1.35 mm. New Mexico (Albuquerque),—Wickham.

*blanditus* n. sp.

Color similarly very pale flavo-testaceous throughout. Form very narrow and elongate, shining, without trace of ground sculpture; head rather more than half as wide as the prothorax, less transverse than usual and with the upper surface flatter, the produced frontal margin broad; antennæ slender, of the usual structure; prothorax scarcely more than twice as wide as long, the sides only moderately converging and rather feebly arcuate; basal margination distinct; scutellum slightly wider than long, ogival; elytra elongate, nearly one-half longer than wide and three times as long as the prothorax, the sides subparallel and broadly arcuate, becoming gradually narrowly parabolic in about apical half, the two striæ distinct; punctures of the series very small, but each lies within an areola apparently caused by the transparency of the integument; metasternal process rather wide, arcuate at apex, the mesosternum forming a thick apical bead; posterior tarsi unusually long, fully as long as the tibiæ, the joints proportioned as usual. Length 1.5–1.6 mm.; width 0.63–0.75 mm. Utah (southwestern),—Weidt. Two examples. . . . . *aridus* n. sp.

Color piceous to black above. . . . . 12  
12—Series of elytral punctures extending to the base, although often excessively fine. . . . . 13

Series gradually obsolete basally. . . . . 14

13—Form oblong-oval, moderately convex, highly polished throughout, pale piceous-brown in color, the under surface and legs slightly paler and more ferruginous; head scarcely half as wide as the prothorax, very minutely and sparsely punctulate, the front broadly trapeziform; antennæ as usual; prothorax only about twice as wide as long, the moderately converging sides rather strongly arcuate, the basal bead evident though not strongly developed; scutellum transverse, obtusely ogival; elytra slightly elongate, scarcely two and one-half times as long as the prothorax, parallel, rather rapidly parabolic in apical half, not reticulate even at apex, the surface smooth, the

series of punctures unusually distinct; abdomen micro-reticulate but feebly so, polished. Length 2.0 mm.; width 1.2 mm. Arizona (near the Grand Cañon),—Prudden. . . . . **decoloratus** n. sp.

Form broadly oblong-oval, strongly convex, polished, blackish-piceous above, dark ferruginous beneath; head nearly half as wide as the prothorax, minutely punctulate, the antennæ of normal structure; prothorax rather large, distinctly more than twice as wide as long, the strongly converging sides moderately and evenly arcuate, the basal bead feeble, rather broad, flat as usual; scutellum transversely and obtusely ogival; elytra slightly elongate, two and a third times as long as the prothorax, parallel in basal half, the apical half evenly and almost circularly, very obtusely rounded; surface very smooth, the flanks sometimes obliquely subrugulose, the punctured series distinct; metasternal process only moderately wide. Length 2.2–2.45 mm.; width 1.2–1.45 mm. Nevada (Ormsby Co.),—C. F. Baker and California (San Diego),—Dunn. The San Diego specimens have the serial punctures of the elytra rather finer as a rule.

**bakeri** n. sp.

14—Color piceous-brown. Body small, oblong-oval, parabolic behind, very highly polished, the elytra without trace of minute sculpture even at apex; under surface and legs pale brownish-yellow; head well developed, distinctly more than half as wide as the prothorax, very minutely punctulate; antennæ of the usual form, the joints of the club increasing rather rapidly in width, the second strongly transverse, rather shorter than the first; prothorax much more than twice as wide as long, the converging sides rather strongly, evenly arcuate, the basal bead feebly marked; scutellum rather sharply ogival, moderately transverse; elytra distinctly longer than wide, fully two and one-half times as long as the prothorax, very smooth, the series faintly visible under sufficient amplification; mesosternum rather broadly visible at the sides of the metasternal process anteriorly. Length 1.4–1.75 mm.; width 0.7–0.9 mm. Utah (southwestern—Weidt and Marysvale—Wickham). . . . . **utealis** n. sp.

Color black, rarely with a feeble piceous tinge, very highly polished, the elytra similarly without fine sculpture at any point, the series of punctures faintly visible. . . . . 15

15—Form elongate, only moderately stout; under surface and legs rather dark ferruginous; head not quite half as wide as the prothorax, minutely, sparsely punctulate, the antennæ as usual, the joints of the club rather rapidly and conspicuously increasing in width; prothorax distinctly more than twice as wide as long, the converging sides rather strongly arcuate, the basal bead subobsolete medially, visible only for a short distance at each side thence outwardly; scutellum rather sharply ogival, moderately transverse; elytra much longer than wide, nearly three times as long as the prothorax, the sides arcuately and gradually converging almost from the base, the combined apices notably narrow; punctures of the series everywhere extremely minute, the surface very smooth. Length 1.8–2.35 mm.; width 0.9–1.2 mm. New Mexico (Jemez Springs),—Woodgate. **callidus** n. sp.

Form much less elongate and more obtuse behind, oblong-oval, convex,

black, the under surface ferruginous; pronotum feebly and broadly picescent toward the sides; head moderate, about half as wide as the prothorax, minutely punctulate, the antennæ of the usual form, the joints of the club gradually increasing in width; prothorax transverse, with arcuate converging sides, about two-fifths as long as the elytra; scutellum as in the preceding; elytra only slightly longer than wide, rather rapidly rounding at the sides behind the middle, the combined apex notably obtuse; punctures of the series very fine though more distinct than in *callidus*, especially toward the sides. Length 1.7–2.0 mm.; width 0.9–1.15 mm. Colorado (Fort Collins and Boulder Co.) and New Mexico (Jemez Springs). . . . . **collucens** n. sp.

Form rather narrowly oval, not so elongate as in *callidus* but more so than in *collucens*, black, the elytra rarely each with a nubilous and gradually disappearing discal spot of red behind the middle; under surface ferruginous, the legs more yellow; head rather more than half as wide as the prothorax, minutely punctulate; antennæ normal, except that the club is more parallel than usual, the joints increasing only very slowly in width; prothorax transverse, with strongly arcuate converging sides, between a third and two-fifths as long as the elytra; scutellum sharply ogival; elytra distinctly longer than wide, the outline obtusely parabolic, the sides becoming parallel only near the base; punctures of the series very minute throughout. Length 1.65–2.3 mm.; width 0.78–1.3 mm. Arizona (near the Grand Cañon of the Colorado).—Prudden. Thirty-six examples, of which only some seven or eight exhibit any signs of the nubilous red spot behind the middle, this being small and barely distinguishable in some, to large and conspicuous in others. . . . . **voraginalis** n. sp.

16—Elytra smooth, feebly reticulate at the extreme apex, without minute scratches at any part. Body broadly oval, very obtuse at apex, pale piceous-brown in color, ferruginous beneath, the legs more yellow; head not quite half as wide as the prothorax, sparsely and very minutely punctulate, the antennæ as usual; prothorax much more than twice as wide as long, the sides rather strongly converging and feebly arcuate, the basal bead distinct; scutellum but slightly transverse, ogival; elytra slightly longer than wide, parabolic in the male, more obtuse in the female, the two striæ subequal, much abbreviated basally, the punctures of the series everywhere minute points; metasternal process broad, finely beaded, the prosteral generally finely beaded at the sides and broadly at apex. Length 1.9–2.2 mm.; width 1.2–1.3 mm. British Columbia (locality unrecorded). Three examples. . . . . **tritus** n. sp.

Elytra having minute longitudinal scratches posteriorly and especially on the flanks. Body more narrowly ovulate, somewhat narrowed behind, the sides strongly arcuate; color black, sometimes with piceous tinge, the under surface infusate, with pale brownish-testaceous legs; head half as wide as the prothorax, finely impresso-punctate; antennæ of normal form; prothorax short, much more than twice as wide as long, the strongly converging sides feebly arcuate, the basal bead distinct; elytra evidently but not greatly longer than wide, parabolic in outline, nearly three times as long as the prothorax,

the series generally accompanied by impressed lines and composed of very minute punctures, which, near the sides, become narrowly sublunate as in *irregularis*. Length 1.7–2.0 mm.; width 0.9–1.1 mm. British Columbia (locality unrecorded—and at Kamloops). Shoal-water Bay, Oregon—LeConte. Five specimens. . . . . **rufipes** Lec.

- 17—Color very pale flavo-testaceous throughout. Head half as wide as the prothorax, the punctures minute and rather diffuse, excessively shallow; antennæ of the usual type, well developed; prothorax evidently more than twice as wide as long, the strongly converging sides evenly and moderately arcuate, the basal bead evident; scutellum ogival, moderately transverse, in great part covered with feeble and transversely wavy strigilation; elytra distinctly elongate, an almost even parabola in outline throughout, the entire surface, except basally, with an exceedingly close minute strigiliform reticulation, the punctures of the series minute, becoming larger and somewhat crescentic near the sides; metasternal process moderate, the mesosternum distinct at its sides anteriorly and narrowly about the apex. Length 2.0–2.2 mm.; width 1.1–1.2 mm. Arizona (near the Grand Cañon of the Colorado),—T. Mitchell Prudden. Five examples. . . . . **pruddeni** n. sp.

Color black to dark piceous, the under surface sometimes black. . . . . 18

- 18—Form moderately elongate, generally dark or blackish piceous, the under surface piceous, the legs pale, the femora sometimes infusate; head rather more than half as wide as the prothorax, the punctures sparse and very minute but clearly defined, the antennæ as usual; prothorax much more than twice as wide as long, the converging sides distinctly arcuate, the surface sometimes a little paler laterally but not distinctly, the basal bead moderate, often feebler medially; scutellum nearly twice as wide as long, ogival, with a few transverse strigilations; elytra long, three times as long as the prothorax, more or less narrowly parabolic, rather sharply so in the male, the punctures minute, a little larger and feebly sublunate in the two lateral series, the series generally accompanied by feebly impressed lines. Male relatively very rare, much smaller than the female. Length (1 ♂, 14 ♀) 1.7–2.2 mm.; width 0.75–1.2 mm. Southern California, Arizona (Walnut) and New Mexico (Albuquerque),—H. F. Wickham. . . . . **wickhami** Csy.

- Form elongate, gradually obtusely attenuate behind, the apex obtusely rounded; color very deep black above and throughout beneath, the legs piceous-black, paler distally, the antennæ pale; head fully half as wide as the prothorax, the punctures minute and remote though clearly defined; antennæ rather long, the club subparallel, its three joints of almost equal width; prothorax more than twice as wide as long, the sides only moderately converging but distinctly arcuate, the basal bead distinct; scutellum transverse, ogival; elytra much elongated, fully three times as long as the prothorax, dull in lustre, polished basally, covered for the most part with minute and exceedingly dense strigiliform reticulation, the series accompanied by feebly impressed lines and having the punctures minute and subaculate,

those at the sides very feebly dilated. Length 2.15 mm.; width 1.15 mm. New Mexico (Fort Wingate),—Woodgate. A single female.

*calamis* n. sp.

Form very broadly oval, convex, polished throughout and deep black above, the under surface black; femora piceous, the remainder of the legs and the antennæ pale; head rather large, more than half as wide as the prothorax, minutely and very remotely punctulate; antennæ with the joints of the club increasing slowly in width, the first joint much longer than the second; prothorax strongly transverse, nubilously pallid at the hind angles, the sides strongly converging but only moderately arcuate; scutellum transversely ogival; elytra but very little longer than wide, rather rapidly parabolic in outline, the combined apex rather narrowly rounded; surface with impressed lines accompanying the series of minute punctures, which become slightly dilated and sublunate at the sides, the sculpture of very minute scratches not at all dense, the surface shining throughout; prosternum rather wider than usual between the coxæ. Length 1.9–2.0 mm.; width 1.23 mm. New Mexico (locality unrecorded) and Arizona (Walnut). Two female examples....*cessus* n. sp.

The last four species of the table represent a common and characteristic type in the far southwestern Sonoran regions, and *wickhami*, as composed at present, would seem to include a number of closely allied forms, of which extended series would be necessary in order to arrive at an intelligent conclusion; of the four female examples remaining of the southern California series, for instance, one, the type specimen, is subparallel, with rapidly rounding and broadly obtuse apex, and two have cuneiform elytra, much more narrowly rounded at tip, both forms having elongate elytra, while the fourth specimen is smaller, much shorter, with the elytra barely longer than wide and rather acutely parabolic. Then, among the New Mexican and Arizona examples, there are some that are much stouter and more convex. The male is very rare and, in the single one at hand, the last abdominal segment is gradually deflexed posteriorly, with the edge produced narrowly at the middle in a rounded lobe-like tooth.

As bearing upon the incongruities noted under *wickhami*, I have almost arrived at the conclusion that any systematic arrangement of the species of *Olibrus* based upon constant structural differences, other than those used in the table, is impracticable without study of the larval forms. At first a division in accordance with the contour of the inner margin of the metasternal bead seemed promising—whether broadly rounded or narrowly parabolic,—but, on examining

specimens of *vittatus* from Dakota, taken at the same time and unquestionably of one species, I find both these forms of the curve, the width of the metasternal process and development of the mesosternum at its sides varying greatly. Generally the deflexed tip of the prosternal process is simple, but in one of these same specimens the extreme deflexed apical margin is reflexed to form a narrow shelf, very obvious when viewed vertically.

Some species, now widely separated in the above table, should properly be grouped together in an arrangement based more upon physiological affinities, such as *fallaciosus*, *irregularis* and *rufipes*, which, because of the peculiar elytral sculpture of minute longitudinal scratches, should be placed in the same group as *pruddeni*, *wickhami*, *calamis* and *cessus*, notwithstanding the fact that the last four species have but a single true discal stria on each elytron. These seven species would be distinguished as a section from all other American forms of *Olibrus*, by having the punctures of the two lateral series of the elytra slightly dilated and lunate as a rule, being a departure from the general rule in the genus, that all the serial punctures are minute and simple or subelongated points, and a reversion toward the usual type of punctures seen in other genera of the family. But even here *fallaciosus* forms an exception, as the punctures of the lateral striæ are in that species minute simple points like the more dorsal punctures—that is, so far as observed in several examples.

The mandibles in this genus are arcuate, acute on the outer edge and hollowed or flattened throughout beneath, the upper surface flattened or feebly impressed and with a few coarse punctures on the external slope. The apex is tridentate, the middle tooth acute and projecting much further than the others, which are small.

#### Stilbus Seid.

In North America this genus is fully as developed as *Olibrus*, perhaps more so, and the species are rather more numerous in the southern parts than elsewhere, while *Olibrus* and *Phalacrus* are more evenly distributed in latitude and relatively not so abundant in the warmer regions. The essential characters of the genus are the rather short hind tarsi, with only very moderately elongate second joint, great development of the mesosternum before the metasternal

process and the flattened porrect tip of the prosternal process, which bears a loose fringe of stiff setæ along its apical edge. The mentum is narrower than in *Olibrus*, the front rather more constricted between the large antennal recesses and the last joint of the maxillary palpi is somewhat more securiform; the scutellum is small or moderate as in *Olibrus*, but, unlike that genus, the elytra never have more than a single stria placed near the suture, generally coarse and deep and sometimes, as in *pusilla*, coarsely punctured in part; occasionally, however, as in *subalutaceus*, it becomes very fine and in certain species wholly obsolete, except a feeble trace on the apical slope. The elytral punctures are small, sometimes, as in *apicalis*, virtually wanting; in other cases, such as *pusillus* and *attenuatus*, distinct in the inner series, except toward base and apex, but they never assume the very broadly crescentic and scratch-like form characterizing *Acylomus* and there are, furthermore, no perceptible sexual modifications of the hind tibiæ, which are so conspicuous in that genus.

I have before alluded to a small tubercle half buried near the base of the first antennal joint. This is a singular formation and is really a knob-like attachment on the posterior part of the base of the joint, resting and moving within an extension of the antennal socket. It is present in apparently all the genera of the family but is especially developed in *Stilbus*\* and probably serves as a point of attachment for muscles giving special movements to the antennæ.

The numerous species at hand may be arranged as follows:

- The subsutural stria of the elytra deep and distinct, though, as usual in the family, abbreviated basally. . . . . 2  
 The stria obsolete except posteriorly, where it is fine and very feeble; body small in size and notably narrow. . . . . 29  
 2—Elytra without micro-reticulate ground sculpture, except occasionally and more or less feebly toward apex, this rather evident in *pallidus*. 3

\* It would give me special pleasure to use the name *Eustilbus* suggested by Dr. Sharp for this genus, as a substitute for *Stilbus*, on the ground of grammatical interference with the older *Stilbum*, were it not for certain reasons, which, however, being personal so far as ascertainable, may after all be of but little value. One such reason is the feeling that generic names should be regarded as constants, wholly independent of linguistic rules and the vagaries of grammatical construction, in other words, that they should be held to be indeclinable, except when used in the genitive as specific names. Under this conception it is unnecessary to change the name, and it seems also almost certain that such action would form a precedent endangering the stability of nomenclature to some extent.



- Elytra with micro-reticulation, usually transversely strigiliform, sometimes obsolete basally and, in *obscurus*, generally covering less than half the surface. . . . . 9
- 3—Body moderate in size for the present family. . . . . 4
- Body very minute, not over 1 mm. in length and generally less. . . . . 8
- 4—Elytra with a rather clearly defined apical paler area. . . . . 5
- Elytra unicolorous or sometimes gradually pallescent apically. . . . . 7
- 5—Male with a broadly triangular and sharply defined tooth at the middle of the hind margin of the third segment, the fifth broadly and feebly sinuate at the middle, the edge near the tooth of the third segment bearing some short stout setiform spinules. Body stout, convex, polished, and sculptureless throughout, pale reddish-brown in color, the apical more flavate areas large, their inner margins oblique posteriorly toward the suture; head distinctly less than half as wide as the prothorax, the antennæ rather long; prothorax short, between two and three times as wide as long, the strongly convergent sides rather strongly and evenly arcuate; scutellum triangular, with arcuate sides, but little wider than long; elytra only slightly longer than wide, two and one-half times as long as the prothorax, the sides feebly oblique from the base nearly to the apex, there more rapidly rounding through the very obtuse tip; stria coarse and deep; punctures scarcely traceable at any part, the basal stria oblique along the scutellum nearly to the suture; prosternal process expanded and arcuate at apex, bearing six or seven long stiff setæ; oblique outer margin of the plate behind the middle coxæ prolonged posteriorly as a feeble groove nearly to the hind margin of the metasternum. Length 1.8–2.2 mm.; width 1.2–1.38 mm. North Carolina, Iowa, Missouri, Texas (Austin and El Paso), Arizona and California (San Francisco—one example taken by the writer); also one female from Sta. Cruz, Calif., taken by the writer, which however seems to be materially narrower and with fewer long prosternal setæ than the others, and which therefore may not be exactly the same specifically. Moderately abundant. . . . . **viduus** Csy.
- Male without trace of an apical tooth on the third abdominal segment. . 6
- 6—Form rather short and stout, oblong-oval, very obtuse behind, polished, pale brown above, the apical areas of the elytra more flavate, becoming more distinct in specimens having darker brown coloration; head somewhat more than half as wide as the prothorax; antennæ rather slender, with notably slender club, the first joint larger and much thicker than the second, third shorter than the next two combined, as usual in the genus, the ninth obtriangular, rather longer than wide; prothorax short, nearly as in the preceding, not beaded at base; scutellum almost similar; elytra but little longer than wide, the stria somewhat finer than in *viduus*; surface with excessively fine punctulation in abbreviated series internally, and with the apical region feebly reticulate; prosternal process as in *viduus*, the rounded expanded apex bearing a close-set fringe of about seven long setæ; outer oblique margin of the post-coxal plaque continued as a very fine impressed line for some distance, gradually becoming obsolete. Male with a very feeble broad sinus at the apex of the fifth ventral.

Length 1.5-1.85 mm.; width 0.9-1.2 mm. Rhode Island, Massachusetts (Marion) and New York (Bluff Point, Lake Champlain).

**pallidus** Csy.

Form more elongate-oval, convex, evenly oval, highly polished and black in color, generally with a slight piceous tinge, the apical pale areas rather abruptly defined as a rule; under surface and legs testaceous; head half as wide as the prothorax; antennæ slender, of the usual structure; prothorax much less abbreviated than in the preceding, only a little more than twice as wide as long, not definitely beaded at base; sides strongly converging and strongly, evenly arcuate; scutellum triangular, paralleled by the posterior deflection of the basal stria of the elytra, which are together distinctly longer than wide, very obtusely parabolic in outline, the surface smooth, though sometimes with feebly impressed lines and a few very fine and remotely separated punctures, disposed in series internally and apically; prosternal process with about six long setæ, the outer margin of the post-mesocoxal plaques soon becoming obsolete posteriorly. Male extremely rare and having merely a very feeble sinus at the apex of the fifth ventral segment as in *pallidus*. Length (1 ♂, 44 ♀) 1.6-2.35 mm.; width 0.9-1.25 mm. New York, West Virginia, Indiana, Illinois (Highland Park), Iowa, Kansas, Colorado (Boulder Co.) and California (Pomona). Very abundant and said by Sharp to extend its range well through northern Mexico. [*Phalacrus apicalis* Mels.]..... **apicalis** Mels.

7—Form less broadly, evenly oval, the elytra distinctly longer than wide; surface convex, very shining, piceous-brown in color, the elytra gradually feebly pallescent posteriorly, the under surface and legs pale testaceous; head about half as wide as the prothorax; antennæ slender, the first joint large, the second small and cylindrical, the basal joint of the club longer than wide and much longer than the second; prothorax evidently more than twice as wide as long; converging sides evenly and rather strongly arcuate, the base transverse, not lobed medially; scutellum equilatero-triangular; elytra very obtusely parabolic, the sides subparallel basally, the stria coarse, deeply impressed, the basal stria paralleling the scutellum; surface very smooth throughout, with some minute and feeble punctures, remotely placed in series; prosternal process with about three long setæ at tip. Length 1.65-1.75 mm.; width 1.0-1.1 mm. California (Siskiyou Co.). Two female examples..... **shastanicus** n. sp.

Form very broadly and evenly elliptical, convex, polished, brownish-testaceous in color, the elytra nubilously somewhat paler at apex and not longer than wide; under surface more ochraceous; head less than half as wide as the prothorax, excessively minutely, remotely punctulate; antennæ slender, the basal joint of the club longer than the second; prothorax much more than twice as wide as long, the sides strongly arcuate and very convergent; base extremely faintly lobed medially; scutellum and elytral base as in the preceding, the stria rather less coarsely impressed; surface smooth, becoming very faintly subreticulate apically and having widely spaced series of extremely minute punctules, which as usual in this genus, appear to

bear each a very short and fine decumbent hair; prosternal process bearing four or five long terminal setæ. Male with sexual characters of the abdomen exactly as in *viduus*, excepting that the sinus of the fifth segment is about a third the total width and much deeper than in that species, the short, broad and sharply pointed tooth of the third segment similar. Length 1.4-1.78 mm.; width 1.0-1.1 mm. Iowa (Iowa City), New York (the locality unrecorded) and an example labeled "Exeter"—possibly in New Hampshire,—which is rather less broadly oval and with six setæ at the tip of the prosternal process.

Five male examples.....**probatus** n. sp.

8—Form rather narrowly oval, somewhat more narrowly rounded behind, convex, very smooth, polished and without trace of punctures at any part above, piceous throughout, paler beneath, the legs still paler; head rather more than half as wide as the prothorax, impunctate, unusually convex longitudinally; antennæ shorter than usual, the club shorter and broader, the tenth joint transverse; prothorax more than twice as wide as long, of the usual outline, unmarginated but with a broad and feeble median lobe at base; scutellum ogival, not paralleled by the basal elytral stria, the elytra slightly longer than wide, parabolic, without trace of ground sculpture at any part, the stria deeply impressed; prosternal process with six long bristles at apex. Length 0.9-1.15 mm.; width 0.55-0.6 mm. New Mexico (Albuquerque), Texas (El Paso) and California (Los Angeles Co.). My previous measurements were somewhat too great.....**nanulus** Csy.

9—Elytra each with a distinct and sometimes sharply defined apical pale area; elytral punctures minute as usual.....10

Elytra unicolorous or nubilously and indefinitely pallescent apically..12

10—Apical pale areas of the elytra distinct though not sharply defined.

Body elongate-oval, very convex, polished, black, the apical pale areas testaceous, their oblique anterior margins converging nearly to the apex on the suture; under surface and legs ferruginous; head half as wide as the prothorax, very minutely, remotely punctulate, the eyes well developed and even more coarsely faceted than usual; antennæ long and slender; prothorax much more than twice as wide as long, of the usual form, scarcely at all lobed or margined at base; scutellum ogival, transversely strigilate; elytra distinctly longer than wide, nearly three times as long as the prothorax, the sides very feebly converging from the base to beyond the middle, then broadly parabolic; surface with partial series of extremely minute punctules and a deep subsutural stria, the ground sculpture throughout consisting of fine and transversely wavy strigilation; prosternal process with a close-set series of seven or eight long setæ at apex. Length 1.7 mm.; width 1.0 mm. Florida (Sanford),—Blatchley. A single female.....**limatus** n. sp.

Apical pale areas of the elytra sharply defined and conspicuous.....11

11—Form moderately stout, oval, very obtuse behind, convex, polished, black, with the head and pronotum paler, sometimes rufo-piceous throughout, the large pale spot on each elytron with its arcuate inner margin attaining the apex near but not quite on the suture; under

- surface and legs ochraceous; head less than half as wide as the prothorax, the eyes moderate, the antennæ slender and rather long; prothorax with minute and subobsolete strigilation throughout, the base finely but distinctly margined medially, but barely visibly and broadly lobed, short, much more than twice as wide as long; scutellum ogival, paralleled by the fine basal stria of the elytra, which are but slightly elongate, obtusely parabolic, the entire surface with minute, transversely wavy feeble strigilation and with a few extremely minute punctules, arranged in feebly defined series; stria deeply impressed; prosternal process with about four terminal bristles. Male with sexual characters as in *viduus*. Length 1.65–1.8 mm.; width 0.9–1.05 mm. Four examples, received from Mr. Meeske, who thought that they were taken near New York City. . . . **ludibundus** n. sp.
- Form rather broadly oval, convex, very shining, widest near the base of the elytra, rufo-piceous, the apical pale areas broadly confluent on the suture, the combined area only very broadly and subangularly sinuate anteriorly; under surface ochreous; head less than half as wide as the prothorax, the antennæ shorter than in the preceding, the club as long as the five preceding joints, the third joint longer than the next two combined; prothorax short and transverse, the strongly converging sides moderately arcuate; elytra somewhat longer than wide, obtusely parabolic in outline, covered throughout with not very fine micro-reticulation, which also is not disposed in distinct transversely wavy lines, the punctures almost completely obsolete; stria rather fine. Length 1.4 mm.; width 0.8 mm. Florida (Lake Poinsett). A single female. . . . . **floridanus** Csy.
- 12—Punctures of the inner series of the elytra, when visible, in the form of simple minute and feeble points. . . . . 13
- Punctures of the two or three inner series—always broadly abbreviated basally and apically—having the form of deep semicircular scratches; color of the body testaceous throughout; hind tarsi rather long and slender but proportioned as usual. . . . . 20
- 13—Color black or piceous above. . . . . 14
- Color black, with bright red elytra. . . . . 18
- Color pale testaceous throughout. . . . . 19
- 14—Species of the Atlantic coast and the Lake regions. . . . . 15
- Species of the Florida region. . . . . 16
- Species of the Pacific coast regions. . . . . 17
- 15—Form rather broadly, evenly oval, highly polished, piceous in color, the elytra gradually though feebly pallescent apically; under surface and legs ferruginous; head less than half as wide as the prothorax, the antennæ rather long, slender; prothorax distinctly more than twice as wide as long, margined faintly but scarcely at all lobed at base, the strongly converging sides evenly and moderately arcuate; surface sometimes paler peripherally or at the sides; scutellum moderate; elytra short, not distinctly longer than wide, slightly more than twice as long as the prothorax, the serial punctures all minute points but more distinct in the two inner series, except apically and basally, somewhat as in the *pusillus* section but with different character of the punctures; micro-reticulation somewhat

strigiliform and not very fine, broadly obsolescent basally; prosternal process with about five long bristles; metasternal process not as wide as usual. Male with a moderate sinus at the apex of the fifth ventral, about a fourth as wide as the base of the segment, the third segment perfectly simple at apex. Length 1.6-1.7 mm.; width 1.05-1.1 mm. Iowa (Iowa City) and New York (Catskill Mts.),—Wickham and H. H. Smith. Three examples.

**finitimus** n. sp.

Form rather less broadly oval and more convex, smaller in size, polished, black above, the elytra gradually pallescent at tip, apparently in great part from diaphaneity; under surface and legs pale; head nearly half as wide as the prothorax, the antennæ long and slender, the club slender; prothorax nearly as in the preceding; elytra distinctly longer than wide, more narrowed toward tip and with impressed lines, the punctures everywhere very minute, distant in the series, not or scarcely more distinct internally; micro-reticulation not very fine, substrigilate and very variable in extent, though always obsolescent basally, the stria moderately coarse and impressed; all the punctures, as in most of the species, bear each a very slender short decumbent hair; prosternal process with about five long bristles, the metasternal process normally wide. Male with abdominal characters as in *viduus*, the spiculate tooth of the third ventral small but distinct, the sinus of the fifth rather wide but shallow. Length 1.3-1.45 mm.; width 0.9-1.0 mm. Iowa (Iowa City), Illinois (Highland Park) and Minnesota (Duluth). Abundant. Thirteen examples, very even in size. . . . . **obscurus** Csy.

Form very short, broadly elliptic, obtuse behind, very convex, shining, deep black above, only feebly pallescent at tip, the under surface and legs testaceous-brown; head much less than half as wide as the prothorax, the minute sparse punctures obsolescent; antennæ very slender in the shaft, of the usual structure; prothorax short, much more than twice as wide as long, the strongly converging sides evenly and moderately arcuate; base finely and feebly margined medially; scutellum but little wider than long, its wavy strigilation rather coarse; elytra scarcely as long as wide, twice as long as the prothorax, rounded at the sides, rather rapidly rounding though the obtuse apex, the entire surface covered with a transverse wavy strigilation, which is much finer and more close-set than in the preceding forms but so feeble as to produce scarcely any visible effect in the lustre, the impressed lines very fine and almost obsolete, the subsutural stria unusually fine and scarcely at all impressed, more so posteriorly; the usual serial punctures are everywhere so excessively minute as to be invisible except under high power, but the minute decumbent hairs are evident. Male with a small and rather deep sinus at the apex of the fifth ventral and completely filled with membrane, the third segment simple at apex. Length 1.28 mm.; width 0.9 mm. Rhode Island (Boston Neck). A single specimen.

**sphæriculus** n. sp.

16—Body rather broadly oval, moderately obtuse behind, small in size, dark piceous in color, the pronotum toward the sides and the elytra

apically shaded slightly paler; head distinctly less than half as wide as the prothorax; antennæ moderately slender, pale but with the club blackish; prothorax slightly more than twice as wide as long, the converging sides rather strongly arcuate; base finely margined medially, the lobe broad and very feeble; scutellum subequilatero-triangular, finely strigilate, with a fine peripheral margin abruptly smooth, paralleled externally as usual by the reflexed basal stria of the elytra, the latter slightly longer than wide, evenly parabolic in outline, evenly and not broadly rounded at tip, covered everywhere with not very fine micro-reticulation, which is not disposed in definite lines, the impressed lines very feeble, the stria distinct, coarsely impressed posteriorly; punctures of the series everywhere very minute, though more visible than in the preceding; metasternal process broad. Male with a small, narrow and rather deep sinus at the abdominal apex, filled with thinner integument as usual, the third segment simple; copulatory spicule slender, simple at the gradually acuminate apex, its lower surface strongly keeled basally. Length 1.28 mm.; width 0.78 mm. Florida (Sand Point),—Schwarz..... *fidelis* n. sp.

Body still smaller and narrower, shining, piceous-black, gradually slightly pallescent posteriorly, the under surface ferruginous; head rather more than half as wide as the prothorax; antennæ slender and of normal structure; prothorax twice as wide as long, the converging sides evenly arcuate, the surface covered throughout, except apically, with fine and feeble wavy strigiliform reticulation; scutellum as in the preceding but with finer and more irregular reticulation; elytra distinctly longer than wide, slightly more than twice as long as the prothorax, the sides moderately converging and but feebly arcuate from the base, broadly obtuse at apex; surface throughout with fine and feeble micro-reticulation in tolerably distinct transverse wavy lines, the impressed lines obsolescent, the stria coarsely impressed but not extending before the middle; punctures of the series extremely minute; prosternal process declivous and not setose at tip; metasternal process unusually wide, the mesosternum before it well developed as usual. Male with a large and broadly rounded sinus-like apical ventral depression, the floor of which is thin and almost impunctate. Length 1.2 mm.; width 0.65 mm. Florida (Enterprise).

*prudens* n. sp.

17—Form oblong-oval, obtuse behind, dark piceous to blackish in color, not paler apically, the under surface and legs pale; head somewhat more than half as wide as the prothorax, nearly smooth; antennæ rather stouter but not much shorter than usual, the club slightly more dilated; prothorax distinctly more than twice as wide as long, the converging sides strongly arcuate; surface in great part minutely and extremely obsoletely micro-reticulate; elytra slightly longer than wide, between two and three times as long as the prothorax, very obtusely rounded at tip, covered with a fine and transversely strigiliform micro-reticulation, the punctures very minute though obvious, the stria coarsely impressed, generally continued basally by a series of small punctures; prosternal process of the usual form, with a fringe

of five or six very thick and rather long setæ; metasternal process rather wide. Length 1.3-1.45 mm.; width 0.8-0.9 mm. California (Sta. Cruz to San Diego). Six specimens. [*Olibrus obtusus* Lec.].....**obtusus** Lec.

Form oblong-oval, nearly as in *obtusus*, rather more elongate, deeper black in color, very shining, the elytra just visibly picescent; head still larger, much more than half as wide as the prothorax, smooth, the eyes very moderate; antennæ slender, the third joint almost as long as the next two, the club evidently shorter than the funicle; prothorax short, much more than twice as wide as long and less than two-fifths as long as the elytra, the very moderately converging sides strongly arcuate; surface obsoletely micro-substrigilate; base feebly margined; scutellum slightly wider than long, ogival; elytra distinctly elongate, almost semicircularly rounded in nearly apical half, the fine strigilato-reticulate sculpture and minute feeble punctures almost as in *obtusus*; a number of longitudinal impressed lines are evident; prosternal process rather wide, the dilated apex bearing four regularly spaced, long and very stiff setæ; mesosternum well developed before the metasternal process; post-mesocoxal plaque large, triangular, its outer oblique line straight, the inner sinuous, the two not meeting behind, leaving the narrow space between them undefined; hind tarsi moderate. Length 1.55 mm.; width 0.85 mm. California (southern—more definite locality unrecorded). A single example.....**apertus** n. sp.

18—Body minute, strongly convex, somewhat attenuate behind though rather obtuse at apex; under surface testaceous, the post-sterna and femora piceous; head more than half as wide as the prothorax; antennæ slender; prothorax more than twice as wide as long, the converging sides rather strongly arcuate, the base finely margined medially; scutellum reticulate, unusually transverse, nearly twice as wide as long, ogival; elytra slightly longer than wide, evenly parabolic in outline, bright rufous in color, sometimes clouded posteriorly and, in one example, blackish-piceous throughout, probably because of accidental discoloration; micro-reticulation feeble, rather coarse, obsolescent basally; punctures of the series very minute and feeble, the stria not very coarse but impressed; prosternal process with four or five very long setæ. Length 0.95-1.1 mm.; width 0.55-0.65 mm. California (Los Angeles Co.). Ten examples—apparently all females. [*Eustilbus notabilis* Fall].

**notabilis** Fall

19—Body broadly, evenly elliptic, very convex and shining, clear testaceous throughout; head rather more than half as wide as the prothorax, the minute hairs borne by the remote punctules evident; antennæ rather stout, the first joint of the club not as long as wide, the second transverse; prothorax scarcely twice as wide as long, minutely margined at base medially, smooth and not at all reticulate, the punctures very minute; scutellum triangular, wider than long; elytra as long as wide, rounded broadly, the sides becoming parallel only near the base, the stria rather fine but distinct; surface with moderately fine reticulation in transverse wavy series, obsolete

basally, the punctures very minute and feeble throughout, but with the minute slender decumbent hairs unusually obvious; prosternum formed as usual, the three to five terminal setæ rather long; mesosternum abruptly declivous from the tip of the metasternal process, its upper line tumid; hind tarsi unusually short, scarcely more than half as long as the tibiæ. Male not observed. Length 1.2-1.4 mm.; width 0.75-0.88 mm. Long Island, westward to Nebraska, Kansas and Texas (Galveston). Abundant and very uniform in size. [*Phalacrus nitidus* Mels.] . . . . . **nitidus** Mels.

Body elongate, much larger, the elytra cuneiform, with not very broad but obtuse apex; color pale rufo-testaceous throughout; head large, much more than half as wide as the prothorax, the minute punctures unusually close-set and distinct; antennæ as usual, except that the club is larger than in any of the preceding species, not especially broad but longer than the entire funicle; prothorax less than twice as wide as long, very convex, the moderately converging sides not very arcuate, the base not at all margined at the middle; scutellum transverse, triangular; elytra much longer than wide but barely more than twice as long as the prothorax, the surface smooth and highly polished, the wavy strigilation so minute, close-set and feeble as to be scarcely glimpsible, even under high power and totally obsolete broadly toward base; stria not very coarse; punctures everywhere extremely minute; prosternal process with seven or eight short stout setæ; mesosternum only moderate in length before the metasternal process; abdominal hairs short and very stiff. Length 1.8 mm.; width 1.1 mm. Florida (Sand Point). A single female example. . . . . **convergens** Csy.

20—Prosternal process with three rather long apical setæ. . . . . 21

Prosternal process with four setæ. . . . . 22

Prosternal process with more than four setæ. . . . . 25

21—Body minute, evenly oval, obtusely rounded behind, polished, testaceous; head rather more than half as wide as the prothorax, the antennæ slender, the third joint only between two and three times as long as wide, swollen apically, slender at base, the club fully as long as the funicle; prothorax slightly more than twice as wide as long, the strongly converging sides evenly and rather strongly arcuate, the base finely and feebly margined medially; scutellum triangular, much wider than long; elytra slightly longer than wide, parabolic in outline, micro-reticulate in broken wavy lines, the reticulation not very minute; punctures of the two inner series and the stria, medially, very small, not conspicuous under the hand lens; stria deeply impressed, not very coarse; metasternal process smooth, narrowing anteriorly, with the mesosternum moderately developed before it. Length 1.0 mm.; width 0.63 mm. Virginia (Fort Monroe).

**trisetosus** n. sp.

Body barely larger and rather stouter than in the preceding, otherwise nearly similar; head much more than half as wide as the prothorax, the antennæ nearly as in *trisetosus*, except that the club is scarcely as long as the funicle; prothorax nearly similar but actually and relatively much shorter, being two and one-half times as wide as



long and barely two-fifths as long as the elytra, minutely margined toward the middle at base; scutellum ogival, much wider than long; elytra much longer than wide, parabolic, the sides becoming more parallel basally; micro-reticulation relatively rather coarse in wavy broken transverse series; punctures of the three inner abbreviated series and of the stria, relatively coarse, semicircularly lunate and conspicuous; metasternum between the coxæ very broad posteriorly, smooth, narrowed anteriorly, the mesosternum smooth and moderately developed; abdomen pointed at tip as in the preceding, the sex of the type in each case probably female. Length 1.2 mm.; width 0.7 mm. Louisiana (New Orleans) . . . . . **ludovicianus** n. sp.

22—Species of the Pacific coast. Body oblong-oval, only moderately stout, shining, ochraceous, the combined elytra somewhat clouded centrally; head fully half as wide as the prothorax; antennæ rather long and slender, of the usual structure, the sparse bristling setæ long, the club not as long as the funicle, in great part shining; prothorax short, much more than twice as wide as long, the strongly converging sides distinctly arcuate, the basal bead fine but evident under ample enlargement; scutellum triangular, only slightly wider than long; elytra much longer than wide, three times as long as the prothorax, the sides parallel and feebly arcuate, becoming almost circularly rounded in about apical half; strigilato-reticulation rather fine, very feeble, not modifying the polished lustre; there are two or three abbreviated inner series of semicircularly lunate and moderately impressed punctures, those of the moderate stria minute, feeble and indefinite; metasternum between the coxæ nearly smooth, subparallel, not very wide, the tumid and well developed mesosternum before it bearing a transverse corona of subdecumbent setæ; hind tibiæ long, the hind tarsi slender, two-thirds as long as the tibiæ; abdomen obtuse at tip. Length 1.7 mm.; width 0.95 mm. California (Los Angeles). [*Olibrus aquatilis* Lec. (San José, near water—LeConte)]. . . . . **aquatilis** Lec.

Species of the Atlantic and Gulf regions. . . . . 23

23—Punctures of the two inner abbreviated series and those along the stria semicircular but widely spaced, and so shallow as to be unnoticeable except under considerable enlargement; prothorax large. Body not narrowly oval, obtuse behind, testaceous in color; head scarcely half as wide as the prothorax, the punctures minute but deep and rather numerous; antennæ slender, the third joint long, cylindrical, equaling the next two combined, the club well developed, not much dilated but longer than the funicle, glabrous, excepting the long stiff setæ on one side, in great part finely pubescent on the other; prothorax less than twice as wide as long and about half as long as the elytra, the converging sides evenly arcuate and the stria along the base medially very fine; scutellum triangular, much wider than long; elytra slightly longer than wide, bluntly parabolic posteriorly, the sides becoming parallel toward base; strigilation very minute, close-set and feeble, the impressed stria not very coarse; metasternum with numerous asperate setigerous punctures; abdomen obtuse at tip;

- hind tibiæ very much shorter than in the preceding and more narrowed basally, the slender tarsi fully four-fifths as long as the tibiæ. Length 1.7 mm.; width 0.85 mm. New York (near the city),—Jülich. A single female specimen. . . . . **thoracicus** n. sp.
- Punctures of the three or four inner series and those on or near the stria, semicircular and deep, conspicuous under low power; prothorax shorter. . . . . 24
- 24—Body rather narrowly suboval, very convex, bright rufous in color, highly polished; head about half as wide as the prothorax, almost completely retracted within the prothorax in the type, the antennæ rather long and slender, proportioned nearly as in the preceding but with the third joint not quite so long and more swollen distally; prothorax twice as wide as long and slightly more than two-fifths as long as the elytra, the converging sides evenly but only feebly arcuate, the basal stria subobsolete; scutellum short, ogival and more than twice as wide as long; elytra elongate, gradually evenly narrowed and with subevenly arcuate sides from base to apex, the combined apex very narrowly rounded; strigilation very fine and close-set but excessively feeble, not extending much before the middle, the stria broadly and deeply impressed posteriorly; metasternal process gradually narrowed, smooth at tip, the mesosternum before it long, flat and glabrous, excepting a long erect seta at each side; hind tibiæ as in the preceding, the tarsi rather less elongate; abdomen narrowly rounded at tip, not modified in the type. Length 1.6 mm.; width 0.7 mm. Texas (Columbus). A single example of undetermined sex. . . . . **attenuatus** Csy.
- Body nearly as in the preceding but shorter and much more obtusely rounded behind, pale rufous, polished; head retracted in the type but apparently rather more than half as wide as the prothorax; antennæ slender, the club fully as long as the funicle, somewhat more pubescent than usual, with its first and second joints equal in length, the third elongate-oval and as long as the preceding two; prothorax as in the preceding, except that the moderately converging sides are more nearly straight, not at all margined at base; scutellum twice as wide as long, ogival; elytra longer than wide, though much shorter than in *attenuatus*, only twice as long as the prothorax and with much less converging sides, which, in posterior half, become obtusely parabolic; surface with abbreviated series of distinct semicircular punctures almost throughout the width, the strigilation fine, close-set and extremely feeble, scarcely traceable suturally toward base; abdomen finely, sparsely villose, the tip obtuse; legs and hind tarsi as in the preceding, the second joint barely twice as long as the first. Length 1.6 mm.; width 0.7 mm. Michigan (Detroit). Another specimen, taken at Willets Point, Long Island, does not seem to differ.
- quadrisetosus** n. sp.
- 25—Body larger, broader and less convex. Oblong-oval, pale and uniform ochraceous in color throughout, shining; head rather small, much less than half as wide as the prothorax, the eyes only moderate; antennæ slender, the third joint almost as long as the next two, the fourth shorter than the fifth, the club much shorter than the funicle;

prothorax short, more than two and one-half times as wide as long, the converging sides evenly arcuate; base finely margined medially; scutellum equilatero-triangular, with slightly arcuate sides, the disk unevenly reticulate; elytra slightly longer than wide, not quite three times as long as the prothorax, broadly parabolic, the sides becoming less flaring basally; surface with distinct and not very minute micro-reticulation in wavy transverse lines, the two inner series composed of rather distinct semicircular punctures medially, the stria strongly developed, coarsely impressed; prosternal process with seven close-set and very thick, long and subspiniform porrect setæ at apex; metasternum nearly smooth, the mesosternum moderately large before it and with a transverse series of very small stiff setæ; hind tibiæ rather long, the tarsi normal. Length 1.8 mm.; width 1.15 mm. California (locality unrecorded). [*S. aquatilis* Csy. nec Lec., olim].

**ochraceus**. n. sp.

Body much smaller, more convex, polished and dark rufous or brownish-rufous in color throughout. . . . . 26

26—Form broadly oval, subglobularly convex. Head slightly more than half as wide as the prothorax, smooth, the punctulation obsolete; antennæ moderate, the third joint as long as the next two, the fourth somewhat shorter than the fifth, the club shorter than the funicle; prothorax distinctly more than twice as wide as long, rather more than two-fifths as long as the elytra, the strongly converging sides strongly arcuate; basal stria very fine and feeble and at some distance from the margin; scutellum ogival, slightly transverse; elytra as wide as long, evenly and very obtusely parabolic in outline, the micro-reticulation not very minute but extremely feeble; punctures of the two or three inner series medially, and on the anterior part of the coarsely impressed stria, distinct and semicircular; prosternal process with about six stiff setæ at tip, apparently of moderate length; mesosternum well developed before the metasternal process; hind tibiæ not very long, obliquely narrowed basally, the tarsi long and very slender though proportioned as usual, much shorter than the tibiæ. Length 1.2 mm.; width 0.85 mm. Central Texas. One example. . . . . **belfragei** n. sp.

Form more elongate, more narrowly oval. . . . . 27

27—Punctures of the two or three inner series medially, and of the sub-sutural stria, notably large, semicircular and conspicuous as in *belfragei*. Form elongate-elliptic; head but slightly more than half as wide as the prothorax, the punctulation sparse and feeble; antennæ rather long and slender, the club but little shorter than the funicle; prothorax much more than twice as wide as long, formed as in the preceding, the basal stria medially very fine and feeble, not so far from the edge; scutellum nearly similar, moderately transverse, ogival; elytra distinctly longer than wide, two and one-half times as long as the prothorax, obtuse at tip, the micro-reticulation rather coarse, everywhere distinct; prosternal process with six porrect setæ, which are notably long; mesosternum moderately developed before the metasternal process and bearing a few short setæ; plaque behind the middle coxæ not definitely outlined; hind tibiæ as in the pre-

ceding, the tarsi notably long and slender, with the joints of the usual proportion, four-fifths as long as the tibiæ, coarsely pubescent beneath. Length 1.15-1.3 mm.; width 0.68-0.8 mm. Texas (Austin and from an unrecorded locality). Eight examples.

**modestus** Csy.

Punctures of the same series evident but smaller and less dilated, toward the sides very shallow and scratch-like, as usual in this section. . . 28

28—Body not very narrowly oval, obscure piceo-rufous; head barely at all over half as wide as the prothorax, minutely, indistinctly punctulate; antennæ shorter than usual, the third joint shorter than the next two combined, the fourth shorter than the fifth, the club rather evidently shorter than the funicle, the tenth joint wider than long; prothorax not distinctly more than twice as wide as long, of the usual form, the converging sides arcuate; base finely margined medially; scutellum triangular, but little wider than long; elytra only very little longer than wide, but little more than twice as long as the prothorax, broadly rounded at tip, the sides more parallel basally; micro-reticulation rather coarse but very feeble, scarcely disposed in wavy lines; prosternal process with six long stiff subporrect setæ; mesosternum rapidly declivous from the tip of the metasternum and with several moderate setæ; plaque behind the middle coxæ not very sharply defined but apparently angulate, as usual in *Stilbus*; legs nearly as in the preceding species. Length 1.2-1.25 mm.; width 0.65-0.7 mm. District of Columbia. Three examples. [*Olibrus pusillus* Lec.] . . . . . **pusillus** Lec.

Body more oblong, very convex and polished, brighter rufous; head evidently more than half as wide as the prothorax, the punctulation somewhat obvious; antennæ rather more slender than in *pusillus*; prothorax shorter than in the preceding, much more than twice as wide as long and about three-sevenths as long as the elytra, feebly margined medially at base, the converging sides evenly arcuate; scutellum sharply ogival, one-half wider than long; elytra distinctly longer than wide, of peculiar outline, the sides feebly converging and barely at all arcuate for two-thirds, then rather rapidly, very broadly rounded through the apex; micro-reticulation somewhat coarse but very feeble, the wavy lines moderately evident; prosternal process with five long stiff setæ; mesosternum not very rapidly declivous, convex; hind tibiæ not very stout, the tarsi slender, but, as usual in this group, with the second joint less than twice as long as the first; basal segment of the abdomen equal to the next two, the apex rather acute. Length 1.0 mm.; width 0.6 mm. Florida (Capron),—Schwarz. [*S. pusillus* Csy. nec Lec., pars, olim]. . **abbreviatus** n. sp.

Body narrower, more evenly elongate-elliptical, bright brownish-rufous; head fully three-fifths as wide as the prothorax, the punctulation barely evident; antennæ with the third joint unusually short, inflated apically, scarcely more than twice as long as wide and shorter than the next two, the fourth slightly shorter than the fifth; club rather evidently longer than the funicle; prothorax but slightly more than twice as wide as long, the sides unusually feebly converging, moderately arcuate, the basal marginal stria feeble;

scutellum triangular, wider than long; elytra much longer than wide, nearly two and one-half times as long as the prothorax, broadly parabolic in fully posterior half, the sides less flaring basally, continuously arcuate; micro-reticulation rather coarse but feeble, the wavy lines slightly evident; prosternal process with five long stiff setæ; mesosternum declivous from the tip of the metasternal process, which is finely, aciculary punctate and setulose nearly throughout; hind legs as usual in the *pusillus* group. Length 1.0-1.15 mm.; width 0.55-0.6 mm. Texas (Galveston). Six examples. A note attached to one of the specimens reads: Jumps about half an inch; found in sand at roots of grasses. [*S. pusillus* Csy. nec Lec., pars, olim.] . . . . . **galvestonicus** n. sp.

29—Form rather narrowly oblong-elliptic, shining though somewhat alutaceous, piceous-black, gradually piceo-rufous posteriorly; entire upper surface, including the head, rather strongly and evenly micro-reticulate; head half as wide as the prothorax, not closely punctate; antennæ with the funicle slender and longer than the club, the third joint as long as the next two, slender; prothorax much more than twice as wide as long, the moderately converging sides evenly arcuate; basal margination very fine; scutellum ogival, one-half wider than long; elytra distinctly elongate, very broadly and obtusely parabolic behind, the arcuate sides less flaring anteriorly; surface with barely a trace of very minute punctulation, each point bearing an infinitesimal decumbent hair; prosternal process not so abruptly limited behind as usual, bearing about four short apical setæ, of which the two median are less apical than those at the angles; metasternum very broad between the coxæ, the mesosternum before it well developed, gradually and convexly declivous; hind tibiæ rather slender, the tarsi short, clothed with stiff hairs, scarcely more than half as long as the tibiæ and with the second joint barely one-half longer than the first; anterior tarsi rather dilated, with dense erect coarse capitulate hairs beneath. Length 1.2-1.25 mm.; width 0.75 mm. New Jersey (Cape May). Four examples, very uniform in size. . . . . **subalutaceus** Csy.

Form still narrower than in the preceding and smaller in size, black, the under surface piceous; entire upper surface and head similarly micro-reticulate; head rather distinctly more than half as wide as the prothorax, the antennæ nearly as in the preceding; prothorax not more than twice as wide as long and fully three-sevenths as long as the elytra, the moderately converging sides somewhat strongly arcuate; basal margination rather strong; scutellum transversely ogival; elytra distinctly elongate, rather acutely parabolic, the arcuate sides only slightly less flaring anteriorly; surface with a few impressed lines but without distinct trace of punctures, excepting the infinitesimal hairs; stria very fine, faintly impressed and shorter even than in the preceding species; prosternal process with the flaring tip somewhat deflexed, not bearing setæ in the type; metasternum much narrower between the coxæ than in *subalutaceus*, the mesosternum well developed, tumid and gradually declivous; hind tarsi a little longer

and more slender than in the preceding. Length 1.1 mm.; width 0.55 mm. Virginia (Fort Monroe). One specimen. . . . *angustus* n. sp.

The antennæ in this genus are rather long and slender, the club especially extended, being much more slender than in *Olibrus*, with an elongate-oval terminal joint giving no suggestion of the pyriform outline characterizing *Olibrus*. There is a raised, posteriorly angulate plaque behind the middle acetabula, which is possibly an extension of the mesosternum, though this is by no means probable, and it may be of an entirely different nature; at any rate, there is no indication of it in *Olibrus*. The space between the subsutural stria and the suture is generally convex, especially behind, taking the place of a sutural beading which is otherwise wanting; it is continued unbrokenly around the apical angles and thence in narrow, abruptly elevated form along the sides, this part bearing, except apically, a fine groove along the edge. The epipleura are very deeply and steeply inflexed basally as usual in the family.

In the male of *pallidus*, and probably quite generally throughout this genus, the anterior tarsi have on the under surface close-set erect hairs, the distal extremities of which seem to be expanded into minute glistening disks; in *pallidus* these tarsi are not very thick but in some species the dilatation becomes marked. I attributed the slightly greater paleness of the elytra toward apex in the types of *pallidus* to translucency in greater part, but additional more mature specimens show that there is really a large apical pale area, somewhat as in *viduus* and *apicalis*.

*Convergens* is rather aberrant in having a transversely curved scratch-like modification of the punctures on the elytral flanks, more or less noticeable also in the *pusillus* section, but these scratch-like punctures are never developed to the degree seen in *Acylomus*. Another aberrant species is *prudens*, where—as also to some degree in the *subalutaceus* section and particularly *angustus*—the apex of the prosternal process is nearly as in *Olibrus*, being convexly declivous and devoid of bristles. In all these species every other character however is that of typical *Stilbus*.

The definition of species in the *pusillus* section by the number of bristles at the tip of the prosternal process, may appear to be somewhat precarious, but I find these setæ to be rather constant in character; this criterion is in each case reinforced, however, by numerous

other differences in form and sculpture of the body, under surface, and, especially of the sterna. In my previous treatment of this *pusillus* section several distinct species were mutually confounded, and the true *pusillus*, I find now, was not at hand; a new scheme of classification therefore becomes necessary. *Pusillus* was represented by two distinct species, one from Florida and the other from Galveston, Texas, here named *abbreviatus* and *galvestonicus* respectively. The true *aquatilis* Lec., was also unknown to me at that time, as I now discover, the type here named *ochraceus* having been described under that name. Finally it should be said that two distinct species were confounded in my description of *obscurus*; the true *obscurus* is the smaller, blacker and very convex form, which I have taken since at Duluth and near Chicago. The measurements given in this original synopsis (Ann. N. Y. Acad., V.) seem to be too great in most cases, undoubtedly because the scale was thoughtlessly held too far above the object being measured.

The remarkable habits of *galvestonicus*, as recorded above under that species, could not well have been anticipated, although in it, as well as others of the *pusillus* section, the hind legs, and particularly the hind tarsi, are much longer than the others.

#### **Leptostilbus** n. gen.

The species of this proposed new generic group have nearly all the characters of *Stilbus*, except that the second joint of the hind tarsi is greatly elongated, being as in *Acyломus*, and the plaque behind the middle acetabula is not posteriorly angulate as in *Stilbus*, but broadly and evenly rounded. The distinct series of semicircular punctures, forming one of the more striking of its external characters, are presaged in several species of *Stilbus*, such as *aquatilis*, *modestus*, *attenuatus* and, it may be said, the *pusillus* section generally, but there the hind tarsi, though notably long and slender as a rule, have the second joint not or scarcely twice as long as the first. The body in *Leptostilbus* is notably narrow and elongate but this also is a characteristic of some of the *pusillus* section of *Stilbus*. The genus is peculiarly southern in range, extending far into Central America, where it is represented by the *Eustilbus distinctus* of Sharp.

The three species in my collection may be described as follows:

Tip of the prosternal process with about six rather long conspicuous setæ. Body elongate-elliptic, obtuse behind, pale brownish-testaceous in color throughout, polished and strongly convex; head half as wide as the thoracic base, minutely and sparsely punctulate, smooth; antennæ rather long, slender as in *Stilbus*, the third joint cylindrical, not as long as the next two, the fourth and fifth equal; club long, fully as long as the funicle; prothorax barely twice as wide as long, the long and moderately converging sides evenly and not very strongly arcuate; base very feebly margined medially; scutellum transversely triangular, not very finely reticulate; elytra much longer than wide, only a little more than twice as long as the prothorax, the sides slightly converging and rather feebly arcuate to about apical third, very broadly rounded though the apex; surface excessively finely, closely and rather feebly transversely strigilato-reticulate, obsoletely toward base, the series of punctures visible throughout the width, widely abbreviated posteriorly, less so basally, the single stria deep and distinct; mesosternum before the metasternal process large, smooth, gradually declivous anteriorly; prosternal process rapidly expanding apically; post-coxal plaque nearly semicircular; second joint of the hind tarsi more than three times as long as the first. Length 1.7-1.9 mm.; width 0.88-1.0 mm. Texas (Brownsville), —Wickham. . . . . **rutilans** n. sp.

Tip of the prosternal process with merely a short inconspicuous seta at each angle. . . . . 2

2—Form moderately narrow, polished, the elytra feebly opalescent, black or nearly so, the anterior parts rufo-piceous; under surface and legs pale ferruginous; head fully half as wide as the prothorax, the eyes well developed, the surface with minute but clear punctulation; antennæ slender, the third joint long and cylindrical, not quite as long as the next two, the fourth a little shorter than the fifth; club long, exceeding the funicle in length; prothorax slightly less than twice as wide as long, the strongly converging sides only very feebly arcuate; base finely margined medially; scutellum ogival, more than twice as wide as long; elytra distinctly elongate, barely more than twice as long as the prothorax (♀), distinctly so and more narrowly rounded at tip (♂), in both sexes with moderately converging arcuate sides and obtuse apex; surface with extremely minute and close-set strigilation, obsolescent suturo-basally, the rows of punctures distinct as in the preceding, the intervals with minute scattered punctules, which, toward the sides, assume the crescentic form of the principal punctures; subsutural stria rather coarsely impressed; prosternal process rapidly expanding to the rounded flattened apex, finely beaded at the sides but not at all at apex; metasternum punctate and setulose, smooth anteriorly between the coxæ, before which the mesosternum is well developed; post-coxal plaque very short, broadly and continuously rounded; second joint of the hind tarsi scarcely less than three times as long as the first. Length 1.6-1.85 mm.; width 0.78-1.0 mm. Mississippi (Vicksburg). Three examples.

**concinus** n. sp.

Form narrow, oval, the size very small; color piceous-black, the under



surface rather obscure rufous; head much more than half as wide as the prothorax, minutely punctulate, smooth, the eyes only moderate; antennæ smaller than in the two preceding, the club much shorter than the funicle and more compact; prothorax not quite twice as wide as long, the rather strongly converging sides very feebly arcuate; base finely margined medially; scutellum transversely triangular, the straight sides becoming arcuate basally; elytra distinctly elongate and rather more than twice as long as the prothorax, somewhat broadly parabolic posteriorly, the sides continuing to flare but only feebly arcuate anteriorly; surface throughout with microreticulation, which is notably coarse and only partially arranged in transverse wavy lines, the series composed of very distinct semi-circular punctures throughout the width, much abbreviated apically and basally, the punctures decidedly coarse, less so but otherwise similar externally, the intervals not distinctly punctulate; prosternal process dilated, flat and strongly arcuate apically, the sides and apex minutely and feebly beaded, the setæ short, two or three in number; metasternal process narrower than in the two preceding, the mesosternum before it only moderately developed. Length 1.2 mm.; width 0.63 mm. Florida (Tampa),—Schwarz. [*Stilbus elongatulus* Csy.] . . . . . *elongatulus* Csy.

The hind tarsi in the unique type of *elongatulus* are wanting; if they had been intact I should probably have noticed the elongate second joint, for it could hardly differ in any decided way from that of *rutilans* and *concinus* described above. It frequently happens that the language used in the original descriptions of the writer differs in degree from that used in the present revisions. As the present descriptions are drawn up independently of the original ones, though from the same specimens, a more permanently accurate statement of characters can be obtained by taking the mean of the statements, for personal equation may differ at different times of life or under different physical conditions, and there are many ways of describing a structural feature erroneously to only one expressing the truth. This of course is not so true of biological matters as of the mathematico-physical, because of latitude caused by variability in the former case, but it obtains nevertheless to some degree, not only as between different authors, but the same author at different times and under less or greater experience.

#### Acylomus Sharp

The chief differences between this genus and *Stilbus* reside in the structure of the hind tarsi, sexual characters of the hind tibiæ and in the sculpture of the elytra. The body is broadly oval, rarely

becoming more elongate, the hind tarsi rather long, due to the notably elongate second joint; the hind tibiæ are rapidly broadened from base to apex as a rule, with the tip oblique and armed with two long and unequal terminal spurs in the male, and more slender, parallel, truncate at tip and with moderate spurs in the female. The metasternum between the coxæ is broad and the mesosternum before it reduced to a thick transverse bead, or at least much less developed than it usually is in *Stilbus*. The antennæ, palpi, general structure of the head, the scutellum and other features, are almost exactly as in *Stilbus*, except that the last palpal joint is less securiform. The raised plaque behind the middle coxæ is moderate in size and angulate to rounded in form. The sculpture of the elytra is one of the most constant and distinctive of the generic structural characters of *Acylomus*, and the genus can be recognized unfailingly by simply viewing it under adequate power. The entire surface of the elytra is always strigilato-reticulate and the punctures—more or less evenly serial internally and confused on the flanks—have always the form of broad, transverse, superficial and lunulate scratches, bearing each a minute decumbent hair; the posterior and partially inclosed surface of each puncture is smooth and polished; there is no exception to this form of sculpture known to me and it is unique in the family.

In geographic range *Acylomus* is essentially southern and tropical, and most of the Central American species assigned to *Olibrus* by Dr. Sharp belong to it. In fact it is very doubtful if any true *Olibrus*, in the sense of the European *bicolor* or the American *pallipes*, occurs in southern Mexico or in Central America, it being a peculiarly subarctic type in the family. The species of *Acylomus* are numerous but more monotonous than those of any other genus, possibly excepting *Phalacrus*; those in my collection may be known as follows:

- Species of the Florida and Cuban regions. . . . . 2  
 Species of the northern Atlantic regions, extending in northern latitudes through to the true Pacific fauna. . . . . 7  
 Species of the Texas and Mexican regions. . . . . 9  
 2—Prosternal process broad apically, with four stout setiform spines at tip.  
 Body rather large, oval, very convex, polished, the elytra opalescent, dark rufo-piceous throughout above, the under surface ferruginous; head half as wide as the prothorax, smooth though with distinct punctulation; antennæ rather long, slender, the slender club as long as the funicle; prothorax very obsoletely micro-reticulate; strongly

margined and broadly lobed medially at base, rather more than twice as wide as long, the strongly converging sides evenly and moderately arcuate; scutellum equilateral, the sides feebly arcuate; elytra barely at all longer than wide, the sides subparallel basally, obtusely sub-ogival in about apical half, the strigiliform reticulation strong, the transverse lunate scratches moderate in the internal series, with smaller ones scattered over the intervals, but laterally becoming very wide and almost interlacing; metasternal process very broad; post-coxal plaque moderate in size and rather sharply angulate posteriorly; second joint of the hind tarsi fully four times as long as the first. Length 2.1 mm.; width 1.35 mm. Cuba (Bahia Honda),—Wickham. A single male.....\***quadrispinosus** n. sp.

Prosternal process only moderately expanded at tip and bearing two to four short slender hairs.....3

3—Body more or less broadly oval.....4

Body rather notably narrower, evenly elliptical.....6

4—Micro-reticuliform strigilation of the upper surface notably coarse, so that the elytral lunules are not well defined except laterally, the ground sculpture similar but fainter on the pronotum and almost completely obsolete on the head. Body, very small in size, broadly oval, shining, the elytra not distinctly alutaceous, piceous-black throughout above, ferruginous beneath; head much more than half as wide as the prothorax, finely, sparsely punctulate; antennæ slender, the third joint not quite as long as the next two, the fourth slightly shorter than the fifth; club longer than the funicle, its first joint much longer than the second; prothorax short, much more than twice as wide as long, two-fifths as long as the elytra, strongly margined and very feebly lobed medially at base, the arcuate sides strongly converging; scutellum equilatero-triangular; elytra scarcely at all longer than wide, broadly and obtusely rounded at tip, the arcuate sides more parallel basally, the single stria well impressed; lunuliform punctures very feeble and rather small, wider and more close-set laterally; sterna moderate in width, the prosternal process with four very slender hairs at tip; post-coxal plaque angulate behind; second joint of the hind tarsi barely twice as long as the first. Length 1.2–1.3 mm.; width 0.8–0.85 mm. Cuba (Bahia Honda),—Wickham. Two females.....\***detractus** n. sp.

Micro-reticuliform strigilation much finer and more close-set, the punctuliform lunules more distinctly defined.....5

5—Form of the body and ground sculpture throughout above nearly as in the preceding, except that the reticulation is finer and the small lunate punctules of the inner rows sharply defined, with intermediate rows of smaller lunules; toward the sides the lunules become much larger, close-set, irregularly disposed and less sharply defined; coloration throughout as in the preceding; head nearly similar, the antennal club not quite so long, increasing in width outwardly, not quite as long as the funicle, its first joint slightly longer than the second; prothorax as in *detractus* but less transverse, the scutellum nearly similar; elytra more elongate, evidently longer than wide, with very faint alutaceous lustre; prosternal process with four short

slender hairs; metasternum broad and subparallel between the coxæ; second joint of the hind tarsi fully twice as long as the first. Length 1.3–1.45 mm.; width 0.8–0.9 mm. Cuba (Havana),—Baker. Two females. . . . . \***cubensis** n. sp.

Form stout, oblong-oval, broadly and obtusely rounded behind, dark piceous-brown in color, gradually slightly paler toward the sides, testaceous beneath, shining, the elytra not obviously alutaceous; head about half as wide as the prothorax, minutely, sparsely punctulate; eyes large, separated on the front by much less than twice their width; antennæ slender, of the usual structure, the club not quite as long as the funicle; prothorax evidently more than twice as wide as long, the moderately converging sides strongly, evenly arcuate; surface obsolete micro-reticulate; base finely margined and broadly lobed medially, the scutellum equilatero-triangular; elytra barely at all longer than wide, a little more than twice as long as the prothorax, the subsutural stria distinct; sculpture moderately finely strigilato-reticulate, the rows of feeble lunules regular interiorly, the lunules broad, confused and numerous on the flanks; metasternum moderately wide between the coxæ; post-coxal plaques rounded behind; legs moderate. Length 1.35–1.4 mm.; width 0.85 mm. Florida (locality unrecorded). A single pair. **vacivus** n. sp.

Form broadly oval, shining, the elytra subalutaceous, black above, the head, elytral tips nubilously, and pronotum laterally, pallescent; under surface testaceous; head half as wide as the prothorax, minutely, sparsely punctulate; eyes not quite so large as in the preceding; antennæ nearly similar, the club notably shorter than the funicle; prothorax distinctly more than twice as wide as long and two-fifths as long as the elytra, finely margined and broadly lobed medially at base, the sides more converging but less arcuate than in the preceding; scutellum ogival, slightly wider than long; elytra barely longer than wide, parabolic in form, the stria distinct, obsolete as usual in about basal third; strigilato-reticulation rather dense, not very coarse, the scratch-like lunules nearly as in the preceding; prosternal process with a small hair at each angle of the apex; metasternal process rather broad, the mesosternum before it unusually developed, only a little more than twice as wide as long; post-coxal plaques rather broadly and evenly rounded behind; hind tarsi somewhat long and slender, the second joint about twice as long as the first, the third three-fourths as long as the second. Length 1.63 mm.; width 1.15 mm. Florida (Palm Beach),—Kinzel. A single female. . . . . **morosus** n. sp.

Form oblong-oval, convex, deep shining black throughout above, the elytra slightly alutaceous; under surface and legs bright ferruginous; head rather large, somewhat more than half as wide as the prothorax, the punctures numerous, rather large, impressed and distinct, the eyes only moderate, separated by slightly less than twice their width; antennæ with the third joint notably shorter than the next two; prothorax but slightly more than twice as wide as long, the sides moderately converging and arcuate; base nearly as in the preceding; scutellum less broad, ogival, as long as wide; elytra distinctly longer

than wide, rather evidently more than twice as long as the prothorax, almost semicircularly rounded behind, the sides becoming more parallel anteriorly; sculpture more evident than in the preceding, the subsutural stria rather fine, less impressed, the punctures of the inner series more nearly semicircular scratches, those toward the sides very broad, straighter and somewhat anastomosing; post-coxal plaques very different from those of the two preceding, being larger and angulate behind, with long straight oblique sides; second joint of the hind tarsi longer, nearly three times as long as the first and almost as long as the remainder. Length 1.6 mm.; width 1.05 mm. Florida (locality unrecorded). A single female.

**carbonarius** n. sp.

- 6—Body rather elongate-oval, strongly convex, shining, the elytra not alutaceous, blackish-piceous above, bright testaceous throughout beneath; head half as wide as the prothorax, nearly smooth, the eyes moderate; antennæ slender but moderate in length, the club much shorter than the funicle; prothorax slightly more than twice as wide as long, the sides moderately converging and not strongly arcuate; surface obsoletely strigilate, finely margined and very feebly lobed at base; scutellum ogival, slightly wider than long, the oblique sides straighter apically than basally; elytra evidently longer than wide and more than twice as long as the prothorax, the strigilation everywhere minute and rather feeble, the stria rather coarsely impressed; lunate scratches everywhere extremely shallow and feeble, broad laterally as usual; prosternal process with about three short apical setæ; metasternum broad between the coxæ, the mesosternum before it only moderate in development; post-coxal plaques triangular but with the posterior angle well rounded; second joint of the hind tarsi nearly three times as long as the first. Length 1.35 mm.; width 0.85 mm. Florida (Haulover),—Schwarz. A single female.

**ovulatus** n. sp.

- Body oblong-oval, moderately convex, the type pale testaceous throughout, the pronotum feebly clouded medially—probably an immature specimen; head retracted in the type, obsoletely strigilate, excessively minutely punctulate; antennal club longer than the funicle; prothorax much more than twice as wide as long, fully two-fifths as long as the elytra, the sides strongly converging but only feebly arcuate; surface feebly strigilate, feebly margined at base; scutellum as wide as long, ogival, with a broad smooth peripheral border; elytra but slightly longer than wide, rather acutely parabolic in outline, the stria distinct, the strigilation feeble, not affecting the polished lustre; lunate scratches rather widely separated and very feeble, not much wider laterally—contrary to the general rule; prosternal process with three short setæ; mesosternum very short and transverse before the metasternal process, constituting scarcely more than a thick beading; post-coxal plaques obtusely angulate, the inner marginal line broadly sinuous; second joint of the hind tarsi barely twice as long as the first. Length 1.2 mm.; width 0.75 mm. Florida (Sanford),—Blatchley. A single female. . . . . **vididus** n. sp.

- 7—Elytra barely as long as wide and evenly parabolic in outline through-

out the circumference. Pale piceous-brown in color, paler beneath, polished, the elytra alutaceous; head very moderate, not one-half as wide as the prothorax, smooth, very obsolete punctulate, the eyes moderate; antennæ with the funicle very slender and somewhat longer than the club; prothorax much more than twice as wide as long, the sides very strongly converging and moderately arcuate; surface wholly devoid of strigilate sculpture, feebly margined and lobed at base; scutellum as long as wide, ogival; elytra having minute and very close-set strigilation throughout, the lunules moderate, those of the intermediate series similar but smaller; toward the sides they become but little larger and are still in regular series; there are also some impressed lines; the subsutural stria is impressed; sterna as usual; post-coxal plaques rounded behind; second joint of the hind tarsi more than twice as long as the first; intromittent spicule of the male slender, with the usual small elongate-oval spatuliform dilatation at the end. Length 1.68 mm.; width 1.1 mm. District of Columbia (type); also one, not quite typical, being black and still more pointed behind, from Southern Pines, North Carolina.

**piceus** Csy.

Elytra fully as long as wide or slightly longer, more parallel and always very obtusely rounded at tip in both sexes, apparently less abbreviated and more obtuse in the female. . . . . 8

8—Lunules of the inner series on the elytra very small and widely separated in the series, those of the intermediate series very minute and inconspicuous, on the flanks still small and in regular series. Body oblong-oval, shining black, the elytra but just visibly opalescent or alutaceous; under surface pale as usual; head half as wide as the prothorax, minutely, sparsely punctulate, the eyes well developed; antennæ very slender, the third joint almost as long as the next two, the club not quite as long as the funicle; prothorax distinctly more than twice as wide as long, the sides only moderately converging but strongly and evenly arcuate; basal margination and lobe distinct; surface not distinctly strigilate; scutellum about as long as wide, triangular, the sides feebly subangulate behind the middle; elytra only about twice as long as the prothorax, almost semicircularly rounded behind, the sides becoming subparallel basally, the stria distinct; strigilation very fine, feeble and close-set; sterna as usual; post-coxal plaques somewhat parabolic in form; second joint of the hind tarsi more than twice as long as the first. Length 1.6–1.75 mm.; width 0.9–1.1 mm. Iowa (Keokuk—type) to Mississippi (Wicksburg) and eastward to North Carolina, Rhode Island and Massachusetts. Very common. Forty-seven examples. **ergoti** Csy.

Lunules of the inner series rather large, those of the intermediate series small but distinct; toward the sides they become long, nearly straight, transverse, subanastomosing scratches, wholly different from those of the preceding species. Body oblong-oval, polished, blackish-piceous, the under surface dark rufous; head half as wide as the prothorax; antennæ rather thick, the club broader than usual and a little longer than the funicle; prothorax with very indistinct though evident strigilation, much more than twice as wide as long, the

sides strongly converging and strongly, evenly arcuate; base distinctly margined and lobed medially; scutellum slightly wider than long, ogival; elytra somewhat longer than wide, the sides rapidly rounding in posterior two-fifths and thence through the extremely obtuse apex, becoming parallel basally, the strigilation not very fine, not producing an opalescent effect; sterna as usual; post-coxal plaques acutely triangular, with straight oblique sides; second joint of the hind tarsi fully twice as long as the first and rather thick. Length 1.6 mm.; width 1.0 mm. Washington State (Tacoma),—Wickham. A single female.....**pugetanus** n. sp.

Lunules internally very broad and close-set in equal close-set series, the lunules of the intermediate series being as broad as the others; toward the sides they are not much broader but still more close-set and confused. Body very short, oblong-oval, deep black, the elytra suffusedly testaceous at tip; under surface pale as usual; head fully half as wide as the prothorax; antennæ slender, the fifth joint distinctly longer than the fourth, the club long and slender, its first and second joints subequal in length and together not quite as long as the third; prothorax distinctly more than twice as wide as long, the sides strongly converging and moderately arcuate; base finely margined and distinctly lobed at the middle; surface feebly strigilate; scutellum slightly wider than long, the sides straight, arcuate basally; elytra as wide as long, distinctly more than twice as long as the prothorax, the apex extremely broadly and obtusely rounded; micro-reticulation not very fine, the lustre polished; sterna as usual; post-coxal plaques rather short, broadly rounded behind; second joint of the hind tarsi between three and four times as long as the first and somewhat longer than the remainder. Length 1.7 mm.; width 1.05 mm. North Carolina (Southern Pines),—Manee. A single male example.....**digestus** n. sp.

9—Setæ of the prosternal process about four in number, very stiff and spiniform as in *aciculatus* and *quadrispinosus*, the body similarly of large, broadly oval, very convex form. Outline broadly and very evenly elliptic, shining, dark piceous in color, testaceous beneath, the elytra barely perceptibly opalescent; head half as wide as the prothorax, the punctures impressed and distinct; antennæ slender, the third joint very much shorter than the next two, the club not quite as long as the funicle; prothorax only twice as wide as long, the strongly converging sides evenly and moderately arcuate; surface very feebly strigilate; base strongly margined and broadly lobed medially; scutellum about as wide as long, ogival; elytra with rather finely and closely strigilato-reticulate sculpture, not longer than wide and only twice as long as the prothorax, very obtusely parabolic in outline, the lunules almost semicircular, moderate in size, those of the intermediate series almost as large; toward the sides they become wide and somewhat anastomosing; prosternal process much expanded at apex; metasternal process broad, truncate, the mesosternum short before it; second joint of the hind tarsi spongiose beneath in the male, four or five times as long as the first and much longer

- than the remainder. Length 2.15 mm.; width 1.35 mm. Texas (Brownsville),—Wickham. A single male.....**integer** n. sp.
- Setæ two to six or seven in number but more slender and generally hair-like, usually very short.....10
- 10—Upper surface in great part testaceous in color.....11
- Upper surface black or piceous-black.....15
- 11—Elytra piceous, each with a large apical and smaller subhumeral testaceous spot, the paler areas very nubilous and not sharply defined.....12
- Elytra uniform pale brownish-testaceous throughout.....13
- 12—Body broad, oblong-oval, very convex, testaceous, the pronotum somewhat clouded medially, the elytra piceous, the obliquely oval posterior spot generally not attaining the suture, the subhumeral small and remote from the humeral angle; under surface testaceous; head not quite half as wide as the prothorax, extremely minutely, sparsely punctulate; antennæ slender, the third joint shorter than the next two, the fourth much shorter than the fifth; club shorter than the funicle; prothorax much more than twice as wide as long, the strongly converging sides evenly and moderately arcuate; base lobed and margined medially; surface very minutely and obsoletely strigilate; scutellum ogival, scarcely wider than long; elytra somewhat longer than wide, much more than twice as long as the prothorax, very obtuse at apex, the sides feebly arcuate; ground sculpture minutely and closely strigilate basally, more coarsely in wavy lines posteriorly and externally and becoming still coarser and more polygonal, the lunules moderate in size, semicircular, those of the intermediate series nearly as large; externally they are but little larger and still in regular series; prosternal process with about three slender bristles, which however are rather long; sterna nearly as in the preceding; second joint of the hind tarsi between three and four times as long as the first, much longer than the remainder and spongiose beneath in the male, more slender and sparsely hairy beneath in the female. Length 1.9–2.0 mm.; width 1.3 mm. California (Fort Yuma). Four specimens.....**nebulosus** Csy.
- Body smaller and much more narrowly oval than in the preceding, very evenly elliptical in outline, shining, the elytra not quite so opalescent as in *nebulosus*, pale testaceous; elytra of a slightly darker brown, each with a very large apical and smaller, very indefinite humeral, pallid area; head barely half as wide as the prothorax, very obsoletely strigilate; antennæ slender, of the usual type; prothorax only slightly more than twice as wide as long, the rather strongly converging sides evenly and distinctly arcuate; surface minutely, feebly strigilate, the base and the scutellum nearly as in the preceding; elytra very much more finely, closely and evenly strigilate throughout than in *nebulosus*, with the subsutural impressed stria similarly conspicuous, slightly longer than wide, oval and more narrowly obtuse at apex, the series of semicircular scratches nearly similar but becoming much broader toward the sides; prosternal hairs few, deciduous and always inconspicuous; anterior margin of the metasternal process more arcuate than usual; post-coxal plaques



acutely triangular; second joint of the hind tarsi very long and slender. Length 1.6–1.9 mm.; width 0.85–1.15 mm. Texas (Brownsville),—Wickham. Three females. . . . . *eximius* n. sp.

- 13—Size larger, the outline broadly, evenly elliptic, strongly shining, pale brownish-testaceous throughout above and still paler beneath, the elytra barely visibly opalescent; head scarcely half as wide as the prothorax, very minutely, sparsely punctulate, smooth; antennæ slender, the third joint much shorter than the next two, equal to the last two funicular joints combined, the fourth much shorter than the fifth; club scarcely at all shorter than the funicle; prothorax short, very much more than twice as wide as long, the sides very strongly converging and but feebly arcuate; surface feebly strigilate, obsoletely so anteriorly, the basal margin and lobe as in the preceding; scutellum equilateral; elytra very slightly longer than wide, two and one-half times as long as the prothorax, evenly and not very obtusely parabolic in outline, the stria coarsely and deeply impressed; lunulate scratches moderate, those of the intermediate series nearly as large; toward the sides they become broader but are still in regular series; prosternal process with about four short setæ, the sterna as usual; second joint of the hind tarsi between two and three times as long as the first. Length 2.0 mm.; width 1.2 mm. Mexico (Guadalupe, Federal District),—Wickham. A single female. . . . . \**micaceus* n. sp.

Size very small, the elytra short and very obtuse. . . . . 14

- 14—Body broadly oblong-oval in form, parallel, very broadly obtuse at apex, shining, the elytra very faintly opalescent, pale brownish-testaceous, the head and pronotum darker, piceous; head half as wide as the prothorax, with very fine and feebly impressed sparse punctules; antennæ of the usual type, the club moderately slender, with its last joint scarcely as long as the first two combined; prothorax short, much more than twice as wide as long though rather more than two-fifths as long as the elytra, the somewhat strongly converging sides distinctly arcuate; basal bead and lobe distinct; scutellum ogival, subequilateral; elytra as wide as long, the feebly arcuate sides rapidly rounding posteriorly, surface minutely, closely strigilate, the lunate scratches moderate, those of the intermediate series extremely small; toward the sides they are all wider but extremely feeble and there the reticulation becomes less fine; prosternum with three or four minute hairs, the sterna as usual; post-coxal plaques short, broadly rounded; second joint of the hind tarsi, in what appears to be the male because of the apically broader hind tibiæ, slender, nearly three times as long as the first and longer than the remainder but merely coarsely pubescent beneath. Length 1.25 mm.; width 0.75 mm. Texas (Austin). A single example.

*abjectus* n. sp.

Body broad but evenly elliptic in outline, pale brownish-testaceous, the head and pronotum darker; under surface testaceous as usual; head rather more than half as wide as the prothorax, very smooth and polished; antennæ as usual, the club about as long as the funicle; prothorax nearly as in the preceding throughout and over two-fifths

as long as the elytra; scutellum slightly wider than long, ogival; elytra scarcely narrower than long, together subcircularly rounded from about the middle, parallel at the sides thence to the base; reticulation everywhere notably less fine than in the preceding and with rather more confused sculpture; the lunules are moderate in size, those of the intermediate series, internally, small, but they rapidly become nearly as large as those of the principal series and, externally, are broad and almost transversely anastomosing; sterna as usual; post-coxal plaques longer than in the preceding and parabolic; second joint of the hind tarsi in the apparent male—the hind tibiae rapidly broader from the base—slender, about three times as long as the first and longer than the remainder but with simple coarse pubescence beneath. Length 1.45 mm.; width 0.83 mm. Louisiana (Alexandria). A single example. . . . . **confusus** n. sp.

- 15—Body broadly oval as in the preceding section. . . . . 16  
 Body narrowly oval, somewhat as in *ovulatus* and *vividus*. . . . . 19  
 16—Post-mesocoxal plaques sharply angulate behind, the angle finely produced. . . . . 17  
 Post-mesocoxal plaques rounded behind; body much smaller; prosternal process with few or no short apical hairs; second hind tarsal joint long but slender and not padded beneath. . . . . 18  
 17—Apex of the prosternal process broadly expanded and bearing six or seven hairs, rather stiff but very moderate in length. Body oblong-oval, subparallel, the elytra rapidly rounding and extremely obtuse at apex, shining black, the elytra feebly opalescent; under surface dark rufous; head large, more than half as wide as the prothorax, the punctures numerous, impressed and unusually distinct, the eyes large; antennæ moderately long and slender; prothorax large, slightly more than twice as wide as long, but little less than half as long as the elytra, the strongly converging sides rather feebly arcuate; surface minutely, sparsely punctulate, feebly reticulate except apically, the basal margination and lobe pronounced; scutellum ogival, about as long as wide; elytra but slightly longer than wide, the feebly arcuate sides only slightly converging nearly to the apex; surface very finely, closely strigilate, the lunules large, semicircular, those of the intermediate series nearly as large as the others; toward the sides all become very broad, close-set and confused in arrangement; metasternum broad, with oblique sides between the coxæ, the mesosternum gradually sloping from its apex; finely prolonged posterior apex of the post-coxal plaques outwardly oblique; second joint of the hind tarsi slender, more than twice as long as the first but not as long as the remainder. Length 1.7–1.85 mm.; width 1.1–1.25 mm. Texas (Brownsville),—Wickham. Seven females.

**socialis** n. sp.

Apex of the process moderately expanded and never having more than two to four very short slender hairs, the sides of the process rather strongly beaded. Body more oval, very shining and convex, deep black, dark rufous beneath; head half as wide as the prothorax, smooth and polished, the eyes moderate; antennæ slender, the club shorter than the funicle; prothorax everywhere very smooth,

nowhere reticulate, very much more than twice as wide as long, the strongly converging sides distinctly arcuate; basal margination rather feeble, the lobe distinct; scutellum slightly wider than long, ogival; elytra unusually elongate, a third or fourth longer than wide, nearly three times as long as the prothorax, the sides very feebly converging from the base, broadly parabolic in about apical two-fifths, the impressed stria extending only to about the middle; strigilation extremely fine, close and feeble, obsolescent basally, the lunules feeble, semicircular, widely separated, those of the intermediate series perceptibly smaller though evident; toward the sides they become scarcely larger and are still in regular series, except very near the edge; metasternum very smooth between the coxæ, heavily beaded, the fine prolongation of the post-coxal plaques short and longitudinal; second joint of the hind tarsi fully twice as long as the first and about as long as the remainder. Length 1.9–2.0 mm.; width 1.15–1.25 mm. Texas (Columbus),—Schwarz. Two females.

**texanus** n. sp.

18—Body broadly oblong-oval, rapidly and very broadly obtuse behind, piceous-black, the head and pronotum rather more piceo-rufous; under surface pale as usual; head half as wide as the prothorax, very minutely punctulate; antennæ slender, the club as long as the funicle; prothorax much more than twice as wide as long, the strongly converging sides strongly arcuate; strigilation very feeble, the basal margination and lobe evident; scutellum ogival, as long as wide; elytra barely as long as wide, twice as long as the prothorax, very finely and closely, feebly strigilato-reticulate, with barely perceptible opalescence, the lunules rather large, equal in the regular and intermediate series, toward the sides only slightly broader but somewhat more close-set; metasternum between the coxæ nearly smooth, finely beaded at the sides, the mesosternum forming a broad and gradually sloping apical bead; post-coxal plaques broadly parabolic; hind tibiæ (♂) gradually broadened to the oblique apex, the unequal spurs conspicuous; second joint of the hind tarsi three times as long as the first and longer than the remainder but with simple coarse hairs beneath. Length 1.3–1.7 mm.; width 0.8–1.1 mm. Texas (Galveston—type locality, Austin, Columbus, Brownsville and Lee Co.), Arkansas and Mississippi (Vicksburg and Agricultural College). Abundant. Thirty-three examples. . . . . **calcaratus** Csy.

19—Form narrowly ovoidal, blackish-piceous, testaceous beneath; head rather large, more than half as wide as the prothorax, the punctures impressed and somewhat evident; antennæ well developed, the club rather thick, fully as long as the funicle, the third joint unusually short, scarcely more than twice as long as wide and only a little longer than the fifth; prothorax much more than twice as wide as long and barely two-fifths as long as the elytra, the sides strongly converging and moderately arcuate; surface obsoletely reticulate basally and with the usual margination and lobe medially; scutellum ogival, slightly wider than long; elytra distinctly elongate and sub-cuneiform, the sides evenly arcuate and converging from the base to the rather narrowly obtuse apex; micro-reticulation not very fine or

strigiliform, the lunules semicircular, well developed, those of the intermediate series small; toward the sides they become very wide, nearly straight and frequently united to form long lines except basally; prosternal process with four rather long and slender setæ at the expanded apex; metasternum very wide between the coxæ, the mesosternum very short; post-coxal plaques sharply angulate posteriorly and somewhat produced obliquely; second joint of the hind tarsi unusually short for the present genus, not quite twice as long as the first and much shorter than the remainder. Length 1.3 mm.; width 0.73 mm. Texas (Brownsville),—Wickham. A single female.

*humilis* n. sp.

Form peculiarly elongate and oblong-oval, the parallel sides evenly arcuate, more rapidly rounding behind, the apex obtuse, dark piceous, the anterior parts nearly black, the under surface dark rufous; head finely reticulate, in great part concealed by retraction in the type, the antennæ normal, the third joint but little shorter than the next two; prothorax of unusual form, not quite twice as wide as long, the very moderately converging sides feebly arcuate, the entire surface finely but feebly strigilato-reticulate, the basal margin and lobe as usual; scutellum ogival, with rather strongly arcuate sides; elytra fully a third longer than wide and evidently more than twice as long as the prothorax, the reticulation unusually coarse, especially toward the sides and not very strigiliform, the lunules large, those of the intermediate series similar but smaller, toward the sides broader and in many cases united transversely; stria coarsely impressed; prosternal process bearing a number of very short setæ at the rapidly expanded apex; metasternum broad between the coxæ; second joint of the hind tarsi three times as long as the first. Length 1.68 mm.; width 0.92 mm. Texas (Columbus),—Schwarz. . . . .*extricatus* Csy.

Form evenly elliptical, dark rufo-piceous and very shining, rufous beneath; head nearly half as wide as the prothorax, minutely punctulate, feebly reticulate anteriorly; antennæ unusually short, the club as long as the funicle, the third joint barely more than twice as long as wide; prothorax barely twice as wide as long, the sides strongly converging and distinctly arcuate; surface minutely and feebly reticulato-strigilate, the basal margination and lobe distinct; scutellum very acutely ogival, as long as wide; elytra only slightly longer than wide and scarcely more than twice as long as the prothorax, very broadly and circularly rounded in about posterior half; strigilation not very fine, coarse laterally; lunules everywhere extremely feebly incised, moderate in size, those of the intermediate series smaller; toward the sides they become broader and closer but are still arcuate; prosternal process only feebly expanded at apex, where no setæ are visible in the type; metasternum not very wide between the coxæ; post-coxal plaques not fully visible in the type, but the outer side is oblique and perfectly straight; second joint of the hind tarsi normally long. Length 1.35 mm.; width 0.72 mm. Texas (the locality and collector unrecorded). A single female. . . . .*ellipticus* n. sp.

The larger typical species such as *aciculatus* Shp., *quadrispinosus*

and *integer*, have a densely spongiose pad on the under surface of the second hind tarsal joint in the male, which is wanting altogether on the more slender joint of the female. In the peculiar *submaculatus* group, embracing so far as known *Olibrus submaculatus* Shp., and *Acylomus nebulosus* Csy., there is a similar dense pad in the male. In other smaller species the males, as known by the peculiar obtriangular form of the tibiæ, have no inferior pad but merely a loose coarse pubescence on the second joint, which is slender as in the females of the *aciculatus* group. The prosternal process is of less moment taxonomically here than in *Stilbus*, the setæ generally being very short and inconstant, but in the *aciculatus* group, these setæ become long, extremely stiff and subspiniform. In the *submaculatus* group, having identical hind tarsi, they are simple hairs, and in this group the ground sculpture of the elytra is more reticulate than strigilate. In the smaller species, as represented by *calcaratus*, there are but few short hairs. A general study of the genus would therefore lead to a grouping based upon rather decided structural characters, which however do not seem to be subgeneric in any sense, the peculiar elytral sculpture being extremely constant throughout. The geographic grouping here followed is merely provisional and for convenience in identification.

*Submaculatus* Shp. (*Olibrus*) is represented before me by two specimens, taken by Wickham at Puente de Ixtla, Morelos. It resembles *nebulosus* very closely and, indeed, the two forms may be subspecific in relationship, but *submaculatus* is more abbreviated, so that the longitudinal distance between the pairs of elytral pale spots is much less than it is in *nebulosus* and this seemingly trivial difference is perfectly constant among the six specimens of the two forms.

In addition to the species described above, there are at hand examples of three other species from Mexico and Central America, but they are obscure forms and it is inadvisable to describe them in the absence of typical examples of the rather numerous allied species described by Dr. Sharp under *Olibrus*. It is rather surprising that the relationship of the latter species with *Acylomus aciculatus* did not occur to the author.

#### *Erythrolitus* n. gen.

\*The above name is proposed for the *Olibrus rubens* of LeConte, which constitutes a genus near but not identical with the Central

American and West Indian *Ochrolitus* of Sharp, as indicated by the writer many years ago (Ann. N. Y. Acad., V, p. 142). It differs from *Ochrolitus* in having the basal joint of the hind tarsi relatively less elongate, in having a short and broadly rounded post-mesocoxal plaque on the metasternum, apparently wholly wanting in *Ochrolitus*, in having the prosternal process dilated, flattened and circularly rounded at tip, the apex bearing a corona of about six long stiff spiniform setæ, of which there is no trace in that genus, in the shorter outer three joints of the antennal funicle, these being rather abruptly short and progressively more transverse and, finally, in having only two discal striæ on each elytron and not three as in *Ochrolitus*. The general surface of the elytra has the peculiar sculpture of long transverse scratches seen in *Ochrolitus*, as well as *Litochropus*.

#### **Litochropus** Csy.

The following species resembles *scalptus*, the type of *Litochropus*, in all its principal structural features, the most radical difference being the single discal stria on each elytron, *scalptus* having two such striæ:

**Litochropus clavicornis** n. sp.—Body very much larger than in *scalptus*, broadly oblong-oval, very obtuse behind, rufo-piceous throughout and without trace of minute ground sculpture above, pale beneath; head rather more than half as wide as the prothorax, very minutely, remotely punctulate, the eyes very moderate; antennæ rather stout, the third joint as long as the next two combined, the club large, broad, loose as usual but longer than the funicle; prothorax rather distinctly more than twice as wide as long, the moderately converging sides evenly and distinctly arcuate; basal lobe very feeble, not at all margined; scutellum ogival, nearly twice as wide as long; elytra slightly longer than wide, between two and three times as long as the prothorax, the arcuate sides moderately converging from the base, then rather rapidly rounding behind, the apex broadly obtuse, the single subsutural stria rather fine but distinct, obsolete near basal fourth; transverse scratches coarse, very long, joining each other transversely, the punctures of the series extremely fine and feeble, each bearing the usual very small decumbent hair; prosternal process rather narrow, the metasternal moderately wide, rounded anteriorly and with only a very fine apical bead, almost exactly as in *Olibrus*; hind tarsi long and slender, the basal joint almost as long as the entire remainder, the second about twice as long as the third; claws abruptly bent and with the usual large internal plate-like basal projection. Length 1.9 mm.; width 1.2 mm. Texas (Columbus),—Wickham.

The head is somewhat larger than in *scalptus*, the prothorax less

transverse, the elytra less abbreviated and the scutellum larger and more transverse. The prosternal process is scarcely at all dilated apically, the tip deflexed and wholly devoid of setæ, almost as in *Olibrus*, and the rounded apex of the metasternal process, with the mesosternum before it reduced to a fine bead, is also as in that genus.

## MONOTOMIDÆ

Dr. G. H. Horn (Tr. Am. Ent. Soc., 1879, p. 257) treats the Monotomids as a distinct family of Coleoptera, and Dr. Sharp follows the same course in regard to the numerous Mexican species; but, in the Henshaw check-list, they are united with the Trogositidæ, a course that cannot be readily defended, as they differ materially in facies and in many important structural features. They also have some rather close relationship with Cryptophagidæ, as seen in the nodiform thoracic angles of *Monotoma*, *Rhizophagus* and with some of the Cucujidæ in the broader extension of that family. In this part of the old clavicorn series a considerable number of separate family groups might be defined to include aberrant types, such as *Monotoma*, *Hypocoprus* and several others, now representing subfamilies of the Cucujidæ. The divergences are so pronounced and annectent forms so uniformly wanting, that it is scarcely practicable to distribute them among the larger families with propriety. In the Monotomidæ little or nothing has been done among the American species since the Hornian monograph alluded to, though in the meantime a considerable number of new forms have come to light, principally in the genera *Monotoma* and *Bactridium*.

It is remarkable, but due largely to the refusal on the part of the author to employ adequate optical enlargement in the study of even the more minute Coleoptera, that Dr. Horn should have rejected the statement of Motschulsky and adopted the opinion of Erichson regarding the formation of the tarsi in this family. The tarsi are very plainly 4-jointed, the three basal joints short, not markedly unequal among themselves, compactly united and together very much shorter than the last; the basal joints of the anterior are somewhat dilated and with an inferior brush of long stiff hairs, which is sometimes visible on all the tarsi, at least in the male, and, in the latter sex, the posterior tarsi are 3-jointed. At the base of the long

fourth joint there is sometimes a feeble swelling, giving the appearance of a nodiform joint, such as is well developed in Coccinellidæ and in many other sections of the Coleoptera, but there is never any obvious suture separating it from the remainder of the joint; this was probably the case, however, at some previous epoch in the development of the stem forms, possibly not so very remote in point of time.

The males may be known very readily by the small terminal segment behind the long and gently sloping pygidium and wholly wanting in the female, but there is elsewhere but little sexual difference, except in *Europs* and a few other genera, where the size of the head is very much greater in the male than in the female of some species.

#### **Monotoma** Hbst.

The species of this genus are very coarsely and roughly sculptured as a rule and are much more numerous in temperate than tropical latitudes of North America, being largely replaced in the latter regions by *Europs* and *Bactridium*, or genera allied to the latter, which are feebly sculptured. Of the more widely disseminated or cosmopolitan species of *Monotoma*, there are at hand *picipes* Hbst., from New York, Indiana, Nebraska, Esmeralda Co., Nevada and southern California; *americana* Aubé, from Illinois to Florida and Texas, most abundant in the last named region, and the very isolated and more feebly sculptured *longicollis* Gyll., from District of Columbia, New York and in considerable series from Esmeralda Co., Nevada. The following species are believed to be undescribed hitherto:

**Monotoma obsolescens** n. sp.—Form rather slender, feebly ventriculate and moderately small in size, piceous-black, the elytra feebly rufescent, the antennæ and legs bright testaceous; head evidently narrower than the prothorax, deeply biimpressed and coarsely and closely, rugosely punctate; antennæ unusually short, excepting the club they are equal in length to the head, the third joint barely more than one-half longer than wide; prothorax not quite as wide as long, the apex barely visibly narrower than the base, the sides very feebly serrulate and nearly straight, all the angles minutely, prominently and subequally nodiform; surface convex, very coarsely punctured, the punctures polygonally crowded laterally but separated by half to three-fourths their diameters dorsally, the subbasal impressions barely traceable; scutellum small, not quite as wide as long; elytra scarcely three-fifths longer than wide, two-thirds



wider than the prothorax, parallel, with rather strongly arcuate sides and arcuato-truncate apex, the punctures regularly serial and rather coarse, each with the usual short coarse pale hair; pygidium very coarsely but loosely punctate apically, the punctures rapidly becoming small, close and deeper toward base; abdomen finely, feebly punctate throughout. Length (♀) 1.7 mm.; width 0.55 mm. District of Columbia. A single example.

This species can be compared only with *picipes*, but it differs conspicuously in its smaller size, shorter antennæ, much narrower prothorax, with obsolescent basal impressions, relatively more oval elytra, smoother and very differently sculptured pygidium and bright rufous legs. In *picipes* the thoracic impressions are not very deep but are always obvious.

**Monotoma famelica** n. sp.—Male rather slender and but slightly ventriculate, moderately small in size, black, the elytra feebly rufescent, the antennæ and legs bright rufous; head slightly narrower than the prothorax, densely and rugosely sculptured and deeply biimpressed; antennæ, excepting the club, longer than the head, the third joint not twice as long as wide, the club oval, longer than wide; prothorax distinctly elongate, very coarsely and polygonally punctured throughout, the subbasal impressions distinct and elongate-oval; apex slightly narrower than the base; sides feebly arcuate and strongly, acutely serrulate; apical nodes very prominent, the basal smaller, scarcely larger than one of the serratures; elytra three-fourths longer than wide, scarcely one-half wider than the prothorax, the parallel sides feebly arcuate, the apex truncate; serial punctures close-set, rather coarse but gradually feebler distally; pygidium with very moderate punctures, well separated distally, close but scarcely at all smaller basally; abdomen finely and feebly punctate, less finely and more closely basally and apically. Length (♂) 1.85 mm.; width 0.58 mm. California (Lake Co.). A single male, with which is placed a female from Clackamas Co., Oregon, differing only in being a trifle more ventriculate and obviously of stouter form.

Also allied to *picipes*, but it differs in its smaller size and more slender outline, less impressed under surface of the head, finer metasternal punctures and narrower prothorax, with more sharply and strongly serrulate sides and more acutely prominent apical nodes, the comparisons being made from males of both.

**Monotoma arida** n. sp.—Body small and moderately slender, rather convex, dull and rather convex above, less dull and more finely sculptured beneath; head evidently narrower than the prothorax, wider than long, with notably large and finely faceted eyes, the vertex unimpressed, coarsely, polygonally punctate; antennæ and legs rufous, the former rather slender, extending beyond the middle of the prothorax, which is barely visibly longer than wide, with nearly straight, subparallel and feebly crenulate sides, the nodiform projections at the anterior and posterior

angles subequal and evident; surface coarsely, polygonally punctured but not subbasally impressed, each puncture bearing a short and very thick bristle; scutellum very small, not as wide as long, truncate at tip; elytra barely two-thirds longer than wide and a third wider than the prothorax, parallel, with feebly arcuate sides and truncate apex, the series of rather coarse punctures as in *parallela*; pygidium (♀) wider than long, with narrowed and arcuato-truncate apex and very coarse punctures; abdomen with the basal segment as long as the next three. Length (♀) 1.68–1.8 mm.; width 0.52–0.55 mm. Three examples, unlabeled in the Levette collection, but probably from Colorado.

Allied to *parallela* Lec., but smaller and shorter, especially with less elongate elytra and with very much larger eyes; the thick erect pale setæ are everywhere rather shorter and less conspicuous than in *parallela*, and the female pygidium is shorter and more truncate at tip. It resembles *parallela* in the obsolete thoracic impressions.

**Monotoma quadraria** n. sp.—Form rather slender and nearly parallel, subopaque, the type pale testaceous in color throughout, the setæ very thick and yellowish; head unusually small, much narrower than the prothorax, coarsely, closely punctate, with a feeble ambient impression along the sides and base, the median part broadly and evenly convex; eyes small; antennæ extending to the middle of the prothorax, the ninth joint evidently larger than the eighth and fully half as wide as the club; prothorax very distinctly elongate, with straight and feebly subcrenulate sides, the apex distinctly narrower than the base; angles having a slightly greater reflexion of the edge but hardly nodiform, the anterior somewhat prominent and with thickened edge; surface with two distinct subbasal, and two very feeble and indefinite subapical, impressions, those on the same side not connected in any way and widely separated; punctures coarse, crowded laterally, distinctly separated dorsally; scutellum as usual; elytra nearly four-fifths longer than wide and barely a fifth or sixth wider than the prothorax, opaculate, the punctures serial, coarse and close-set, the lines of pale setæ very regular; pygidium nearly as long as wide, triangular, with rounded angle, the punctures very coarse apically, smaller and more sharply defined basally, everywhere well separated. Length (♀) 1.75 mm.; width 0.55 mm. California (San Francisco).

A very distinct species, which I long had marked *quadrifoveolata* Mots., in my collection. I am unable to refer to the original description, giving Daghestan as the locality, but, according to the description of Horn, from a District of Columbia example, it does not closely resemble the European species, except in its ferruginous color and opaque surface, for there is no trace of the longitudinal grooves connecting the pronotal impressions, and the anterior impressions are so feeble and diffused in *quadraria* that they cannot be observed, except under oblique illumination. *Quadrifoveolata*,

according to Horn, has the prothorax as wide as long, while in *quadraria* it is distinctly elongate.

**Monotoma rhodeana** n. sp.—Somewhat stout and convex, pale ferruginous throughout in the single type and rather shining; head much narrower than the prothorax, somewhat wider than long, unimpressed, broadly and feebly convex and very coarsely, polygonally punctate, the eyes more than twice as long as the tempora, very prominent and moderately developed; antennæ extending to basal third of the pronotum and having an unusually narrow and elongate club; prothorax much wider than long, the apex slightly narrower than the base, the sides straight and strongly serrulate; apical nodes rather large, obliquely truncate, the basal smaller but distinct and more acute; surface very coarsely, polygonally punctate throughout, the concave bottoms of the punctures polished; subbasal impressions very feeble and widely separated; scutellum small, narrow and truncate; elytra two-thirds longer than wide and a third wider than the prothorax, more ovulate than in any of the preceding species, the sides arcuate and gradually converging behind about the middle, the apex arcuato-truncate; series regular and composed of moderately coarse punctures, the erect setæ only moderate in size and not very coarse, not at all conspicuous; pygidium parabolic, rather convex, slightly wider than long, the punctures very close, extremely coarse, shallow and confluent apically, smaller basally; a short hyaline membrane protrudes apically from beneath the rounded tip; metasternum closely and strongly punctate throughout. Length (♀) 1.7 mm.; width 0.62 mm. Rhode Island (Boston Neck).

This species is allied only to *americana*, but differs in its smaller size, less robust outline, narrower antennal club, much shorter prothorax, with larger and more prominent, obliquely truncate apical nodules, and in the less coarse and more sharply defined elytral punctures. The pale ferruginous color of the type is quite probably a feature of immaturity, as I have a specimen of the normally black *americana* from Louisiana, which is also pale testaceo-ferruginous and likewise two very pale examples of the deep black *producta*.

The antennæ in this genus, as elsewhere in the family, are really 11-jointed, the eleventh joint being in great part inclosed within the tip of the tenth, as in *Rhizophagus*.

### **Hesperobænus** Lec.

In some respects this genus is intermediate between *Monotoma* and *Europs*, as in the form of the last funicular joint of the antennæ, which is obconical, a little wider and less oblong than in the former, but not so wide as in the latter, where it becomes about equal in width to the club. In most respects, however, it does not even

remotely resemble *Monotoma*, the scutellum having a very different outline, the general sculpture being much finer and sparser and the prothorax without prominent basal angles. The first abdominal segment has, behind each coxa, a small angulate plaque, the acute apex of which is prolonged posteriorly in a fine embossed line, but never so far as the hind margin of the segment. In *rufipes* Lec., this plaque and attendant line become very small in size, and in *Europs*, which is rather closely allied to *Hesperobænus*, it becomes a very variable feature, but when present the plaque does not seem to be prolonged posteriorly as it is here. The following species seems to be distinct from any so far described:

***Hesperobænus arizonicus*** n. sp.—Male elongate, moderately slender and shining, black, the elytra rufous in nearly anterior half; legs and antennæ bright rufous; head large, rather wider across the eyes than the prothorax, reticulate, evenly and feebly convex, the punctures rather coarse, umbilicate, separated, smaller and less close-set medially; eyes small and prominent, about as long as the tempora; antennæ extending nearly to the middle of the pronotum, somewhat slender, the third joint as long as the next two, the last funicular joint fully as long as wide; prothorax slightly longer than wide, the sides converging from apex to base, broadly arcuate and finely serrulate, the apical angles acutely prominent laterally; surface gradually convexly declivous laterally, even, reticulate, the punctures elongate-oval, coarse, close-set and eccentrically umbilicate, smaller and sparser medially, where there is a partial impunctate line; scutellum cordiform, fully as long as wide, very acute at tip; elytra twice as long as wide, but very little wider than the prothorax, the parallel sides evenly and broadly arcuate, the apex arcuately truncate; striæ in the form of rather broad and shallow grooves, having small punctures, the flat intervals polygonally and somewhat strongly reticulate; pygidium with rather strong but not very close or coarse punctures; abdomen feebly punctate, the first segment as long as the next three and much longer than the fifth, the longitudinal embossed line extending to apical fourth. Length ( $\sigma^7$ ) 2.7 mm.; width 0.7 mm. Arizona (locality unrecorded).

Rather closely allied to *abbreviatus* and colored in the same way, but differing from the male of that species in the less slender outline, larger head and longer third antennal joint, coarser punctures, much stronger reticulation of the entire upper surface, more acute scutellum and, especially, in the character of the elytral striæ, which have the form of rather broad and shallow grooves in *arizonicus*, but are fine and not wider than the small punctures in *abbreviatus*; in both species the setæ borne by the punctures are rather long, subdecumbent and much finer than in any species of *Mono-*

*toma*. There is no trace of punctures on the alternate intervals as in *alternatus* Schf.

**Leptipsius** n. gen.

This genus, here proposed for the *Monotoma striata* of LeConte (*Bactridium* Horn nec Lec.), is rather closely allied to *Hesperobænus* but differs in several more or less important particulars, relating principally to the antennæ, scutellum and pygidium. The body is very slender and rather depressed, the head abruptly constricted at base as in *Hesperobænus* but at a much shorter distance behind the eyes, the tempora being very short though rectangular; it is rather singular, with this structure of the head, that *striata* should have been placed by Dr. Horn in *Bactridium*, which he defines particularly by the unconstricted base; besides this, however, the abdomen is sculptured in an altogether different way, having no trace of the transverse series of oblong-oval foveæ; it is in every respect like that of *Hesperobænus*. The antennæ differ from those of *Hesperobænus* and are almost exactly as in *Bactridium*, the third joint being very short and the outer joints of the funicle like those which precede them, except for the usual very slight enlargement; in *Hesperobænus* the ninth joint is long and obconical. The scutellum in the latter genus is rather narrow and distinctly constricted subbasally, while here it is larger and more evenly oval, and the pygidium is very much more elongate and less convex.

*Leptipsius striatus* Lec., is very common under bark in southern California and the neighboring parts of Arizona, and one Mexican specimen at hand I cannot distinguish from it in any way. The description of *Rhizophagus adustus* Rtt., answers to this species almost perfectly, and I have scarcely any doubt that the two are identical. The type of *adustus* was stated to be simply from North America, without more definite localization, and, in the "Biologia," Dr. Sharp has called a mixture of closely allied forms by that name; a revision should be made of them and *adustus* more accurately defined. The following species is allied to *striatus* but has more abbreviated elytra:

**Leptipsius dilutus** n. sp.—Form oblong-elongate, depressed, parallel, rather shining though strongly micro-reticulate throughout, ferruginous, the elytra more flavate, becoming just visibly clouded apically; head about as wide as the prothorax (♂), a little narrower (♀), sparsely

punctate, the eyes large but not very prominent; antennæ very short, the club large and subglobular; prothorax quadrate, fully as long as wide, the apex slightly wider than the base; sides nearly straight and even, but becoming faintly crenulate basally; surface broadly and feebly impressed medially, except at base, and not densely punctate, more coarsely and closely so at the sides; elytra truncate at tip, three-fifths longer than wide and but just visibly wider than the prothorax in both sexes, the parallel sides very feebly arcuate; striæ fine and very finely punctate, obsolete toward the suture and on the flanks, where they are represented simply by the series of punctures; pygidium rather longer than wide and almost half as long as the elytra, loosely punctate, the terminal segment (♂) rather small; abdomen reticulate but almost completely impunctate, the last segment broadly arcuato-truncate in the male and feebly punctate, the post-coxal plaques elongate, triangular and rather feeble. Length (♂ ♀) 1.45-1.58 mm.; width 0.33-0.38 mm. Illinois.

Differs from *striatus* Lec., in its still smaller size, shorter and less apically blackish elytra, less arcuate sides of the prothorax anteriorly, more truncate and less punctured fifth ventral of the male and in several other characters.

#### Europs Woll.

This genus, while resembling certain others of the family, such as *Hesperobænus*, in external habitus, is well distinguished by the acute intercoxal process of the abdomen, this being broadly obtuse in all the other genera. Sexual differences in the size and form of the head become rather more pronounced here than elsewhere in the family, and I have at hand a male and female from Havana, Cuba, taken by Baker, in which these differences become extreme, the female being smaller, much more slender and parallel and with relatively very much smaller head than the male. The female fits rather well Chevrolat's description of his *Rhizophagus cubensis*, the dark apex of the elytra, not mentioned in the description, being less pronounced in the female than in the male and in the types of the author was probably a feature too feeble to attract attention. Chevrolat uses the language "vage punctato," referring to the pronotum; the punctures are rather small and sparse but deep and sharply defined, and agree with the expression used, being rather irregularly scattered.

The following species is widely distinct from *pallipennis* Lec., and I cannot recognize it among the numerous Mexican species defined by Sharp:

**Europs unicolor** n. sp.—Male parallel, moderately slender, somewhat shining and depressed, pale ochreo-testaceous throughout in color, the upper surface with distinct reticulation throughout; head not quite as wide as the prothorax, somewhat wider than long, evenly and moderately convex, the punctures rather strong, oval, umbilicate and widely separated; eyes large, between two and three times as long as the short rectangular tempora behind them; antennæ but little longer than the head, the third joint obconical, less than twice as long as wide, the ninth large and fully as wide as the tenth; prothorax somewhat elongate, parallel, slightly widest at about apical third, the sides feebly arcuate and obsoletely serrulate, some serrules near the rounded basal angles more distinct; apical angles obtuse; surface even, the punctures numerous, rather small, umbilicate, the hairs subdecumbent and not conspicuous, a median line impunctate; scutellum rather large, longer than wide, obtusely constricted basally, obliquely pointed apically; elytra fully three-fourths longer than wide and a fourth or fifth wider than the prothorax, broadly truncate at tip, the parallel sides very feebly arcuate; striæ fine and with fine and well separated punctures, bearing rather coarse short subdecumbent setæ, stouter than those of the prothorax, the alternate intervals also with a few remote punctures; pygidium large, transversely convex, almost as long as wide, strongly and evenly, not very coarsely or closely punctate, the punctures of the additional segment numerous but smaller; abdomen moderately punctured, the basal segment without post-coxal modification of any kind, as long as the next three, the fifth as long as the first and having a large, elongate-oval median impression, extending throughout the length; all the tarsi have a brush of hairs beneath. Length ( $\sigma^7$ ) 2.8 mm.; width 0.78 mm. Texas.

The antennæ in this genus betray a distinct transition toward the purely 3-jointed club of *Glischrochilus* (*Ips*) and *Pityophagus*, which are closely related to *Rhizophagus*; the ninth joint forms a part of the club and is in no wise a segment of the funicle, as it should be regarded in all other genera of Monotomidæ. This, and a community of tarsal structure, lead me to believe that it would be a partial solution of some of the taxonomic difficulties in this part of the Coleoptera, to organize a family which might comprise the three genera mentioned, the present Monotomidæ, *Tisiphone* (*Smicrips*) and probably a few others. *Hypocoprus* seems best placed in the Cucujidæ. The tarsi of *Rhizophagus* have the small joint at the base of the long last joint well developed and free, but otherwise they are almost exactly as in *Monotoma* and there are but two other points of divergence in the structure of the body, the feeble depression at each side of the buccal opening, which partially receives the antenna—in my own opinion of very trivial importance, owing to the feebly developed stage of this structure—and the

oblique anterior coxæ. Neither of these characters is so important as the purely 3-jointed antennal club of *Tisiphone*, combined with still longer oblique anterior coxæ, but there is nevertheless a vague habitus, supported by many definite characters in common, such as the formation of the pygidium, that seem to show that the genera mentioned might be associated to form a single family with much propriety.

#### **Macreurops** n. gen.

The type of this proposed new genus is the *Europs longicollis* of Horn. Its habitus, due to the very elongate prothorax, is quite unlike that observable in any true *Europs* and this feature is supplemented by the short and transverse propygidium of the male and unusual development of the terminal pygidium in that sex, and by the form of the scutellum. In all the species of *Europs* known to me, the scutellum is elongate and more or less laterally compressed, but here it is short, transverse and very broadly obtuse at apex. In addition to these differences, the broadly truncate apex of the prothorax is in advance of the apical angles, or briefly tubuliform, in a manner not noticeable in the genus *Europs*. There are two examples of *longicollis* at hand, a male from Washington State and a female, taken by the writer under oak bark at Monterey, California; it is a little smaller than the male and with noticeably less developed head.

#### **Bactridium** Lec.

As constituted by Horn, this genus was composite and included three distinct genera; one of these, founded upon *striatum* Lec., has been defined above under the name *Leptipsius*. The other two have as types *ephippigerum* and *cavicolle*, which belong to the true *Bactridium* type, in having the head wholly unstricted at base, the prosternum with a posteriorly oblique impression extending outward from each acetabula, serving as a partial fossa for the anterior femora and apparently wanting in any other generic type of the family, and a peculiar system of abdominal sculpture, also unsuspected elsewhere. The short intermediate segments of the abdomen have each a transverse, very regular series of oval, close-set foveæ, presenting a very peculiar appearance. *Bactridium* is distinguished from *Pycnotomina* by the obtuse frontal extension



and several other characters. The species known to me at present can best be defined in tabular form as follows:

Prothorax large, wider than long; body less slender. . . . . 2  
 Prothorax smaller, subquadrate, never distinctly transverse; body very slender. . . . . 3

2—Surface dark ferruginous and rather shining throughout, subdepressed, the micro-reticulation of the upper surface very feeble, coarser and more distinct on the elytra; hairs short, sparse and inconspicuous; head much wider than long and distinctly narrower than the prothorax, the surface evenly and feebly convex, rather finely and closely punctate, the punctures elongate; eyes rather large, convex and prominent; antennæ very short, barely longer than the head, the third joint barely as long as wide, the ninth but little wider than the eighth, the club rounded; prothorax about a fifth wider than long, widest slightly behind the apex, where the sides are slightly more rounded; apex and base subequal; sides nearly even but with a few serrules about the rounded hind angles; surface flattened medially, the flat area defined by parallel lateral and a transverse posterior line, the lateral lines not extending to the middle; punctures moderate and sparse, largely wanting medially; scutellum about as wide as long, cordiform; elytra one-half longer than wide, not (♂) or very little (♀) wider than the prothorax, the striæ not very fine and rather closely punctate, the punctures very close-set and confused on the flanks; pygidium slightly wider than long, broadly parabolic, convex, closely and very coarsely punctate, the additional segment (♂) very small; abdomen coarsely punctate, the transverse series of foveæ even and regular, the fifth segment very coarsely, subconfluent punctate, the first with a gradually attenuated triangular post-coxal plaque at each side, extending almost to the apex of the segment in the male. Length (♂ ♀) 1.5–1.8 mm.; width 0.42–0.58 mm. New York and Indiana. Not uncommon. [*Rhizophagus ephippiger* Guér.] . . . . . **ephippigerum** Guér.

Surface more convex, similarly micro-reticulate and shining, similar in color and pubescence; head large, transverse, rather closely punctate, more finely and sparsely anteriorly, the lateral oblique impressions distinct; eyes prominent, much smaller than in the preceding; antennæ nearly similar, though evidently longer than the head; prothorax still more transverse, fully a third to two-fifths wider than long, formed nearly as in the preceding, but not flattened and not definitely impressed medially, the punctures elongate, close-set and subconfluent laterally, irregularly and somewhat widely separated medially, arcuately somewhat condensed near the base; scutellum nearly similar, well developed; elytra about one-half longer than wide, just visibly wider than the prothorax, the sides perceptibly arcuate; striæ not very coarse but deep, finely but strongly punctate, the flanks not striate but with a few well separated and irregular series of punctures; pygidium wider than long, feebly convex and very coarsely, polygonally punctate, the terminal segment of the

- male small; abdomen strongly sculptured, nearly as in the preceding, the first segment somewhat longer than the next three, much longer than the last, the post-coxal plaques long, triangular and attenuated; oblique prosternal groove deep as in the preceding. Length ( $\sigma^7$ ) 1.75–1.9 mm.; width 0.6–0.65 mm. Michigan. **convexulum** n. sp.
- 3—Color black, the elytra ferruginous throughout; under surface piceous black, the legs and antennæ pale rufous. Surface very shining, the micro-reticulation everywhere obsolescent and scarcely discoverable, except on the apical part of the head, the pubescence sparse and inconspicuous; head ( $\text{♀}$ ) much smaller than in the female of *ephippigerum* and nearly as long as wide, much narrower than the prothorax and with smaller eyes, the punctures very close-set throughout, oval, becoming shallower and rounded anteriorly; antennæ very short, barely as long as the head, the ninth joint slightly wider than the eighth; across the base of the head, between the hind limits of the eyes, there is a shallow impression not extending to the sides; prothorax but slightly wider than long, formed nearly as in *ephippigerum* but with the median area broadly flattened, though with the impressions barely traceable, the scattered punctures more abruptly close-set laterally; elytra throughout nearly as in that species and similarly sculptured on the flanks; pygidium obtusely parabolic, black, nearly as long as wide, convex, with very coarse punctures, close-set though not polygonally crowded; abdomen strongly sculptured, the medial transverse series of foveæ very conspicuous; basal segment longer than the next three and much longer than the last, the post-coxal plaques with their inner margin forming a distinct line to the hind margin, the outer margins obsolete slightly behind the middle of the segment. Length ( $\text{♀}$ ) 1.55 mm.; width 0.42 mm. North Carolina (Southern Pines).—Manee. [*Rhizophagus eryth.* Mels.—Pennsylvania]. . . . . **erythropterum** Mels.  
Color uniform or very nearly so throughout. . . . . 4
- 4—Form somewhat slender, the lustre shining; color piceo-rufous, the elytra if anything more obscure than the anterior parts, the pubescence sparse and inconspicuous; head well developed, but slightly wider than long and distinctly narrower than the prothorax, rather finely and sparsely punctured throughout, the eyes notably large, convex and prominent; antennæ about as long as the head, with all the funicular joints transverse except the first, which is barely as long as wide; prothorax quadrate, as long as wide, parallel, the sides feebly arcuate, a little more so anteriorly, with a few serrules posteriorly; surface broadly and almost evenly though very moderately convex, sparsely punctate, more coarsely and closely toward the sides; scutellum well developed; elytra barely one-half longer than wide, a fifth or sixth wider than the prothorax, the parallel sides broadly arcuate, the striæ rather strong but not coarse, finely, loosely punctate, the flanks with a few widely separated and irregular unimpressed series of punctures; pygidium wider than long, broadly parabolic, the punctures very coarse but separated, gradually less coarse and more elongate basally, the terminal segment of the male small; abdomen with the basal segment much longer than the next three

and very much longer than the last, the first, three median and the fifth very differently sculptured, as usual in the genus; post-coxal posteriorly angulate plaques open behind and not attaining the segmental apex. Length ( $\sigma^7$ ) 1.7 mm.; width 0.5 mm. New York (Catskill Mts.),—H. H. Smith. Named in honor of Hendrik Hudson . . . . . **hudsoni** n. sp.

Form slender, moderately convex, shining, piceous-black, the entire elytra deep black; under surface rufo-piceous, the legs bright rufous; micro-reticulation rather distinct throughout, the hairs inconspicuous; head but very slightly narrower than the prothorax, almost as long as wide, sparsely punctate, the punctures elongate, coarser and closer laterally; eyes notably large; antennæ very short, not longer than the head, rufous, the third joint not as long as wide, the club very abrupt and well developed; prothorax quadrate, as long as wide, distinctly widest before apical third, where the sides are somewhat angulate though very obtusely, the edges nearly even but with about two serrules at the broadly rounded basal angles, the apical very obtuse; surface unimpressed, with small and widely scattered punctures, coarser and close on the flanks; scutellum rather large and obtuse; elytra not quite one-half longer than wide and nearly a third wider than the prothorax, the parallel sides evidently arcuate, the apex truncate: striæ fine, with small and well separated punctures, which are broader than the striæ, the flanks with a few series of punctures in slightly impressed lines; pygidium moderately and not densely punctate; abdomen coarsely sculptured, the punctures of the first segment small, separated and elongate, those of the last segment very large, oval and isolated, the foveæ of the three transverse series large, close-set and elongate; post-coxal plaques of the first segment long, finely acute and entire posteriorly, not quite attaining the apex. Length ( $\varphi$ ) 1.6 mm.; width 0.43 mm. A single female unlabeled in the Levette collection and probably taken by him in Indiana . . . . . **obscurum** n. sp.

Form not very slender and more depressed than in either of the preceding, shining, the size minute, ferruginous, the elytra and legs slightly paler, the former infumate in about apical fifth; micro-reticulation feeble, coarse but obsolescent on the elytra; hairs short and inconspicuous; head much shorter than wide, evidently narrower than the prothorax, with coarse but shallow, close-set punctures, becoming fine and sparser apically; eyes notably large; antennæ very short, the third joint but little longer than the fourth and not as long as wide, the outer joints of the funicle gradually a little broader; prothorax very nearly as long as wide, the sides feebly arcuate, rather more so near apical third and with two small spicules at the rounded hind angles; surface broadly flattened medially and transversely impressed subbasally, the punctures sparse, close and coarser on the flanks; scutellum rather large, almost circular; elytra notably abbreviated, distinctly less than one-half longer than wide, less than twice as long as the prothorax and about a fifth or sixth wider, the parallel sides very feebly arcuate, the apex broadly truncate; striæ moderately coarse, the punctures rather strong, the flanks with contiguous coarse

striae as in *ephippigerum*; pygidium very coarsely, closely punctate; basal segment of the abdomen with well separated and moderate elongate punctures, those of the fifth very coarse and crowded, those of the three series oblong and close-set; inner line of the post-coxal plaques extending about to the apex of the segment; tarsi notably slender, more so than in any of the preceding species. Length ( $\sigma^7$ ) 1.35 mm.; width 0.35 mm. Arkansas. A single example. . . . . **curtipenne** n. sp.

The species named *convexulum* above, is that usually identified as *striolatum* Rtrr., but it does not agree at all well with Reitter's description of *striolatum* (Verh. Nat. Vereins, Brünn., 1872, p. 14). The size is not so large (2 mm.) and *striolatum*, the locality of which was unknown, was described as depressed, the head and pronotum rather closely punctate, the former fully as wide as the latter, or wider in the male, and the prothorax "fast etwas breiter als lang," which would be very misleading if applied to the notably transverse prothorax of *convexulum*. Then again, the elytra are said to be "subtiliter striatis, striis subtilissime punctatis," which will not answer to the rather strong and distinctly punctured striae of *convexulum*. As shown above, there are several species having the loosely serial punctuation of the elytral flanks, which was undoubtedly the character relied upon by Dr. Horn for the identification of *striolatum*; perhaps it would have been better to classify the species of the above table primarily upon the radical differences in the sculpture of these flanks of the elytra, but this did not occur to me until afterward and the arrangement adopted will answer for the present.

#### **Pycnotomina** n. gen.

The type of this proposed genus is the *Bactridium cavicolle* of Horn. In general habitus, due to its broad form and dorsal concavity, it presents a radically different appearance from *Bactridium* and, structurally, it differs in having the front of the head acutely ogival in outline and not broadly and arcuately obtuse. As minor differences it should be said that there is no trace of the micro-reticulation of the integuments, universally visible in *Bactridium*, and the elytral striation is obsolete, leaving simply the regular series of punctures. In the structure and peculiar sculpture of the abdomen, in the legs and antennae and the oblique impression extending outwardly from the anterior acetabula toward the hind

angles of the prothorax, it agrees with LeConte's genus. I have at hand a single example of *Pycnotomina cavicollis* Horn, taken at Tryon, North Carolina.

Subfamily RHIZOPHAGINÆ

**Rhizophagus** Hbst.

It is rather surprising that this small group should have been so uniformly separated widely from the Monotomidæ in systematic works, for the two are evidently closely allied. In facies they are so similar that many Monotomids have been described as Rhizophagids and the reverse, and that this superficial resemblance really imports close affinity, can be seen at once on examining the general structure. The antennæ are identical in structure, and the slight impression beneath, at each side of the buccal opening, in which they lie when flexed beneath, is of very little morphological significance. The mouth parts and unbroken frontal part of the head, excepting a very small epistomal piece in *Rhizophagus*, are virtually the same, the abdomen of similar structure, the pygidium, with its additional segment in the male, and the general form and vestiture of the legs and tarsi are alike in the two groups. The only tarsal difference is the small free joint at the base of the long terminal joint in *Rhizophagus*, making them 5-jointed instead of 4-jointed, but the hind tarsi lose a joint in the male in exactly similar manner. There remains but one structural feature of note, and this has been given more weight than it deserves; it relates to the anterior coxæ, which are oblique and oval, instead of being smaller and rounded as they are in *Monotoma*.

The genus *Rhizophagus* in general has been very skillfully treated recently by Mr. Méquignon, and our own species have been rather superficially reviewed by Mr. Schaeffer (J. N. Y. Ent. Soc., 1913, p. 309) but I fail to understand the motives of the latter author in changing Say's name *bipunctatus* to *sayi*; he states that it is because of the previous use of the name *bipunctatus* by Herbst in the European fauna, but there is no such name recorded in any of the large European catalogues. There is a *bipunctulatus* Hbst., recorded in the Munich catalogue, which is a synonym of *bipustulatus* Fabr., but this is not the same as *bipunctatus*. This error was rectified by Mr. Méquignon (L'Abeille, 1914, p. 168), who also

drew attention to Mr. Schaeffer's error in uniting *dimidiatus* Mann., with *dispar* Payk., the two species being abundantly distinct. The two following species have not been described hitherto:

**Rhizophagus longiceps** n. sp.—Male elongate, parallel, evenly convex, rather shining, though the entire upper surface is distinctly micro-reticulate, evenly rufo-piceous in color, the legs bright rufous; head large, elongate, evenly and moderately convex throughout and somewhat finely, evenly and not closely punctate, fully as wide as the apex of the prothorax; arcuate suture delimiting the small apical epistoma, distinct nearly to the edges, the surface of the front behind it not at all impressed; eyes rather small and not very convex, situated rather before the middle of the length, the sides behind them evenly and feebly converging and evenly, very feebly arcuate to the base; antennæ smooth, the third joint distinctly longer than the next two combined, the eleventh protruding well beyond the tenth; prothorax fully a fifth longer than wide, the expanded apex much wider than the base, the sides broadly but evidently sinuate, the basal angles broadly rounded; punctures fine and sparse throughout, not different toward the sides; scutellum transverse, semicircular; elytra barely as wide as the thoracic apex and distinctly less than twice as long as the prothorax, parallel, the sides straight, broadly rounding at apex; striæ moderate, feebly impressed, distinctly, rather closely and evenly punctate, with a few punctures scattered over intervals 1–3 at base; pygidium fully as long as wide, feebly convex, not very coarsely or deeply punctate, the additional segment semicircular, shining and with smaller but deeper and closer punctures; abdomen strongly and rather closely punctate, gradually more finely and sparsely basally; outer anterior tibial angles everted and acute, prolonged by a short spine, and there is another minute spine at apical fifth; middle tibiæ with about four small external spines in distal half. Length (♂) 4.8 mm.; width 0.95 mm. Virginia (a single male, probably taken by Mr. Richardson at Fredericksburg, but there is no definite record).

On comparing the type with a male of *cylindricus* Lec., from Tennessee, it can be seen quite readily that, although rather closely allied, the two are different specifically. In *longiceps* the head is more elongate, being about as long as the prothorax, and not distinctly shorter than the latter and only just visibly elongate, as it is in *cylindricus*, and, in the latter, the front just behind the small epistoma is distinctly impressed, the sides behind the eyes more arcuately swollen, the prothorax less elongate, with the converging sides more nearly straight and the elytra more elongate, being twice as long as the prothorax.

**Rhizophagus rectus** n. sp.—Male cylindrical, evenly convex, rather shining, pale and even rufo-testaceous in color throughout; micro-reticulation subobsolescent anteriorly but distinct on the elytra; head much smaller, not longer than wide and fully as wide as the prothorax,

sinuato-truncate but not impressed at apex, finely, rather sparsely punctate; eyes moderate and rather prominent, behind the middle and at scarcely more than twice their length from the base, the tempora feebly, evenly converging and evenly and very moderately arcuate from the eyes to the base; antennæ nearly as in the preceding but with a shorter third joint, this being not longer than the next two; prothorax a fourth longer than wide, the sides straight and subparallel, being but just visibly converging, rounded apically, the basal angles broadly rounded; punctures very fine and sparse, evenly distributed: elytra nearly as in *cylindricus*, but without scattered punctures at base; pygidium and supplementary segment as in the preceding, the abdomen also nearly similar; anterior tibiæ gradually broadening from base to apex but scarcely at all everted externally at apex. Length 3.6 mm.; width 0.75 mm. North Carolina (Southern Pines),—Mancee.

The male type of this species much more closely resembles the female of *cylindricus* to external view than it does the male of either that species or *longiceps*, and the head, with more posterior position of the eyes, is very different. In the type, the head has, before the middle, two small and rounded impressions, arranged transversely and separated by a third of the total width. *Cylindricus* of LeConte, is a very peculiar species, having but little of the general habitus of the other species of the genus and is evidently representative of a group containing possibly others besides those here mentioned.\* In this *cylindricus* section, the species are all very rare individually.

#### Subfamily TISIPHONINÆ

#### Tisiphone Reitter.

#### *Smicrips* Lec.

It is with some confidence that I follow Dr. Sharp in assigning to *Tisiphone* a place in the Monotomid series, for most of its characters, as well as a certain general habitus, harmonize very well. Here it is the very different and purely 3-jointed antennal club, oblique anterior acetabula, separation of a large epistoma from the front by a transverse arcuate suture, and the apparent absence of a supplementary pygidium in the male, that form the most puzzling features to the systematist in advocating this relationship, but we

\* This group is distinguished primarily by the spinose outer margin of the intermediate tibiæ and will perhaps include also *bipunctatus* Say, although the latter does not have quite so exceptional a facies as the others. The group is evidently of subgeneric value and I would suggest the name *Syringobidia* (n. subgen.) for it, with *Rhizophagus cylindricus* Lec., as the type species.

must either disregard these obstructive features in pursuing this course or propose a separate family for *Tisiphone*; the former seems preferable. The elytral suture, also, is dissimilar, being completely unmarginated, and the scutellum has a different form, but the tarsi are of the same general type, having a very long terminal joint and two or three compactly united and inferiorly hispid short basal joints, the intermediate abdominal segments similarly short and the gradually sloping pygidium of similar nature but relatively even more developed, so that the last abdominal segment is longer, exceeding the first segment in length. The species are decidedly minute, peculiar to the warmer parts of North America and the only one described thus far from our own fauna is the *Smicrips palmicola* of LeConte, from Florida, which, as recognized by Sharp, is not the same specifically as *Tisiphone hypocoproides* Rtrr., the West Indian type of the genus. The following is another species, apparently not identical with any hitherto described:

***Tisiphone texana*** n. sp.—Form narrow, parallel, with feebly arcuate sides, evenly convex, dull in lustre and red-brown in color, the microreticulation everywhere very strong, obscuring the very minute punctures of the elytra; pubescence even, not dense, consisting of small pale decumbent hairs; head much shorter than wide and but very slightly narrower than the prothorax, evenly convex, not constricted at base, the eyes small and very prominent, finely faceted and subbasal; punctures rounded and distinct laterally, wanting medially; epistomal suture deep; antennæ one-half longer than the head, the first two joints large, the funicle suddenly narrow, parallel, composed of six small equal joints which are about as long as wide, the club abrupt, loosely 3-jointed, the first two joints transverse, the second the wider and more than twice as wide as the funicle, the third narrower and subcircular; prothorax a fifth wider than long, parallel, with very evenly and moderately arcuate sides; punctures small, circular and close-set over the entire surface; scutellum well developed, semicircular, flat; elytra parallel, with evenly and distinctly arcuate sides, distinctly wider than the prothorax and not quite twice as long, truncate at apex, not striate; pygidium much longer than wide, feebly convex, gradually arcuately narrowed to the broadly obtuse and arcuate apex, the punctures very minute and subasperate; abdomen almost impunctate; metasternal side-piece parallel and well developed; legs short and simple, the hind coxæ widely separated. Length 1.0–1.4 mm.; width 0.25–0.35 mm. Texas (Austin and Brownsville). Six specimens.

Differs from *palmicola* Lec., in its rather less minute size, more arcuate sides of the body, somewhat longer antennæ, rather longer and laterally more arcuate elytra and more elongate, less broadly truncate pygidium. The mandibles are briefly bifid at tip.



## OSTOMIDÆ

The few genera at the head of this family in our fauna have been greatly neglected and misunderstood until recently, when Dr. E. C. Van Dyke published a table of the Nemosomini (Bull. Bk. Ent. Soc., 1915, p. 25), showing, with apparent correctness, that those species hitherto recorded under the name *Nemosoma* Latr.,\* in our lists, are really members of the Central American genus *Corticotomus* Sharp, and that *Nemosoma* never had been correctly reported in our fauna until Mr. Fall described a species under the synonymic name *Pseudalindria* (Tr. Am. Ent. Soc., 1910, p. 126), which he named *fissiceps*. Dr. Van Dyke added another, in the article cited, under the name *attenuata*. I now find that the genus *Corticotomus*, as defined by Sharp and Van Dyke, is also composite. It is to be regretted, in the interests of more general knowledge of this group, that individuals seem to be extremely rare in collections, and I have never seen an example of the true *Nemosoma*.

**Corticotomus** Sharp

This genus is represented thus far by *basalis* and *gracilis* of Sharp, from Guatemala and Panama respectively, also *cylindricus* Lec., *parallelus* Mels. and *caviceps* Fall. Never having seen a specimen of *parallelus*, I am unable to state whether or not it may be identical with *cylindricus*; the published characters do not distinguish the two very clearly. I am under the conviction that *Corticotomus californicus* of Van Dyke, is a member of the next genus. The following species seems to be new to literature:

**Corticotomus læviventris** n. sp.—Moderately slender, convex, inflated posteriorly, piceous-black, rufo-piceous beneath, the legs rufous; elytra rufescent basally toward the humeri; micro-reticulation fine and feeble, becoming very strong and dense on the alutaceous elytra; head peculiarly porrect, the mandibles sloping upward, without the latter slightly trans-

\* This is the original spelling of the word, later emended to *Nemosoma*. The original spelling was restored by Reitter (Verb. Nat. Ver., Brünn., 1876, p. 13) and I think justly, for permanence in generic names is more important than any other consideration, and if changes of any kind are inaugurated, permanence suffers, as seen in the various ways of writing several names that could be cited. There is no reason, for instance, why some other reformer should not write *Nematosoma*. So the safest plan is to adhere to the original spelling of generic, though not necessarily of specific, words, even though they may be incorrect from an etymological point of view. I should properly have used *Rhyzophagus* above, instead of *Rhizophagus*, but perhaps the principle can be carried too far.

verse, parallel, fully as wide as the prothorax, the eyes feebly convex, slightly transverse, at less than twice their length from the base, acutely truncate above; surface rather finely, irregularly, not densely punctate, more closely and coarsely at the sides, having a very feeble transverse impression at about basal third, wholly interrupted at the middle, the feebly sloping front large and strongly flattened, with a feeble transverse impression parallel to the apical margin, which is broadly truncate and with two small distant obtuse lobes; antennæ bright rufous, shining, as long as the entire head, the basal joint large, subglobular, second small and very short, three to six subquadrate, the next two larger and longer, the long loose club with the sensitive inner areas of the first two joints more than a third as wide and more than half as long as the joints; prothorax very slightly longer than wide, broadly rounded at base, truncate at apex, with the punctures uniform, deep and moderately close-set, somewhat coarse; scutellum small, elongate, tumid and acutely triangular; elytra pedunculate at base, fully as wide as the apex of the prothorax, gradually inflated and with arcuate sides posteriorly, rounded at apex, fully twice as long as the prothorax but barely more than twice as long as wide, having regular series of small punctures, becoming obsolete at about apical third, the series impressed thence to the base except in inner half, the intervals with very minute punctures in obscure double series; general surface with numerous coarse creases, especially behind; abdomen very smooth and polished, very minutely and sparsely punctulate, the last two segments shortest, equal, the fifth broadly and circularly rounded; hind tarsi much longer than the tibiæ, the latter somewhat longer than the very short femora. Length 5.0 mm.; width posteriorly 1.2 mm. Colorado (Boulder Co.).

At the base of each elytron there is a steeply sloping, polished transverse omoplate, which is completely divided by a very deep perforate excavation just within each humeral convexity, the humeral angles rather obtuse and not denticulated by the omoplate. This is a remarkable structure, which is present also, though much less developed, in *cylindricus*. The species is evidently allied to *caviceps* Fall, from the Huachuca Mts. of Arizona, but it is impossible to state the degree of relationship from the short and rather unsatisfactory description of the latter species, which is unaccompanied even by a definite statement of the dimensions. However, the head is not concave, though strongly flattened over the frontal regions behind the transverse subapical impression, and the sub-basal transverse impression is so feeble as to be barely traceable, except under very oblique illumination, and is wholly obsolete medially. If *caviceps* is really like *cylindricus* in outline, as is implied by the author, it is very different from *laviventris*, the posterior inflation of which is a prominent feature and *cylindricus*, as shown by my single example, is a much smaller species.

**Parafilumis** n. gen.

There are three points of difference between this proposed genus and *Corticotomus*, those relating to the form of the labial palpi, proportion of the abdominal segments and to the system of elytral sculpture. The last joint of the labial palpi in *Corticotomus* is arcuately fusoid, the apex being much narrower than the maximum thickness of the joint, while here the apex is broad, rectilinearly truncate and about as wide as at the middle, rather rapidly narrowed basally. The last two ventral segments are the shortest and are mutually equal in length in that genus, while here segments one to three gradually and evenly decrease in length, the fourth subequal to the third, or even a little longer, and the fifth much the shortest of all. In *Corticotomus* the punctures of the elytra are serially arranged, even when the series are only partially impressed, while here the minute punctures are arranged without order, there being no trace of series of any kind. In all other characters the two genera are, however, very much alike, including the very remarkable base of the elytra, with its perforate foramen within the humeri. This is not mentioned by any systematist that I am able to consult, but it is indicated in the drawing of *Corticotomus basalis* Shp., given in the "Biologia." If *Corticotomus californicus* Van D., really belongs to this genus, it would prove the latter to be a type of the tribe peculiar to the true Pacific coast fauna, which seems to be probable. The type of *Parafilumis* may be described as follows:

**Parafilumis estriata** n. sp.—Slender, convex, parallel, very feebly inflated posteriorly, pale testaceous in color throughout and strongly shining, the micro-reticulation feeble even on the elytra; head as wide as the prothorax and a little shorter, without the mandibles wider than long, very porrect, gradually turned upward apically; surface of the vertex and front broadly flattened, finely and not densely punctate, the punctures elongate; frontal margin with a broad and sinuate median lobe; eyes moderate and slightly prominent, transversely oval and at three-fifths from the base of the head proper, the tempora parallel; under surface upwardly convex, very long behind the shallow buccal opening; antennæ moderate, the first joint large, subglobular, the second rather wider and longer than the third, 3-8 gradually very little larger, compactly joined, rather longer than wide distally; club loose, eccentric, as long as the preceding seven joints, the inner surface of the joints sensitive throughout the length, except on the ninth joint where the sensitive area does not attain the base; prothorax slightly elongate, gradually narrowed from the truncate apex to the rounded base, near the base much narrower than the elytral base; side margin finely reflexed, becoming altogether obsolete

toward apex; punctures very fine, sparse, equally distributed and sharply defined throughout; scutellum very small, elongate and acutely triangular; elytra more than twice as long as wide and much more than twice as long as the prothorax, wider at base than any part of the latter and greatly so posteriorly, evenly convex, smooth, the punctures extremely minute simple points, not close, irregularly disposed; impressed striae completely wanting; surface finely and feebly creased in part; rounded humeri minutely and subobsoletely denticulate; under surface of the hind body almost completely impunctate, polished; hind femora somewhat shorter than the tibiae, the latter much shorter than the tarsi. Length 4.2 mm.; width 0.85 mm. Oregon (locality unrecorded).

This species seems to resemble *californica* Van D., from northern California, but there the basal part of the prothorax is said to be as wide as the base of the elytra and the pronotal punctures become indistinct toward base, the elytra three times as long as wide—which is however probably somewhat overstated, with faintly impressed striae except apically and with close double series of faint elongate punctures; *estriata* seems also to be materially larger than *californica*.

#### Airora Rtrr.

*Alindria* Lec. et Horn, nec Erichs.

The differences between this genus and *Alindria* are rather radical in the structure of the antennæ and, although well known to the authors of the "Classification" of our Coleoptera, were completely lost sight of by them, though fully recognized by Sharp in the "Biologia." *Airora* is North American, probably extending into South America, while *Alindria* seems to be purely African. The joints of the antennal club are connected near their outer margins in the former, and at points only slightly eccentric in the latter, genus. The tips of the mandibles are abruptly smooth and polished. *Airora* does not form part of the preceding tribe but is more closely allied to *Temnoscheila* Westw. The peculiar intra-humeral pit of the latter is not even faintly suggested and the antennal club is much shorter and more compact. Our species are rather numerous and those known at present are the following:

Body larger in size. Cylindric but not very slender, deep shining black in color, sometimes testaceous throughout when immature, the under surface, legs and antennæ blackish-castaneous when mature; head opaculate, strongly but sparsely punctate, very broadly and feebly impressed medially toward apex; antennal club rather narrow

and elongate; mandibles finely and sparsely punctate and dull, except at the abruptly polished apex; eyes nearly flat, well developed, arcuately truncate above, broadly sinuato-truncate behind; prothorax not or but very slightly longer than wide, distinctly wider than the head, the base broadly arcuate and but slightly narrower than the apex, the basal angles slightly denticuliform; side margins well developed throughout, the base coarsely beaded, the head minutely punctate; surface strongly and deeply punctate, the punctures well separated throughout; scutellum very small, rounded, tumid; elytra fully as wide as the prothorax and between two and three times as long, perfectly parallel and with nearly rectilinear sides, the apex circularly rounded; striæ very regular, impressed and with coarse rounded punctures, the intervals convex, each with a series of widely separated minute points; under surface strongly and closely punctured laterally, more sparsely and finely medially. Length 8.3–10.7 mm.; width 2.0–2.6 mm. North Carolina (Southern Pines) to Indiana and northern New York. [*Hypophlaeus? niger* Mels.]..... **cylindrica** Serv.

Body smaller and more slender, never over 7 mm. in length; antennal club shorter and relatively rather broader, at least in all the western forms, where also the prothorax is always very distinctly elongate. . . . 2

2—Atlantic coast species—not known to the writer. . . . . 3

Pacific coast and Sonoran species. . . . . 4

3—Form entirely as in the preceding species, blackish, strongly tinged with reddish-brown; head not longitudinally indented in the middle, formed and punctured as in *cylindrica*; eyes, palpi and antennæ similar; outline of the prothorax also similar, but with the punctures denser; scutellum and elytra formed and sculptured as in *cylindrica*; under surface and legs entirely similar. Length 6 mm.; width 1 mm. Pennsylvania [*Hypophlaeus? nigellus* Mels.] . . . . **nigrella** Mels.

Form as in the two preceding species, castaneous; head as in *nigrella* and similarly punctured, with an obsolete impressed line between the eyes, which are as in the preceding; mandibles similar, piceous; antennæ and palpi rufous; prothorax in outline as in *nigrella*, the punctuation as in *cylindrica*; elytra cylindric, slightly narrowed from the base toward the apex, not as wide at base as the thoracic apex, sculptured as in the two preceding; under surface and legs dark rufo-piceous; form of the tibiæ and tarsi as in *nigrella*. Length 4 mm.; width 0.67 mm. Pennsylvania [*Hypophlaeus? teres* Mels.].  
**teres** Mels.

4—Body cylindric as usual, though rather stout in the female, the outline nearly as in *cylindrica*. Polished black throughout, the legs obscure rufous; antennæ black, the apex and inner half of the club ferruginous, the club broad, fully as long as the shaft, the joints of which are short and transverse, the tenth joint twice as wide as long; head but slightly narrower than the thoracic apex, very shining, strongly but not closely punctate, the front convexly declivous but only just visibly impressed anteriorly; eyes transverse, truncate above, sinuato-truncate behind, only very feebly convex and very coarsely faceted as usual; under surface, just behind the buccal opening,

very coarsely but not deeply rugose; prothorax about an eighth (♀) to nearly a fourth (♂) longer than wide, perfectly parallel, with very feebly arcuate sides, the hind angles minutely denticulate, the lateral margin distinct and bearing a line of elongate punctures; surface evenly convex, strongly but not very closely punctate, with a narrow and feebly defined impunctate median line; scutellum very small, narrow, tumid and sunken; elytra equal in width to the prothorax and exactly twice as long, parallel and straight at the sides, broadly parabolic at tip, the striæ rather coarse, feebly impressed, bearing coarse punctures crenulating the intervals basally, becoming fine distally, the intervals each with a single loose series of very fine punctures; apical slope with confused fine punctures; abdomen very coarsely, closely punctate; sterna of the hind body coarsely and densely punctate, the prosternum more finely and sparsely except laterad; legs short and stout. Length 5.4–6.5 mm.; width 1.18–1.5 mm. Arizona (Tucson).—Tucker. . . . . **punctiventris** n. sp.

Body cylindrical and notably slender. . . . . 5

5—Upper surface bicolored, the head and pronotum rufous, the elytra black. Highly polished and very slender, the under surface and legs obscure rufous throughout; head of the usual form; eyes slightly convex, wider than long, transversely truncate behind; surface finely and rather sparsely punctate, shining, broadly impressed medially toward apex; antennæ short, piceous, the basal joint obscure rufous, the club one-half longer than wide, parallel as usual, the tenth joint less than twice as wide as long; under surface coarsely rugose, the duller part, just behind the buccal opening, short, transversely rugulose; prothorax elongate, a fourth or fifth longer than wide, parallel, the sides very feebly arcuate; basal angles not at all denticulate, the margin nearly as in the preceding; punctures rather small but deep, separated by two or three times their diameters; scutellum very small, somewhat rounded, tumid; elytra very elongate, parallel, equal in width to the prothorax and distinctly more than twice as long, the apex gradually but very obtusely parabolic; striæ moderate, fine behind, the inner stronger than the others, especially toward tip; punctures moderately coarse, fine apically, the apical slope with some fine, sparse, diffused punctures; intervals moderately convex, each with a single series of very minute punctures; abdomen finely, rather sparsely punctate, more coarsely and closely laterally on the first two segments. Length 5.0–5.25 mm.; width 1.0–1.1 mm. California (Mokelumne Hill, Calaveras Co.).—Blaisdell. Three examples. . . . . **bicolor** n. sp.

Upper and lower surfaces of the body each uniform in color throughout. . 6

6—Form elongate, cylindrical, black or piceo-castaneous, shining; under surface and the antennæ and legs dark ferruginous; head remotely punctate, the anterior margin medially depressed; prothorax elongate-quadrate, somewhat densely and strongly punctate; elytra equally punctato-striate, the striæ slightly finer apically; intervals narrow, equal, uniseriately punctulate; tibiæ nearly straight; sutural stria only slightly more strongly impressed than the others. Length 6 mm. California. . . . . **æqualis** Rtt.

Form cylindrical though less elongate than in *bicolor* and much smaller than in *æqualis*, pale testaceous in color throughout above and beneath; integuments polished; head evidently narrower than the thoracic apex, shining, feebly impressed medially at apex; punctures widely separated and unusually elongate, gradually smaller anteriorly; eyes unusually small, scarcely at all convex, transverse, rounded above, truncate behind; antennæ rather short, the club parallel as usual, more ochreous internally, the tenth joint not quite twice as wide as long; under surface nearly smooth, the rugose area at apex unusually small; prothorax longer than wide but differing in outline from that of other species, wider at apex than at base, the apical angles sharply defined and the basal just visibly subprominent, the sides broadly and feebly angulate at the middle, elsewhere straight; punctures well separated, moderately strong; scutellum small, tumid, narrowly oval; elytra rather more than twice as long as the prothorax, as wide as the apex of the latter but broader than the base, sculptured nearly as in *bicolor*; abdomen cylindrically convex, with sparse and very moderate punctures posteriorly, becoming larger but not dense basally; posterior legs much smaller than the anterior. Length 4.8-5.0 mm.; width 1.0-1.1 mm. California (probably the coast regions) ..... *polita* n. sp.

The description of *æqualis* is translated from the original; the type was sent to Reitter by Dohrn and the locality may not be absolutely correct, but it "ist angeblich aus Californien"; it is materially larger in size than either of the other California species described above. The synonymy given in our check-list is of course incorrect; it is simply an easy way to overcome an uncertainty, though scarcely just by any liberal code of ethics. I think, however, that *nigrella* and *teres* of Melsheimer, may prove to be the sexes of a single species—although the difference in size is greater than usual, in which case the former would become a synonym of the latter; it seems to be extremely rare. The measurements of that author are sometimes unreliable (see Mem. Col., V, p. 163).

### CUCUJIDÆ

This family exemplifies in a peculiarly cogent way, the difficulties in the way of defining homogeneous family groups among the so-called Clavicornia. In the assemblage of incongruities now known as the Cucujidæ, we have a very variable degree of inclosure of the anterior acetabula by the sternal pieces, and the tarsi are extremely inconstant in structure, some genera having a joint less in the hind tarsi of the male as in *Monotoma* and *Rhizophagus*, while others have uniformly 4 or 5-jointed tarsi throughout. Again, the antennæ

may be without trace of club and moniliform as in *Catogenus* and *Scalidia*, or finely filiform, as in the males of certain species of *Læmophlæus*, or they may be strongly clavate as in *Silvaninæ*. In *Hemipeplus* the tarsi are purely heteromerous in both sexes, and it is for this reason that some have advised its removal to the *Heteromera*, though it is not easy to find a congenial location for it even there. In my own opinion it should form a distinct family near the *Edemeridæ*. The *Silvaninæ* introduce an inharmonious element among *Læmophlæus* and allied genera, and *Hypocoprus* is still more incongruous. But this is not the place to propose many radical alterations in the accepted classification, as it is merely the desire of the writer to make known a number of hitherto undescribed species from the many and considerable accessions made to his cabinet during the last quarter century.

This family was the subject of the first efforts on the part of the writer in the field of taxonomy and, as might be well imagined, the result was rather crude, including many mistakes due to inexperience. These errors are particularly noticeable in the identifications, as in some cases the provisional identifications in the collections of LeConte and Horn were relied upon, without going to original sources for essential information. In the case of certain European species, the identifications derived from descriptions were erroneous, as became evident afterward from a series accurately identified and very kindly transmitted by Mr. A. Grouvelle. In the meantime, Dr. David Sharp published his admirable treatise on the Mexican and Central American forms, as a part of the great *Biologia Centrali-Americana*, of Godman and Salvin; this materially advanced our knowledge of the very difficult groups involved. Dr. Sharp correctly reinstated *Parandrita* and subdivided the genus *Læmophlæus* in part, separating the species of the *testaceus* type under the name *Silvanophlæus*, by reason of the peculiar closure of the anterior acetabula, as well as because of their different habitus, which alone would almost have warranted the course pursued.

#### Subfamily PASSANDRINÆ.

##### **Passandra** Dalm.

That genera are clearly limited groups of species, at any rate in some parts of the Coleoptera, is well demonstrated by those con-



stituting the subfamily Passandrinae; they are widely isolated among themselves and annectent forms are apparently unknown. In fact the generic type is so paramount, that the species forming the genera are subject to exceedingly limited diversification and, while these species seem to be as real as in other genera, they present so marked a uniformity to external view as to appear arbitrary or artificial until studied carefully in series. As a group of genera the Passandrids are as unlike the remainder of the Cucujidæ, as *Parandra* is unlike the other Cerambycids, or perhaps more so, and personally I am almost in favor of considering them a distinct family of Coleoptera. We very often perceive a diffidence on the part of systematists toward the idea of increasing family groups, but I cannot understand why it would not be more satisfactory to tabulate a large number of family groups in such a series as the Clavicornia, than to attempt to assemble recognized subfamilies into inharmonious series called families. Omitting *Hemipeplus*, we might propose at least four families from the Cucujidæ for instance—Passandridæ, Læmophloëidæ, Silvanidæ and Hypocopridæ. One remarkable feature of the Passandrinae, of peculiar persistence and uniformity and betraying an alliance with some subcortical groups of Tenebrionidæ, is the deep transverse sulcus of the last ventral segment, which is similar in the sexes and altogether obscure as to origin and meaning.

In *Passandra*, the species, following the general rule in the subfamily, are mutually very similar in appearance, but the following seems to be different from any hitherto described:

\**Passandra mexicana* n. sp.—Form oblong, subparallel, depressed, dark castaneous in color throughout, excepting a broad black vitta along the elytral suture from base to about apical fifth or sixth; integuments highly polished, without fine ground sculpture and with scarcely any trace of punctuation; head very nearly as wide as the prothorax, with the usual two broad longitudinal impressions and the median depression at apex, the long sulcus above the eyes very abrupt, deep and with its bottom alutaceous; mandibles rather small, thick; eyes small, convex, moderately coarsely faceted; antennæ filiform, stout, polished, deep black, extending to apical third of the elytra, each joint as usual broadly constricted post-medially, the last joint twice as long as wide, strongly and evenly arcuate in external, and broadly sinuate in internal, outline, the apical edge to behind the middle abruptly beveled, opaque and sensitive; prothorax wider than long, of the usual form, the sublateral stria not attaining the apex and ending at basal third; surface between the stria and the sides

with excessively minute sparse punctulation, barely discoverable; scutellum transversely oval; elytra two-thirds longer than wide, as wide as the prothorax and two and not quite one-half times as long, the subsutural groove continuing about the apex and along the sides, the sulcus near outer third extending to apical seventh, the finer stria on the upper part of the flanks ending at the middle and not quite attaining the humeri. Length 14.0 mm.; width 4.4 mm. Mexico (Guerrero),—Baron.

The coloration seems to be different from that of *fasciata* Gray, and the elytra are much more abbreviated. The sex of the single individual at hand is not discoverable at present. A specimen from Brazil, sent to me by Mr. Grouvelle under the name *fasciata*, is much more elongate than *mexicana*, the superciliary groove is much less broad and deep and is polished at the bottom and the elytra are uniformly castaneous. Guerrero is on the western slope of the Mexican plateau, a region zoologically rather different from the Atlantic coast regions quoted as the locality of *fasciata*.

#### Catogenus Westw.

As at present organized, this genus contains rather numerous species from Africa and North America, but, as the American species hold together very closely in facies, it would be interesting to know whether or not the African species are really congeneric, since generic differences in this part of the series are likely to be correspondingly slight to superficial view. I find on closer examination, that there is no such remarkable variation in size of our *Catogenus rufus* as hitherto believed, but that there are several distinct species involved, as I have suspected for many years. There is also an interesting new species at hand from southern Florida. At first it seemed almost impossible to discriminate the sexes, but, although the differences are slight, it will be found easy to do this, for the male, as seen in series, is larger and stouter than the female and has the antennæ notably longer and slightly thicker. The forms in my collection, which may be regarded as species provisionally, are as follows:

- Canaliculation along the median line of the head evident throughout the length.....2  
 Canaliculation obsolete anteriorly; body very small in size and with shorter elytra, the eyes relatively smaller; second joint of the antennæ globular, as long as wide.....4  
 2—Antennæ short, very thick, moniliform, the joints subglobular and

not longer than wide. Body smaller and narrower than in *rufus*, evenly red-brown and shining throughout; head including mandibles much longer than wide and distinctly narrower than the prothorax, the median sulcus stronger than in any of the others and the punctation more minute, abruptly coarse basally as usual, the oblique impressions very coarse; antennæ barely equal in length to the head and prothorax, the latter as in *rufus* throughout, except that the sides do not become parallel at base as they do in that species; scutellum transversely rounded; elytra two and one-half times as long as the prothorax and slightly wider, with the usual outline, having four deep entire sulciform and impunctate grooves, the fifth sulciform and impunctate to well behind the middle, where it becomes a feebly impressed series of close-set punctures, the sixth a series of close-set punctures becoming subsulciform basally, the fifth and sixth much more approximate than the others, the seventh acutely cariniform as usual; deep transverse subangulate groove of the last ventral at some distance from the hind margin. Length (♀) 8.0 mm.; width 1.8 mm. Florida (Lake Worth),—Kinzel.

**monilicornis** n. sp.

Antennæ much longer than the head and prothorax in both sexes; longitudinal sulcus of the head entire but very feebly impressed throughout. . . . . 3

3—Form rather depressed, the lustre shining; color dark castaneous, the femora rufous; head broader than in the preceding though evidently narrower than the prothorax, more coarsely but loosely punctate, the antennæ very much longer though notably thick, as long as the elytra (♂) or three-fourths as long as the latter and not quite so thick (♀), the joints much elongated, the eleventh only slightly longer but narrower than the tenth, with its apex obliquely pointed, the erect pale hairs, internally, long and dense, shorter and fewer in the female; second joint not as long as wide; eyes well developed and convex; prothorax slightly longer than wide, the sides feebly converging and straight from the apex to basal two-fifths, there becoming oblique and arcuate, then parallel and straight for some distance before the basal angles, which are right, the parallel part paralleled by a distinct carina; punctures moderately strong, deep, not close, coarser on the flattened median area and wanting in a narrow impunctate line; scutellum slightly transverse, rounded; elytra two and three-fourths times as long as the prothorax and much wider, of the usual outline; sculpture as in the preceding, except that the punctures on the flat subvertical flanks are coarser and much closer; transverse groove of the last ventral not quite so remote from the hind margin, the intervening space finely and rather closely punctate. Length (5 ♂, 2 ♀) 9.7–11.8 mm.; width 2.2–2.7 mm. Iowa, Maryland and Florida. [*Cucujus rufus* Fabr.] . . . **rufus** Fabr.

Form nearly as in *rufus* but narrower and with distinctly more slender antennæ, red-brown in color and shining; head distinctly narrower and rather more finely and closely punctate; antennæ (♀) about as long as in the female of *rufus* but less stout, the joints elongate, the eleventh longer but not evidently narrower than the tenth and more

- obtuse and feebly oblique at tip than in that species; prothorax throughout almost exactly as in *rufus*, the scutellum similar; elytra also similar, except that the fifth stria is sulciform only very near the base and becomes a row of close-set punctures thence nearly to the apex, the sixth a row of small close-set punctures throughout, obsolete subapically, the sublateral carina strong, the flat flanks with numerous punctures, which are smaller than in *rufus*; groove of the last ventral similar. Length 7.2-8.7 mm.; width 1.65-2.0 mm.; North Carolina (Southern Pines),—Manee, and Indiana..... **puncticollis** Newm.
- 4—Body in outline nearly as in *rufus* but with much shorter elytra, similar in color and lustre; head nearly similar but more closely and rather strongly punctate, the punctures separated by twice their own widths or less; front with a deep impression on the median line just behind the apex and not connected with the more posterior feeble median canaliculation; under surface unusually closely and conspicuously punctate; antennæ not as long as the elytra in the type and not very slender, moniliform, the joints slightly elongate, the eleventh much longer than the tenth and fully as wide, very obtuse at tip; prothorax unusually short, barely visibly longer than wide, throughout nearly as in *rufus*, the punctures much coarser medially, the impunctate median line somewhat convex; elytra as in *rufus* but shorter, only a little more than twice as long as wide, two and one-half times as long as the prothorax, the punctures of the flanks numerous but fine. Length (♂ ♀) 5.8 mm.; width 1.25 mm. Pennsylvania (Rockville),—Champlain and District of Columbia..... **puncticeps** n. sp.
- Body still smaller and more slender, pale red-brown in color throughout and shining; head rather narrow, finely, not densely punctate, without trace of the perforate impression near the apex; antennæ nearly as in *puncticeps* but more slender; prothorax differing considerably, distinctly elongate, narrower, the sides more arcuately converging throughout and with the sinus toward base less differentiated, the carina at each basal angle extremely fine and short; surface with very fine punctures externally, becoming coarser and more conspicuous on the flattened median part, the impunctate line not extending before the middle; elytra barely wider than the prothorax, relatively shorter than in *rufus* and with sculpture as in *puncticollis*; groove of the last ventral not very coarse, unusually little bent and close to the hind margin. Length (♂ ♀) 4.6-5.2 mm.; width 0.9-1.1 mm. Indiana..... **parvus** n. sp.

The Indiana specimen associated above with the North Carolina example of *puncticollis*, differs in having the longitudinal sulcus of the head much deeper and more conspicuous, and the fifth elytral stria is sulciform for a longer distance from the base; the sides of the prothorax, also, are more parallel; as I am not entirely certain of the identity of *puncticollis*, it is however necessary to avoid formally defining it for the present.

The name of the Central American species described by Dr. Sharp as *puncticollis* being preoccupied, as shown above by *puncticollis* Newm., it becomes necessary to change it, and I would propose *sharpi* (nom. nov.) as a substitute.

#### Subfamily CUCUJINÆ.

The variety of structure comprised at present within the limits of this subfamily necessitates the organization of many tribal groups, some of which point toward the Passandrinæ, such as *Prostomis*, with its elongate genæ, and others toward the Silvaninæ. Based upon material now at hand the following tribes seem worthy of definition.

PROSTOMINI.—The typical species is *Prostomis mandibularis* Fabr. *P. americana* Cr., is very closely allied but is not the same as *mandibularis*, differing chiefly in the notably prominent, semi-globular eyes; in the European species the eyes are only moderately prominent; this difference becomes very apparent when series are compared. As in all the genera allied to the Passandrinæ, the species frequently resemble each other very much, though nevertheless distinct.

NARTHECIINI.—Chiefly distinguished from the following tribes by the produced and prominent median part of the front, large head, with moderate and very advanced eyes, short silvanoid clavate antennæ and open anterior acetabula. The tarsi are 4-jointed, with the last joint very long as in Monotomidæ. In various ways the tribe has affinities with the Læmophlœini, through the head and eyes of *Parandrita* and by way of the short clavate antennæ of *Dysmerus* and *Leptophlæus angustulus* Lec. It will be noted that when the median part of the front is advanced in the Læmophlœini, as in *Rhinomalus* and *Rhinophlæus*, the frontal margin remains transverse and truncate, while in *Narthecius* there is a more or less acute projection medially. This tribe will also include *Paraphlæus* Sharp.

LATHROPINI.—Including, so far as known, only the minute species belonging to the genus *Lathropus* Erichs., reminding us of Læmophlœini in bodily habitus but having small and very short antennæ, with strongly though loosely 3-jointed club as in *Hypocoprus*. The anterior coxæ are very small and the acetabula broadly closed. The

tarsi are nearly as in the preceding tribe, 4-jointed, with a very long terminal joint. There are rather numerous species of *Lathropus*, of which a few believed to be new are described further on. Some doubt may arise as to the authorship of *L. vernalis*, named in manuscript by Zimmermann. The name was adopted by LeConte for a species to which he had called attention but failed to describe (Proc. Acad. Sci., Phila., 1866, p. 379), and the description given by the writer under LeConte's name (Tr. Am. Ent. Soc., 1884, p. 95) appears to have been the first to be published.

CUCUJINI.—Includes the largest species of the subfamily, all very depressed, the elytra dorsally prominent sublaterally, with the flattened or concave inner part even and unstriated, though sometimes with a few fine raised threads, and the antennæ non-clavate and generally moniliform. The tribe will include *Cucujus* Fabr., *Palastes* Perty, *Platigus* Erich., *Pediacus* Schuck., and probably some others. *Pediacus*, with its shorter and clavate antennæ, constitutes the same kind of exception in the Cucujini, that *Dysmerus* and *Leptophlæus* do among the genera of Læmophlœini.

LÆMOPHLŒINI.—This tribal group includes a great diversity in external form and in the antennæ, from long and finely filiform to short, loosely clavate and silvaniform, but there is a community of habitus that is unmistakable. The elytra vary from very short as in *Inopeplus*, to longer, though leaving the abdomen partially exposed as in *Silvanophlæus*, to an elongate form, completely covering the abdomen, as in most of the other genera. The anterior coxal cavities are not quite closed behind in most of the genera, but the opening is extremely narrow in some; in others the closure is virtually complete. The genera of the Læmophlœini are numerous and those in my collection may be separated as follows:

- Antennæ long and filiform, more or less decidedly shorter in the female, where there is generally an obvious 3-jointed and claviform though feeble expansion distally, this being sometimes manifest also in the males.....2
- Antennæ short, compact, with a 3-jointed club as in *Silvanus*; body very slender and parallel; eyes small and subbasal.....7
- 2—Elytra very short, leaving most of the abdomen exposed hind body more broadly expanded than in any other genus, very depressed, feebly sculptured.....**Inopeplus** Smith
- Elytra longer, covering all or most of the abdomen.....3
- 3—Scutellum large, semicircular or broadly angulate, never very short..4
- Scutellum very short and transverse.....6

- 4—Eyes far advanced on the sides of the head; mandibles prominent.  
**Parandrita** Lec.  
 Eyes subbasal; mandibles variable in prominence.....5
- 5—Body broad in outline, sometimes rather convex though generally depressed.....**Læmophlœus** Cast.  
 Body narrow, parallel, very depressed and usually feebly sculptured, the elytra shorter, leaving a portion of the abdomen exposed; prostomal suture always evident.....**Silvanophlœus** Shp.
- 6—Body more or less narrow and parallel, depressed, usually closely, feebly sculptured and more or less pubescent; epistomal suture obsolete. [Type *Læm. ferrugineus* Steph.] . . . . **Cryptolestes** Gangl.
- 7—Antennal funicle inserted axially at the tip of the basal joint as usual in the tribe; prothorax elongate; upper surface rather convex. [Type *Læm. angustulus* Lec.]..... **Leptophlœus** n. gen.
- Antennal funicle inserted at the side of the basal joint in both sexes, this joint enlarged and of peculiar obliquely suboval form in the male; body not very depressed, the prothorax quadrate.. **Dysmerus** Csy.

Excepting *Parandrita*, which is Californian, and *Dysmerus* of the Atlantic regions of North America, all of these genera are widely distributed, that is, if some of the European species of slender subcylindric form and short antennæ can be admitted to *Leptophlœus* as defined above, which seems likely; *perrisi* Grouv., is almost certainly assignable to *Leptophlœus*. In *Dysmerus* the anterior acetabula seem to be narrowly open and the tarsi are 4-jointed.

### **Lathropus** Erichs.

The following species of this genus seem to be hitherto undescribed, so far as can be discovered, although the Californian *pubescens* Csy., is not now at hand; the type is presumably in the collection of LeConte. As the genus is well represented in North America and rather poorly so in Europe, it is possible that *sepicola* Müll., may simply be a migrant to Europe from America, in which case this would be the proper name for the species that we call *vernalis*; but this is merely a suggestion.

**Lathropus striatus** n. sp.—Oblong, subparallel, moderately convex, opaculate, the elytra less so, uniformly dark brown in color throughout, the pubescence short but rather abundant; head three-fourths as wide as the prothorax, wider than long, with fine elongate close-set tubercles throughout, the surface even, the epistomal suture angulate by oblique light; eyes rather small, prominent, at a little less than their length from the base, minutely setulose, the facets notably convex; tempora parallel; antennæ a third longer than the head, slender, the second joint a little narrower and longer than the first, three to eight forming a slender funicle,

the third joint longer than wide and longer than the succeeding joints; club loose, not very stout, about as long as the four preceding joints, the ninth joint longer than wide and obconic; prothorax one-half wider than long, the sides feebly converging, feebly undulated and broadly, evenly arcuate from apex to base; surface even, sculptured like the head, having near each side a very fine carinule, which is obsolete at apex and disappears basally; scutellum obtuse, twice as wide as long; elytra two-thirds longer than wide, very slightly wider than the prothorax, obtusely parabolic in about apical third, where they are very slightly wider than at base; surface with close-set rows of distinct punctures, the third and fifth evidently accompanied by feeble carinules; smooth basal plate broadly angulate at the base of the third stria; first abdominal segment as long as the next two, the others subequal in length; coxæ all widely separated, the legs small. Length 1.5 mm.; width 0.55 mm. Michigan (Detroit),—Schwarz. A single example.

Larger and broader than *vernalis*, with larger eyes, still more markedly dentate hind angles of the prothorax and larger and more conspicuous elytral punctures, the general surface of the elytra less shining and with closer pubescence.

**Lathropus robustulus** n. sp.—Short, convex, much broader than any other species, opaque, pale brown in color, the minute pubescence rather abundant; head smaller, scarcely more than two-thirds as wide as the prothorax, densely micro-reticulate as usual, the elongate fine granules ruguliform; epistomal suture obsolete, though traceable as in the preceding by oblique illumination; eyes large, at less than half their length from the base, much larger than in *striatus*, similarly micro-setulose and minutely faceted; antennæ still more slender, but little longer than the head, the second joint much longer and barely narrower than the first, nearly as long as the next three, third to eighth forming a slender funicle, the third obconic, slightly longer than wide, four to eight equal, small, close and wider than long; club loose, about as long as the preceding five joints; prothorax one-half wider than long, widest before the middle, apparently somewhat wider at base than at apex, the sides distinctly arcuate, nearly even, the undulations subobsolete, the basal angles only minutely acute; surface sculptured like the head, the sublateral carinule almost entire but extremely fine and somewhat disintegrated; scutellum very short, transverse; elytra scarcely one-half longer than wide, evidently wider than the prothorax, the parallel sides broadly arcuate; apex subcircularly rounded; basal plate bisinuate posteriorly; surface with rather groove-like series of relatively strong and close-set punctures, the two dorsal carinules feeble; basal segment of the abdomen rather longer than the next two, the remaining segments just visibly decreasing in length; legs very short. Length 1.3 mm.; width 0.4 mm. A single specimen, taken by Mr. Schwarz at Columbus, Texas.

The sculpture is coarser than in *pictus* Schz., from Florida, the size larger and the outline very much broader; it is much more



abbreviated and with shorter antennæ, smaller head and much larger eyes than *striatus*. The surface of the prothorax in *pubescens* is said to have large close punctures, and it seems to differ greatly also in its longer pubescence and in several other features; the length of *pubescens* is only 1 mm.

### **Læmophlæus** Cast.

The various species in this genus hold very well to a common type of habitus, the body being of larger size and much broader outline as a rule than in *Cryptolestes* or *Silvanophlæus*; they also present more marked sexual differences and these, as in Lucanidæ, are of variable degree. There are, for example, fully developed males, and less developed stages in which the head is not so large and the antennæ shorter, but, unlike the Lucanidæ, where the female is rather constant, that sex in *Læmophlæus* also has its greater or less developments, particularly pronounced in the length of the antennæ; the head is always distinctly smaller in the female than in the male and the body is also smaller in size. The mandibles are generally moderate, but in species of the *convexulus* type, they become long and prominent, as in *Parandrita*, and, in that very peculiar type the eyes also differ greatly in the sexes, being extremely prominent and globularly convex in the males and relatively rather larger but much less prominent in the females. In the latter sex the antennæ always have a rather obvious but long and loose 3-jointed club, but in the males they are long and purely filiform as a rule. The following new forms are to be noted at the present time:

**Læmophlæus fervidus** n. sp.—Male large, broad, oblong, subparallel, greatly depressed, polished and without trace of micro-reticulation, piceo-rufous in color, the elytra each with an elongate-oval pale spot on the median line near basal third; head fully as wide as the prothorax, transverse, rather finely but very strongly and loosely punctate, the ambient stria complete, joined by a median longitudinal stria; labrum large, trapezoidal, with the angles and apex rounded, the surface finely, loosely punctate; eyes at not quite their own length from the base, the tempora converging; antennæ rather thick but purely filiform and extending to apical fourth of the elytra, the first joint thickest, twice as long as wide, second oboval, third to tenth gradually increasing very slightly in length and all more than twice as long as wide, the last nearly three times as long as wide, straight, enlarged apically; pubescence of their inner sides not very developed; prothorax not quite twice as wide as long, the base fully three-fourths as wide as the rectilinearly truncate apex, the sides

feebly and almost evenly arcuate, there being a feeble prominence near basal fourth; surface finely, rather sparsely and very evenly punctate, more closely between the strong sublateral grooves and the sides; scutellum finely, rather closely punctate; elytra oblong, one-half longer than wide, fully as wide as the thoracic apex and three times as long as the pronotum, the parallel sides evenly arcuate, the apex rapidly and obtusely rounded; surface very shining, each having three subcarinuliform striae and a strong sublateral costule bordered within by a regular line of very close-set punctures; intervals minutely and confusedly, rather sparsely punctulate; abdomen finely, sparsely punctate. Female smaller than the male, with much smaller head and shorter antennae, the punctures everywhere stronger and closer. Length (1 ♂ Ill., 2 ♀ Ks.) 2.4-3.7 mm.; width 1.0-1.4 mm. Illinois and Kansas.

While allied to *fasciatus* Mels., this species differs in its larger size, more elongate form, very much longer antennae, stronger though almost equally sparse punctures, longer elytra, with the striae less coarsely impressed and in the individually elongate-oval and narrow, and not broad and subfasciate, character of the elytral pale spots, the comparison being made with a very fully developed male of *fasciatus*. The larger of the above measurements refer to the male type. As usual in species of this type the anterior acetabula are narrowly but clearly open behind.

***Læmophlœus californicus*** n. sp.—Male in outline almost exactly as in the preceding, pale red-brown in color, each elytron with a large rounded nubilous pallid spot just before the middle; pubescence short and decumbent but abundant and distinct; integuments highly polished and completely non-reticulate; head barely as wide as the prothorax, with complete ambient stria but without trace of a striiform line along the middle; punctures not coarse but deep and perforate, very dense, becoming slightly separated medially; labrum large, subtrapezoidal, finely punctulate; eyes large, almost twice as long as the converging tempora, which, as usual in the *fasciatus* group, continue evenly the outline of the eye; antennae filiform, moderately slender, extending to about the middle of the elytra, moderately pubescent internally, the basal joint not quite as long as the next two and three-fourths thicker, evenly oval, second shorter than the third, equal to the fourth, the last joint but little longer than the tenth, straight, gradually wider toward tip; prothorax three-fourths wider than long, the outline otherwise as in the preceding, the edges very faintly nodulate, the cusp near basal fourth distinct; surface deeply and densely punctate, less densely so medially, with a distinct impression just behind the middle and adjacent to each of the cariniform sublateral lines; scutellum finely, closely punctate; elytra between two and three times as long as the prothorax, less than one-half longer than wide, the outline and striation nearly as in the preceding, except that the subsutural carinule only extends to slightly before the middle of the length, the irregularly arranged punctures stronger and very close-set;

abdomen shining, rufous, the punctures small but rather close; under surface of the head strongly and closely punctured throughout. Length (♂) 3.5 mm.; width 1.3 mm. California (a single example from an unrecorded locality).

From *fasciatus* this species differs in its more elongate form and very much denser and stronger punctures and, from *biguttatus* Say, which it resembles in the latter respect, it differs in the less evenly distributed and laterally denser cephalic punctures and absence of the median stria of that species, in the relatively rather shorter antennæ and less broad and much paler body, legs and antennæ, the comparison being made between males of corresponding developments. The pale spots of the elytra are slightly less anterior than in *biguttatus*.

*Læmophlœus shastanus* n. sp.—Male oblong, not parallel, rather strongly depressed, shining and piceous-black, each elytron with an elongate-oval pale streak before the middle; pubescence short, rather sparse and inconspicuous; head distinctly narrower than the prothorax, the eyes only moderate in size and three-fourths their length from the base; surface finely and loosely, evenly punctulate throughout, the ambient line distinct, the median stria not very deep though distinct; antennæ filiform but not very slender, piceous, scarcely extending to the middle of the elytra, the first joint scarcely longer but much thicker than the third, second and fourth subequal, eighth joint much shorter than those adjoining and barely as large as the second; prothorax three-fifths wider than long, the sides moderately converging and broadly arcuate from apex to base, scarcely nodulate at any point, the basal angles acute and rather prominent; surface finely, closely, rather strongly punctate, more feebly medially, not impressed near the carinulate sublateral lines; scutellum minutely, inconspicuously punctate; elytra oblong, slightly wider than the prothorax and between two and three times as long, with the usual three discal carinulate grooves and sublateral carina, the sub-sutural stria not extending anteriorly to the middle; punctures very fine and rather sparse, confused as usual in this group; abdomen very finely, sparsely punctulate. Length (♂) 2.8 mm.; width 0.95 mm. California (Redwood Creek, Humboldt Co.).

The type is probably not the most fully developed form of male, judging by analogy in the case of *biguttatus*, to which this species is allied, differing in its finer and much sparser punctures and in antennal structure, the eighth joint not being so notably reduced in that species. The eyes also are much smaller.

*L. biguttatus* Say, is a very widely diffused species, varying remarkably in size, and I have a large series taken at numerous points from Pennsylvania to Arizona.

*Læmophlæus fraterculus* n. sp.—Female oblong, distinctly convex, highly polished, pale flavo-testaceous throughout, the elytra infumate at least posteriorly; hairs small, sparse and inconspicuous; head almost as wide as the prothorax, rather strongly but loosely punctate, not striate along the median line, the ambient line narrowly interrupted at the middle anteriorly; labrum short, rounded; eyes well developed, about at the base, globularly convex, moderately faceted and with infinitesimal erect setæ; antennæ extending to basal third of the elytra, slender, the 3-jointed club distinctly dilated, joints four to eight smallest, subequal, each much shorter than the second, which is a little shorter than the third, the basal joint subcylindric, very moderate in size; prothorax short, about twice as wide as long and rather less than a third as long as the elytra, the sides perfectly even, not undulated, parallel in apical half, thence sinuously converging to the prominent basal angles; surface rather strongly, moderately closely punctate, finely and sparsely outside of the sublateral lines and also having an impunctate median line; scutellum with very few minute punctures; elytra nearly one-half longer than wide, much wider than the prothorax, circularly rounded posteriorly, the parallel sides rather strongly arcuate; surface of each with four distinct striæ, the intervals with sparse moderate punctures, sometimes in part biserially arranged, the sublateral carina of the preceding group wanting; abdomen finely, sparsely punctulate. Length (♀) 1.8 mm.; width 0.75 mm. Pennsylvania (Buena Vista Spring, Franklin Co.).

Readily distinguishable from *adustus* Lec., by the sparser punctures and much larger head in the female. In *adustus* (♀) the punctures of the head and pronotum are smaller and much closer than in *fraterculus*, the head not so large and the eyes smaller, abruptly more prominent and at a considerable distance from the base; the scutellum, basal joint of the antennæ and basal angles of the prothorax are as in *fraterculus*. In the male of this peculiar section of the genus the antennæ are finely filiform throughout and about as long as the elytra, the head across the eyes about as wide as the prothorax and the eyes very moderate, slightly in advance of the base and globularly prominent. *Adustus* was described from eastern Pennsylvania and I have examples at hand from Virginia (Norfolk) to Maine (Wales),—Frost.

The section of *Læmophlæus* represented at present by *convexulus* Lec., is also aberrant. The mandibles in the male are long, prominent and but slightly arcuate, the eyes in that sex very prominent and hemispherical, while in the female they are larger and less prominent. The epistomal suture is more or less broadly interrupted medially in the male, though generally subentire in the female, and the frontal margin in both sexes is feebly sinuato-truncate through-

out the width, having no trace of the usual two dentiform projections. The body is more convex than usual as in the *adustus* section. The anterior acetabula are more widely open behind than in the *biguttatus* section, but the tarsi are normal and 5-jointed, except the posterior of the male. My representative of *convexus* Lec., is a male from Detroit, Michigan, which is the type locality according to the list published in the paper by LeConte on the Coleoptera of Michigan, by Hubbard and Schwarz (Pr. Am. Phil. Soc., 1878, p. 652), where it is said to have been taken at Port Huron, only a few miles from Detroit, though not described until a year later. As shown by the very prominent spherical eyes, head as wide as the prothorax and the only moderately elongate elytra, this specimen is obviously a male, but the outer three joints of the antennæ are slightly dilated, somewhat as in the female of the two species here described though less conspicuously. In the female the hind body is always much longer than in the male. The figure of *convexus* given by me in my early work on the Cucujidæ (Tr. Am. Ent. Soc., 1884, plate VI, fig. 6) is taken from a female, but from what locality I do not now recall. The species of this *convexus* section resemble each other rather closely but differ in antennal structure. The two following are hitherto undescribed:

**Læmophlœus filiger** n. sp.—Male oblong, convex, shining, brownish-black throughout, the legs and antennæ also blackish; pubescence short and not close though distinct; head, including the small subbasal, very prominent and spherical eyes, slightly wider than the prothorax, strongly and rather closely punctate, feebly impressed transversely subapically but without trace of epistomal suture, except laterally, and without the ambient line of normal species; labrum large, semicircular; palpi long and slender, the mentum large, transversely oval and coriaceous; mandibles long, evenly and feebly arcuate, bifid at tip and also with a short tooth on the upper edge near the apex; antennæ very long and filiform, without trace of apical enlargement, about as long as the entire body, all the joints very long and slender, except the second, which, though slender, is much shorter than either the third or fourth, which are subequal, and the basal joint, which is stouter, cylindric-oval and twice as long as wide; last three joints slightly dilated at their apices; prothorax very transverse, fully twice as wide as long, much wider at apex than at base, the sides becoming arcuately oblique in more than basal half, the apical and basal angles both very prominent, the former acute, the latter right; surface broadly convex, punctured strongly like the head, the sublateral grooves strong and entire; scutellum semicircular, punctate; elytra oblong-oval, at base as wide as the prothorax, at the middle wider, between three and four times as long as the latter, barely one-half longer than wide, the parallel

sides arcuate, the apex subcircularly rounded; surface with three or four moderately coarse, feebly impressed and punctate striæ, the punctures of the broad flat intervals strong and moderately close-set in irregular double series; abdomen finely, not closely punctate, the first segment shorter than the next two, the last four equal in length, the fifth circularly rounded; legs not very short. Female with smaller head and larger, less prominent eyes, entire epistomal suture, smaller labrum and mandibles, shorter antennæ, having a distinct loose 3-jointed club, less transverse prothorax and larger and longer elytra. Length ( $\sigma^7$   $\text{♀}$ ) 1.7–2.4 mm.; width 0.8–1.0 mm. Massachusetts (Framingham),—Frost.

The male is distinguishable at once from the same sex of *convexus* by the very long and entirely filiform antennæ, more acutely dentiform anterior thoracic angles, larger size and rather more elongate outline.

*Læmophlæus sphærops* n. sp.—Male almost as in the male of *filiger*, polished, piceous-brown, the under surface anteriorly and the legs paler; head nearly similar, the upper mandibular tooth rather nearer the apex, the antennæ long and finely filiform, though shorter than in the preceding and differing in the proportions of the basal joints, the first joint stout, oval, not quite twice as long as wide, second as long as the first but much more slender and as long as the fourth, the third longer than the second or fourth and about as long as the succeeding joints after the fourth, eleventh longer than the tenth but otherwise similar; prothorax very nearly as in *filiger* though not so strongly or closely punctate; elytra nearly as in that species but with the punctures smaller and sparser. Length ( $\sigma^7$ ) 2.5 mm.; width 1.1 mm. New York (the exact locality unrecorded); a female from District of Columbia is also attached.

This species is allied somewhat closely to *filiger* but the general outline is stouter, the sculpture finer and looser and the antennæ are rather shorter, with the second joint notably more elongate; they are also slightly less slender throughout. The eyes are minutely setulose in all the species of this section.

The *convexus* and *adustus* sections of *Læmophlæus* have several peculiar features, separating them from the normal forms of the *biguttatus* type. For example, the frontal margin lacks the two obtuse projections of that typical section of the genus, and the epistomal suture is generally broadly interrupted medially; the mandibles are longer, usually becoming very prominent in the males, almost as in *Parandrita*, and the body is convex and not strongly depressed, with the sides of the prothorax of a different contour. I think that these sections, comprising at present *convexus*, *filiger*, *sphærops*, *adustus* and *fraterculus*, should be given a special sub-

generic designation and would suggest the name **Charaphlœus** (n. subgen.) for them, with the type *Læmophlœus convexulus* Lec.

The species described by Dr. Sharp under the name *Læmophlœus immersus* (Biol. Cent. Amer., Vol. II, Pt. I, p. 520; Pl. XVI, fig. 18) also constitutes a section radically different from the normal forms of the genus in the special habitus produced by the peculiar subquadrate outline of the prothorax, and it may also possibly be distinguished by 4-jointed tarsi, as suspected by the author. I would suggest that it form the type of a distinct subgenus under the name **Phlœolæmus** (n. subgen.).

### Silvanophlœus Sharp

The type of this genus is the European *Læmophlœus testaceus* Fabr. The genus differs from *Læmophlœus* in many ways. The elongate parallel and very depressed configuration and long exposed terminal segment of the abdomen, give the species a very different general aspect, and to this should be added the entirely closed anterior acetabula; the hind tarsi are 4-jointed in the male, as in *Læmophlœus*, but the second joint is less elongate. The epistomal suture is distinct in all the species, which will distinguish them readily from any *Cryptolestes*—even the unusually elongate forms of the latter genus. The species in my collection may very easily be known among themselves by the following characters:

Head and sides of the prothorax rather convex, the latter densely microreticulate and dullish in lustre, the head above and beneath closely and strongly punctured. Body elongate, the sides somewhat arcuate; male with the eyes slightly before the base, moderately large and prominent; antennæ three-fourths as long as the body, rather slender, filiform, the basal joint stout, oval, the next three mutually subequal and shorter than the following joints; prothorax subquadrate, the sides feebly converging from the apex, where the angles are abruptly denticuliform and prominent, the basal angles sharp but not at all prominent; surface finely, not densely punctate, more strongly and closely outside of the strong sublateral furrows; elytra wider than the prothorax, the sides feebly arcuate and slightly converging from near the middle to the subcircularly obtuse apex; surface finely, rather closely, confusedly punctate, with two fine approximate sublateral striæ on each, and a coarsely impressed sub-sutural stria vanishing before the middle; last ventral segment only slightly longer than the preceding. Female nearly like the male but with still less exposed apex of the abdomen and less elongate antennæ. Length (♂ ♀) 2.0–2.9 mm.; width 0.63–0.73 mm. Europe. [*Cucujus testaceus* Fabr.].....\***testaceus** Fabr.

- Head and sloping sides of the pronotum nearly flat, the latter more shining though sometimes feebly reticulate; head always loosely and inconspicuously punctate; elytral punctures regularly serial. *America*.....2
- 2—Elytra each with two approximate sublateral striæ proceeding from a shallow foveiform basal impression, the inner generally greatly abbreviated, the sides gradually converging posteriorly as in *testaceus* and similarly having the last ventral segment but slightly longer than the others.....3
- Elytra without sublateral striæ or foveiform basal impression; size still smaller as a rule, the elytra shorter, parallel, nearly straight at the sides and more abruptly truncate at apex, the last ventral more evidently longer than the preceding.....5
- 3—Posterior extension of the inner sublateral stria extremely feebly marked; joints two to four of the male antennæ subequal in length; abdomen and under surface of the head rather alutaceous. Male elongate, depressed, shining, pale testaceous in color throughout; head subequal in width to the prothorax, finely, rather sparsely punctate above, more strongly and less sparsely beneath; epistomal suture broadly, posteriorly angulate; median stria not evident; eyes well developed, basal and moderately prominent; antennæ long and strictly filiform distally, four-fifths to scarcely more than two-thirds as long as the body, the basal joint twice as long as wide, narrowed rapidly toward base and as long as the next two together, one to three gradually less thick, five to ten subequal and very elongate, the eleventh slightly longer; prothorax parallel, quadrate, barely visibly wider than long, the sides very feebly arcuate, the apical angles generally minutely denticulate but variably so; surface very finely, sparsely punctate, rather more strongly and less sparsely outside of the strong sublateral grooves, adjoining which, medially on the inner side, there is usually a small impression; scutellum broadly ogival, fully twice as wide as long, with very few fine punctures; elytra nearly twice as long as wide, at base a little wider than the prothorax, nearly two and one-half times as long, the sides feebly arcuate and gradually converging posteriorly, except near the base, the apex truncate but with the angles broadly rounded; surface flat or feebly concave, polished and shining, prominent along the summit of the flanks; subsutural stria extending forward to the middle; punctures extremely small, feeble and scarcely observable; anterior acetabula rather broadly inclosed. Female in outline, size and general features as in the male, but with the antennæ very much shorter and with a loose 3-jointed club which is distinctly more than half as long as the remainder, the entire antenna shorter than the elytra; abdomen scarcely at all different. Length ( $\sigma^7$  ♀) 1.65–1.75 mm.; width 0.55–0.63 mm. Illinois, Indiana, New York (Catskill Mts.) and Pennsylvania (Philadelphia). [*Læm. testaceus* Csy. nec Fabr.].....**apertus** n. sp.
- Posterior extension of the inner stria very obvious, it being generally subentire.....4
- 4—Size larger than in *apertus*. Male rather more parallel, with similar



and very sparse, inconspicuous hairs, polished, pale testaceous throughout; head distinctly narrower than the prothorax, minutely, sparsely punctate above, more coarsely and closely so though shining beneath, the suture similar, the median stria visible basally; eyes larger, otherwise similar; antennæ barely visibly shorter than the body, as in *apertus*, except that joints two and three are equal and each much shorter than four, which is about twice as long as wide though evidently shorter than five; prothorax nearly as in *apertus* but rather more evidently wider than long, the apical angles minutely aciculate and subprominent; elytra similarly elongate and with gradually converging sides but scarcely visibly wider than the prothorax, the serial punctures extremely fine and feeble, barely traceable; abdomen more shining, the fifth segment dull, more closely punctulate and similarly about one-half longer than the fourth. Length (♂) 1.85 mm.; width 0.58 mm. Texas (New Braunfels).—Wickham. . . . . **illustris** n. sp.

Size smaller. Female nearly as in the two preceding in form, color and sculpture, polished; head slightly narrower than the prothorax, the punctures small and sparse above, coarser on the equally polished under surface; antennæ rather slender and short, not as long as the elytra, the first three joints decreasing evenly and rather rapidly in thickness, the club loose but shorter than in the female of the two preceding, being only as long as the preceding four joints combined, the eleventh joint much longer than the ninth or tenth, which are very nearly as wide as long; prothorax and scutellum as in the preceding; elytra at base a little wider than the prothorax, slightly less than twice as long as wide, the sides more rapidly converging in posterior three-fifths than in either of the preceding, the apex relatively narrower; striæ rather evident, even the one along the median line of each elytron being visible except basally and apically, the punctures minute and very indistinct; abdomen polished, finely, sparsely punctulate, the fifth segment only a third longer than the fourth, broadly rounded, somewhat shining though more closely punctulate as usual. Length (♀) 1.4 mm.; width 0.45 mm. North Carolina (Asheville) . . . . . **sobrinus** n. sp.

5—Punctures of the elytral series distinct and relatively coarse. Body parallel, depressed, highly polished and free from fine reticulation throughout, pale testaceous, the elytra more flavate. Male with the head slightly narrower than the prothorax, finely, rather sparsely punctate, the eyes distinctly before the base, rather small and globularly prominent; antennæ slender and filiform, four-fifths as long as the body, herissate with stiff setæ within, the basal joint subcylindric, twice as long as wide, one to three gradually diminishing in thickness, second shorter than three or four, which are subequal and shorter than any of the succeeding joints; prothorax but slightly wider than long, the sides nearly straight and feebly converging from apex to base, minutely denticulate in about basal half, the apical angles obtuse, the basal finely denticuliform and prominent; surface finely but distinctly, not very closely punctate, the punctures even

finer and sparser on the slope between the strong sublateral grooves and the sides; scutellum large, obtusely ogival, barely at all punctate; elytra as wide as the prothorax, but little over twice as long as the latter, the sides parallel and nearly straight, the apex abruptly and broadly truncate, the tip of each broadly arcuate; surface even, not at all prominent sublaterally, having nothing but the close-set series of strong and conspicuous punctures. Female nearly like the male but with the elytra distinctly more elongate, the prothorax slightly more transverse and the antennæ barely longer than the hind body; head and eyes nearly as in the male. Length ( $\sigma^7$   $\text{♀}$ ) 1.8–2.0 mm.; width 0.6–0.65 mm. District of Columbia to Florida and Brownsville, Texas; the single female from the latter locality is a little more slender. [*Cucujus modestus* Say and *singularis* Smith].

**modestus** Say

Punctures of the elytral series finer and much feebler to almost obsolete. 6—Form rather slender, subparallel, very strongly depressed, polished, pale testaceous, the elytra more flavate and translucent; hairs very sparse and inconspicuous, more visible at the sides of the pronotum; head about equal in width to the prothorax, minutely, sparsely punctulate above and beneath, the epistomal suture distinct, as is also the medial stria; on the upper surface, above each antenna, there is a large and rounded, feebly convex and impunctate area; eyes well developed, rather prominent, slightly in front of the base; antennæ ( $\text{♀}$ ) rather slender, somewhat longer than the hind body, the outer three joints very slightly dilated, the first three decreasing evenly and rather rapidly in thickness; prothorax just visibly wider than long, quadrate, the sides parallel, feebly arcuate in about anterior half, thence very slightly converging to the base, the apical angles very minutely subdentate, scarcely prominent; surface sparsely, extremely minutely punctulate, rather more visibly so between the fine grooves and the sides; scutellum ogival, not twice as wide as long; elytra parallel and feebly arcuate at the sides, three-fourths longer than wide, slightly wider than the prothorax and much more than twice as long, very flat, abruptly becoming vertical at the sides, these flanks each with two fine approximate striæ, their upper limit not prominent; punctures of the discal series rather large but shallow and extremely feebly impressed; pygidium short, closely punctate; last ventral broadly rounded, one-half longer than the fourth; coxæ all very remotely separated. Length ( $\text{♀}$ ) 1.6–1.65 mm.; width 0.5 mm. Southern California. [*Lam. nitens* Lec.].

**nitens** Lec.

Form somewhat shorter and less slender, somewhat less depressed, polished, testaceous, the elytra slightly more yellowish, less translucent than in *nitens*. Male with the head nearly as wide as the prothorax, minutely, sparsely punctate, the median stria extremely fine and faint, the smooth area above each antenna barely at all convex; eyes rather small, abruptly very strongly and globularly convex, at nearly half their length from the base; antennæ slender and filiform distally, two-thirds as long as the body, the basal joint rather longer than the next two, stout and oval, second much less thick though not quite so

thin as the succeeding joints, third somewhat shorter than two or four; prothorax distinctly wider than long, widest near anterior third, where the sides are broadly and feebly arcuate, thence converging perceptibly to the acute and plectrate basal angles, the apical prominent and dentiform; surface perceptibly convex, finely but rather strongly, loosely punctate, more finely and sparsely at the sides beyond the distinct grooves; scutellum having a few minute punctures, much less than twice as wide as long, obtusely ogival; elytra parallel, slightly wider than the prothorax and more than twice as long, two-thirds longer than wide, abruptly truncate at apex, the sides very feebly arcuate; punctures small but sharply defined, somewhat elongate, in regular series, the two striæ of the vertical flanks distinct, the upper not attaining the base; last ventral more punctate and one-half longer than the fourth. Female more elongate and parallel than the male, the eyes similarly small and abruptly hemispherical; antennæ nearly as long as in the male but rather less slender and with relatively less stout basal joint, the three outer joints very feebly enlarged; prothorax nearly as in the male but notably wider than the head; elytra more elongate, fully three-fourths longer than wide, not distinctly wider than the prothorax; fifth ventral almost as in the male. Length (♂ ♀) 1.45-1.6 mm.; width 0.45-0.55 mm. Texas (Houston).....*liquidus* n. sp.

*Apertus*, which was erroneously identified in my former work on the Cucujidæ, is one of a small group to which *testaceus* also belongs, though the latter is very different from any of our species; in this group the species become closely allied among themselves. *Gundlachi* Grouv., of which the author kindly presented me with two examples from Brazil and therefore possibly not exactly typical, seems undoubtedly to be closely allied to *nitens*, but with the punctures of the elytral series smaller, deeper and more distinct, though somewhat impressed and less sharply defined than in *liquidus*, where also the eyes are smaller and more globularly convex in both sexes; in *modestus*, also of the *nitens* group, the elytral punctures become very much coarser.

The sterna behind the anterior coxæ truly close the cavities to external view in this genus, but on closer examination it will be found that the formation is really the same as in *Læmophilæus*, that is, the broad median lobe of the prosternum is simply more dilated at the sides, so that it extends over the apices of the inwardly projecting lateral parts, apparently merely concealing the inner limits of the latter from view; there may still be a horizontal separation, though this necessarily would be very slight.

The species described by Dr. Sharp under the name *Silvano-*

*phlæus fraudator* (Biol. Cent.-Amer., Vol. II, Pt. I, p. 539; Pl. XVII, fig. 10) evidently constitutes at least a subgenus different from *Silvanophlæus*, for which I would suggest the name **Phlœ-ipsius** (n. subgen.). It differs not only in its different facies, owing to the broader suboval outline, but in the gradually incrassate antennæ distally.

### **Cryptolestes** Gangl.

In this genus, as represented by *ferrugineus* Steph., the tarsi are nearly as in the preceding, but the anterior coxal cavities are even more broadly and completely inclosed by the sterna, there being merely a fine suture between each side piece and the median lobe; the coxæ are very small. This character, in conjunction with the narrow parallel form of the body and absence of epistomal suture, shows that *Cryptolestes* is not a subgenus of *Læmophlæus* but a very distinct and well characterized genus, which however, as now constituted, is composite, the very slender forms, with short silvanoid antennæ in both sexes, being separated below under the name *Leptophlæus*. In *Cryptolestes* the male antennæ are filiform, or with very feeble enlargement of the last three joints. The American species in my collection are *ferrugineus* Steph., *rotundicollis*, *truncatus*, *quadratus*, *extricatus*, *pubescens* and *denticornis* Csy., and *puberulus* and *punctatus* Lec. The European *pusillus* Schön., does not occur here, so far as known to me, and the species so identified in my former work is *puberulus* Lec., the name of which must therefore be restored; this species occurs from southern California to southwestern Utah. Although undemonstrable at present, I also have strong doubts concerning the occurrence of the European *alternans* Er., in this country and believe some allied native species has been mistaken for it. Of *truncatus* Csy., I now have a good series of ten examples from Keokuk, Iowa; it is larger and more elongate than *ferrugineus*, and the male has very much smaller eyes; in the latter species the female is more elongate than the male, with the head fully as large and sometimes larger; I have specimens from southern California, Iowa and Natick, Massachusetts, that resemble completely the European examples sent me by Grouvelle; they are all females. *Rotundicollis*, also represented only by the female, is narrower and has shorter antennæ; *extricatus* has a rela-

tively much smaller head and prothorax when compared with the broad elytra. The Californian *pubescens* Csy., differs from allied species in its large and stout basal joint of the antennæ; *quadratus* Csy., is much narrower and has unusually long elytra when compared with the head and prothorax. The following species are hitherto undescribed:

**Cryptolestes disseptus** n. sp.—Broad, oblong, not parallel, very depressed, rather dull in lustre and pale brown in color throughout; pubescence short but close and distinct; punctures small but deep and very close-set throughout anteriorly, not quite so fine and feebler though close-set and confused on the elytra; head much narrower than the prothorax, the basal constriction extending across the dorsal surface chagrined but impunctate, the sides straight and converging in basal two-thirds, then constricted; eyes rather large and prominent, before the base, the tempora converging; antennæ fully as long as the elytra, with a loose but evident 3-jointed club, the basal joint not very stout, oboval, not as long as the next two, the next three equal in length and slightly shorter than five to seven, eighth a little shorter than the seventh; prothorax two-fifths wider than long, the base slightly narrower than the apex, the sides slightly arcuate and feebly quadrisinuate as a rule, the cusp points very feeble, all the angles minutely dentiform; surface nearly flat, becoming concave between the strong sublateral carinules and the sides; scutellum fully twice as wide as long, broadly angulate at apex; elytra broad and parallel, a third wider than the prothorax and fully three times as long, the sides feebly arcuate, rounding more in apical third; surface flat, with two discal carinæ and a strong sublateral keel, between which and the sides the surface slopes steeply and concavely; sutural line feebly elevated, flat; under surface rather dull; last four ventrals equal. Length ( $\sigma^7$ ) 1.7–1.9 mm.; width 0.7–0.78 mm. Texas (Columbus),—Schwarz.

Evidently allied to the Californian *horni* Csy., but with the undulations at the sides of the prothorax very shallow and feeble and the carinulate sides of the head, above the somewhat larger eyes, straight for a much longer distance from the base. The anterior coxal cavities seem to be closed behind much more narrowly than in *ferrugineus*, and, in this and several other ways, *horni* and *disseptus* form a distinct subgeneric group of *Cryptolestes*. Both of the specimens at hand seem to be males.\*

\* Since the above was written, I have received from the Fuchs collection a male of *horni*, taken in Ventura Co., California. The original description and figure of *horni* were evidently drawn from the female, the antennæ being notably short, and perhaps in that sex the undulations at the sides of the prothorax are somewhat stronger than in the male. At any rate, these undulations in this Ventura exponent of *horni* are no more conspicuous than in *disseptus*, but, as a species, it differs from the latter in its narrower and more parallel form—relatively narrower and more elongate elytra and

**Cryptolestes adumbratus** n. sp.—Narrower and more parallel, shining, rather dark testaceous throughout, the punctuation loose and the pubescence short, decumbent and inconspicuous. Male smaller and shorter than the female; head much narrower than the prothorax, the eyes very moderate in size and prominence, not quite basal, the carinulate sides above them nearly straight for two-thirds, then sinuously converging to the truncate front; punctures fine and well separated; there is a distinct canaliculation in about basal half of the length; antennæ slender, not quite as long as the body, the first three joints decreasing rather rapidly in thickness, the first more than twice as long as wide, distinctly shorter than the next three together, third slightly shorter than the second or fourth, the outer joints slender and cylindric, mutually subequal in length; prothorax transverse, two-fifths wider than long, the base distinctly narrower than the apex, widest near the apex, the sides arcuate, becoming oblique and straighter posteriorly; basal angles sharp and slightly prominent, the apical obtuse; surface flat, finely, rather sparsely punctate, the part between the sublateral lines and the sides convexly sloping, rugose, dull and with a very fine carinuliform line except apically; scutellum very short and transverse, broadly rounded; elytra oblong-oval, wider than the prothorax and not quite three times as long, the parallel sides evenly and distinctly arcuate, the apex circularly rounded; surface flat, each with three fine and slightly carinulate striæ, the sub-sutural obliterated basally, the intervals with rows of small indistinct punctures, the sublateral carina strong; between this and the sides the flat surface slopes very steeply and, just within the side margins, there is a coarse deep groove. Female larger and more elongate than the male, similar in sculpture, color and lustre, the head similar, the antennæ shorter, as long as the elytra, the outer three joints each much longer than the preceding but only very slightly enlarged, the basal joint stout and longer than the next two but not as long as in the male; prothorax not quite so transverse and a little less narrowed basally; elytra much longer, nearly twice as long as wide, otherwise similar; abdomen punctate throughout, of the usual structure. Length ( $\sigma^7$   $\text{♀}$ ) 1.5–1.75 mm.; width 0.52–0.62 mm. Texas (Borden).

This species belongs to an isolated group of the genus hitherto represented by *punctatus* Lec., and probably also by *denticornis* Csy., and several allied Mexican species more recently described by Dr. Sharp. The basal joint of the antennæ is unusually elongate in the males of all this group, though less so in the less highly developed males. In *punctatus* the first joint in this sex is notably less elongate in some individuals than in others, but it will be noted that it always bears the same proportional length, the entire antenna broader head; the antennæ, also, are not quite so long, and the punctuation of the under surface of the body, especially toward the sides of the head and prosternum, is much less evident. Two discal foveæ on the pronotum, arranged transversely, are more or less visible in all three of the examples of these two species at hand.

diminishing in length correspondingly; it is always as long as the next three joints combined and is therefore materially longer than in *adumbratus*; the head in the latter is smaller and, on the elytral flanks, there is a shallow groove just below the carina, besides the very coarse sulcus near the margin; in both species there is a distinct medial cephalic stria in basal half of the length.

### **Leptophlæus** n. gen.

The body in this genus is very slender, parallel and subcylindrically convex, reminding us somewhat of *Narthecius* and, as in that genus, the sides of the buccal opening are slightly produced forward. The head is somewhat elongate but with broadly truncate front as in *Cryptolestes*, with which it agrees also in the complete closure of the anterior acetabula and in the slender tarsi, in the posterior of which (♂) the last joint is about twice as long as the three basal joints combined. The eyes are moderate, prominent and at nearly their own length from the base, the antennæ short, with a short loose 3-jointed club, the ninth and tenth joints strongly transverse in both sexes. The prothorax is cylindrically convex, slightly narrowed at base, longer than wide and with straight sides, the sublateral line rather fine. The scutellum is very short and transverse. The elytra are relatively rather short as in *Narthecius* and only a little longer than the head and prothorax conjointly; each elytron has the three fine discal carinulate lines of *Cryptolestes*, but the sublateral carina of that genus is wholly wanting, the flanks gradually sloping from the convex dorsum. Just below the crest of the flanks there is a coarse deep groove, and the epipleura are defined above by a fine groove; the elytra cover the entire abdomen. The coxæ are only moderately remote and the last ventral segment slopes upward. The type of this genus\* is the *Læmophlæus angustulus* of LeConte; the European *perrisi* Grouv., also belongs to it and perhaps others. My representatives of *Leptophlæus angustulus* were taken by Schwarz at Detroit, Michigan, but the species was described as inhabiting the District of Columbia. I am unable to say whether the two are absolutely conspecific, though this is highly probable.

\* The name *Leptophlæus* is probably not well composed, but may be regarded as signifying a slender thing found in or near bark. It is probably as rationally founded as *Læmophlæus*, in which the *laimos* cannot be regarded as an adjective modifying *phloios*.

## Subfamily SILVANINÆ

The genera *Silvanus* Latr., and *Cathartus* Rche., are mutually distinguishable at once by the structure of the antennal club; in the former all the joints are perfectly free, while in the latter the eleventh joint is broadly and closely joined to the apex of the tenth and is considerably reduced in size. As represented by *cassia* Reiche, the eyes are very much more developed in *Cathartus* than in *Silvanus* and are less rigorously basal in position.

In some way not precisely known, but probably because of a surmise on the part of Mr. Grouvelle, the species described by me under the name *Silvanus gilæ* has been placed in synonymy with *Cathartus cassia*. No statement could be more singularly and obviously incorrect than this, for the two species do not remotely resemble each other and belong to different genera. *Gilæ* is a true *Silvanus*, of the *planatus* type, but it is very much stouter than *planatus*, with very much larger and less acutely pointed oblique prolongations of the anterior thoracic angles, very much coarser and denser sculpture, especially of the elytra, longer antennæ, with similarly perfectly free eleventh joint and smaller head, but particularly and especially by the notably small eyes, situated as usual at the extreme base. The eyes are not over a fifth as long as the head inclusive of the mandibles, while in *planatus* they are about a third as long. In any comparison with *Cathartus cassia*, the incongruity in regard to the eyes becomes still more startling, for in the latter species they are larger than in any other Silvanid type known to me, being in front of the base and more than a third as long as the head. *Silvanus gilæ* is a remarkably distinct species, not closely allied to any other so far described.

**Silvanus Latr.**

The following species is entirely unlike any other known to me. Possibly it may be an adventitious importation but I am unable to identify it among the old world species:

**Silvanus parviceps** n. sp.—Form moderately stout, convex and parallel, brown in color throughout and dull, the elytra and abdomen more shining; pubescence short, moderately distinct; head very small, not more than three-fifths as wide as the prothorax, slightly wider than long, rather coarsely and extremely densely punctate, feebly convex throughout above, broadly arcuato-truncate at apex and without trace of epistoma; eyes



moderate, not very prominent and at about a third their length from the base; antennæ distinctly longer than the head and prothorax, the shaft notably slender, first three joints diminishing rapidly in length and thickness, the fourth as thick as the third but shorter, barely longer than wide, seventh and eighth slightly thicker than the preceding four; club loose and broader than the basal joint, its first joint obtriangular and as wide as long, the second obtrapezoidal and wider than long, the third subcircular, perfectly free and nearly as wide as the preceding; prothorax parallel and exactly quadrate, the sides feebly arcuate and minutely serrulate, the acute basal angles slightly prominent; apical angles prominent and in the form of a deplanate semicircular lobe; surface evenly and moderately convex, very densely sculptured like the head; scutellum short and transverse; elytra just visibly wider than the prothorax, twice as long as wide, the parallel sides feebly arcuate, gradually rounding and converging in about apical third, the apex somewhat narrowly parabolic; series regular and composed of rather coarse but very feeble punctures; abdomen with the basal segment nearly as long as the next two, the last four equal, the punctures well separated and notably feeble; anterior acetabula very broadly inclosed behind; basal joints of the tarsi dilated and densely pubescent beneath. Length 2.4 mm.; width 0.68 mm. Apparently from New York, taken Oct. 21, 1888.

The very small head, rather long antennæ and quadrate parallel prothorax, with large deplanate lobiform anterior angles, impart a very peculiar appearance to this species, which will be recognized at once if previously described.

#### Subfamily HYPOCOPRINÆ

There can be but little doubt apparently, that *Hypocoprus* must be placed in the Cucujidæ near *Silvanus*, although there are some radical differences. The anterior coxæ are minute and globular in the same way, but the cavities seem to be rather widely open behind and the intercoxal process is narrower, extremely narrow when compared with the Læmophlœinæ. The general form of the body is not inconsistent with *Silvanus*, the antennal club is similarly loosely 3-jointed, and the abdomen is of similar structure, the last four segments subequal, but there is an exposed pygidium remindful of the Monotomidæ. The two European species described thus far differ each considerably from the following in several structural features:

***Hypocoprus tenuis*** n. sp.—Body very slender, minute in size, moderately and evenly convex, dull in lustre, the elytra slightly shining; color brownish-black, the elytra with suffused rufous tint behind about the middle nearly to the apex; pubescence pale, rather stiff, decumbent and

evident; integuments very strongly micro-reticulate, obscuring the moderate and rather shallow punctures, the elytra smoother, the fine confused punctuation more evident though very shallow; head nearly as long as wide, not at all constricted at base, evenly convex, convexly declivous anteriorly and narrowed to the truncate apex, without trace of epistoma, the antennæ inserted at the sides before the eyes, the base not concealed from above, rufous, not extending quite to the thoracic base, the basal joint moderately thick, barely longer than wide, second as long as the next two, fifth slightly larger than any one of three to eight; club about as thick as the basal joint, the eleventh joint not quite as long as the two preceding; eyes rather small, not very prominent, well in advance of the base, moderately faceted and minutely setulose; prothorax distinctly elongated, parallel, somewhat wider than the head but much narrower than any part of the elytra, the sides feebly arcuate, the angles obtuse and rounded, the basal rather broadly; scutellum small, short, twice as wide as long; elytra parallel, with evenly and feebly arcuate sides and arcuato-truncate apex, very nearly twice as long as wide; pygidium transverse, feebly punctate and reticulate; abdomen slightly shining, rather closely punctulate; tarsi slender, cylindric, plainly 5-jointed, the basal joint very short. Length 0.9-1.2 mm.; width 0.25-0.3 mm. Colorado. Levette collection and also taken by Mr. Schwarz.

One of the three examples at hand has the elytra much shorter than the other two, not quite three-fourths longer than wide; in this specimen the pygidium is less fully exposed than in the two more slender examples. In the Cucujidæ at large, the elytra are more elongate in the female than in the male, but in the latter sex the pygidium is usually more exposed than in the female. The short basal joint of the hind tarsi is at least not evident in this example with shorter elytra, so it is probably the male; its general coloration is sometimes pale, probably from immaturity.

In *Hypocprus quadricollis*, Reitter describes the prothorax as being no longer than wide. In *lathridioides* Mots., the form is narrower and more slender than in *quadricollis*, with the prothorax longer than wide but only just visibly narrower than the base of the elytra, the entire outline being more parallel. In *tenuis* the outline is slender, the prothorax much elongated and very distinctly narrower than any part of the elytra in both sexes. Although this or some allied form now stands in our lists under the name *lathridioides* Mots., it is to be noted that no locality other than the Armenian region and the Caucasus has been published in the European literature for *lathridioides*, and none other than southern Europe for *quadricollis*; that either of these should suddenly appear

in the high mountains of Colorado (Garland), and nowhere else, is highly improbable, and yet the genus in typical representatives seems to be very widely distributed. It is not mentioned in the "Biologia" as occurring in Mexico.

### ENDOMYCHIDÆ

The reasons for the separation of this family, together with Erotylidæ and the Coccinellidæ, as a distinct group of Coleoptera known as the Trimeria and placed at the extreme end of the series, were always obscure, and of recent years these families very properly have taken their place among the Clavicornia. The tarsi are not strictly trimerous in any of them. Even in Coccinellidæ there is always a pronounced node at the base of the last joint and this node sometimes becomes apparently a free joint. The Endomychidæ are with us a rather small family of fungous-loving beetles, frequently conspicuous in coloration and generally of wide distribution. It is probable that the larger forms are pretty thoroughly known, but among the very small species there is much yet to discover and record.

#### **Rhymbomicrus** n. gen.

The type of this proposed new genus is the very minute species standing in our lists under the name *Alexia lobata* Lec. In the genus *Alexia*, as remarked by Gorham, the base of the prothorax is straight and not medially lobed as it is in *lobata*, and it is impossible to assign the species to *Rhymbus*, because of the complete absence of the sublateral pronotal sulci. In some characters *Rhymbomicrus* seems to approach the Central American genus *Exysma* Gorh., especially the Mexican *Exysma lævigata*, which is probably generically different from the Central American type named *Exysma parvula*. The body in *R. lobatus* is evenly oval and strongly convex, the curve of the sides of the elytra evenly prolonged by the sides of the prothorax without break. The surface is apparently almost glabrous, impunctate and devoid of any kind of sculpture, uniformly dark piceous in color and shining; parallel with the basal thoracic lobe, and at a slight distance therefrom, there is a feebly impressed line not extending laterally beyond the limits of the lobe; there is no subsutural stria. The prosternal process is narrow

between the coxæ, expanding to a truncate apex; it is perfectly horizontal and free behind them. The middle coxæ are very widely separated. The first ventral segment is as long as the entire remainder of the abdomen. The antennæ and tarsi are broken off in my single example, which was taken in Kansas. Its dimensions are 0.85 by 0.68 mm.

### **Symbiotes Redt.**

The species of this genus differ greatly from those of *Rhymbus* in their oblong or oblong-oval form. The sublateral sulci of the pronotum are always broad and deep basally and the vestiture is long and more or less bristling. There is a distinct subsutural stria, sometimes flexed outwardly at base, and the punctures are always distinct and generally though not always serial in arrangement. In 1910 Mr. Blatchley supplied the first description of an American *Symbiotes* under the name *S. duryi* Walton MS. (Coleop., Indiana, p. 536). This was followed two years later by the description of *S. duryi* by Prof. L. B. Walton, with very satisfactory drawings accompanying (Ohio Nat., Feb., 1912, p. 461). As Mr. Blatchley states that his specimen came from Prof. Walton, it is to be presumed that the same material forms the basis of *S. duryi* Blatch., and *S. duryi* Walton. As Mr. Blatchley published his description first, the name is to be attributed to him in the records. Still later, Mr. Chas. Dury published two species (Cin. Soc. Nat. Hist.), *impressus* and *waltoni*, taken in the suburbs of Cincinnati and well characterized by the singular male sexual modifications at the apices of the elytra. On going over the material in my collection I find four distinct species, no one of which can be identified with any one of the three already published, showing that the genus *Symbiotes* is not only widely distributed in North America, but that it is undoubtedly one of our largest genera of Endomychidæ.

In the following species the elytral punctures have scarcely a trace of serial arrangement at any part:

***Symbiotes montanus*** n. sp.—Oblong-oval, shining, testaceous throughout, convex, the vestiture not dense but long and bristling, pale in color; head fully three-fifths as wide as the prothorax, minutely, sparsely punctulate; antennæ well developed, extending well behind the prothorax, the basal joint large, the second shorter and thinner, third not quite as long as the next two combined, four to eight compact, subquadrate,

gradually very slightly increasing; club long and loose, the ninth joint fully as long as wide, obtriangular, tenth obtrapezoidal, wider than long, the last well developed, obliquely pointed at tip; prothorax not quite twice as wide as long, the sides parallel and nearly straight, rounding in almost anterior half to the transverse apex, which is much narrower than the base; surface with a slender furrow along the straight basal margin, terminating at each side in a triangular sulcus; sides rapidly declivous to the coarse arcuate gutter in anterior two-thirds, the expanded posterior end of the gutter coarsely foveiform; surface with very minute sparse punctures throughout; scutellum small, strongly transverse; elytra widest near basal third, the sides arcuate, gradually rounding and converging thence posteriorly, the apex obtusely ogival; surface with fine sparse confused punctures throughout and a fine subsutural stria, which is impunctate and flexed strongly outward at base; mesosternum broad and finely bicarinulate between the coxæ. Length 1.4-1.7 mm.; width 0.75-0.9 mm. Colorado (Denver). Ten examples, of which three bear the label "found on a vessel near Key West," which is unaccountable to say the least.

There is no eastern species to which this is allied in any way closely. The male has a small indentation adjoining the suture near the apex, the impression enclosing a minute and strongly elevated tubercle. The coarse gutter along the sides of the elytra terminates abruptly in a strong fovea under and behind a rather pronounced humeral callus.

The three following species differ greatly from the preceding in having the median part of the pronotum more closely and strongly punctate than the rest of the surface:

*Symbiotes lacustris* n. sp.—Rather broad, oblong, moderately convex, shining, pale testaceous, the erect hairs rather long, coarse and yellowish; head minutely, remotely punctulate, three-fifths as wide as the prothorax; antennæ distinctly longer than the head and prothorax, the second joint very much shorter and narrower than the first, about as long as the next two together, third barely longer than wide and scarcely longer than the fourth, three to six closely joined, subequal and subquadrate, the seventh but slightly larger, the eighth shorter and transverse, ninth obtrapezoidal, wider than long, the tenth as long as the ninth but wider, the eleventh as long as the two preceding, stout, very obliquely pointed; prothorax slightly less than twice as wide as long, the subparallel sides feebly arcuate, becoming broadly rounded and converging anteriorly, the narrow basal groove joining the deep triangular sublateral sulci, the very coarse marginal gutter becoming finer and shallow basally and expanded at basal third into a large deep fovea; surface evenly convex, minutely, remotely punctate, except medially, where the punctures become relatively coarse, deep and close-set; scutellum short, transverse; elytra oblong, only very slightly wider than the prothorax and somewhat more than three times as long, the parallel sides very feebly arcuate, rather

rapidly, arcuately converging posteriorly, the humeri well marked and but slightly obtuse; punctures somewhat large and deeply impressed, arranged in rather irregular series, with minute remote punctures on the intervals, all the punctures bearing setæ, the subsutural stria very fine, not evidently punctate and only moderately flexed outward basally; basal segment of the abdomen not quite as long as the next three, each of which is much shorter than the fifth; broad mesosternum between the coxæ even, wholly devoid of carinæ; tarsi slender. Length 1.8 mm.; width 0.9 mm. Michigan (Detroit).

In the single type the fine subsutural stria becomes rather broadly and deeply impressed for a short distance on the upper part of the apical declivity. It will be noted that *lacustris* differs very greatly from *montanus*, not only in the even, minute and very remote pronotal punctulation of the latter, but in the seriate elytral punctures and absence of the two carinules on the intercoxal part of the mesosternum; the deep marginal gutter of the elytra, ending just behind the humeri in a fovea, is virtually similar. From *duryi* it differs in the less rounded sides of the elytra and shorter ninth antennal joint, from *impressus* in the very fine subsutural stria and short transverse eighth antennal joint, and, from *waltoni*, in the apparently shorter third and fourth antennal joints, more transverse prothorax, very feeble and impunctate subsutural stria of the elytra and in its somewhat smaller size.

**Symbiotes oblongus** n. sp.—Outline oblong, only moderately convex, shining, pale yellowish-testaceous in color, the bristling pubescence as in the preceding; head as usual, the antennæ much longer than the head and prothorax, the second joint shorter and much narrower than the first and longer than the next two, third and the following subequal, quadrate, closely joined, gradually increasing very slightly in size, the eighth transverse, ninth and tenth on the flattened side—as should always be assumed—subsimilar in outline, obtrapezoidal and slightly transverse, the eleventh not as long as the two preceding, obtusely and very obliquely acuminate; prothorax scarcely less than twice as wide as long, the parallel sides broadly rounding and converging in about apical half, the basal groove finer than in the preceding, the remaining features almost similar, except that the closer punctures of the median part are not so large and are less close-set or conspicuous; scutellum short, transverse; elytra unusually long, parallel and feebly, very evenly arcuate at the sides, rapidly rounding and circularly obtuse at apex, just visibly wider than the prothorax and distinctly more than three times as long, the lateral gutter and subhumeral fovea moderate, the humeral angles obtuse and slightly rounded; punctures rather coarse, moderately close-set in rather even series, with a few other minute scattered punctures, which become numerous and subgranose near the suture, the subsutural stria fine and shallow, stronger basally, where it is strongly everted along the base to the end of the

fourth series; mesosternum as in the preceding; hind tarsi slender, two-thirds as long as the tibiæ. Length 1.85 mm.; width 0.9 mm. Pennsylvania.

The single male serving as the type of this species has, on each elytron, very near the apex and suture, a small rounded convexity, bearing small and moderately close-set granules, and, on the sutural margin just before the convexity, a sharply elevated tubercle, the summit of which is deeply excavated. The elytra are much longer in proportion to the anterior parts, than in any of the other species. The last joint of the labial palpi, as usual in the genus, is very much inflated.

*Symbiotes pilosus* n. sp.—Outline narrower, more ovoidal and somewhat more convex than in the preceding, very pale yellowish-testaceous in color and polished, the erect pale hairs long and bristling on the elytra; head two-thirds as wide as the prothorax; antennæ rather longer than the head and prothorax, the second joint much shorter and narrower than the first; funicle compact, gradually increasing in thickness distally, the third joint quadrate, equal to the fourth or fifth, seventh slightly, the eighth scarcely more, transverse, ninth and tenth obtapezoidal, wider than long, the eleventh as long as the two preceding, gradually obliquely acuminate at tip; prothorax twice as wide as long, throughout nearly as in the preceding, the cluster of larger punctures very much smaller than in either of the two preceding and inconspicuous; scutellum similarly short and transverse; elytra barely visibly wider than the prothorax and rather less than three times as long, the sides almost evenly arcuate, gradually becoming posteriorly convergent from near basal third, where the width is scarcely perceptibly greater than at base, the outline posteriorly elongate-parabolic; lateral gutter behind the humeri unusually broad; punctures very moderate and rather confused in partial series, generally confused posteriorly, the fine subsutural stria broadly impressed anteriorly, but only feebly everted basally; under surface and tarsi as usual. Length 1.7 mm.; width 0.75 mm. New York (Bluff Point, Lake Champlain).

The single type is probably a female, as I can discover no special marks denoting the male sex, but the outline is very different from that of either of the two preceding species, the hind body being more gradually narrowed behind.

From St. Vincent, Pennsylvania, I have still another species, also apparently different from any of the others, but unfortunately the head and prothorax are missing; it was taken by P. J. Schmitt. The color is black and the general characters somewhat as in *oblongus*, but with shorter and more posteriorly narrowed elytra.

### Stenotarsus Perty

This is one of the largest genera of the family, but is not at all well represented in the colder parts of the world. Until now we have only recorded a single species within our faunal limits, *hispidus* Hbst., and I now add another as follows:

**Stenotarsus solidus** n. sp.—Similar to *hispidus* in sculpture and pubescence but more broadly oval, the coloration as in *hispidus*, except that the elytra are solidly black, excepting a narrow ambient tawny border throughout, the suture without trace of the pallid vitta of *hispidus*; head and prothorax nearly similar, the latter slightly less transverse; ninth antennal joint distinctly longer than the tenth and not subequal in length as it is in *hispidus*; elytra less elongate-oval, barely more than a third longer than wide; last joint of the hind tarsi still longer. Length 4.2 mm.; width 2.7 mm. North Carolina (Southern Pines),—Maenee.

The under surface of the body and the legs throughout are very uniform pale testaceous in color. I have *hispidus* from District of Columbia, New Jersey and Indiana.

### Aphorista Gorb.

The following species belongs near *vittata* Fabr., and has the same color pattern, but differs in many ways, particularly in antennal structure:

**Aphorista ovipennis** n. sp.—Small in size, ventricose, polished and testaceous in color throughout, the two feeble median convexities of the pronotum picescent, the elytra colored exactly as in *vittata*; head but slightly more than half as wide as the prothorax, minutely, sparsely punctulate, the eyes large and coarsely faceted as usual; antennæ black, the basal joint feebly rufescent, a little more than half as long as the body, the third joint as long as the next two, five to eight short, just visibly longer than wide, each a little shorter than the fourth; club gradually slightly broadening from the base, the ninth joint slightly elongate, tenth wider than long, the eleventh rufescent, obtuse, oval and obliquely pointed; prothorax three-fifths wider than the median length, formed as in *vittata*, impunctate; scutellum transversely oval; elytra feebly micro-reticulate and with fine sparse punctures, only about a third longer than wide and about one-half wider than the prothorax, the apex of each rather broadly rounded; under surface clear rufous throughout, minutely and sparsely punctulate and polished. Male with the sixth ventral small, narrow and rounded, the tibiæ all simple and straight; tarsi very short as usual. Length (♂) 4.0 mm.; width 2.3 mm. Lake Superior (Bayfield).

Differs from *vittata* in its smaller size, distinctly shorter outer antennal joints, relatively smaller head and prothorax, more ab-



breviated elytra, having their apices individually broadly rounded, and in the more evidently micro-reticulate ground sculpture, but, because of the general similarity, especially in ornamentation, it may possibly not rank higher than a subspecies of *vittata*.

### **Epipocus** Germ.

The numerous species of this genus often resemble each other to a very confusing degree in outward form and coloration, but are nevertheless distinguished by structural characters of value. I have at hand a male of *mutilatus* Gerst., taken by Wickham at Brownsville, Texas, and can state positively that it is not by any means specifically identical with *cinctus* Lec., as surmised by Gorham. It is not so large as *cinctus*, has a much more abbreviated outline of the body, far more numerous thoracic punctures, less oblique apical truncatures of the elytra in the male, with the external angle much less produced, and the inner side of the anterior tibiæ are not rapidly dilated beyond the middle as they are in *cinctus*. The two following species have not been described hitherto:

**\*Epipocus punctipennis** n. sp.—Outline very elongate-oval, moderately convex, uniformly brown in color throughout the body, legs and antennæ, moderately shining; pubescence not dense but long and rather bristling throughout; head not quite half as wide as the prothorax, rather deeply sunken; antennæ thick, about half as long as the body, joints three to five decreasing uniformly and rapidly in length, six to eight slightly elongate-oval, tenth and eleventh more obliquely pointed apically on the inner side, wider than long, the last broadly and very obtusely oval, not much shorter than the two preceding together; prothorax not quite twice as wide as the median length, of the usual form, deeply sinuate at apex, the sides strongly reflexed basally, deplanate apically and closely punctate, the oblique sulci extending beyond the middle, foveiform at base, the internal surface at their ends feebly impressed and impunctate; punctures outside the sulci, to the sides, moderate and rather sparse, over the central region coarse and sparse basally, finer and less sparse apically; scutellum finely, closely punctate; elytra elongate, two-thirds longer than wide, the sides subparallel and broadly, evenly arcuate, rounding rapidly at base to the prothorax, gradually arcuato-convergent posteriorly, the apices being straight and obliquely truncate; surface strongly and densely punctate and less coarsely so apically, the marginal gutter broad and deep. Male with the additional segment of the abdomen small, transversely rounded, the surface of the abdomen rather finely but deeply, somewhat closely punctate and with long hairs; anterior tibiæ gradually thickened distally and with a small denticle on the inner edge just beyond two-thirds from the base. Length (♂) 6.5

mm.; width 3.35 mm. Mexico (Colonia Garcia, Sierra Madre Mts., Chihuahua),—C. H. T. Townsend.

This very distinct species could only be compared with *unicolor* Horn, and from that it differs in the dense elytral punctures, relatively shorter third antennal joint, sparse punctures toward the base of the prothorax, more elongate elytra and in many other features.

\**Epipocus simplicipes* n. sp.—Body somewhat as in *mutilatus* in outline and coloration but a little narrower, the elytra conjointly evenly rounded at apex; surface polished, the pubescence fine, not at all dense and rather moderate in length: head barely half as wide as the prothorax, the eyes very prominent; antennæ not quite half as long as the body, somewhat slender, with broad club, black, the two basal joints and tip of the eleventh ferruginous, the third joint not quite as long as the next two combined, tenth strongly transverse; prothorax much less than twice as wide as the median length, of the usual form, the sides broadly, subevenly reflexed and more closely punctate; sulci rather narrow, feebly arcuate, extending beyond the middle, with two foveiform impressions near the sulcus, the anterior beyond the end of the latter; surface between the sulci broadly convex, evenly, deeply, rather coarsely and not densely punctate, with a fine impunctate median line; scutellum semicircular, ferruginous, finely, sparsely punctate; elytra rather strongly convex, one-half longer than wide, widest near the middle, at the tumid humeri distinctly wider than the prothorax, colored as in *cinctus* and *mutilatus*, the punctures very moderate in size and widely separated, the marginal gutter broad, disappearing completely beneath the elevated humeri; under surface ferruginous, the abdomen in great part black, shining, strongly and closely but not coarsely punctate; tibiæ in the male all straight and unmodified, the sixth ventral well exposed, broadly rounded and with its surface somewhat impressed transversely, except at the middle. Length (♂) 7.0 mm.; width 3.5 mm. Mexico (Orizaba).

The only species with which this can be compared is *tibialis*, but the tibial characters of the male, described by Gerstäcker as pertaining to that species, are completely wanting. The pronotum is ferruginous, with the entire area between the sulci and extending from base to apical fifth deep black. The two foveæ obliquely arranged at each side of the middle of the pronotum are bilaterally similar and do not appear to be adventitious.

#### EROTYLIDÆ

The Languriids occupy a very isolated position among the Erotylids, but, though constituting a distinct subfamily, there was little cause to consider them apart from the rest of the family in the

recent general catalogue edited by Dr. Schenkling. As pointed out by Gorham, they have a very peculiar geographic distribution, being components of most faunas though altogether unknown in Europe, Madagascar and New Zealand. Their peculiarly slender and elongate form of body is scarcely even suggested by any other Erotylid type.

#### Langurites Mots.

It seems quite certain that the confusing differences observable among individuals at present classed together under the specific name *Langurites lineatus* Cast., are not all due to variability; closer and more careful study with ample material, would doubtless show that a number of distinct species are now commingled. This is, at any rate, true of the two forms that I describe below; for they seem to be unequivocally distinct species from every point of view, though apparently variable in coloration:

\**Langurites apiciventris* n. sp.—Elongate-fusiform, convex, polished and glabrous, testaceous throughout, excepting a small spot on the occiput, a median vitta on the pronotum and a marginal stripe on the latter including the thick side margins, the scutellum and entire elytra, excepting a medio-basal region on each, gradually fading out in basal fifth or sixth, and the last two ventral segments, all of which are black; legs and coxæ deep black throughout, excepting the feebly rufescent extreme base of all the femora, and the antenæ are also deep black throughout; head excessively minutely and remotely punctulate, the superciliary ridges broad, limited within by a fine incised line; eyes large, prominent and very finely faceted; antennæ slender, not quite extending to the base of the prothorax, the 4-jointed club gradually formed as usual; prothorax of the usual outline, a fourth longer than wide, with the base a little wider than the apex, impunctate, the base lobed medially, the transverse sulcus straight; scutellum very smooth, convex and subcircular; elytra at base rather suddenly wider than the prothorax, gradually attenuate, nearly four times as long as wide, the punctures of the scarcely impressed series very gradually disappearing apically and more rapidly basally; abdomen impunctate, becoming strongly and densely punctate at the apex of the last segment. Length (♀) 12.8 mm.; width 2.35 mm. Mexico (Guerero).—Baron.

There is no intimation made by Gorham that the entire abdomen in *lineatus* is not red, and it is so described by Horn (Tr. Am. Ent. Soc., 1885, p. 139) in the case of an Arizona specimen supposed by that author to be *lineatus*; here, the last two ventrals are wholly and abruptly black and the locality—the western slope of Mexico—is different from any recorded by Gorham in the "Biologia."

**Langurites superciliatus** n. sp.—Male with the entire under surface and legs pale flavo-testaceous, the head entirely testaceous above, the prothorax and elytra colored as in the preceding species. Female with the entire under surface and coxæ pale, the legs throughout deep black, the femora all gradually and nubilously pallescent basally, the upper surface colored as in the male, except that there is no trace of a medial pronotal vitta and that the marginal black stripe is much reduced in width; the scutellum is blackish, but the entire basal part of each elytron is testaceous, the pale tint very gradually and nubilously fading out behind but traceable along the middle of each elytron almost to apical third or fourth. The antennæ are in great part missing in the male, but they are pale at least at base; in the female they are deep black throughout, extending to basal fourth of the prothorax, with the seventh joint intermediate in thickness between the sixth and the basal joint of the club, which increases very little in width thence to the end; superciliary ridges much narrower and more abruptly and strongly tumid than in *apiciventris*. Length (♂ ♀) 11.5–11.7 mm.; width 2.2–2.3 mm. Florida.

In the general proportion of the parts and in sculpture these two species are much alike, but *superciliatus* is shorter and relatively stouter. The last ventral of the female differs from that of the preceding species in having the rather strong punctures well separated toward the sides of the segment but fine and sparse medio-apically; in the male the last ventral has a small, broadly and evenly parabolic notch which is distinctly wider than deep. The differences in coloration between the male and female as detailed above are extraordinary, and I cannot say at present whether they are characteristic or in part fortuitous.

#### **Languria** Latr.

The following species is allied to *convexicollis* Horn, and possibly also *sanguinicollis* Chev., apparently agreeing more nearly with the latter in elytral sculpture, but differing among other ways in the coloration of the head:

**Languria interstitialis** n. sp.—Form stout, nearly as in *convexicollis* and of about the same size and coloration, polished, deep black throughout the body, legs and antennæ, except the prothorax, which is clear rufous above and beneath, the head generally more or less rufescent basally above and below, sparsely but distinctly punctate, more coarsely on the epistoma, the epistomal suture perfectly straight; lateral marginal edge strongly cariniform; antennæ with the first of the six joints of the club small, polished like the preceding joints and but little thicker, of the same shape as the second club joint but only half as wide; prothorax somewhat longer than wide, the sides distinctly arcuate, becoming slightly oblique and straighter only near the base; surface convex, very minutely, re-

motely punctulate, the basal striae very short but deep, oblique, the edge between them not black, the apical margin blackish; elytra across the rather broadly rounded humeri distinctly wider than the prothorax, not quite three times as long as wide, the apex obtuse and parabolic, the sides but feebly converging from the humeri; punctures rather strong, perforate, somewhat close-set in scarcely at all impressed series and gradually becoming fine apically, the intervals flat and with confused fine feeble punctures broadly along the middle of each; sutural series oblique at base, slightly impressed thence posteriorly but strongly and broadly so only toward apex; abdomen very minutely and remotely punctulate, the last segment abruptly less polished and with distinct scattered punctures throughout. Length 9.0–10.0 mm.; width 2.0–2.35 mm. Utah (Nephi),—Wickham. Four examples.

This species, though resembling *convexicollis* closely to external view, is really quite distinct, as shown by the structure of the antennal club, the sixth joint in *convexicollis* being large and strongly transverse like the succeeding joints, and the elytral intervals are smooth and impunctate, having only irregular rugiform creases. The antennal club in *interstitialis* comes far nearer to being 5-jointed than 6-jointed, showing that no generic distinction can be adduced from the number of joints in the club.

\**Languria irregularis* n. sp.—Much smaller than the preceding, moderately slender and convex, very shining, pale ferruginous throughout the body and legs, excepting the head, which is piceous-black, with the neck rufous, the elytra, which are bronzy-black to bright blue and the deep black last two ventral segments; antennæ but little longer than the prothorax, slender, the club abrupt, subparallel and broad, 5-jointed; first six joints forming a slender ferruginous shaft, the basal joint of the club also more or less pallid, the remainder black; head convex, sparsely punctate, orbicular, much narrower than the prothorax, the eyes large though scarcely at all prominent; prothorax but little longer than wide, broadly arcuate at the sides, slightly sinuate before the acute and slightly prominent basal angles; surface convex, polished, finely and sparsely but clearly punctate, the basal striae extremely small and inconspicuous; scutellum transverse, broadly angulate at tip, rufous; elytra barely three times as long as wide, at the rounded humeri only slightly wider than the prothorax, the sides almost parallel to about apical two-fifths, where they become more converging to the very narrowly parabolic apex; punctures notably coarse, very deep and unevenly spaced in scarcely at all impressed series, the intervals scarcely more than twice as wide as the punctures and without obvious punctulation; all punctures become completely obsolete, and the surface very smooth, at apex; last ventral segment with very moderate sparse punctures, bearing fine hairs. Length 6.8 mm.; width 1.5–1.6 mm. Mexico (Puente de Ixtla, Morelos),—Wickham.

A very distinct species that can be compared only with *cyani-pennis* Cr., and from this it differs in its much smaller size, very

much coarser, more widely and irregularly spaced serial punctures and wholly pale legs. The color of the elytra in one of the examples at hand is black, with strong bronze lustre, and in the other bright and pure blue, but there seems to be no difference otherwise.

#### Acropteroxys Gorh.

This genus is very closely allied to *Languria*, differing only, so far as can be observed externally, in the more gradually narrowed and more apically acute elytra; this gives to them a rather different habitus, however, and the name can be advantageously retained for that reason. The author assigns as the type a peculiarly sculptured Mexican species, described under the name *caudatus* and states that the American *Languria gracilis* of Newman, also forms part of the genus, but erroneously places a number of Mexican species with *gracilis* as varieties, which they cannot be regarded in any sense; one of these is described below under the name *aztecana*. It is to be presumed that *Languria divisa* Horn, can also enter this genus. The following is a species allied to *divisa* but differing greatly in the form of the antennal club:

**Acropteroxys thoracina** n. sp.—Rather slender and convex, the lustre above slightly alutaceous, polished beneath; body, legs, coxæ and antennæ black, the under surface of the head with a basal pale spot, the prothorax above and beneath ferruginous, with an irregular median basal spot of black above, and, beneath, a black area outside of each coxa but not attaining the sides; head about as wide as the prothorax, strongly but sparsely punctate, the eyes large and rather prominent; antennæ longer than the prothorax, the club as long as the remainder, subparallel, wide and 5-jointed; prothorax slightly elongate, parallel, with feebly arcuate sides and acute though scarcely prominent basal angles, the punctures moderate in size but deep, sparse; scutellum black, smooth, broadly angulate behind; elytra distinctly wider than the prothorax, with rounded humeri, between three and four times as long as wide, the sides straight and parallel to about posterior two-fifths, where they gradually and arcuately converge to the very narrowly obtuse apex, each tip narrowly rounded; punctures rather coarse, very deep, close-set in unimpressed series, gradually finer posteriorly but very nearly attaining the apices, the intervals each with a series of minute and widely spaced punctules; abdomen minutely, remotely punctulate, more distinctly and less sparsely toward tip; mesosternum coarsely and perforately punctate. Length 8.7 mm.; width 1.6 mm. Arizona (Huachuca Mts.),—Knaus.

At first I considered this to be *divisa* Horn, under which name it had been sent to me, but having since found an example, collected

in Colorado by Levette, which answers much better to the description of that species, I conclude that it is not *divisa* but widely distinct because of antennal structure. My single specimen of *divisa* has the black basal fascia of the pronotum entire from side to side but only occupies basal third of the length, with its anterior limit transverse and only feebly undulated; the antennal club has its basal joint, the seventh, not distinctly wider than long and very much narrower than the next joint, while in *thoracina* it is broad, twice as wide as the sixth and as wide as the eighth; this is a very striking difference. The structure of the antennæ was not alluded to by Dr. Horn in describing *divisa*, which is said to occur in Colorado and New Mexico.

\**Acroteroxys aztecana* n. sp.—Form slender, convex, shining, the pronotum sometimes very feebly alutaceous; color deep black, the elytra with feeble bronzy lustre; head, antennæ and legs black throughout; prothorax ferruginous, the upper surface black throughout basally, the black area prolonged anteriorly, gradually diminishing in width, to the apex, in the greatest development of the black area leaving only a large rufous spot at each side anteriorly; beneath, the surface, together with the coxæ, is rufous, becoming broadly black laterally except toward apex; head finely and sparsely but deeply punctate, the 5-jointed antennal club rather narrowly fusiform, the seventh joint scarcely wider than long, similar to the eighth in outline but a little smaller; prothorax between a fourth and third longer than wide, parallel, barely at all arcuate at the sides, the basal angles feebly prominent; base bisinuate; surface remotely and very minutely punctulate, the striae minute, the basal sulcus not attaining the sides; scutellum smooth, broadly angulate at apex; elytra fully four times as long as wide, at the broadly rounded humeri much wider than the prothorax, the straight sides thence just visibly converging, gradually more so and broadly arcuate posteriorly, to the narrow apex, the tips dehiscent, each very narrowly blunt; punctures moderate in size, deep, rather close-set in even and unimpressed series, gradually very minute posteriorly and wholly disappearing for a considerable distance before the tips; sutural stria impressed as usual except behind the scutellum, having near the apices a short dilatation; last ventral rather closely punctate except at base. Length 7.3–9.5 mm.; width 1.2–1.6 mm. Mexico (Puente de Ixtla, Morelos).—Wickham.

This species seems to be figured by Gorham on plate I, fig. 19, of the "Biologia," as a variety of *gracilis*, but it is not closely related, as in *gracilis* the entire prothorax above and beneath, excepting a regular entire median dorsal vitta, is ferruginous, and the seventh antennal joint is very much more markedly smaller and narrower than the eighth; the transverse basal impressed line of the pronotum

attains the sides, and each elytron is very much more obtusely rounded at tip. The elytra are more elongate in *aztecana*.

\**Acropteroxys pertenuis* n. sp.—Very slender, deep greenish-black through every part of the body, legs and antennæ, polished, the pronotum just visibly alutaceous; head finely, very remotely punctate, less sparsely toward the sides anteriorly, the eyes large and prominent; antennæ but little longer than the prothorax, slender, the 5-jointed club gradually broader from the base, the seventh joint longer than wide, the eighth a third wider and slightly wider than long; prothorax much elongated, nearly one-half longer than wide, equal in width to the head, parallel, the sides nearly straight, feebly everted basally, the basal angles acute, the base broadly bisinuate, the impressed line along the base not attaining the sides; surface remotely and very minutely punctate, with a rather broad impunctate axial area not attaining base or apex, the striae minute and obsolescent; scutellum broadly angulate, moderately transverse; elytra four times as long as wide, at the rather narrowly rounded humeri only slightly wider than the prothorax, the sides just visibly converging to near apical fifth, where they become moderately oblique to the narrow apex, each tip very narrowly rounded; punctures deep and perforate, almost half as wide as the intervals, rather close-set in regular unimpressed series, smaller but still very distinct posteriorly, though wanting at the apex as usual; intervals each with a widely spaced series of excessively minute punctules; last ventral distinctly but not densely punctate. Length 6.3 mm.; width 0.95 mm. Mexico (Puente de Ixtla, Morelos),—Wickham.

There is no species closely allied to this that I am able to find in the literature of the genus; it is the most slender Languriid known to me at present.

Of those Erotylids following the Languriinæ, the Dacnids seem to be placed at the head in the works of Mr. Gorham, but toward the last of the series in the arrangement followed by Kuhnt in his systematic catalogue of the Erotylidæ.

#### **Dacne** Latr.

Several authors, among whom are Thomson, Fairmaire, Chapuis and Horn, have used the name *Engis* Payk., for the species of this genus, instead of *Dacne* Latr., which is older by some four years, as subsequently noted by Crotch. The species of *Dacne* are rather numerous; they are small, elongate-oval or suboblong, with widely separated coxæ, slender tarsi and compact 3-jointed antennal club, the joints of which are very strongly transverse. The eight in my collection at present may be known as follows:



Color ferruginous, the elytra with a broad common black vitta from base to apex and a narrower one, obsolescent apically, at the sides, the under surface piceous-black, the abdomen in part nubilously paler, the legs brown. Head fully two-thirds as wide as the prothorax, finely, moderately closely punctate, the eyes somewhat prominent; antennal club oblong, longer than wide, its last two joints shorter and even more transverse than the first; prothorax four-fifths wider than long, the sides straight and feebly converging from base to about apical fifth, where they become rounded and more convergent; side margins rather thick; punctures deep, not very coarse, somewhat close-set, evenly distributed and conspicuous; base distinctly lobed medially; scutellum transversely oval, minutely punctulate; elytra elongate-oval, nearly twice as long as wide, distinctly wider than the prothorax, the base exactly equal to the thoracic base; sides broadly arcuate, rather more prominently so just behind basal fourth, the combined apices rather broadly parabolic; punctures not coarse but distinct, arranged in a few distinct even series, which disappear apically, the general surface irregularly, not closely and rather less strongly punctate; under surface finely, deeply and closely punctate. Length 3.0 mm.; width 1.25 mm. Nevada. . . . . *vittata* n. sp.

Coloration diversified but never vittiform on the elytra. . . . . 2

2—Elytral punctures always, at least in part, serial in arrangement. . . 2

Elytral punctures minute and without trace of serial arrangement at any part. . . . . 7

3—Base of the prothorax broadly and feebly lobed medially; head larger, very much wider than an elytron. Body rather abbreviated, convex, polished, very pale and uniform brownish-flavate throughout above and beneath in the type, the hairs extremely short and decumbent, scarcely observable; head fully three-fourths as wide as the prothorax, finely, strongly and closely punctate, the eyes rather small, moderately prominent; antennal club broad, oblong-oval, its last joint semicircular, longer than the preceding; prothorax relatively large, fully as wide as the elytra, two-thirds wider than long, the sides parallel and very evenly but moderately arcuate, the bead moderate; apex and base exactly equal in width; punctures rather strong but well separated throughout, the basal striae small and feeble though observable; scutellum moderately transverse; elytra scarcely one-half longer than wide, two and one-half times as long as the prothorax, elongate-parabolic in form in about posterior two-thirds, the sides becoming parallel and feebly arcuate basally and, at about basal third, very slightly wider than at base; punctures rather strong, not very close-set in even approximate series, obsolescent apically; under surface finely, rather closely punctulate. Length 2.2 mm.; width 0.9 mm. Idaho (Cœur d'Alene),—James A. Leyden.

*cephalotes* n. sp.

Base of the prothorax rather abruptly and strongly lobed medially; head relatively not quite so large. . . . . 4

4—Prothorax wider than any part of the elytra. Body short and broader than in the other species, convex, polished, pale yellow-brown in color throughout, the elytra more flavate, very nubilously

- toward the humeri; hairs sparse and extremely short; head scarcely two-thirds as wide as the prothorax, rather finely and closely punctate, the eyes large but not very prominent; antennal club broad and abrupt, oblong; prothorax large and strongly convex, two-thirds wider than long, the sides perfectly parallel and evenly, rather strongly arcuate throughout the length; punctures strong and close-set, becoming finer medially; basal striae extremely minute and barely at all indicated; scutellum small, transverse; elytra short, one-half longer than wide, obtusely parabolic in about apical half, the sides thence parallel and but feebly arcuate to the base, two and one-half times as long as the prothorax, the punctures rather small and not very close-set, evenly lineate, obsolescent apically; under surface very closely punctulate on the abdomen. Length 2.35 mm.; width 1.1-1.15 mm. Indiana,—Levette collection. *laticollis* n. sp.
- Prothorax never wider than the elytra, the latter black, with rufous areas. . . . . 5
- 5—Elytra each with a rufous area at the humeri but not at apex. Body ferruginous in great part, blackish beneath, the elytra when fully colored black, excepting the humeral spot, but occasionally the entire body and elytra is paler brown, with still faintly paler humeral region—probably from immaturity; head finely, densely punctate, the eyes moderate and not very prominent; antennal club broadly oval; prothorax much shorter than in *quadrimaculata*, two-thirds to three-fourths wider than long, the sides parallel to very feebly oblique, never more than very feebly arcuate, generally slightly more so apically, the punctures well separated, rather strong and close laterally; elytra three-fifths to two-thirds longer than wide, generally very slightly wider than the prothorax, parabolic in form in about apical half, with the punctures well separated in tolerably regular series, except suturally, the sculpture obsolescent apically as usual; under surface finely, closely punctulate. Length 1.7-2.75 mm.; width 0.8-1.2 mm. California (Lake Co. to Sta. Cruz Mts.). Abundant. [*Engis californica* Horn]. . . . . *californica* Horn
- Elytra maculate as in the preceding, the form still more elongate and materially larger in size, the hairs small, still sparser and less evident; color black above and shining, the head and pronotum obscure, the latter gradually blackish toward base; under surface nearly black, the pubescence of the abdomen rather dense and conspicuous; head nearly as in *californica*; prothorax similar in general outline and sculpture but not so abbreviated, only about three-fifths wider than long; apex arcuate, sinuate toward the moderately prominent angles; scutellum less abbreviated; elytra notably longer, three-fifths to three-fourths longer than wide, not wider than the prothorax, similar in general outline and sculpture to those of *californica*; abdominal punctures fine and close, the apical segments generally pallescent. Length 2.7-3.4 mm.; width 1.15-1.25 mm. California. Two examples, said by Dunn to have been taken in the vicinity of San Francisco. . . . . *elongata* n. sp.
- Elytra each with a large rufous humeral and apical area. . . . . 6
- 6—Form elongate-oval, convex, polished, black, the abdomen posteriorly

and the legs pale; upper surface almost glabrous; head two-thirds as wide as the prothorax, finely but strongly, loosely punctate, the eyes moderate in size, rather prominent; antennal club pale, very broad, oblong-oval; prothorax only about one-half wider than long, somewhat narrowed from the base to apex and having slightly arcuate sides, the apex rather strongly arcuate, sinuate near each anteriorly prominent and acute angle, the punctures rather small, deep and widely separated; striae completely obsolete; elytra two-thirds to nearly three-fourths longer than wide and obtusely parabolic posteriorly, very slightly wider than the prothorax and two and one-half times as long, the sides feebly arcuate, rather more prominently so near basal third; punctures small but deep, widely spaced in even approximate series, obsolescent apically; under surface finely pubescent and densely punctulate. Length 2.5-3.3 mm.; width 1.05-1.35 mm. Indiana, Pennsylvania and North Carolina (Asheville). [*Ips 4-mac.* Say].....**quadrimaculata** Say

Form much more abbreviated, smaller, not so shining, the hairs small and decumbent but distinct; color pale ferruginous, blackish except posteriorly beneath, the elytra piceous-black, broadly rufous at base, more briefly behind the scutellum and each with a large oval postero-external, more nubilous rufous spot, which sometimes almost disappears; head two-thirds to three-fourths as wide as the prothorax, finely, closely punctate, the eyes moderate in prominence but rather large; prothorax very much shorter than in the preceding, fully three-fourths wider than long, the sides subparallel and distinctly arcuate, the marginal bead thick; apex strongly arcuate in the middle, more advanced than the angles, the sinuses near which are generally feeble; punctures deep, dense laterally, rather smaller and not so close medially; surface broadly, feebly impressed at base at each side of the middle, the usual striae, however, wanting; elytra parallel and about as wide as the prothorax, barely one-half longer than wide, very broadly and obtusely rounded behind, nearly three times as long as the prothorax, the punctures strong, well separated in partial series which, as usual, are wholly unimpressed but in great part confused in arrangement antero-externally and minute posteriorly, though traceable almost to the apex; abdomen finely, closely punctate, the metasternum more coarsely, though wholly impunctate at its posterior margin. Length 2.4-2.7 mm.; width 1.0-1.1 mm. Utah (Provo),—Wickham.....**uteana** n. sp.

7—Body elongate-subrhomboidal, convex, rather shining, ferruginous, the elytra slightly darker though broadly clear toward the humeri, the abdomen dark brown, the legs and abdomen, posteriorly, pale; pubescence rather long, decumbent and distinct; head three-fourths as wide as the prothorax, finely, rather closely punctate, the eyes moderately large and prominent; third antennal joint longer than the next two combined, the eighth as wide as long, regularly obtriangular and wider than the preceding, the club broad and oblong, of the usual structure; prothorax relatively smaller than usual, nearly four-fifths wider than long, the sides converging from the base and nearly straight, a little more convergent apically, the

marginal bead finer than usual; apex almost transverse, the angles acute, somewhat anteriorly prominent; surface closely and rather strongly punctate laterally, more finely and loosely medially, the basal lobe strong and rather abruptly formed, the striae wanting; scutellum smaller and much less transverse than usual; elytra fully four-fifths longer than wide, nearly four times as long as the prothorax and, near basal third where the sides are somewhat prominently rounded, about a fourth wider than the latter, thence peculiarly attenuate posteriorly to the apex, which is narrower than in any other species, the sides arcuate; surface minutely, not very closely, confusedly punctate throughout; abdomen finely, rather closely punctate, the metasternum but little less finely though deeply. Length 3.0 mm.; width 1.35 mm. California (Siskiyou Co.). A single example taken by Albert Koebele. . . . . *picea* Lec.

The species described by LeConte under the name *Dacne picea* is very aberrant, not only in sculpture but in its peculiarly long attenuate elytra and relatively small transverse prothorax; it deserves a more distinguishing name than that given it by the author. I am somewhat puzzled on viewing the considerable series of *californica* in my collection. Typically, it would appear to have a piceous-brown color, clearer toward the humeri, a broad, short, parallel prothorax and comparatively short elytra, but by far the greater number of examples have black elytra, with a red humeral spot as in *4-maculata*, though smaller and without the apical red cloud of that species. It may always be distinguished easily from *4-maculata*, however, by the very much shorter and ferruginous, not deep black, prothorax, and, from *elongata*, though almost similarly colored and sculptured, it may be known by its more abbreviated form and smaller size. In *4-maculata* the prothorax is more extended longitudinally than in any other species. The abbreviated outline and inflated prothorax of the two mutually similar examples of *laticollis* at hand, give this species a peculiar habitus. In fact all the species above enumerated seem to be well differentiated among themselves.

#### **Pseudischyrus n. gen.**

The type of this genus is *Ischyrus nigrans* Cr., which is however synonymous with *Tritoma brunnea* Lac. (Mon. Erot., p. 222). The body is shorter and more oval than in *Ischyrus*, more nearly as in *Tritoma*, with the black forms of which it will doubtless be found commingled in many collections, but the eyes are very coarsely faceted as in *Ischyrus 4-punctatus* Oliv., which may be regarded as

the type of *Ischyryus*. In other ways, also, it differs so profoundly from *Ischyryus*, as to excite surprise that its essential differences were apparently unnoticed by Mr. Crotch. The last joint of the maxillary palpi is very strongly dilated and transverse and the tibiæ are triangular, both of which characters are at radical variance with those of *Ischyryus*. The antennal shaft is very much more slender and the 3-jointed club smaller, shorter and still more compact. Of *Pseudischyryus brunneus* Lac., I have a good series, taken at Palm Beach, Florida; it agrees very well with the original description but, when mature, is deep black above, with the head pale brown and the pronotum nubilously piceous toward the sides and apex as stated, the under surface piceous-black, the prosternum, metapleura, legs and antennæ pale; it varies very much in the size of the body—2.4–4.4 mm. The following is an evident additional species of the genus:

***Pseudischyryus acuminatus*** n. sp.—Elongate-subrhomboidal, strongly convex, black above, the pronotum nubilously pallescent toward the apical angles, the head brown; under surface, legs and antennæ colored nearly as in *brunneus* (*nigrans*), the pale parts of the surface more obscure, the elytra feebly alutaceous; head nearly half as wide as the prothorax, minutely, evenly and sparsely punctate, the eyes very coarsely faceted; antennæ small, not as long as the prothorax, the basal joint large and cylindric, the second small and subglobular, the shaft very slender basally, increasing in thickness distally, the third joint very slender, longer than the next two; club barely more than half as long as the remainder, oblong-oval, rather compact, the joints much wider than long; prothorax much longer than in *brunneus*, but little over one-half wider than long, the sides nearly straight, moderately converging from the base, slightly more arcuate anteriorly; apical angles rather blunt but anteriorly prominent, the apex transverse between them; base gradually and strongly lobed medially, finely margined except on the lobe; punctures very minute, sparse, less sparse but not distinctly larger laterally; scutellum slightly wider than long, broadly angulate behind, very finely, rather sparsely punctate; elytra about three-fourths longer than wide, two and two-thirds as long as the prothorax and, at basal third or fourth, distinctly wider than the latter, the sides evenly arcuate, gradually strongly converging to the apex, which is very much more narrowly rounded than in *brunneus*, the apex feebly and nubilously pallescent; punctures very fine, moderately close-set in very even, unimpressed and entire series, becoming feebly impressed laterally, the intervals sparsely, evenly and excessively minutely punctulate; abdomen finely, sparsely punctate, the flat triangular tibiæ asperately punctulate. Length 3.8 mm.; width 2.0 mm. Florida (Lake Co.).

The single example in my collection was received at some time

during the past ten years, but its source is unrecorded. The species may be distinguished easily from *brunneus* by its narrower, more rhomboidal form, longer prothorax, with more rectilinear sides, more acuminate elytra, more minute sculpture and several other characters.

I have not seen the *Ischyrys extricatus* of Crotch, and so cannot pass any opinion upon it, further than to say that it also is more likely to be a *Pseudischyrys* than an *Ischyrys*.

#### **Mycotretus** Chev.

This is a tropical genus and the *Triplax sanguinipennis* and *Tritoma pulchra* of Say, assigned thereto by Crotch, do not belong to it but are normal species of *Tritoma*, where their bodily facies would place them at first sight. There is considerable variety in the form of the mentum in *Tritoma*, and in *biguttata* it appears quite different from that of *unicolor*; in the latter it does not differ essentially from that of *sanguinipennis*, and the elytral striation toward the suture and scutellum is exactly the same in the latter species and *unicolor*, except in degree of development. The antennæ are alike in both, but in a Mexican species of true *Mycotretus* at hand, which the work of the author impels me to identify as *rubidus* Gorb., the mentum does not differ essentially; the long, loose and compressed 4-jointed antennal club is however of an entirely different order from that of any of the species named above. The following seems to be an undescribed species of *Mycotretus*:

\***Mycotretus nubifer** n. sp.—Evenly elongate-elliptic, strongly convex, shining, pale brownish-flavate in color throughout the body, legs and first seven antennal joints, the antennal club, the first joint of which is rather small, a nubilous spot on the occiput, six clearly defined spots on the pronotum, two rounded and widely separated near the base of each elytron, the inner of which is faint and nubilous, a sharply marked broad fascia at the middle, not reaching the sides and prolonged in a cusp on the suture half way to the scutellum and the elytral suture behind the fascia to the apex, very narrowly, black; on each elytron near the apex there is also a transverse discal area of such faintly nubilous character as to be barely noticeable; head fully half as wide as the prothorax, very finely, loosely punctate; antennæ longer than the prothorax, which is four-fifths wider than long, the sides moderately converging, very evenly and moderately arcuate from base to apex; surface minutely, evenly and not closely punctulate, the base unmarginated, having a gradually formed and rather broad median lobe, the edge at the sinuses having the punctures just visibly less minute; besides the six rounded and sharply defined

spots in transverse hexagon, there is a small transverse spot at the middle of the apex and one more distinct at the middle of the base; scutellum black, broadly angulate behind; elytra barely visibly wider than the prothorax and two and one-half times as long, at base exactly equal to the thoracic base, the sides evenly arcuate, the outline behind bluntly ogival; punctures small but strong, rather close-set in unimpressed and even entire series, the intervals with excessively minute loose punctulation; legs rather stout, the basal joint of the hind tarsi but slightly elongated. Length 4.9 mm.; width 2.75 mm. Guatemala (Quitché).

This species is allied rather closely to *6-punctatus* Gorb., but differs in the medial, and not post-medial, elytral fascia and in the two rounded and widely separated subbasal spots on each elytron, there being a single very large spot in that species, in which also there appears to be no trace of the small marginal maculæ at the middle of the apical and basal thoracic margins.

### **Mycophtorus** Lac.

The mentum in the small species assigned below to this genus, does not differ radically from that of *Mycotretus*; that is, there is a deep excavation at each side of the exposed surface, the two separated by a narrow carina; the posterior part of the surface is nearly flat but slopes rapidly toward base. The last joint of the maxillary palpi is very broadly dilated. The antennæ are short and stout, the third joint nearly as long as the next two, though only one-half longer than wide, joints 4-8 shorter than wide, the eighth rather transverse, the club very abrupt, broad, oblong and 3-jointed, the joints very transverse and perfoliate, symmetric. The eyes are finely faceted. The prosternum is slightly compressed, the tibiæ smooth and not broader apically, and the last joint of the hind tarsi is much shorter than the remainder.

\***Mycophtorus vernix** n. sp.—Oblong-oval, rather strongly convex, bright yellowish-scarlet red throughout the body and legs, the pale antennæ with the end of the funicle and basal part of the club in part nubilously picescent; upper surface with a highly polished varnish-like lustre, the entire under surface very minutely strigilate and duller; head less than half as wide as the prothorax, impunctate, broadly and feebly biimpressed between the antennæ, the frontal margin rather deeply, parabolically sinuate; eyes rather prominent and deep black as usual; prothorax twice as wide as the median length, the sides slightly converging, evenly and very distinctly arcuate from base to the broadly and strongly advanced and rather sharp apical angles, impunctate; base and apex unmarginated, the side margins very fine; base with a rather

short but narrowly rounded, very gradually formed lobe, the edges at the sinuses with a few coarse foveiform punctures; scutellum small, but little wider than long; elytra two and one-half times as long as the prothorax and, near basal third, where they are feebly inflated, rather distinctly wider than the latter, the outline behind the inflation very obtusely ogival, each with six unimpressed series of moderate but conspicuous, rather widely and unevenly spaced punctures, obsolete basally and for a longer distance apically, the fifth series however attaining the base; sterna and abdomen wholly impunctate. Length 3.7–4.2 mm.; width 2.2–2.45 mm. Isthmus of Panama (Colon),—Beaumont.

This species is undoubtedly closely allied to *pauperculus* Lac., from Colombia, but it is somewhat smaller and some of the statements of Lacordaire do not agree very well, as for example, in describing the sides of the prothorax, the author says “un peu arrondi sur les côtés antérieurs,” while here they are almost evenly rounded throughout the length; it is also said that the elytral punctures are “peu marqués,” while here they are conspicuous, and that the series “n’arrivent pas tout-à-fait jusqu’à l’extrémité,” while here they are not traceable in apical two-fifths of the length. The figure given by Mr. Gorham is very misleading, as the artist has drawn the large cells showing through the elytra, which however are not distinct in *vernix*, as punctures, the true punctures being omitted. The prothorax here is less transverse than in the specimen illustrated in the “Biologia,” and the apical sinus is very deep.

### **Tritoma** Fabr.

As stated by Gorham, it is very difficult to define this genus unequivocally, though the same might be said of many genera of Erotylidæ when structural characters of the mouth are relied upon. In fact, as in many other parts of the Coleoptera, it is the general habitus of the species which, after all, forms the surest criterion in the limitation of genera, unless there be some radical structural feature that interferes, such as the coarsely faceted eyes in preventing an assignment of *Ischyrys nigrans* Cr. (*Tritoma brunnea* Lac.) to *Tritoma*, the outward resemblance here being very marked. *Tritoma* is essentially a subarctic genus and the species are rather numerous; our own are systematically defined by Crotch (Tr. Am. Ent. Soc., 1873, p. 355), although he has made a few errors, and only one species, *tenebrosa* Fall, has been described since; this is entirely black, somewhat as in *unicolor* but narrower or less oval in form and



with the elytra densely alutaceous; it occurs in North Carolina. Some of the described species are made subspecies of *humeralis* by Crotch, but there is very little reason for this course, since large series of such forms as *humeralis* and *biguttata* show that the coloration is virtually constant; however, this is a minor point. *Sanguinipennis* and *pulchra*, which are placed in *Mycotretus* by Crotch, are to be restored to *Tritoma*, and this is probably true also of *Mycotretus simulator* Cr., though I have not seen that species. The *Tritoma brunnea* of Lacordaire, which is said by Crotch to be an immature form of *angulata*, is not that species by any means, but is the same as the one described by him (p. 354) under the name *Ischyrys nigrans*, as before stated. The author is probably correct in considering *Tritoma livida* Lac., as founded upon an immature specimen of *affinis*, but is apparently wrong in placing *flavipes* Lac., as a synonym of *angulata*. The description of *flavipes* shows that in general characters it resembles *angulata* rather closely, but the size is given as 1.5–2.0 mm. in length and 1.0–1.3 in width, which would not fit *angulata* at all. The following are some undescribed species received from time to time:

***Tritoma ornata*** n. sp.—Form oval, rather strongly convex, distinctly narrowed behind, especially in the male; upper surface black, the elytra with the large basal rufous areas coming together at or slightly behind the scutellum, very much as in *biguttata*; each elytron also has a large external rufous area at apex, the basal and apical areas joined by a very fine rufous line along the middle of the fifth interval, this line occasionally obsolescent; under surface deep black throughout, the apex of the abdomen rufous; legs pale; antennæ pale, with darker club, not quite as long as the prothorax, the third joint normally elongate; head not very shining, minutely, not densely punctate; prothorax nearly twice as wide as long, with converging and broadly arcuate sides, broadly advanced and slightly thickened apical angles and distinct basal lobe, the surface minutely, sparsely punctate and shining medially, alutaceous and less sparsely though still minutely punctate toward the sides, also with a series of larger shallow punctures along each basal sinuation; elytra shining, two-fifths longer than wide, parabolic, at the rather tumid humeri distinctly wider than the prothorax, the punctures moderate and in unimpressed entire series, the fifth outwardly arcuate basally, the fifth interval broadening correspondingly; under surface minutely, rather sparsely punctulate throughout. Length 3.0–3.8 mm.; width 1.8–2.25 mm. Wisconsin (Bayfield),—Wickham.

This species might be considered as allied to *vittata* Lec., but the latter is said to have the sides of the prothorax rufescent and the

elytra red, with a common sutural piceous vitta extending to the second stria, and another submarginal and slightly abbreviated at the ends; it is from New York.

*Tritoma nigripennis* n. sp.—Body oblong-oval, obtuse behind, convex, shining, ferruginous throughout above and beneath, but with the entire elytra black, the coloration exactly as in *affinis*; head fully half as wide as the prothorax, finely, evenly and sparsely punctate, the antennæ and eyes nearly as usual, the latter strongly convex; prothorax short, rather more than twice as wide as long, the sides converging and nearly straight from the base, more arcuate anteriorly, the lateral bead slightly thickened at the moderately advanced apical angles, the apex broadly sinuate, the bottom of the sinus slightly arcuate medially; basal lobe rather strong, gradually formed, somewhat narrowly rounded; punctures fine but distinct, sparse, less so laterally; scutellum piceous-black, finely punctured, smooth apically; elytra barely more than a third longer than wide, slightly behind the base a little wider than the prothorax, the sides broadly arcuate, only very moderately converging posteriorly, the combined apex broadly obtuse; punctures moderate but deep, close-set in even series, which are distinctly impressed, especially toward the sides, the intervals with sparse and fine but very evident punctulation; epipleura wholly black; under surface uniformly ferruginous, the sterna finely and sparsely, the abdomen strongly and, toward the sides rather closely, punctured. Length 3.8 mm.; width 2.15 mm. Florida (Lake Worth),—Kinzel.

Allied to *affinis* but more oblong and very much more obtuse at apex, differing especially, however, in the strong and rather close-set punctures of the abdomen.

*Tritoma carolinæ* n. sp.—Oval, convex and rather shining, pale flavo-testaceous throughout above and beneath, the elytra black, each with a large triangular basal spot, of the same color as the anterior parts, extending from the humeral callus to the scutellum and occupying rather more than basal fourth of the length; head half as wide as the prothorax, the eyes moderate in size and prominence, the punctures fine but strong and well separated; antennæ pale, the club infusate; prothorax not quite twice as wide as the median length, the sides converging and very feebly arcuate from base to apex, the latter broadly and feebly sinuate from side to side, the angles rather obtuse and barely at all advanced; basal lobe large and gradually formed, broadly rounded; punctures fine and sparse throughout; base a little narrower than the elytral base; scutellum with a few minute punctures; elytra less than one-half longer than wide, distinctly wider near basal fourth than at base, the sides there somewhat prominently rounded, thence arcuate and rather converging posteriorly, the apex moderately obtuse; punctures fine and not deep, close-set in regular series that are not impressed, except feebly toward the sides, the eighth at a considerable distance from the sides; intervals remotely and extremely minutely punctulate; under surface sparsely and excessively minutely punctulate throughout. Length 3.7 mm.; width 2.2 mm. North Carolina (Southern Pines),—Manee.

While belonging to the *affinis* group, because of its pale head, pronotum and under surface, this species differs very much in having a large testaceous spot at the base of each elytron, similar to that of *biguttata*, and not extending to the humeral angles as it does in the *humeralis* group.

### **Triplax** Hbst.

The species of this genus have a facies quite different from that of *Tritoma*, because of the more oblong and posteriorly obtuse form of the body, and the antennæ are longer and with a longer and looser club; they are likewise found in fungi of various species and are generally very abundant in individuals. The body is glabrous and highly polished, but the pubescence on the abdomen is frequently rather conspicuous. *Festiva* Lec., may be known at once by the broad pale fascia of the elytra, but the latter in all the other species are black or blue-black throughout, though paler basally in *antica* and *mormonalis*. Of these, the only species having the under surface entirely pale, described thus far from our fauna, is *thoracica* Say (*melanoptera* Lac.); it is abundant to the eastward of the Appalachians, but in the Mississippi Valley there are several varietal forms of it as follows:

**Triplax thoracica** ssp. *antennata* nov.—Similar to *thoracica* in coloration and sculpture, but with the prothorax less, and the elytra more, abbreviated, the antennæ a little longer, the third joint distinctly shorter as a rule than the next two combined; head similarly large, much more than half as wide as the prothorax. Length 3.4–4.8 mm.; width 1.7–2.3 mm. Missouri (St. Louis) and Indiana. Very abundant.

The corresponding dimensions of a good series of typical *thoracica* from New York (Catskill Mts. and Lake Champlain), southeastern Pennsylvania and one labeled Indiana, are 3.2–5.3 by 1.45–2.5 mm.

**Triplax thoracica** ssp. *obliqua* nov.—Stouter than *antennata* and with shorter antennæ, these in the female much shorter than the head and prothorax, with joints 3–5 decreasing uniformly and very rapidly in length, 5–7 a little longer than wide, the eighth as long as wide; head a little smaller; prothorax of similar length, the sides parallel basally, oblique and nearly straight in about apical half; scutellum shorter and more transverse; elytra broader; abdomen rather more strongly punctate. Length (♀) 4.9 mm.; width 2.5 mm. Missouri (near St. Louis).

**Triplax thoracica** ssp. *brevicollis* nov.—Very small in size, the female nearly as in the same sex of *antennata*, except that the head is relatively wider, being nearly three-fourths as wide as the prothorax, the antennæ

shorter and especially more slender, the club narrower; third joint not over twice as long as wide; prothorax much shorter, twice as wide as long, more parallel, the apex but little narrowed, the sides very evenly and distinctly arcuate; elytra rather more narrowly rounded at apex. Length (♀) 2.9 mm.; width 1.35 mm. Missouri (near St. Louis).

**Triplax thoracica** ssp. **convergens** nov.—Form nearly as in *antennata*, the coloration similar throughout; prothorax similar in length to that of *antennata*, relatively longer than in *thoracica*, the elytra relatively shorter than in that form of this very composite species; sculpture as in *antennata*, the head however is not quite so large and the antennæ a little shorter; prothorax peculiar, about three-fifths wider than long, trapezoidal, the long and rather conspicuously converging sides barely at all arcuate. Length (♂) 4.3–4.8 mm.; width 2.0–2.3 mm. Michigan (Marquette),—Sherman.

This subspecies is distinct in the trapezoidal prothorax; in *antennata* this part of the body is less narrowed from base to apex and the sides are always distinctly arcuate to subangulate.

The following is of the *thoracica* type but is much shorter and broader:

**Triplax latiuscula** n. sp.—Broadly oblong-oval, convex, ferruginous, with black elytra and piceous scutellum, the antennæ black, gradually pale basally; head large, much more than half as wide as the prothorax, strongly and rather closely punctate, the eyes moderate in size, prominent; antennæ as long as the head and prothorax, the latter short, fully twice as wide as long, behind the middle somewhat wider than at base, the sides conspicuously arcuate, becoming more oblique anteriorly, with the apical angles advanced and sharp, the foveiferous thickening very small; base broadly and strongly lobed medially; punctures rather coarse, deep and close-set, smaller and sparser broadly toward the middle and narrowly near the side margins; scutellum broadly angulate behind, almost punctureless; elytra one-half longer than wide to somewhat less, as wide as the prothorax, parallel, the sides broadly arcuate, circularly rounded in about apical third; punctures strong and deep, rather close-set in scarcely at all impressed series, the intervals with minute punctulation, generally forming a very uneven single series; under surface more opaque, not very coarsely but deeply and rather closely punctate throughout. Length (♀) 4.6–4.8 mm.; width 2.3–2.65 mm. Texas (the locality unrecorded). Two examples.

In comparing the type specimen of this species with the females of *thoracica*, the body is at once perceived to be shorter, broader and rather more closely and strongly punctate, but to differ especially by the short and laterally subinflated prothorax, with very strongly arcuate sides; there can be little doubt that it constitutes a distinct species.

**Triplax puncticeps** n. sp.—Body more elongate and with very much more rectilinear parallel sides than in any of the forms mentioned above, and also with a smaller head, the coloration as in *thoracica* throughout; head not quite half as wide as the prothorax, with rather coarse, deep, close-set punctures, sparser centrally, the prominent eyes moderate; antennæ not as long as the head and prothorax, gradually pale toward base as usual, the third joint but little more than twice as long as wide, as long as the next two, the eighth shorter than wide; first two joints of the club rather transverse; prothorax strongly convex, three-fourths wider than long, the moderately converging sides broadly and evenly arcuate from base to the sharp and advanced apical angles, which have a foviferous dorsal thickening; basal lobe broad and gradual, very much feebler than in *thoracica*; punctures relatively stronger and somewhat closer, perforate; elytra nowhere distinctly wider than the thoracic base, the parallel sides nearly straight, the apex broadly and subcircularly rounded, three-fifths or more longer than wide, the surface as in *thoracica*, except that the punctures of the series are coarser and less close-set; sterna strongly but not densely punctate, the abdomen much more finely and more pubescent than in the preceding, as in *thoracica*. Length (♀) 4.6 mm.; width 2.0 mm. Texas (Austin).

The single type represents a species truly of the *thoracica* order, but distinct in its narrower and more parallel form, smaller head, more convex prothorax with feebler basal lobe, coarser elytral punctures and more pubescent abdomen.

The two following species belong to the *californica* section of the genus, in having the body narrower and relatively more elongate, and, as in *flavicollis* Lac., with the under surface in great part fuscous or blackish.

**Triplax monostigma** n. sp.—Elongate, oblong-suboval, more depressed than usual, shining; head and prothorax above and beneath, mesosternum, legs and antennæ pale flavo-testaceous, the scutellum and entire elytra deep black, the pronotum with a small black spot at the middle of the apex; epipleura pale, the post-sterna and abdomen darker, piceous, the latter gradually pale posteriorly; head moderate, barely more than half as wide as the prothorax, with rather strong but well separated punctures, the eyes very moderate though prominent; antennæ as long as the head and prothorax, the third joint not quite as long as the next two, eighth somewhat longer than wide, the club rather less pale than the shaft and as long as the preceding four joints; prothorax trapezoidal, three-fourths wider than long, the sides moderately converging and very evenly, feebly arcuate from base to the rather sharp advanced apical angles, the apex more sinuate near the angles; base with a very broad, gradually formed lobe and an entire fine margin; punctures rather strong and deep but widely separated; scutellum transverse, broadly angulate; elytra at base just visibly wider than the thoracic base, still wider medially, one-half to three-fifths longer than wide, the parallel sides evenly

and very moderately arcuate, the apex broadly and subcircularly rounded; punctures notably coarse and deep, well separated in even and feebly impressed series, the intervals with remote and excessively minute punctulation; metasternum coarsely and sparsely, and the met-episterna similarly coarsely but closely, the abdomen finely and not very closely, punctate, the latter with the hairs moderately evident. Length 4.0-4.5 mm.; width 1.8-1.95 mm. Colorado (Levette collection and from an unrecorded source).

The two examples represent a species allied to *californica* but differing in the smaller head, in the anterior spot on the pronotum, less close-set punctures of the elytral series, pale mesosternum and much more depressed form of the body; the sculpture of the under surface also differs very much from that of *californica*, where also the hind body beneath is usually deep black.

***Triplax mormonalis*** n. sp.—Body elongate, more convex than in the preceding, shining, the head and antennæ rufous, the former with a faintly nubilous darker frontal area at the middle and the club of the latter slightly infusate, the prothorax piceo-rufous, broadly darker medially above and blackish, paler laterally, beneath, the elytra black, pale at apex and nubilously so at base, with the scutellum pale; epipleura piceous; hind body beneath piceo-rufous, with the abdomen blackish, pallescent peripherally, the legs pale throughout; head large, nearly two-thirds as wide as the prothorax, rather finely but strongly, somewhat closely punctate, the eyes moderate; antennæ nearly as long as the head and prothorax, the third joint barely twice as long as wide and much shorter than the next two, the eighth distinctly elongate; first joint of the club obtriangular, not as wide as the second, both more or less transverse; prothorax three-fourths to four-fifths wider than long, the sides very feebly converging from the base and almost perfectly straight, rounding inward at apex, where the moderately advanced and rather blunt angles have a remarkably developed dorsal thickening, bearing the usual coarse fovea; apex transverse between the angles, the base finely margined and broadly, feebly and gradually lobed medially; punctures rather coarse and close-set laterally, becoming fine and sparse medially; elytra at base perceptibly wider than the thoracic base and, at the middle, still wider, one-half longer than wide, the parallel sides broadly, evenly arcuate, gradually more converging behind about the middle, the apex broadly rounded; punctures only moderate in size but deep and close-set, in very even and wholly unimpressed series, the intervals with excessively minute punctulation frequently in irregular single line; prosternum and anterior half of its side-pieces coarsely and closely punctate, the posterior half of the latter abruptly impunctate; metasternum and its episterna less coarsely but strongly punctate, the latter more densely; abdomen finely, loosely punctate and with conspicuous pubescence. Length 3.4-3.7 mm.; width 1.4-1.7 mm. Utah (Provo),—Wickham.

This species can be compared only with *antica* Lec., from Oregon,

but it differs in not having the head and prothorax black, though darker than in the *californica* section, in its pallid and not black scutellum, and, so far as can be inferred from the descriptions of LeConte and Crotch, in its pale elytral apex and smaller size of the body. The thickening of the anterior thoracic angles on the dorsal surface is much more conspicuous than in any other species, and the included fovea is larger.

The following is a conspicuous species to be placed near *frontalis* Horn:

***Triplax occipitalis*** n. sp.—Body very elongate and parallel, the sides scarcely arcuate, shining as usual; coloration exactly as in *thoracica* throughout, except that the head is black, rufous only at base above and beneath, large, more than two-thirds as wide as the prothorax, the sides along the eyes and epistoma finely carinulate, the punctures not very coarse but deep, sparse and irregularly distributed; eyes rather large, prominent; antennæ black, extending behind the prothorax, having a purely 3-jointed club, the elongate eighth joint a little shorter but scarcely at all thicker than the seventh; prothorax only one-half wider than long, almost perfectly parallel throughout and with very feebly, evenly arcuate sides, the apical angles obtuse and but slightly advanced; base broadly and arcuately lobed medially, the lobe alone margined; punctures fine and everywhere sparse, though more remote medially; basal margin with a series of coarse punctures laterally; scutellum barely less than black; elytra slightly wider than the prothorax and scarcely three times as long, the series of moderate and well separated punctures not at all impressed, the three outer series abruptly ending behind the pronounced humeral prominences; intervals with minute sparse punctulation; under surface strongly and closely punctate, the abdomen finely and densely, the apices of the segments smooth. Length 5.25 mm.; width 2.25 mm. Michigan (Marquette),—Sherman.

The peculiar subquadrate prothorax, large and almost entirely black head and fine dense abdominal punctures, are features distinguishing this species at once from *frontalis*, where, also, the scutellum is rufous. The last joint of the maxillary palpi is extremely dilated, being four or five times as wide as long.

In all the species of the *thoracica* type, and also in *californica*, the seven shadowy spots on the pronotum are distinctly evident as a rule.

#### Hæmatochiton Gorh.

The following, from the mountains of southern Arizona, resembles very closely to superficial view, the Durango type species named *elateroides* by Gorham, but there are some points of divergence as will appear:

*Hæmatochiton biscalptum* n. sp.—Form very elongate-oval, rather strongly depressed and shining, deep black in color, including the legs, antennæ and most of the mouth organs, the elytra red, with the extreme tip black; head half to three-fifths as wide as the prothorax, impressed near the base of each antenna, the punctures not very coarse but strong and somewhat close, largely wanting toward the middle basally; eyes rather large, finely faceted, only moderately prominent; last joint of the maxillary palpi obtriangular but wider than long; antennæ shorter than the head and prothorax, the third joint longer than the next two, the eighth slightly wider than long and a little wider than the preceding, the club almost as long as the five preceding joints; prothorax not quite twice as wide as the median length, the sides moderately converging and very evenly arcuate from base to the sharp and distinctly produced apical angles; base very finely, feebly margined, the median lobe broadly rounded but distinct; surface with coarse and elongate-oval shallow umbilicate and rather widely but irregularly separated punctures in lateral fourth, the median half of the surface abruptly with fine, sparse punctures and a median impunctate stripe not reaching the apex; along the basal sinuses there is a series of still coarser punctures; scutellum angulate, black, minutely, sparsely punctulate; elytra long, nearly four times as long as the prothorax, the two bases exactly equal, at the middle slightly wider, the sides very evenly arcuate, the apex broadly rounded; punctures somewhat close-set in unimpressed series and suturally rather feeble, those basally coarser, especially in the fifth series at base, the series seven in number, all obsolete posteriorly, the sixth not attaining the base, the seventh represented only by a short series at the middle; across the base there is also a series of punctures; under surface almost impunctate; tibiæ finely, densely punctulate, except basally, and distinctly pubescent. Length 4.8–5.9 mm.; width 2.2–2.6 mm. Arizona (Chiracahua Mts.).

It can safely be assumed, if the pronotal punctuation has the strikingly dual character in *elateroides* that it has here, that this fact would be alluded to in some way by the author; he makes no statement concerning it, however. But there is a lack of agreement also in recording the striation of the elytra, the striæ being definitely stated to be eight in number in *elateroides*; in *biscalptum* there are six rather complete series, the seventh short and medial and the eighth, completely obsolete; it is true, however, that the eighth is said to be "almost obsolete" in *elateroides*. Again, the femora are said to be a little compressed in that species, but there is no indication of anything like an obvious compression in the femora of *biscalptum*.

#### *Ægithus* Fabr.

Of the species allied to *cardinalis* Chev., there seem to be several still undescribed, besides *politus* Gorb. The two following may readily be identified:



\**Ægithus rhombifer* n. sp.—Body broadly rounded, very convex, the elytra cordiform and obliquely pointed behind; color bright red, the entire under surface, excepting the head, broad sides of the prothorax and the wide and basally impressed epipleura, deep black, the narrowly convex median part of the prosternum piceous and the mesosternum between the coxæ testaceous; legs and antennæ wholly black; head rather more than two-fifths as wide as the prothorax, smooth, the epistoma loosely punctate, the eyes very prominent, the fine side margins above them well developed; antennæ a little longer than the head and prothorax, slender, smooth, the third joint as long as the next two, the eighth but little thicker than the seventh, the club subparallel, pubescent and much compressed as usual; prothorax nearly three times as wide as the median length, the sides very strongly converging, the apex deeply sinuate; surface broadly flattened laterally, having at the middle from apex to base, a subrhomboidal black area, which is much narrower than long, rounded at the sides, widest near basal fourth and thence rapidly narrowed to the middle of the base; scutellum black; elytra widest near basal third, where they are fully four-fifths wider than the prothorax, obliquely and arcuately narrowing to the acutely ogival apex; in profile they are highest at about the middle, almost equally and arcuately sloping thence anteriorly and posteriorly; surface impunctate and with a varnish-like glaze; under surface almost impunctate. Length 10.3 mm.; width 7.8 mm. Honduras (San Pedro Sula). A single example.

In *politus* Gorb., which this seems to resemble in some features, it may be known by the rhombiform thoracic spot. The prosternum is not produced medially at its anterior margin as described of *politus*.

\**Ægithus binarius* n. sp.—Broadly rounded, strongly but very evenly convex, red, the elytra alutaceous; pronotum with a small transverse black spot at the middle of the apical margin and a larger and less transverse spot at base, just before the scutellum, which is black as usual; under surface colored as in the preceding, except that the prosternum is not more pallid in color or elevated and convex medially, its anterior margin not at all produced medially; legs and antennæ throughout black; head nearly as in the preceding, except that there is some minute punctulation anteriorly behind the punctate epistoma; antennæ with the second joint not as long as the next two, the eighth nearly twice as thick as the seventh and slightly wider than long, shining, the club very densely punctulate, pubescent and opaque, much more densely so than in the preceding; prothorax not so short, barely two and one-half times as wide as the median length, nearly similar in shape but with the surface less flattened laterally; elytra very different, widest at the middle, with the sides almost evenly arcuate, gradually but rapidly converging posteriorly to the very broadly ogival apex; surface in profile evenly convex from base to apex, having some feeble creases; under surface impunctate, shining. Length 10.5–10.7 mm.; width 8.0–8.2 mm. Mexico (Guerrero).—Baron.

The peculiar maculation of the pronotum will easily distinguish

this species from *cardinalis*; it almost exactly resembles *rufipennis* in general form and size, but the eighth antennal joint is broader, more nearly as in *clavicornis*, of which I have a good series from Honduras and Panama.

\**Ægithus abruptus* n. sp.—Rather elongate-oval, convex, very dull in lustre, pale piceous-brown throughout the body and legs, rather paler beneath, the last five or six antennal joints black; head rather more than two-fifths as wide as the prothorax, flat above, with some minute sparse punctulation, a little stronger on the epistoma; at each side just above the antenna there is a pronounced ridge, which is prolonged posteriorly above the eyes in a very fine line, the eyes well developed and prominent; antennæ fully as long as the head and prothorax, with a broad 4-jointed club, the seventh joint black and intermediate in thickness between the sixth and eighth, the sixth only piceous though much darker than the preceding joints, the third nearly as long as the next two; prothorax two and one-half times as wide as its median length, the sides very strongly converging, the apex deeply sinuate, all the edges finely margined, the basal lobe broadly rounded but pronounced; surface impunctate and very feebly but evenly convex throughout the width; scutellum nearly as long as wide, obtusely ogival; elytra at base abruptly wider than the thoracic base, not quite one-half longer than wide, widest before the middle but with very evenly arcuate sides from base to the obtusely ogival apex; surface of each with three double series of distinct punctures, a subsutural series and, near the sides, a very confused series, all the double series vanishing at a considerable distance from the apex and the third gradually obsolescent basally; the general surface has also some minute sparse punctulation; under surface almost punctureless, the abdomen sparsely puberulent and with very minute sparse punctulation. Length 7.2 mm.; width 4.4 mm. Mexico (Rio Balsas, Guerrero),—Wickham.

This species is allied closely to *högei* Gorh., also from Guerrero, but the author states of *högei* that “only the two inner pairs of striae are visible, and they are very faint and almost obliterated, except in the middle.” This language will not apply even approximately to *abruptus*, and I infer, therefore, that the two are distinct, either specifically or subspecifically.

#### Lybas Lac.

The following species is remarkable in coloration, in its varnish-like lustre and almost punctureless elytra and does not agree with any of the published descriptions:

\**Lybas cruentissimus* n. sp.—Broadly, evenly oval and very strongly convex, highly polished and deep yellowish-red throughout the body and legs, rather paler in tint below than above, glabrous, excepting the tibiæ,

which are finely and densely punctate and conspicuously fulvo-pubescent; head two-fifths as wide as the prothorax, finely and loosely but distinctly punctate, with a broad longitudinal impression at each side, which gradually disappears posteriorly; eyes large and prominent, finely faceted; antennæ about as long as the thoracic median line, deep black, the two basal joints pale, the third joint shorter than the next two, the 3-jointed club not very closely pubescent, eighth joint a little longer and thicker than the seventh; prothorax but little more than twice as wide as the median length, the strongly converging, evenly and moderately arcuate sides not quite coarctate with those of the elytra, the tips of the humeral angles exposed; apex deeply sinuate, the angles dorsally much thickened, with the fovea moderate; base transverse, but with a rapidly formed, very strong, somewhat narrowly rounded median lobe, which partially conceals the base of the scutellum; surface evenly convex, with sparse and excessively minute punctulation, rather more visible toward the sides; scutellum transverse, broadly ogival; elytra two-fifths longer than wide, widest barely before the middle, with nearly evenly arcuate sides throughout, rather more so posteriorly, the apex very broadly ogival; surface smooth throughout, except some feeble punctures in the sutural series in nearly anterior half; the serial cellular structure shows feebly through; prosternum compressed medially, the anterior margin acutely prominent at the middle. Length 8.2 mm.; width 5.8 mm. Guatemala (Quirigua).

The single example of this species was very kindly sent me by Prof. T. D. A. Cockerell, together with some other interesting forms, such as *Megischyrus sanguinolentus* Lac., *Coccimorphus dichrous* Lac., *Zonarius zebra* Fabr., and *Ægithus quadrinotatus* Chev. I understand they were collected by Mrs. Cockerell. The only species with which this can be compared, is the Mexican *Lybas granatus* Lac., and, according to the description, this has eight series of impressed punctures and the knees, tarsi and most of the tibiae are blackish-brown, no vestige of which characters can be perceived in *cruentissimus*. *Lybas carbunculus* Lac., of Yucatan and Tabasco, is a much smaller species (5 by 2.5 mm.) and it also is described as having rows of impressed punctures on the elytra, though the legs are similarly wholly pale.

There is in my collection a specimen of the very striking *Erotylus quagga* of Lacordaire, from Natá, Panama, which comes apparently within the faunal regions considered in the "Biologia," but which is not mentioned in that work. It was originally described under the name *onagga* (Lac.,—Mon. Erot., p. 427), which name is, singularly enough, repeated in the next description, though not appearing at all in the index. While the name *quagga* eminently fits the animal, *onagga* is meaningless, showing, at least from abstract reasoning,

that it is a misprint and therefore may as well be corrected, on the principle that specific words, if not conveying the contemplated meaning, may be altered. This principle, however, does not apply to generic names.

### MYCETOPHAGIDÆ

In my previous work on this family I unfortunately adopted the name Tritomidæ, which was given out by the most authoritative European catalogue as being the correct designation, notwithstanding the fact that the word *Tritoma* was wholly inappropriate for what had been called *Mycetophagus*. Subsequently the compilers of this catalogue determined that their previous course was wrong and that Mycetophagidæ is the proper designation for the family; so we will all change back again—that is all except those who were wise enough never to have made the change.

#### *Mycetophagus* Hellw.

On considering more carefully the description given by Melsheimer (Proc. Acad. Phila., 1844, p. 114) of the form named by him *bimaculatus*, now considered a synonym of *flexuosus* Say, I am quite convinced that, until rediscovered, it would be safer to regard it as a subspecies of *flexuosus*, rather than a synonym. This appears to be evident on looking over extended series of both *punctatus* Say, and *flexuosus*, when the slight amount of variation in the color pattern becomes apparent. *Bimaculatus* is said to have the elytra rufo-testaceous, each with two large irregular black spots, the anterior attaining the lateral margin but not the suture and the posterior contiguous to the suture, but scarcely attaining the lateral edge. The probabilities are that it is a distinct species, which has never since been taken so far as known.

A number of undescribed species have recently been received, belonging in every case to *Mycetophagus* proper, and in no instance to any of the subgenera heretofore defined. The following two are allied to *subdepressus*:

***Mycetophagus quadralius* n. sp.**—Outline notably abbreviated and relatively broad as in *subdepressus*, not very shining, the pubescence rather dense on the elytra; color above black, each elytron with a quadrate humeral, and a more irregularly oval subapical, testaceous spot, the humeral not including the actual humeral angle; under surface brown,

the legs still paler; head more than half as wide as the prothorax, somewhat closely punctured and pubescent; antennæ thick, gradually narrowed basally, longer than the head and prothorax (♂) and with the fourth joint distinctly shorter than the third, though slightly elongate, the color piceous-black, gradually pale basally and with the last joint also pale as usual; prothorax fully twice as wide as long, of the usual form, the punctures distinctly separated by the shining interspaces, the subbasal pits deep; elytra barely one-half longer than wide, at base as wide as the prothorax, at, or rather behind, the middle, slightly wider, the sides broadly and feebly arcuate, the apex gradually very broadly rounded; striæ feebly impressed and with rather small and feeble punctures, the intervals finely and densely punctate, scarcely at all shining; under surface densely punctulate. Length (♂ ♀) 3.1-4.2 mm.; width 1.6-1.85 mm. North Carolina (Southern Pines and Asheville). Three examples.

Differs from *subdepressus*, which it resembles almost exactly in outline, in its immaculate elytra, excepting the humeral and apical spot on each, and in its shorter fourth antennal joint of the male; in the male of *subdepressus*, from Indiana, the fourth joint is equal in length to the third. In one specimen of *quadralius*, there are two very small submedial spots on the left elytron but none on the right; one of these spots is near inner third slightly behind the middle, the other at three-fifths from the base and outer two-fifths. The male is smaller than the female.

**Mycetophagus tribalteatus** n. sp.—Body narrower than in the preceding and less punctate, the surface shining, black, the elytra each with a large quadrate humeral spot, with a very small one near it internally and posteriorly and sometimes attached to the large spot, also, at three-fifths from the base, a slightly oblique transverse fascia, not quite attaining the sides and still more widely separated from the suture, its hind margin bisinuate or with two obtuse projections and, finally, a subapical spot, attaining the sides but not quite reaching the suture, the spots of pale flavo-testaceous tint; under surface blackish-piceous, gradually paler posteriorly, the legs brown; head three-fifths as wide as the prothorax, rather closely punctate, the eyes large and prominent; antennæ as in the preceding but paler; prothorax similar but not quite so short; elytra rather more than one-half longer than wide, at the middle barely at all wider than the prothorax, circularly rounded behind; striæ more coarsely and deeply impressed and somewhat more strongly punctured, the interspaces more convex and much less closely punctured, shining; under surface closely punctate, the abdomen more finely and still more densely than the sterna. Length (♀) 3.75 mm.; width 1.65 mm. North Carolina (Southern Pines),—Manee.

This species differs from both *subdepressus* and *quadralius* in the narrower and relatively more elongate form and less punctured and more shining elytra; from the latter it differs in maculation, but

the former resembles it rather closely in this respect. The following species belongs near *californicus* Horn:

**Mycetophagus provensis** n. sp.—Elongate, parallel, convex, distinctly shining throughout, piceous, the elytra each with four spots of paler tint as in *californicus*, except that the anterior spot is larger, enveloping the entire humeral angles and extending along the base half way to the middle of the scutellum; pubescence short, subdecumbent, not very dense; head scarcely more than half as wide as the prothorax, punctured and with very deep epistomal suture, the eyes only moderate but notably prominent; antennæ nearly as in *californicus*; prothorax still shorter, distinctly more than twice as wide as long, widest at the basal angles, the converging sides evenly and moderately arcuate thence to the apex; surface nearly as in that species, except that the sides are concavo-deplanate nearly throughout the length; scutellum similarly transversely oval; elytra nearly as in *californicus* in size and outline, but the serial punctures are rather larger and better defined and the intervals rather less conspicuously punctulate; under surface with the punctuation similarly dense but finer and less granulose. Length (♀) 4.3 mm.; width 1.75 mm. Utah (Provo), —Wickham.

Resembles *californicus* closely, but differs in the rather smaller though notably more prominent eyes and deplanate sides of the pronotum; the very pallid color of the type is probably due to immaturity, at least in great part.

### **Litargus** Erich.

#### Subgenus **Litargellus** Csy.

This subgenus, or genus as it will probably be considered when all the components of the *Litargus* group are more fully known, is composed of small species of regularly oval, convex form and with a complex design of pale and darker markings on the elytra. On looking over my material again, it seems apparent that there are more than the single type species, *nebulosus* Lec., and I would suggest the following tabular arrangement of them:

Prothorax black, nubilously pallescent near the sides; general color above, beneath and throughout the legs black or nearly so, the elytra each with a system of transverse pale markings which might be termed trifasciate, the middle fascia on each directed posteriorly toward the suture; punctures rather small, close-set and asperulate on the upper and lower surface; pubescence stiff, reclining, less distinct beneath; head with the coarse hairs directed outward from the median part, the eyes rather small; antennæ small, slender, the first joint of the club as long as wide, with straight diverging sides, the second transverse and the third truncate and shorter than wide; prothorax more

than twice as wide as long, the sides converging and evenly arcuate from base to apex, the two medial sinuses at base very feeble, the surface even; elytra nearly one-half longer than wide, as wide as the prothorax, rather narrowly rounded at apex, the sides arcuate, becoming parallel only near the base; punctures and pubescence confused throughout; hind tarsi longer than the tibiæ. Length (♀) 1.65 mm.; width 0.78 mm. New Mexico (Las Cruces).....**longulus** n. sp.

Prothorax in great part pale in color.....2

2—Body more broadly oval than in the preceding, convex, more shining, the punctures above smaller, sparser and less asperate, fine and dense beneath; pubescence coarse, reclining, rather long and pale in color; head somewhat more than half as wide as the prothorax, the eyes small; antennæ moderate, rather slender, the club relatively more slender than in *longulus*, the ninth joint longer than wide, the tenth slightly wider than long and the eleventh quadrate; prothorax, more than twice as wide as long, the converging sides somewhat strongly arcuate; surface black, with broad pale periphery throughout the base, apex and sides in the more mature stage, the black sometimes nubulously pallescent; elytra scarcely more than a third longer than wide, about three times as long as the prothorax, oval, more obtuse at apex than in the preceding; pale areas greatly exceeding the black, the basal pale fascia with a posterior projection along the suture, the post-medial fascia more even, bent posteriorly toward the suture and, between the two fasciæ on the outer side, there is a pale spot, generally obliquely uniting with the basal fascia; apical pale fascia anteriorly emarginate at the suture; hind tarsi (♀) a little longer than the tibiæ. Length (♂ ♀) 1.5–1.75 mm.; width 0.68–0.85 mm. Pennsylvania to Utah (Provo). Eight examples.

**nebulosus** Lec.

Body more elongate-elliptic in form, similarly convex, more shining and very pale flavo-testaceous in color throughout, the elytra with faintly darker markings, outlining the three broad fasciæ of the usual type of ornamentation; pubescence shorter and more closely decumbent than in *nebulosus*, sparser and much less conspicuous, the punctures of the upper surface throughout much coarser and more deeply impressed; head slightly larger, the eyes similarly small, the hairs directed outwardly as usual; antennæ nearly as in *nebulosus*; prothorax nearly as in that species in outline and much more than twice as wide as long, but very pale in color throughout; scutellum transversely rounded; elytra longer, nearly one-half longer than wide, rather more than three times as long as the prothorax and equal to the latter in width, obtusely rounded at apex; under surface closely and strongly punctured; hind tarsi much longer than the tibiæ, very slender. Length (♀) 1.7 mm.; width 0.8 mm. New York (Catskill Mts.),—H. H. Smith.....**pallens** n. sp.

The two specimens of *pallens* at hand are alike in every way, but nevertheless may be somewhat immature, though there is no indication of this by warping of the integuments; at any rate, it is

amply distinct from *nebulosus* by reason of the coarser punctures and shorter, more decumbent and less evident pubescence, more elongate-oval outline and several other characters. The type of *longulus* I had included with specimens of *nebulosus* in my previous work on the genus, but it is distinct by its black coloration, narrower outline, denser and finer sculpture and rather shorter antennæ.

### Thrimolus Csy.

The very minute species of this genus are allied somewhat to *Litargus* but have different antennal structure, and the finely beaded base of the pronotum is only feebly sinuato-truncate at the scutellum and is not medially bisinuate as in that genus. The following species was given the name *minutus* Csy., by Blatchley, but closer observation of specimens kindly sent me by Mr. Dury, shows that it is different; it may be described as follows:

**Thrimolus duryi** n. sp.—Minute, oblong-suboval, moderately convex, broadly obtuse at apex, shining and pale brown in color throughout; pubescence coarse, rather long, sparse and reclining and mingled with other longer erect bristles on the elytra; head large, nearly four-fifths as wide as the prothorax, very minutely, sparsely punctulate, the eyes well developed, and basal; antennæ as long as the head and prothorax, very pale, with darker and relatively thick club, the first three joints decreasing rapidly in length and thickness, third and fourth slender and subequal, five to eight gradually increasing in breadth and in brevity, the fifth as wide as long, obconical, the eighth very short and transverse, not as wide as the club, the latter subparallel, with rather transverse joints; prothorax short, more than twice as wide as long, the sides subparallel, rounding anteriorly, the punctures asperulate, small and sparse; scutellum large, semicircular, very feebly punctulate; elytra two-fifths longer than wide, widest near basal third, where they are slightly wider than the prothorax, the two bases exactly equal; sides feebly converging behind, but with the apex rapidly and very broadly obtuse; punctures without trace of serial arrangement, rather fine and distinctly separated, strongly asperulate; tarsi slender, filiform, fimbriate beneath with short hairs, the posterior distinctly shorter than the tibiæ. Length 0.78–0.82 mm.; width 0.48 mm. Ohio (Cincinnati).—Charles Dury. Two examples.

In *minutus* the general outline of the body is very similar, though not quite so broad and of smaller size, but the antennæ are shorter and joints 5–8 increase much more slowly in width, the eighth less broad. The punctures throughout are less minute in *duryi* and rather more numerous. The types of both species are females, so



far as can be discovered. The length of the type of *minutus* is about 0.68 mm., and not 0.78 mm. as originally stated, and it is apparently not over 0.4 mm. in width, but not having an eye-piece micrometer, I am forced to estimate dimensions by a scale and reading-glass, and the apparent length and width of these very small objects depends very much upon the relative distances of the beetle, scale and eye.

### BYTURIDÆ

The genus *Byturus* is one of those singularly annectent genera that are difficult to place satisfactorily. By LeConte and Horn it was thought to be a part of the Dermestidæ; by the latest European authorities it is given family rank, in the vicinity of Nitidulidæ, connecting that group with the Melyridæ and Cleridæ; perhaps this is correct, but, at the same time, there are some suggestions of relationship with Mycetophagidæ. However, in a miscellaneous paper of this sort, no attempt is made to place the succession of family groups any more than roughly in accordance with natural affinities, and a very extended study would be necessary, having any other object in view. There is as yet but a single genus.

#### *Byturus* Latr.

The indications are that this genus is much more extensively represented in America than in Europe, where only two species are recorded, *fumatus* Fabr., and *tomentosus* Fabr. To the two species hitherto known from within our territories, I would here add several others, which seem at least to be specific. *Unicolor* Say, is widely distributed from Pennsylvania to Washington State and Arizona; it varies greatly in the color of the integuments, from pale ferrugineo-flavate to blackish-piceous, as is frequently observed in most of the species; *grisescens* Lcc., has a definite design in the arrangement of the pubescence; it is confined to California and adjacent regions. The following species may be regarded as allied to *grisescens*:

***Byturus inflatulus*** n. sp.—Form moderately short and stout, convex, shining, blackish-piceous in color, the legs dull rufous; pronotum pallescent at the sides; pubescence rather long and coarse, though not at all dense or much variegated, whitish; head barely more than half as wide as the prothorax, nearly as long as wide, the eyes not quite basal, well

developed and prominent, finely faceted as usual; punctures fine and sparse; antennæ rufous, of nearly the same structure as in *Litargus*; prothorax three-fourths wider than the median length, convex, gradually declivous toward the sides, very finely, not densely punctate; sides feebly converging, evenly and rather strongly arcuate from base to apex, the base arcuate, oblique laterally; elytra three times as long as the prothorax, inflated posteriorly, widest behind the middle, together obliquely narrowed behind, the individual tips narrowly obtuse; punctures notably fine, well separated; under surface finely and closely punctate, the abdomen more finely; tarsi with the two inferior oblique lobes well developed. Length 2.75 mm.; width 1.2 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

Differs from *grisescens* in the much finer and sparser punctures of the entire upper surface, more arcuate base of the prothorax, posteriorly inflated elytra and absence of evident maculation of the elytral pubescence.

**Byturus punctatus** n. sp.—Stout, oblong, parallel and convex, slightly shining; pubescence long, coarse, abundant, bright fulvous in color and conspicuous, including a lineal arrangement on the elytra; head three-fifths as wide as the prothorax, not coarsely but deeply, somewhat closely punctate, as usual without trace of epistomal suture, the eyes very large and globose; antennæ unusually short, scarcely longer than the head, the club not longer than the preceding four joints, abruptly broad and rather compact; prothorax very convex, not quite twice as wide as long, broadly deplanate at the sides postero-laterally, rather strongly and closely punctate, the sides subparallel and arcuate, the base very feebly arcuate; scutellum as in the preceding; elytra as wide as the prothorax and three and one-half times as long, three-fifths longer than wide, gradually ogival apically; punctures very coarse, deep and close-set though evidently separated; under surface with the pubescence whiter, closely decumbent, very dense toward the sides of the post-sterna, on which the punctures are very fine; they are larger but feeble on the abdomen; tarsal lobes rather feebly developed. Length 3.6 mm.; width 1.5 mm. District of Columbia.

Differs widely from any of our other species in the very conspicuous elytral punctures and in the long coarse fulvous pubescence; from either of the European species it differs even more strikingly in sculpture. The single example seems to be a female, but even considering this, the abbreviated antennæ, in conjunction with the very large eyes, constitute a noteworthy character. At the middle of the length and at outer fourth of each abdominal segment one to four, there is a large impressed puncture.

This species belongs to the same section of the genus as the European *fumatus*, but the elytra are not only more coarsely punc-

tate but much less elongate. The following, which also belongs to the same section, has a very much more abbreviated prothorax:

**Byturus brevicollis** n. sp.—Rather stout, oblong, parallel, convex, somewhat shining, the pubescence unusually short, very stiff and decumbent, the hairs well separated, fulvous and perfectly uniform on the elytra; head large, fully three-fifths as wide as the prothorax, with strong but loose punctuation, the eyes large, globose and basal; antennæ of the usual length, longer than the head, the club much less abrupt than in the preceding, the outer joints of the funicle somewhat dilated; prothorax shorter than in any other species, more than twice as wide as long, strongly convex, with a broad concave deplanation in outer fourth or more of the base and flexed anteriorly along the sides, becoming narrower apically; sides feebly arcuate and slightly converging from the base, more rounded apically; base feebly arcuate, the apex rectilinearly truncate; punctures strong and close-set; scutellum quadrate, more densely and pallidly pubescent; elytra as wide as the prothorax and about four times as long, parallel, nearly three-fourths longer than wide, rather rapidly ogival at tip; punctures moderately coarse, deep, very even and somewhat close-set; under surface minutely, closely punctate throughout and with the hairs short, decumbent and everywhere distinctly though narrowly separated; lamellæ beneath the tarsi well developed. Length 3.5 mm.; width 1.45 mm.

The single specimen is of undetermined sex and has long been in my collection unlabeled; possibly it may have come from the Levette collection; it represents a species not very closely related to any other known to me, and therefore well merits description, notwithstanding its unrecorded habitat. In some characters it is related to *punctatus*, being of about the same form and size and with similar deplanature about the sides and external base of the pronotum, but the antennæ differ in structure, the pubescence is very much shorter, sparser and more evenly distributed and, on the under surface, is sparser, much shorter and not dense toward the sides of the post-sterna.

#### DERMESTIDÆ

The articles of dried animal substances furnishing food for most of the members of this family, form subjects of frequent commercial barter between different parts of the world, so that it might be supposed for that reason that many of the species might be cosmopolitan in distribution. This is a fact in many cases, as with about five species of *Dermestes*, *Attagenus piceus*, *pellio* and *schaefferi* and *Anthrenus verbasci* and *scrophulariæ*, but it is surprising, under the

circumstances, that the interchange has not been more extensive; I do not know of a single species of European *Lanorus*, *Telopes* or *Globicornis* that has found its way to this country. Our very numerous *Trogoderma* and *Cryptorhopalum* species do not seem to include any demonstrable foreign elements, and there are many purely endemic species in *Dermestes*, *Attagenus* and *Anthrenus*, which do not seem to have spread to other parts of the world. The family is one of the more sharply circumscribed of the Clavicornia, and there are many species and subspecies—in some parts of the series rather closely allied among themselves—that are still to be differentiated and described.

### Dermestes Linn.

In my former review of this genus (J. N. Y. Ent. Soc., 1900, p. 140), I inadvertently overlooked the species described by Mr. Fall, from Sta. Rosa Island, off the coast of California, under the name *tristis*. Subsequently Mr. Fall intimated that my *medialis* was probably a synonym of *tristis*, and so it appeared until more careful comparison was made between the two, as they are both small, with the upper surface black, inconspicuously pubescent and strongly and closely punctate; but the author does not mention the three points of white hairs in transverse line on the pronotum in describing *tristis*. However, the matter is completely settled on examining the under surface, which, in *tristis*, is said to be "clothed as usual with dense white pubescence, with lateral series of black spots." In *medialis* the under surface has the usual dense white pubescence only on the post-sterna and parapleura; the abdomen is loosely clothed with coarse whitish, mingled with a few fulvous, hairs, only slightly condensed medially toward base; the posterior fringes are of dark brown hairs, becoming white in a small tuft near each side; the punctures are strong but well separated and show clearly through the comparatively sparse vestiture. The under surface of the anterior and middle male tarsi is finely but not densely pubescent, with a few short spinules laterally.

The following is allied to *vulpinus* but is apparently distinct:

**Dermestes truncatus** n. sp.—Form oblong, only feebly convex above, piceous-black; head slightly less than half as wide as the prothorax, strongly, closely cribrate and with moderately close, even, whitish hairs; antennæ nearly as in *vulpinus*; prothorax two-fifths wider than long, the

sides converging and very feebly, subevenly arcuate from base to apex, the latter transversely truncate; base broadly lobed medially; surface strongly, rather closely punctate and with gray pubescence, close apically and broadly toward the sides—gradually less broadly to the basal angles, sparse elsewhere; scutellum moderately griseo-pubescent; elytra three-fourths longer than wide, slightly wider than the prothorax, otherwise nearly as in *vulpinus* and with a similar sutural spinule, but with the pubescence evenly grayish-white and rather close throughout; anterior tarsi pubescent beneath in the male, the sexual characters as in *vulpinus*. Length (♂) 7.8 mm.; width 3.4 mm. Arizona.

Differs from *vulpinus* in the nearly straight converging sides of the prothorax, these being more arcuate in that species, especially anteriorly, and also in the notably more abbreviated and flatter elytra, uniformly and more closely clothed with shorter pubescence. A female of *vulpinus* at hand, from the District of Columbia, differs from any other of a series taken at various places from Florida and Indiana to Guadalupe Island and Durango, in having the prothorax much less transverse and more parallel, in fact only about a third wider than long, the sides more rapidly rounding anteriorly. There is also some variation in the vestiture visible in this series, this sometimes becoming more uniform and pale throughout, but there is no combination of differences so pronounced as in the case of the type of *truncatus*, above described, and I have little or no doubt that this is a distinct taxonomic form; perhaps it is the one mentioned by Dr. Sharp in the "Biologia" under the name *canus* Sturm, which seems to be unpublished, as it is not recorded in the Torre catalogue, of the Schenkling series.

*Dermestes cylindricus* n. sp.—Male narrow, parallel, with straight sides and not very abruptly rounded before or behind, convex, black, strongly and densely punctate throughout; pubescence anteriorly rather long, subdecumbent, in great part fulvous, with a little black and some white patches intermingled; on the elytra it is much shorter and more decumbent, in great part blackish, with some fulvous areas especially toward the suture and with sparser whitish flecks, taking the form of transverse irregular lines suturally, the scutellum with dense whitish vestiture; under surface with dense decumbent grayish vestiture, variegated on the abdomen by oblique lines of denser whiter tint, with an elongate black spot at the sides of each segment, the last segment almost entirely without pale vestiture, the small median sexual fascicle of hairs on the third and fourth segments being almost without denuded surrounding surface; legs having very short pubescence, the middle and hind femora rather feebly annulate with white submedially; anterior tarsi almost without pubescence beneath; antennæ obscure ferruginous, with the basal joint of the club slightly wider than long and obparabolic,

the second fully twice as wide as long, the club distinctly longer than the entire preceding part. Female nearly like the male, though with the sides not rectilinear but feebly arcuate, the outline less cylindrical. Length (♂ ♀) 6.8–7.0 mm.; width 2.65–2.8 mm. Massachusetts (Southboro).

Examples of this species were sent to me several years ago by Mr. Frost, with the suggestion that they might represent an undescribed species, but at that time my familiarity with the genus had faded in great measure and I held them to be a variety of *talpinus*. I see now, however, that they have but little very close relationship with that Pacific coast species, being narrower, more cylindrical, with relatively shorter prothorax and longer elytra and with the abdomen singularly diversified by oblique lines of greater density in the pubescence; the antennal club, also, is broader. In the coloration of the vestiture of the upper surface throughout, they are almost absolutely similar, but in *talpinus* the hairs of the pronotum and elytra are about equal in length, while here the pronotal pubescence is very much longer and more shaggy than that of the elytra. The European *murinus* Linn., is also allied to these species but is of still more broadly oval outline, only slightly variegated vestiture, equally short hairs on the pronotum and elytra and more parallel black antennal club.

#### *Attagenus* Latr.

The species which I called *schaefferi* Hbst. (l. c., p. 146), based upon a specimen from northern Idaho, was named simply from descriptions, and I am by no means certain that it is correctly identified. It is blacker and more shining than *piceus* and has the elytral punctuation much less dense; *piceus* is of a browner color and has a shorter prothorax. *Pellio* seems to be very rare in this country—at least I only have the single example serving for my former description. The development of the last antennal joint in the male is of little significance from a specific point of view and, in the separation of species, reference must be confined to general characters of bodily form and sculpture, that reveal themselves conclusively with large series. *Deficiens* Csy., I find to be by far the commonest species in the District of Columbia, and I have a very large series of both sexes taken on the window ledge of my working-room; it is on the whole a smaller, narrower and blacker species than *piceus*, with even denser elytral sculpture, as seen especially

in the male. *Extricatus* Csy., is smaller and much shorter than *piceus*; it is briefly oval and, in the darker specimens, the humeri are frequently rufescent; I have examples from Pennsylvania, Missouri and Mississippi (Vicksburg). *Bicolor* Har. (*dichrous* Lec.) and *spurcus* Lec., are made synonyms of *schaefferi* in the Torre catalogue, but I am at a loss to understand the reason for this, for *spurcus* is plainly a synonym of *cylindricornis* Say; *bicolor*, on the other hand, seems to me to be a very good species, more elongate and with more closely and strongly sculptured elytra than in *cylindricornis* and apparently differing radically from *schaefferi* in coloration; *brunneus* Fald., resembles *cylindricornis* very much, but is narrower and has a shorter prothorax as in *piceus*. *Elongatulus* is closely allied to *bicolor* but is narrower and has stronger frontal impressions. The four following are at least distinct specifically among themselves, and there is no present evidence that any one of them is an importation:

**Attagenus canadensis** n. sp.—Form very broadly oblong, convex and strongly shining, piceous-black, the elytra sometimes rufous; legs bright rufous in the female, darker in the male; head unusually small, barely a third as wide as the prothorax (♀), larger (♂), minutely and loosely punctulate and with small sparse palish hairs, the ocellus small; antennæ of the usual form, pale, the club in great part black, the last joint much elongated in the male; prothorax not quite twice as long as wide, with converging arcuate sides and strong basal lobe; surface impressed along the base except laterally, convex, minutely, not densely punctate and with the pubescence in great part luteous, especially postero-externally; scutellum acutely triangular, almost glabrous; elytra two-fifths longer than wide, as wide as the prothorax but not three times as long, parallel, broadly rounded at apex, very finely and rather sparsely punctured, the hairs very small, fine, fuscous and inconspicuous, except toward base, where they become coarser, fulvous and distinct; under surface rather finely but strongly, very densely punctured throughout and with rather even luteous pubescence; hind tarsi four-fifths as long as the tibiæ in the female. Length (♂ ♀) 3.3–4.0 mm.; width 1.7–2.2 mm. Canada (Ottawa and Quebec).

Very distinct from any other of the American species in its short and broad outline, fine sparse sculpture and bicolored elytral vestiture.

**Attagenus atrolucens** n. sp.—Elongate-oval, convex, polished and deep black above, similarly black but finely, densely punctured, scarcely shining and with short decumbent gray pubescence beneath, the legs blackish-piceous; head (♀) small, finely, densely punctate, the impres-

sions above the antennæ small and feeble; ocellus well developed, pallid; antennæ of the usual structure, pale, the club black; prothorax distinctly less than twice as wide as long, the sides strongly converging and evenly arcuate from base to apex; basal lobe rather narrow, strong and rapidly formed; surface slightly deplanate at base between the lobe and the sides, strongly, rather closely punctate and evenly clothed with somewhat long fusco-fulvous hairs; scutellum acutely triangular, obscurely pubescent; elytra nearly two-thirds longer than wide, as wide as the prothorax and nearly three times as long, gradually parabolic posteriorly; punctures not coarse but deep and conspicuous, widely separated, the sparse vestiture like that of the pronotum; legs slender, short as usual, with the tarsi rather long and very slender. Length (♀) 4.0–4.2 mm.; width 1.9–2.0 mm. Indiana.

The two female types of this species are exactly alike and were received from the Levette collection as having been taken in Indiana, but they represent a species quite different from any other known to me at present.

**Attagenus nigripes** n. sp.—Oblong, convex, moderately slender and shining, very deep black throughout, the legs black, with piceous tarsi; pubescence above even, not dense, blackish in color and inconspicuous; on the under surface it becomes longer, coarser, rather dense, gray in color and conspicuous; head (♂) rather small, barely two-fifths as wide as the prothorax, densely punctate, not impressed apically, the ocellus small; antennæ short, deep black throughout, the last joint long, rather compressed and velvety-black in the male; prothorax short, more than twice as wide as long, the sides strongly converging and evenly arcuate from base to apex, the basal lobe very moderate; flattening of the base at each side very feeble; surface not coarsely but deeply, closely and conspicuously punctate; scutellum as usual; elytra two-fifths to one-half longer than wide, as wide as the prothorax and more than three times as long, parallel, broadly rounded in about apical third; punctures rather fine but deep, well separated; epipleura flat, closely punctured, disappearing as usual behind the middle. Length (♂ ♀) 3.2–3.75 mm.; width 1.6–1.8 mm. California (Milpitas, Sta. Clara Co.,—R. J. Smith; Mokelumne Hill, Calaveras Co.,—Blaisdell). Three examples.

This species is not closely allied to any other, the dense bristling gray pubescence of the under surface, intensely black color throughout and the obscure vestiture of the upper surface, giving it a peculiarity of habitus which can be recognized readily.

**Attagenus sparsus** n. sp.—Outline oblong-oval, rather stout and somewhat less convex than usual, polished, pale brownish-testaceous throughout, more blackish beneath, the legs very pale; pubescence beneath fuscous, rather sparse and not concealing the somewhat loosely punctate integument; hairs throughout the upper surface very long, erect, blackish and bristling though sparse; head (♂) two-fifths as wide as the prothorax,



minutely, loosely punctate, the ocellus prominent and well developed; eyes prominent, the antennæ very pale throughout, the last joint not at all darker, long, parallel and apically obtuse; prothorax barely twice as wide as long, the sides strongly converging and evenly arcuate from base to apex; basal lobe moderate, prominent; surface broadly, feebly impressed at base at each side of the middle; punctures minute and very remote, rather less sparse and somewhat stronger near the sides; scutellum triangular as usual; elytra scarcely one-half longer than wide, as wide as the prothorax and fully three times as long, parallel, rounding in about apical third, each apex somewhat broadly rounded; punctures minute and sparse throughout, the black hairs long and bristling; legs slender; hind tarsi fully as long as the tibiæ. Length (♂) 3.8 mm.; width 2.0 mm. New Mexico (Jemez Springs),—Woodgate.

There is no species described thus far that seems to come anywhere near this; it is notably distinct because of the sparse erect blackish hairs, and also the sparse sculpture and vestiture of the under surface. The epipleura are flat as usual, but only extend through basal third of the elytra.

### Trogoderma Latr.

This is a large genus, particularly in the neosubarctic faunal regions. The various species sometimes resemble each other rather closely, but fortunately the eyes and male antennæ furnish very convenient and positive means of segregating them into groups, within which the species may generally be easily recognized by their form, sculpture and ornamentation. *Obsolescens* Csy., described from a single female from an unrecorded locality, I have since found at St. Louis, Missouri; it comes near *inclusa* Lec., but differs in its smaller average size and distinctly more slender form. The considerable number of undescribed species which have accumulated since my review of the genus may be known as follows:

*Eyes not sinuate; antennæ (♂) strongly serrate, joints three and four subequal.*

**Trogoderma procera** n. sp.—Form elongate-oval, strongly convex, shining, black, the elytra with transverse, sinuous and very irregular rufous bands, the one at the middle at an unusually long distance from the next posterior, which is the second from the tip and close to the apical, the bands having ashy to yellowish pubescence, the general pubescence short and fuscous; head two-fifths as wide as the prothorax, finely, rather sparsely but deeply punctate, the eyes strongly setose; antennæ (♀) short, with the usual 4-jointed club; prothorax slightly more than twice as wide as long, the sides converging and evenly, rather strongly arcuate from

base to apex; surface with two transverse discal bands of very loose pale hairs, the punctures sparse and very minute, much smaller than those of the head; elytra very slightly wider than the prothorax and between three and four times as long, parallel, rounded at apex, the punctures small, rather close-set and deep, having four or five times the diameter of the pronotal punctures; under surface shining; sterna finely punctate, the metasternum rather sparsely, the side-pieces more closely; abdominal sculpture rugulose but not dense; legs small and slender, rufous, the thighs blackish. Length (♀) 2.75 mm.; width 1.3 mm. New York (Willetts Point, Long Island).

A distinct species near *serrigera* Csy., but still more elongate and with much more minute and sparser punctures of the pronotum and under surface. The name *serrigera* was changed to *serrifera* in the Torre catalogue, because of the earlier *serrigera* of Sharp.

**Trogoderma parvula** n. sp.—Small in size, rather narrowly oblong-oval, shining black, the elytra with sparse rufous maculation, more noticeable suturally in anterior half; head three-sevenths as wide as the prothorax, somewhat finely but deeply and closely punctate, the ocellus large and pale as in the preceding; antennæ (♂) nearly as in *serrigera*, rufous, the basal joint fuscous, second but slightly smaller, three to five small, short and transverse, five to seven increasing rapidly, similar in form and very transverse; pedicels of the joints much exposed in the type, eccentric; prothorax very short, much more than twice as wide as long, the sides strongly converging but only very feebly arcuate from base to apex; surface with loose coarse gray hairs, sparser transversely in the middle, the punctures minute and well separated; elytra subparallel, broadly rounded behind, as wide as the prothorax and more than three times as long, having the usual mixture of whitish to fulvous or more obscure hairs, the punctures fine, deep and close, having about three times the diameter of the pronotal punctures; under surface strongly and densely punctate throughout. Length (♂) 1.7 mm.; width 0.95 mm. Virginia (Norfolk).

This species also belongs near *serrifera* but is very much smaller; it may be considered to be identical with the Massachusetts species that I formerly identified as *tarsalis* Mels. On reading the description of the latter, I find that it is not Melsheimer's species, but one very much smaller in size. A study of the descriptions of *tarsalis* Mels. (Proc. Ac. Phila., 1844, p. 116) and of *pallipes* Zieg. (l. c., p. 269), indicates that both these species are the same as *ornata* Say, and I would therefore propose that synonymy, in lieu of that given by Jayne, which is entirely wrong. If the latter synonymy were true, the name of *inclusa* Lec., would be *tarsalis* Mels., that being much the older name; but both descriptions quoted fit *ornata* Say, very much better; *tarsalis* is described as having the male antennæ pectinate, which is not true of *inclusa*.

*Eyes not sinuate; antennæ (♂) less serrate, the third joint very small.*

**Trogoderma plagifera** n. sp.—Oblong, rather convex and moderately shining, black, the elytra with the usual pattern of irregular pale lines and spots, except that in fully anterior half the pale color is nearly solid except near the sides, and also in two basal black spots on each; pubescence coarse, abundant, ashy and fulvous on the pale areas, obscure and finer on the black spots; head two-fifths as wide as the prothorax, rather convex, the ocellus not very sharply defined, the sculpture consisting of large shallow punctures, polygonally crowded throughout; antennæ (♂) rufous, moderately long, stout and serrate, the joints eccentrically joined, but scarcely so markedly so as in the preceding division; joints five to eight gradually larger, transverse; prothorax not more than twice as wide as the median length, the sides strongly converging but only very slightly arcuate from base to apex; pubescence coarse, unevenly and loosely condensed; basal lobe strong as usual, its surface feebly impressed transversely; punctures fine but deep and rather close-set; elytra fully as wide as the prothorax and not over three times as long, parallel, very obtusely rounded at apex, the punctures small but strong and rather close-set, not evidently larger than those of the prothorax; under surface closely punctured, the sterna more strongly than the more shining abdomen; hind tarsi (♂) but very little shorter than the tibiæ. Length (♂ ♀) 2.3–2.5 mm.; width 1.2–1.25 mm. Colorado (Boulder Co.). Three examples.

Rather more closely allied to *oblongula* Csy., from El Paso, Texas, than to any other species known to me, though easily separable by the more solidly pale elytra in anterior half, more elongate-oblong elytra and less coarse, elongate or abundant erect pubescence of the latter. The sculpture of the head is altogether different from that of *procera* or *parvula*.

**Trogoderma cylindrella** n. sp.—Parallel, strongly and subcylindrically convex, very small in size, rather shining, the elytra dull and solidly ochraceous in color, each with a large rounded blackish spot just behind the middle and truncated by the suture, and a smaller, more nubilous dark spot near the scutellum; anterior parts and under surface black to piceous, the legs pale; head (♀) fully half as wide as the prothorax, convex, the punctures coarse, shallow and umbilicate, close-set but not crowded; antennæ (♀) short, with the usual 4-jointed club; prothorax barely twice as wide as long, the converging sides from base to apex only feebly arcuate; punctures very fine but deep and rather well separated; pubescence slightly condensed unevenly; elytra as wide as the prothorax and three times as long, parallel and straight at the sides, rapidly very obtuse at apex; punctures relatively coarse and close-set, with the surface somewhat rugose, having two to three times the diameter of the pronotal punctures; pubescence coarse, suberect, not notably long or dense, evenly ashy on the pale parts and blackish on the dark spots; under surface shining, the pubescence rather sparse. Length (♀) 1.8 mm.; width 0.9 mm. New Mexico (Jemez Springs),—Woodgate.

The type of this species is a female, but it is so very distinct in elytral coloration that there could be no mistaking it; the general structure, punctuation and proportions of the parts, show that it is allied to *sternalis*, though perhaps more closely to *plagifera* than to any other; the combined elytra are evenly pale, with four rounded black spots.

*Eyes sinuate; antennæ (♂) almost perfectly symmetric.*

**Trogoderma frosti** n. sp.—Body large in size for the present genus, oblong-oval, similarly rounded before and behind, less convex than usual, shining black; head but little more than a third as wide as the prothorax, flat, the punctures strong and deep, separated by about their own diameters, the ocellus distinct; antennæ (♀) short and thick but of the usual structure; prothorax barely twice as wide as the median length, the sides strongly converging and strongly, evenly arcuate from base to apex, the basal lobe well developed; pubescence sparse and but little variegated, inconspicuous; punctures extremely minute, sparse; elytra broad, two-fifths longer than wide, slightly wider than the prothorax and not quite three times as long; humeral callus rather prominent but obtuse; apex rapidly and very broadly rounded; surface with small deep punctures, separated by from two to three times their diameters and three or four times as wide as the pronotal punctures; transverse irregular pale bands narrow and incomplete, disposed somewhat as in *inclusa* and similarly pubescent, but the subapical fascia is without oblique posterior offsets including a rhomboidal area, as is the case in that species; under surface deep black, unusually convex, finely, rather sparsely punctate throughout, shining and inconspicuously pubescent. Length (♀) 3.2 mm.; width 1.7 mm. Massachusetts (Framingham).—C. A. Frost.

This species is very distinct but associable with *inclusa* Lec., differing in its larger size, slightly less convex upper surface, less transverse prothorax and much finer and sparser punctuation of the elytra and of the entire under surface.

**Trogoderma nigrescans** n. sp.—Female oblong-oval, rather strongly convex and shining, black above and beneath; elytra black throughout, without evident paler lines, but with the very decumbent and rather short white hairs disposed in similar irregular transverse lines, the more erect dark hairs of the general surface not at all conspicuous; head two-fifths as wide as the prothorax, feebly convex, not coarsely but strongly, deeply and rather closely punctate, more finely and sparsely so toward base, the ocellus distinct and, just before it, there is a feeble indentation of the surface; antennæ rather short, the compact fusiform club clearly 5-jointed; prothorax somewhat more than twice as wide as long, the rapidly converging sides evenly and rather strongly arcuate from base to apex; pubescence rather long and coarse but very sparse and inconspicuous; punctures sparse and very minute; elytra short and broad, barely a third

longer than wide, fully as wide as the prothorax and not quite three times as long, rapidly and very obtusely rounded behind; punctures small and rather sparse; under surface convex, deep black and shining, the punctures fine and everywhere widely separated, the pubescence short, obscure and inconspicuous; legs small, slender and piceous. Male smaller than the female, with the prothorax more inflated basally and with a little red on the elytra, the antennæ of the same type as in *inclusa*; joints two to six transverse and gradually increasing in size. Length (♂ ♀) 1.8–2.3 mm.; width 1.0–1.2 mm. Missouri (St. Louis). Two examples.

The only one with which this species can be compared is *inclusa* Lec., and in that the head and entire under surface are strongly, very densely punctured and dull, not at all as in the present species, where, also, the conspicuous pale lines of *inclusa* are wanting or greatly reduced. From *obsolescens* Csy., it differs in its much broader form of body and more gradually formed, or more nearly 5-jointed than 4-jointed, antennal club of the female.

**Trogoderma brunnescens** n. sp.—Oblong, obtusely rounded before and behind, moderately convex and shining, piceous-black, the entire elytra pale red-brown and crossed by about three somewhat irregular narrow lines of aggregated coarse yellowish hairs, the other vestiture sparse, darker and inconspicuous; head two-fifths as wide as the prothorax, strongly and closely punctate, more finely and sparsely basally, the larger punctures somewhat irregular in form though not densely crowded; antennæ short and very stout but with joints three and four unusually small, very short and transverse, four to seven increasing rapidly in size, strongly transverse; prothorax short, distinctly more than twice as wide as long and barely a third as long as the elytra, the sides very strongly arcuate and converging anteriorly, becoming almost parallel basally; punctures minute and sparse, the hairs coarse, sparse, fuscous and inconspicuous, almost uniform in color; elytra as wide as the prothorax, two-fifths longer than wide, parallel, very obtusely rounded at apex, the punctures rather small, separated by two to three times their diameters and twice as wide as those of the pronotum; under surface convex, inconspicuously pubescent, the met-episterna and abdomen strongly and closely punctate, the entire metasternum very evenly, finely and loosely punctate. Length (♂) 1.75 mm.; width 1.15 mm. District of Columbia.

While belonging to the *inclusa* group, this species does not closely resemble it, being much smaller and narrower, with the three transverse lines of elytral pubescence more even.

**Trogoderma scabripennis** n. sp.—Much larger than the preceding and as broad as *inclusa* but more elongate, black, the legs and tarsi blackish-piceous throughout, not shining except on the pronotum; ashy elytral pubescence disposed in three bands, the subbasal posteriorly biarcuate, the integument only partially pallescent under the bands, the remaining pubescence obscure in tint; head very densely punctate, rather small in

size; antennæ very thick, joints three to seven increasing uniformly and rapidly in size, transverse; prothorax slightly more than twice as wide as long and somewhat less than a third as long as the elytra, the converging sides almost evenly, strongly arcuate; pubescence coarse, ashy, sparse and scarcely at all variegated; punctures small and widely separated; basal sinuses slightly impressed near the median lobe; elytra as wide as the prothorax, about a third longer than wide, parallel, evenly rounded in about apical third; punctures only moderately coarse but deep, rugose and close-set, giving a dull and very rough surface; under surface strongly convex, inconspicuously pubescent, rather finely but strongly, very closely punctate throughout; hind tarsi not three-fourths as long as the tibiæ. Length (♂) 2.8 mm.; width 1.7 mm. District of Columbia.

This species differs from any other of the *inclusa* group in the very rough dense sculpture of the elytra, and, from *inclusa*, it differs in its rather more elongate outline, much smaller or obsolescent red areas of the elytra and less broken and irregular system of more densely pubescent lines on the latter.

On examining the male antenna of *Trogoderma serrifera*, I find a marked agreement with that of *Eucnocerus dispar* Shp., as depicted in the "Biologia," though the part just beyond the second joint does not fit very well. In *serrifera*, the joints are attached very nearly at the extreme sides as in *dispar*, but in *parvula*, described above, belonging to the same group as *serrifera*, the points of attachment are slightly less lateral. In *sternalis* and others of that group, the joints are more symmetric and the pedicels are only slightly though evidently eccentric, and, finally, in *inclusa* and others of that group, characterized by sinuate eyes, the pedicels are so nearly in the antennal axis, that their eccentricity would not be noticed unless looked for carefully. I believe that *Eucnocerus* is undoubtedly a valid genus and it is quite possible, as suggested by Dr. Sharp, that some of our species, such as *serrifera*, can be associated with its Yucatan type, but, as the males of many of our species, especially as assigned provisionally to the *serrifera* group, are not yet known, I do not deem it prudent to make any definite transfers to it at present.

#### Cryptorhopalum Guér.

The body in this genus is usually more briefly oval than in the preceding and has much thicker integument. The antennæ differ radically in having a very compact, elongate-oval, 2-jointed club, almost similar in the sexes, though the entire antennæ, as well as the

club, are materially longer and larger in the male; the club is received in a closely fitting fossa and is not so loosely sheltered as in *Trogoderma*. The species are extremely numerous in the drier western country and in Mexico, but are comparatively few in the Atlantic regions. At the time of my revision of the genus, *picicorne* Lec., was not known to me, but recently Mr. Frost has sent me some examples, taken by him at Framingham, Massachusetts, that seem to fit the original few lines of description very well; it is of more broadly oval form than *ruficorne* Lec., and is much more strongly and closely punctate above and beneath; similarly, however, it is of a uniform deep black color throughout, with fine inconspicuous fuscous vestiture, but the tibiæ and tarsi are always blackish and not rufescent as in *ruficorne*; the latter has been taken by Mr. Manee at Southern Pines, North Carolina. It is singular that *triste* Lec., should still persist in figuring, at least in part, as an Atlantic coast species, as recorded in the Torre catalogue of 1911, page 76; it is wholly and completely a Pacific coast species and was described by LeConte as from San José, California; *nigricorne* Lec., apparently does not differ from it specifically. In the course of years undescribed species have accumulated in our collections in large numbers, and for the sake of completeness in our records, I define below those known to me as follows:

*Elytra with variegated pubescence.*

**Cryptorhopalum insigne** n. sp.—Broadly ovoidal, strongly convex, piceous-black, shining, the elytra and under surface duller because of the dense punctuation; head small, densely punctured, the ocellus large, pale and conspicuous; antennæ (♂) extending nearly to basal third of the prothorax, ferruginous, the basal joint fuscous, the club evenly oval, much longer than the entire remainder and with its first joint but little longer than the second, or (♀) only extending through two-fifths of the prothorax, the club similarly proportioned but equal in length to the remainder; prothorax twice as wide as the median length, the sides moderately converging and very strongly arcuate (♂), or strongly converging and feebly arcuate (♀), the basal lobe abrupt and strong; surface with very coarse vestiture, broadly yellowish toward the sides and at the basal lobe, the punctures minute and well separated; scutellum nearly smooth; elytra two-fifths longer than wide, at the rather swollen humeri distinctly wider than the prothorax, strongly, closely, subasperately punctate; pubescence coarse, pale at base except laterally, in a post-humeral spot, in a transverse fascia interrupted at the suture and broadly near each side, in another broader interrupted fascia just behind apical third, forming four large spots, and,

at apex, except on the suture; elsewhere it is finer, shorter and blackish; under surface densely punctate and clothed with rather long coarse cinereous pubescence; tibiæ and tarsi paler than the femora; flat epipleura ending at basal third. Length (♂ ♀) 2.4–3.15 mm.; width 1.5–1.9 mm. New Mexico (Jemez Springs),—Woodgate.

Allied to *pruddeni* from the Grand Cañon, but larger and broader, with more nearly equal two joints of the antennal club and longer, coarser and more conspicuous pubescence of the under surface; the condensations of the paler pubescence of the upper surface are almost exactly as in *pruddeni*, but the integuments are darker in color. It is represented by a large series.

**Cryptorhopalum tuckeri** n. sp.—Stout, oblong-oval, rather convex and shining, deep black, the tibiæ and tarsi rufescent; paler pubescence moderately long, loose and not very coarse; head two-fifths as wide as the prothorax, rather strongly and closely but not densely punctate, finely and sparsely toward base, the ocellus dark; antennæ ferruginous, the two stout basal joints black; club (♂) elongate and evenly oval, its second joint only three-fifths as long as the first, the latter about as long as the entire preceding part of the antenna; prothorax twice as wide as the median length, which is much greater than the sublateral length, the abrupt strong basal lobe transversely truncate; sides converging and strongly arcuate; punctures minute, not close, the surface loosely clothed with pale hairs, excepting in a transverse medial area; elytra short, not a fifth longer than wide, at the humeri much wider than the prothorax, the apex rapidly and obtusely rounded; punctures rather strong, separated by two to three times their diameters; loose pale hairs forming an entire but somewhat irregular fascia near basal third, and, on each elytron, there is a similarly clothed broad subapical spot; toward the suture the dark inconspicuous hairs of the general surface are interspersed with a few scattered pale hairs; under surface strongly and closely punctate and clothed with coarse loose ashy hairs. Length (♂) 2.2 mm.; width 1.4 mm. Arizona (Tuçson),—J. F. Tucker.

This species is not closely allied to any other but may stand just after *reversum* in the list. The antennal fossa extends through three-fifths of the thoracic length.

**Cryptorhopalum coloradense** n. sp.—Stout and oblong-suboval, very obtuse behind, moderately convex, black, somewhat shining, the elytra rufous, nubilously shaded with black broadly toward base, the black traceable feebly along the suture to the apex; legs pale, the middle and hind femora more or less blackish; paler pubescence cinereous, moderate in length and very loosely aggregated; head small, finely, sparsely punctate, more strongly and subrugosely in the middle before the distinct pale ocellus; antennæ (♀) extending to apical two-fifths of the prothorax, ferruginous, the first joint alone black; club oval, not quite as long as the entire remainder, its second joint evidently, though not conspicuously,



smaller than the first; prothorax rather small, four-fifths as wide as the elytra at the humeri, not quite twice as wide as long, the strongly converging sides nearly straight, broadly rounding in apically; basal lobe narrow, strong, arcuato-truncate at tip; surface minutely, not closely punctulate, the pale hairs rather long and coarse, sparsely aggregated toward the base and sides; elytra nearly a third longer than wide, arcuately rounding at the sides in about apical third, the apex obtuse; punctures rather small but strong, separated by three or four times their diameters; ashy hairs forming a broad and very oblique fascia on each near basal third, not reaching the sides or suture and also a transverse subapical spot; under surface rather finely but strongly punctate, loosely on the metasternum, densely and as usual more rugosely on the abdomen. Length (♀) 2.7 mm.; width 1.65 mm. Colorado (Golden),—C. A. Frost.

The position of this species is near the last and *reversum*, but it differs from both in the oblique, loosely pubescent fascia on each elytron; the subapical spot is still more loosely, or even sparsely, pallido-pubescent.

**Cryptorhopalum pallens** n. sp.—Very evenly elongate-oval, convex and shining, the type evenly pale testaceous in color throughout above, somewhat more obscure beneath and on the head; pale vestiture yellowish-cinereous and very coarse, more grayish beneath; head small, finely but rather deeply, evenly and somewhat sparsely punctured throughout, the ocellus large and very prominent; antennæ (♀) small, ferruginous, extending through only apical third of the prothorax, the club ovoidal, shorter than the basal parts and with its second joint notably narrower as well as shorter than the first; prothorax scarcely twice as wide as long, the sides strongly converging and very evenly though not strongly arcuate from base to apex; basal lobe strong, subtruncate; punctures very fine, sparse; vestiture in great part denuded in the type, but such as remains is pale and coarse; elytra two-fifths longer than wide, obtusely oval, the humeral swellings only very moderate, the punctures fine, separated by two or three times their diameters, the surface smooth; vestiture in great part denuded in the type, but some coarse yellowish-cinereous hairs remain behind the middle, apparently enclosing a subapical area in which they become rather less pale and less coarse; under surface very convex, not coarsely but closely punctate, the metasternum gradually finely and sparsely so medially, the hairs conspicuous and coarse. Length (♀) 2.35 mm.; width 1.35 mm. Texas (El Paso),—G. W. Dunn.

I at first associated the type of this species with *hæmorrhoidale* Lec., but the antennal club is distinctly different. In both that species and *reversum*, the two joints in the female are exactly equal in form and size; the cavity is relatively shorter in *hæmorrhoidale* than in *reversum*, being nearly as short as in *pallens*. There is no doubt, from the antennal structure, that *pallens* is distinct from either

of the species mentioned, but whether its pale uniform testaceous color is constant, or is to some extent the result of immaturity, cannot be stated at present. This species may be placed next after *hæmorrhoidale* in the lists. The New Mexican *reversum* has the pubescence disposed almost exactly as in the maritime Californian *flitarse*, but it is a broader species and differs in the form of the antennal club.

**Cryptorhopalum anthrenoides** n. sp.—Broadly oval, moderately convex, rather shining black, the legs black, the tarsi piceous; pale pubescence nearly white; head not quite two-fifths as wide as the prothorax, somewhat dull, the punctures not dense, the ocellus large and pallid; antennæ short though extending fully to the middle of the prothorax, fuscous throughout, the club unusually broad, regularly oval and much longer than the preceding part, its two joints very nearly equal, the basal just visibly the longer; prothorax twice as wide as the median length, the sides moderately converging and evenly, rather strongly arcuate, the basal lobe abrupt and strong, truncate; punctures minute, rather sparse; pale pubescence coarse, densely aggregated in a large and abrupt lateral area and sparsely before the scutellum; elytra short, only very little longer than wide, at the rather strong humeral swellings distinctly wider than the prothorax, the sides thence feebly converging posteriorly, rapidly and broadly rounded at apex; punctures moderate but rather close-set, differing irregularly in size among themselves; white hairs loosely aggregated in a narrow irregular fascia at two-fifths, bifurcating toward the sides, in a narrow irregular fascia near apical third and in an apical, suturally divided fascia; hairs of the general surface much finer, shorter, black and inconspicuous; under surface somewhat strongly, densely punctured throughout and with uniform coarse whitish and conspicuous pubescence. Length (♂) 2.35 mm.; width 1.65 mm. Arizona (Sta. Catalina Mts.),—Tucker.

This very distinct species may be associated with those that precede, but the abruptly defined areas of unusually white aggregated pubescence, and the abbreviated outline, give it quite a different appearance. The antennal club, also, is unusually broad, the transverse suture very fine, and the vestiture of the under surface is conspicuous.

**Cryptorhopalum fontinale** n. sp.—Form oblong-suboval, moderately convex, shining black, the elytra sometimes nubilously rufescent except basally; legs rufous, the thighs more or less blackish; pubescence above obscure cinereous and coarse, though not dense, rather more condensed on the peripheral parts of the pronotum and with scattered coarser and paler cinereous hairs near basal third of the elytra, except suturally, and near the apices; under surface with luteous pubescence, closer on the abdomen; head moderately small, not differing in the sexes, finely, rather densely punctate, the pale ocellus prominent; antennæ (♂) pale, extend-

ing through three-fifths of the prothorax, the club large, attenuately oval, with the second joint only two-thirds as long as the first, or (♀) very much smaller, extending only through about two-fifths, the club much smaller and its joints slightly less unequal; prothorax twice as wide as long (♀), or shorter and with more arcuate sides (♂), the basal lobe truncate; punctures fine and widely separated; elytra oblong, wider than the prothorax, parallel, with feebly arcuate sides and rapidly very obtuse apex, rapidly narrowed before the somewhat prominent humeral swellings; punctures rather strong but well separated; under surface closely and strongly punctured throughout. Length (4 ♂, 3 ♀) 2.2–2.5 mm.; width 1.2–1.5 mm. New Mexico (Jemez Springs),—Woodgate.

The outline in this species is more oblong and parallel than in *apicale*, before which it should stand, the very indefinite discal condensation of cinereous hairs on the elytra approaching the condition of entire absence of anything but the subapical condensation characterizing *apicale*.

*Elytra with uniform pubescence.*

**Cryptorhopalum grisescens** n. sp.—Oblong-oval, moderately convex and shining, black, the elytra nubilously rufescent except toward base and the suture basally; pubescence throughout not very long or close but pale luteous-gray in color, shorter and slightly closer on the under surface; head small, somewhat less so in the male, not coarsely but closely punctate, sparsely basally, the ocellus dark and small but prominent; antennæ ferruginous, sometimes clouded in part, the club (♂) extending fully to basal third of the prothorax and oval, the second joint barely three-fifths as long as the first, the suture rather impressed, or (♀) much smaller, not extending quite to the middle, the joints less unequal though still with the second notably smaller than the first; prothorax scarcely twice as wide as long in either sex, the sides more converging but only slightly less arcuate in the female; basal lobe truncate (♂), or more arcuate at tip (♀); punctures very fine, sparse; elytra at the moderately prominent humeral swellings wider than the prothorax, about a third longer than wide, shorter in the male, the sides from the humeri to the rapidly and very broadly rounded apex only very slightly arcuate; punctures decidedly coarse and close-set, especially in the male, slightly irregular in form and sometimes triangular; under surface shining, though strongly and closely punctate; legs ferruginous, the femora sometimes blackish basally. Length (♂ ♀) 2.3–2.45 mm.; width 1.3–1.4 mm. Arizona (Tuğson),—Tucker. Two examples.

This species does not appear to be closely allied to any other and, because of its paler and more ashy, sparse and even vestiture, may lead the division having the elytra uniformly pubescent.

**Cryptorhopalum uteanum** n. sp.—Male oblong, parallel, not very obtusely rounded behind, black, somewhat shining, the elytra frequently

more broadly, nubilously rufescent posteriorly, the pubescence above rather short, moderately coarse and obscurely cinereous, beneath more ashy but unusually short and loose; head moderately punctulate; antennæ pale, with piceous elongate-oval club, its second joint three-fourths as long as the first, with rather fine suture, the cavity extending to basal fifth or sixth of the prothorax, the latter short, much more than twice as wide as long and less than a third as long as the elytra, the sides parallel in nearly basal half, converging thence to the apex; basal lobe not sharply truncate, the punctures minute and well separated; elytra two-fifths longer than wide, distinctly wider than the prothorax, the sides straight, evenly arcuate inwardly at base to the prothorax, the humeral swellings not prominent from above, longitudinally ridge-like; punctures strong and close-set, triangular, attenuate at their anterior ends; under surface densely punctate; legs in great part ferruginous. Female smaller and more oval than the male, the prothorax smaller, less transverse, with more strongly and evenly convergent sides, the antennæ much smaller, the joints of the club more nearly equal and the suture deeper, the cavity however unusually long for this sex, extending nearly to basal third of the prothorax. Length (♂ ♀) 1.8–2.2 mm.; width 1.0–1.2 mm. Utah (Provo and Nephi),—Wickham.

Allied to *fusciclava* Csy., of the Texan fauna, but with a shorter prothorax, more distinctly narrower than the elytra, and with much stronger and more close-set elytral punctures. All four examples from Provo are males, the single female being one of the four female specimens from Nephi, representing the allied *nephanum*.

**Cryptorhopalum nephanum** n. sp.—Body somewhat as in *uteanum*, but broader, shining, black, the elytra rather bright rufous, nubilously blackish only near the base as a rule; head small, the fine punctures widely separated; antennæ moderate, with the cavity extending fully to the middle of the prothorax, pale, the club feebly infusate, sometimes with the apical joint dark and the basal pale, oval, more pointed apically, the second joint slightly shorter than the first, the suture deep and impressed; prothorax not quite twice as wide as long and evidently narrower than the elytra, the moderately converging sides evenly arcuate; punctures minute and sparse; elytra not a third longer than wide, parallel, evenly rounded in about apical third, the punctures fine, slightly compressed in form, separated by four or five times their diameters; pubescence, under surface and legs nearly as in the preceding. Length (♀) 2.1–2.3 mm.; width 1.15–1.25 mm. Utah (Nephi),—Wickham. Three examples.

Related rather closely to *uteanum* but having the elytral punctures finer and sparser, the surface smoother, and differing especially in having the thoracic cavity for the female antennal club shorter, the club itself apparently somewhat more developed, however, in that sex.

**Cryptorhopalum aridum** n. sp.—Form oblong, with the elytra slightly

narrowed from the humeral prominences but broadly, obtusely rounded at apex, deep black, shining, the elytra feebly rufescent posteriorly; pubescence obscurely luteous and moderately distinct; head small, finely, rather sparsely punctate, the ocellus small but distinct; antennæ pale, with fuscous club, the cavity extending fully to basal fifth of the prothorax; club unusually long, its basal joint two-thirds longer than wide, the second two-thirds as long as the first, the suture rather deep; prothorax—the length always being measured along the median line—twice as wide as long, distinctly narrower than the elytra and a third as long, the sides strongly arcuate, becoming subparallel in about basal half, the punctures minute as usual; elytra with moderate humeral swellings; punctures moderately large but very shallow and subasperate, subtriangular, separated by two or three times their diameters; under surface closely punctured, becoming finely, feebly and sparsely so inwardly on the metasternum. Length (♂) 1.7–2.25 mm.; width 0.95–1.2 mm. Utah (southwestern),—Weidt, and California (Inyo Mts.—8000 ft.),—Wickham.

In my former treatment of this genus I placed the type of this species with that of *fusciclava*, but now find that it is not the same specifically, differing in its narrower and shorter prothorax and stronger elytral sculpture; the antennal club of the male is a little narrower than in that species and longer than in *uteanum*; the elytral punctures are not as strong or close as in the latter species but more so than in *nephianum*. From *fusculum* Lec., inhabiting the lower Colorado and Gila valleys, it may be known by its slightly stouter form and less close or conspicuous vestiture, and also by the more elongate and darker antennal club of the male. The five examples at hand are all males and I have not seen the female.

**Cryptorhopalum bakeri** n. sp.—Evenly oval, moderately stout and convex, shining, black, the elytra rather pale rufous though somewhat blackish basally; pubescence obscure, not dense, even and not conspicuous though evident, short, ashy and much closer on the under surface; head finely, not densely punctate, broadly concave on the front, the ocellus small; antennæ testaceous, the cavity extending not quite to the middle of the prothorax, testaceous, the club oval, piceous-black, with its first joint distinctly shorter than the second, the suture moderate; prothorax not quite twice as wide as the median length, the lobe strong, truncate; sides strongly converging and evenly, moderately arcuate, the punctures small, perforate, separated by about four times their diameter; elytra fully a third longer than wide, wider than the prothorax but evenly oval, so that the sides from a dorsal viewpoint are almost evenly coarcuate with the thoracic sides, with the humeral swellings longitudinally prominent; punctures minute and very widely separated; sterna strongly, closely punctate, the abdomen much more feebly and irregularly; legs rufous in great part. Length (♀) 2.35 mm.; width 1.35 mm. California (mountains near Claremont),—C. F. Baker.

There is no described species closely allied to this, as may be seen by the structure of the antennal club and the minute sparse punctures of the elytra. The punctures of the abdomen consist simply of two lines, radiating backward from the base of each hair, inclosing a few longitudinal rugulæ—a sculpture quite general in the genus.

**Cryptorhopalum piceum** n. sp.—More briefly oval than the preceding, convex, shining and black above and beneath, the elytra throughout obscure rufous, blacker basally; pubescence above obscure, not long or close, shorter beneath and even finer, not closer and even less conspicuous; head flattened on the front, finely, sparsely punctate, the ocellus large; antennæ dark brown, with its cavity not extending quite to the middle of the prothorax, the club oval, its second joint only about three-fourths as long as the first; prothorax as in the preceding in outline though rather shorter and more transverse, the punctures sparser and still more minute; elytra not more than a fourth longer than wide, slightly wider than the prothorax and with more prominent humeral swellings than in *bakeri*, obtusely rounded at apex; punctures fine and widely separated, but less so than in the preceding, and with the outline of the punctures slightly pyriform; sterna somewhat strongly but very loosely punctate and shining, the abdomen rugosely sculptured in a manner somewhat similar to that of *bakeri*; legs rufous. Length (♀) 2.0 mm.; width 1.2 mm. California (Claremont).—Baker.

This is also a very distinct species which, according to the legend, occurs in the blossoms of *Eriogonum fasciculatum*; it is distinguishable at once from *triste* Lec., by its more abbreviated form and finer and much sparser elytral punctures, among other differences such as coloration, which however is not always stable. It may be placed near *caseyi* Torre (*affine* || Csy.); it is more abbreviated than that species and has a much more feebly sculptured abdomen.

**Cryptorhopalum floridanum** n. sp.—Oval, moderately stout, convex, shining, widest across the rather conspicuous humeral prominences, deep black above, picescent beneath, the abdomen dull rufous; legs ferruginous, the femora nubilously darker; pubescence moderate in length and nearly black, extremely short beneath, sparse and inconspicuous; head strongly but sparsely punctate, the ocellus feeble; antennæ bright ferruginous, the basal joint infusate, the club broadly oval, with its second joint a little smaller than the first, the suture rather coarse; cavity extending barely two-fifths the length of the prothorax, the latter not twice as wide as long, the converging sides evenly and moderately rounded, the lobe large though narrowly truncate; punctures fine and widely separated; elytra scarcely a fourth longer than wide, only two and one-half times as long as the median line of the pronotum, the sides slightly converging and broadly arcuate behind the humeral prominences to the rapidly rounding and very obtuse apex; punctures shallow, rounded, not very fine and separated by two to three times their diameters, the ground sculpture

finely and faintly rugulose though polished; sterna sparsely punctured, with a fine line from the inner side of the middle coxæ obliquely outward to near the middle of the length, the side-pieces more closely punctate; abdomen finely, rugulosely punctate. Length (♀) 2.1 mm.; width 1.3 mm. Florida (Gulfport).

On the metasternum the surface between the oblique lines, which extend backward from the inner sides of the middle coxæ, is abruptly more finely and sparsely punctate than the remainder of the surface. In *triste* Lec., the oblique lines on the metasternum are very much shorter and more transverse than they are in this species.

### **Anthrenus** Fabr.

There is but little to add to my former revision of this genus but some to subtract, as I now think that the varietal form *nevadicus* Csy., should be considered a true synonym of *occidens*; it also should be stated that there is a specimen of this species in my collection from southern Illinois, about forty miles below St. Louis. *Carolinæ* Csy., is to be considered a synonym of *castaneæ* and not a subspecies, and *suffusus* Csy., is a synonym of *lepidus* Lec.

The following species may possibly be an importation, but I cannot identify it with any European form:

**Anthrenus seminiveus** n. sp.—Eyes emarginate and the antennæ 11-jointed; body briefly oval, strongly convex, with black shining integuments, wholly concealed by a dense covering of large, oblong-oval, minutely and evenly strigose scales, white, fulvous and blackish-brown in color; head very small, less than a third as wide as the prothorax, the dense white scales smaller than elsewhere and becoming yellowish basally, the ocellus hemispherical and hyaline, perfectly transparent and glass-like; the antennal club is compact, 3-jointed and broadly oval; prothorax twice as wide as the median length, which is nearly one-half greater than that of the strongly converging and feebly arcuate sides; base sharply triangular, each of the straight sides of the angle feebly sinuate at inner third; scales very dense throughout, pure white, tawny in a small transverse central area and in two small basal areas at each side; scutellum very minute; elytra laterally longer but suturally shorter, than wide, broadly, evenly oval, clothed with dense white scales, becoming blackish at base in a spot near the scutellum and a large medially subdivided more lateral spot, in a sutural spot at a third from the base, in an irregular oblique area from the middle of the sides to the suture near apex, and in two small marginal posterior areas on each, the dark areas more or less sprinkled with isolated fulvous scales; under surface very convex, densely clothed with very uniformly white scales; legs brown, the femora densely clothed on their exposed surfaces with yellowish scales. Length (♂) 2.5 mm.; width 1.8 mm. District of Columbia.

The male has each elytron obtusely subdentate at the apical margin near the suture. I found a single example of this very striking species in my working-room about a year ago; no foreign material of any kind had been received therein for several years and whence it came is rather mysterious. However, the above description will easily permit of identification.

***Anthrenus acomanus* n. sp.**—Eyes emarginate, the antennæ 11-jointed; body broad, oblong-oval, densely clothed with elongate-ovoidal, finely strigose scales, mostly grayish-white in color, the integuments black, the elytra feebly rufescent; head very densely cribrate where denuded, the scales white and tawny, the antennæ stout, with transverse funicular joints, the compact club broadly oval, with its last joint rather longer than the first two combined; ocellus hyaline, moderately convex; prothorax rather short, with strongly converging and moderately arcuate sides, the base oblique and straight at the sides, the lobe large, nearly a third the total width, obtusely triangular; scales dense, whitish, mingled with tawny, a large median area nearly black; elytra distinctly longer than wide, oblong, very obtuse at apex, the humeral prominences well developed; whitish scales broadly condensed suturally and toward the middle of the sides, but in both cases extremely indefinitely limited, the general surface with a mixture of whitish and tawny scales; pronotal punctures, where exposed, coarse and separated by their own diameters, smaller and sparser medio-basally, rather coarse, deep, close and umbilicate on the elytra; under surface very convex, densely clothed with uniform grayish scales. Length (♂ ♀) 2.6–3.2 mm.; width 1.6–2.0 mm. New Mexico (Jemez Springs),—Woodgate.

The elytral apices are obtusely subangulate in the male. This species is not closely allied to any other known to me. The maculation of condensed scales on the elytra is much looser and less defined than in any other, but it might be placed near *lepidus* in the lists; it is much broader and more oblong than that species. The scales of the upper surface are easily removable and it is difficult to find a well preserved specimen.

### Orphilus Erichs.

Of *subnitidus* Lec., I now have a large series from Jemez Springs, New Mexico, that display no differences from those that occur in California. There is only a moderate amount of variation in the elytral punctures, which are notably strong and close-set toward base. *Æqualis* Csy., described as from the Grand Cañon of Arizona, I now have also from two different localities in Oregon; it seems to extend along the Sierras to the more northern latitudes; it



differs from *subnitidus* in the notably small and everywhere widely separated punctures of the elytra and in its rather less transverse prothorax.

## HISTERIDÆ

This is one of the largest and most isolated families of the old Clavicornia and, as it exhibits no decided relationship with any of the other large divisions of the Coleoptera, it may be considered a representative family of an order having the name Clavicornia, in absence of any more fitting. It is safe to say that not three-fourths of the species now forming our collections have ever been described. The collection of the writer has increased greatly since his early work in the family, and it seems desirable to bring it up to date by naming the numerous nondescripts. Mr. F. G. Carnochan has, it is understood, a monographic treatment of the Hololeptids in view, and this part of the family is therefore omitted for the present.

### *Platysoma* Leach

A large genus as heretofore constituted, but Mr. Lewis has subdivided it into numerous subgenera, some of which will doubtless be accorded generic weight in times to come. In the true *Platysoma*, a species which I described under the name *tabella* (Ann. N. Y. Acad. Sci., 1893, p. 551) has been reduced to synonymy by Mr. Lewis, and this is followed by Mr. Bickhardt in his catalogue of the Schenkling series,\* but this is not correct. The type of *tabella* was unlabeled in the Levette collection and I surmised that it might have been taken in Indiana, but subsequent study shows that it is from California. Segregating all of the California and Arizona examples in my collection and comparing them as a series with *depressa* Lec. (*lecontei* Mars.), from the Atlantic regions, demonstrates at once that *tabella* is a larger, broader species, with more abruptly and broadly truncate elytra and relatively longer and less transverse prothorax, broader pygidia, less punctate abdomen and broader

\* The compiler of a general catalogue, such as this, confers so signal a benefit upon all workers in the branch considered, that it ill becomes one to criticize adversely, and I pass over numerous typographic errors in page numbers and other such details without comment; but it does seem as though Mr. Bickhardt might give some other locality data than "Nord-Amerika," in referring to species from the U. S. of America. One might with equal propriety give the locality Asia for a Japanese or Persian species.

antennal club. It is peculiar to the Pacific coast regions. The following is another species allied to *depressa* but smaller and more convex:

**Platysoma pinorum** n. sp.—Oblong, shining, deep black, the antennæ piceous, the club pale; legs black; head fully two-fifths as wide as the prothorax, smooth transversely concave anteriorly, with the stria entire, transverse; prothorax one-half wider than long, the sides feebly converging and straight, rounded anteriorly and becoming transverse; sinus deep, margined medially, transverse; base just visibly arcuate, the adjacent punctulation only visible laterally; surface convexly declivous laterally and with sublateral punctures nearly as in *depressa*; elytra barely as wide as the prothorax and two-fifths longer, parallel, the feebly arcuate sides rounding and converging apically, the surface evidently convex, impunctate, excepting a few scattered punctules along the convexly declivous apical margin; striation throughout as in *depressa*; under surface and pygidia nearly as in that species. Length 2.8 mm.; width 1.45 mm. North Carolina (Southern Pines and Asheville). Two examples of undetermined sex.

Although at first sight very similar to *depressa*, this species may be known by its more abbreviated form, the broader prothorax, the more convex lateral slopes of the pronotum and more depressed basal and apical angles, the sides at apex rounding in more, becoming transverse; the anterior tibiæ are similarly quadridentate.

**Platysoma quadrifera** n. sp.—Parallel, subcylindric though only moderately slender, deep black, shining, the legs rufo-piceous; head moderate, finely, rather closely punctate, moderately and not abruptly concave anteriorly, the frontal part of the stria straight and entire; prothorax quadrate, scarcely wider than long, the parallel sides feebly arcuate basally, strongly rounded apically, the apical sinus rather abrupt, not margined; base transverse, subarcuate, bordered throughout with distinct confused punctures; surface finely punctate, sparsely medially, gradually less sparsely laterad, the marginal bead fine but strong; elytra equal in width to the prothorax and barely more than a third longer, having five entire moderate discal striæ, the sutural tending to slight disintegration very near the base; apices with a few fine punctures; pygidia both coarsely and rather closely punctate; under surface moderately punctate, coarsely at the sides; beaded margin of the broadly rounded prosternal lobe entire, the mesosternum sinuate, but with the usual broad convex margin completely wanting, except at the sides. Length 2.5–2.9 mm.; width 1.0–1.15 mm. North Carolina (Southern Pines and Asheville) and Alabama (Auburn). Five examples.

Differs from *parallela* in its rather larger size, coarser pygidial sculpture and obsolete mesosternal margination, which character is as in *æqua*. I see but little or no allusion to the very coarse deep

elytral striæ in *æqua*, which constitute its most salient differential character. From *coarctata* the present species differs in its entire fifth, and virtually entire sutural, stria, besides the absence of mesosternal margin; it is distinctly broader than *coarctata*. These species represent the subgenus *Cylistosoma* of Lewis, in our fauna.

Of *Cylistix cylindricus* Payk., I have a very small specimen from Peekskill, New York; individuals seem to vary very much in size, 3.7-5.5 mm.—more so than is generally the case in these cylindrical species. *Platysoma depressa* varies a good deal in size, but *carolinæ* is more constant. In *Cylistix gracilis* the prosternal lobe is completely devoid of an apical marginal bead, constituting a remarkable exception in both *Cylistix* and *Platysoma*.

### Psiloscelis Mars.

The broad parallel hind tibiæ, together with the special facies due to the dense sculpture of the integuments, indicate that *Psiloscelis* is a fully valid genus, as now generally acknowledged, and is not in any way a subgenus of *Hister*; the name *harrisi* Lec., has therefore to be reinstated for the species sometimes called *planipes* Lec.—a change of name made by LeConte when certain heterogeneous elements, such as *Psiloscelis*, *Margarinotus*, *Hister*, *Platysoma* and others were united to form a single genus. Besides *perpunctata*, *harrisi* and *corrosa*, my collection contains representatives of three other species, seemingly undescribed, as follows:

***Psiloscelis incurva* n. sp.**—Shorter and relatively rather broader than *harrisi*, but resembling that species almost exactly in sculpture and general structure; head finely and closely punctate, the frontal stria forming a strong reëntrant angle medially, the epistoma shining, with the very fine punctures rather close but not dense; prothorax throughout as in *harrisi*, except that the punctures are slightly less coarse; elytra similar but slightly shorter, the coarse deep close-set punctures as in *harrisi*, the dorsal striæ also nearly as in that species but not so broad, relatively deeper and more groove-like and with both their edges sharply defined; in *harrisi* the inner edges of the striæ gradually slope upward, without distinct limits, the outer edges very sharply defined; flanks with the basal part of the humeral stria obsolescent, barely traceable by a few disconnected punctures, the apical part in the form of an irregular groove half as long as the elytra, the subhumeral strong, downwardly arcuate, extending from the base not quite to the middle; under surface and tibiæ as in *harrisi*, except that the mesosternal sinus is shallower. Length 6.7 mm.; width 4.8 mm. New York (the locality unrecorded).

This species is rather closely allied to *harrisi*, but is more abbreviated. In *harrisi* the frontal stria is transverse, or very feebly sinuate, never having the abrupt reëntrant angle of *incurva*, and the humeral stria of the elytra is distinct, even and deep in about basal fourth of the length, with the apical part simply an irregular series of detached uneven lines. The form of the discal striæ of the two species is quite different, as shown above.

My examples of *harrisi* are from Fayville, Massachusetts and Peekskill, New York. One of them has very peculiar anterior tibiæ, due probably to excessive wear; the tibia is narrower than in the normal form, the outer edge forming a broad even arc, perfectly smooth and devoid of any trace of dentition, the tibiæ bilaterally similar.

*Psiloscelis millepora* n. sp.—Elongate, parallel, with feebly arcuate sides, moderately convex and shining, the body and antennal club black, the legs somewhat piceous though virtually black; head finely but deeply, closely punctate, the epistoma with a central rounded indentation, the ambient carinate stria strong and entire, transversely subsinuate along the epistomal base; antennal club broad and rounded; prothorax about one-half wider than long, widest near basal third, where the sides are arcuate, the latter thence slightly converging and nearly straight anteriorly, rounding apically, the angles broadly rounded; sinus deep, paralleled by a distinct line, which rounds evenly at the sides and thence continues posteriorly as the inner lateral stria, which partially forms the inner slope of the convex surface between this line and the outer lateral, the latter close to the margin and finely cariniform, curving inward apically; this intermediate surface is narrow and very closely and minutely punctate; general surface with fine but deep punctures, having about a third or fourth of the diameter of the punctures in *harrisi*, the punctures close-set though scarcely dense, but little larger laterally; scutellum smooth and polished, equilatero-triangular; elytra nearly as long as wide, as wide as the prothorax, the sides rounding in gradually behind, the combined apex angularly sinuate; surface finely, closely punctate, nearly like the pronotum; striæ shallow, as in *harrisi*, except that the humeral is wanting and the subhumeral similarly occupies basal half only and is more deeply impressed; lateral interval with some scattered coarser punctures posteriorly, the sutural interval more finely punctured as usual in the genus; pygidia coarsely, closely and shallowly punctate, with intermingled minute punctures; under surface finely, sparsely punctate medially, the sides and abdomen coarsely, the prosternal lobe margined at the sides but not at apex, exactly as in *harrisi*; mesosternal sinus very shallow. Length 7.2 mm.; width 4.4 mm. Wyoming (Laramie, June 12, 1893).

At first I thought that this was the *subopaca* of LeConte, described from Nebraska and of which Dr. Horn added another speci-

men from Vancouver, at any rate supposed by him to be the same. The present species, according to the original description of *subopaca* (New Spp. Col., 1863, p. 60), differs in the elytral striation, it being said of *subopaca* "elytris striis utrinque 6 marginalique integris." The marginal stria, said to be entire, is the subhumeral of Horn, who states in his description of *subopaca* (Mon. 1873, p. 279) that it is abbreviated and continued thence to the apex by a row of punctures. The internal marginal of LeConte is the humeral of Horn; it is said to be obsolete in *subopaca* by the former, and very short by the latter, author.\* The punctures in *millepora* are very fine, being, on the pronotum, exactly as in *perpunctata*, but on the elytra of the latter they are much feebler.

*Psiloscelis blanchardi* n. sp.—Oblong-oval, convex, distinctly shining, black, more or less piceous beneath, the legs often rufescent; head finely but deeply, very closely and uniformly punctate, the epistoma not more than feebly concave medially, the ambient line wanting at the sides, represented along the epistomal base by a transverse and posteriorly very obtusely angulate line; antennal club ferruginous, broadly rounded; prothorax three-fifths wider than long, widest at base, the sides thence feebly converging and evenly but very feebly arcuate, more rounding apically, the angles well defined, not rounded; sinus deep, its submarginal line very broadly rounding at the sides to form the inner lateral stria, this attaining the base and only moderately strong, the narrow surface between it and the fine outer stria minutely and very closely punctate; general surface finely, rather sparsely punctate, gradually more closely, much less finely and with intermingled minute punctures toward the sides; elytra before the middle somewhat wider than the prothorax, a little shorter than wide, the sides distinctly and evenly arcuate, somewhat more converging posteriorly, the apex as in the preceding; striæ similarly in the form of broad shallow grooves, the six discal as in *harrisi*, the humeral almost entire, being only slightly disintegrated apically, the subhumeral scarcely at all more impressed and not extending quite to the middle; punctures fine but deep and widely separated, with minute punctures intermingled; pygidia with equal and very close, rather large rounded punctures, very even throughout; under surface shining, the punctures generally well separated, the margin of the prosternal lobe interrupted medially; mesosternal sinus deep; anterior tibiæ tridentate, the apical tooth broad and bifid. Length 4.2–4.5 mm.; width 2.7–3.0 mm. Massachusetts (Tyngsboro—Fred. Blanchard, and Framingham—Frost). Two examples.

This species has been labeled *Hister repletus* Lec., in my collection

\* I shall continue the nomenclature of Horn in the genus *Hister*, calling the stria on the outer side of the humeral swelling the subhumeral and that on the inner side the humeral; the short oblique stria sometimes extending outwardly from near the base of the first—or outermost—discal stria, is called the oblique humeral.

for many years, but on referring to the original description (Lec. Mon., p. 49), I find that there are certain disagreements. The anterior tibiæ of *repletus* are said to be 5-dentate and this is borne out by the figure given on Plate II; the size, as indicated alongside the figure, should also be noted—7 mm. Dr. Horn (Mon., p. 288) makes *repletus* a synonym of *cænosus* Er., and, finally, it appears in the Henshaw list as a valid species next to *Hister harrisi*, where indeed it was placed originally by LeConte. It is probable that it was originally described from a series containing a mixture of various species and so the resulting diagnosis and figures are indecisive; it is possible, also, that it may not even be an American species, for *Omalodes borealis*, said in the same work to be from Long Island, proves to be a Brazilian species. No definite species can therefore be determined as *repletus*, except by purely arbitrary action, and it should be dropped as having a *nomen nudum*.

### Hister Linn.

#### Subgenus *Spilodiscus* Lewis

Disregarding the various groups, among which our species having red elytra, with a large black spot medially at base, were distributed by the Hornian arrangement, Mr. Lewis has suggested they be brought together to form a subgenus by themselves. When we consider how species similar in general habitus are frequently widely separated by the characters assumed as the basis of that arrangement, though very convenient in the identification of species, I presume that the suggestion of Mr. Lewis is as good as any that could be offered; at any rate it gives a simpler arrangement and is correct taxonomically. We have a large number of species belonging to this subgenus, only a part of which are yet described, and I now add a few new forms in the subjoined table. The large terminal tooth of the anterior tibiæ is always estimated as a single tooth, even when broadly bifid.

Anterior tibiæ bidentate; prothorax ciliate at the sides, the two lateral thoracic striæ entire. . . . .	2
Anterior tibiæ tridentate; prothorax not ciliate; outer stria apical only. . . . .	11
Anterior tibiæ having no external tooth except the apical; prothorax not ciliate. . . . .	12
Anterior tibiæ with a series of about five small subspiniform external teeth; prothorax not ciliate. . . . .	13

- 2—Surface between the lateral thoracic striæ with ruguliform lines anteriorly. . . . . 3
- Surface between these striæ smooth or nearly so . . . . . 4
- 3—Rufous areas of the elytra far removed from the sides and apex; hind tibiæ very broad distally. Body very broadly oblong-oval, convex, shining, black, the femora rufous except at base and apex; head smooth, the ambient stria generally entire; epistoma with a small feeble impression basally; mandibles with extremely minute and very remote punctulation; prothorax fully three-fourths wider than long, the sides moderately converging and very evenly arcuate from base to apex, the fulvous fringe long, coarse and conspicuous; surface smooth, the lateral striæ coarse; elytra distinctly shorter than wide, one-half longer than the prothorax and, near basal third, evidently wider, the sides arcuate, more converging posteriorly, the apex broadly, angularly sinuate; surface very smooth; striæ one to three entire, the fourth represented by only a short line at base; sutural stria not attaining apex and broadly obsolete basally, the humeral wholly wanting, the subhumeral short and not attaining the base; propygidium with rather large, well separated and very shallow punctures, almost wanting along the middle, the pygidium convex, rather coarsely, very shallowly and loosely punctate basally, gradually finely and sparsely distally; prosternal lobe very narrowly rounded; mesosternal sinus deep. Length 6.8–7.3 mm.; width 4.8–5.2 mm. Atlantic sea coast . . . . . *arcuatus* Say
- Rufous areas extending to the sides but not quite to the apex; hind tibiæ less broadly inflated distally; lateral fringe of the prothorax similarly long and conspicuous. Body and legs black throughout, the elytra rufous, except at apex and in a short medio-basal plaga, which is inflated laterally behind; head with small and sparse punctures, the ambient line evenly arcuate and unbroken on the front; prothorax fully three-fourths wider than long, the outline as in *arcuatus*, the two lateral striæ widely separated, the included rugulæ numerous except basally, the outer stria not attaining the base, the surface smooth; elytra in form and proportion nearly as in *arcuatus*, smooth, each with three discal striæ extending from the basal margin not quite to the apex, the fourth represented only by a small indentation near the base, the sutural only by a short subapical remnant, the humeral and subhumeral wholly obsolete, the oblique humeral fine and evident; propygidial punctures large, shallow, rather widely but unequally spaced and replaced by minute sparse punctulation medially toward apex, those of the pygidium not so coarse but deep and close-set, less coarse and sparser apically; prosternal lobe less narrowly rounded than in *arcuatus*, the mesosternal sinus deep, the anterior tibial teeth rounded at tip and the apical not at all bifid. Length 4.8–6.0 mm.; width 3.4–4.4 mm. California. . . . . *sellatus* Lec.
- 4—Mandibles very minutely, sparsely punctate. . . . . 5
- Mandibles minutely but more deeply, very closely punctate . . . . . 9
- 5—Sutural stria of the elytra wanting. Body rather broadly oblong-oval, shining, black, the legs black throughout; head evenly and feebly convex, with minute and very feeble punctulation, the ambient line

entire, evenly arcuate on the front; prothorax almost twice as wide as the median length, with evenly arcuate converging sides and sharp apical angles, the surface smooth, the lateral striæ moderate, the outer fully attaining the base, the inner slightly abbreviated, the intermediate surface smooth, except that there is some minute and very feeble punctulation and, anteriorly, one or two of the rugulæ characterizing the two preceding species; elytra fully a third wider than long, the sides evenly arcuate, distinctly converging posteriorly, each with three entire striæ, the fourth represented by a very short basal line, the subhumeral by a very short dash before the middle, oblique humeral fine but evident; red color extending to the sides but not quite to apex, the black plaga but slightly wider posteriorly, wider than long; propygidium with rather large but very shallow, remotely scattered punctures; pygidium convex, with small and sparse punctures, becoming rather coarse only very near the base; mesosternal sinus very deep. Length 6.3 mm.; width 4.4 mm. Utah (southwestern). . . . . **semiruber** Csy.

Sutural stria distinct though never entire. . . . . 6

6—Punctures of the propygidium coarse and dense laterally, mingled everywhere with distinct small punctures; body more broadly oval, the tibiæ more dilated distally, the two lateral striæ of the pronotum very approximate at base. Color black, the abdomen rufescent, the legs not at all pallescent; integuments highly polished; head with minute remote punctulation, the ambient stria entire, evenly curved; prothorax only three-fifths wider than long, strongly convex, the sides rather strongly converging and very feebly arcuate from the base, more rounding apically; surface minutely, remotely punctulate laterally, the striæ coarse and deep; elytra nearly a third wider than long, the arcuate sides moderately converging, the subbasal inflation feeble; three entire striæ very coarse, becoming finer apically, the fourth represented by short subbasal and subapical dashes, the sutural sharply defined from basal third nearly to the apex, the humeral a succession of short incisures from basal third nearly to tip, the subhumeral a short stria near basal third, the oblique humeral deep and very distinct; propygidial punctures not quite so coarse or close medially, those of the pygidium notably coarse, deep and close-set, less coarse but not sparser apically; prosternal lobe narrowly parabolic; mesosternum rather deeply sinuate; teeth of the anterior tibiæ each with an abruptly smooth rounded extension, appearing like a short broad eroded spine. Length 7.0 mm.; width 4.85 mm. New Mexico (Deming).—Wickham. . . . . **subcruentus** n. sp.

Punctures of the propygidium always sparse and never so coarse, the intermingled punctulation never more than extremely minute; body less broadly oval; lateral striæ of the pronotum remaining widely separated throughout their length. . . . . 7

7—Legs black, with the femora red, blackish at base and apex as in *arcuatus*. Body short, subquadrate-oval, convex, shining, black, the elytral red areas large, extending to the sides but not quite to apex, the medio-basal black spot not extending to the middle and wider than long; head smooth, the ambient line transverse on the



front and tending to brief medial discontinuity; prothorax transverse, the moderately converging sides evenly but feebly arcuate, slightly more rounding at apex; surface smooth, the lateral striæ very widely separated and not coarse, the included surface with some short rugulæ anteriorly; elytra short, more than a third wider than long, slightly wider than the prothorax though only very feebly inflated subbasally, the usual three entire striæ distinct, the fourth represented at base and less distinctly at apex, the fifth also sometimes traceable at apex, the sutural short, obsolete before the middle and at apex; flanks not striate, excepting a short fine humeral stria at apex and sometimes at base and a short but stronger subhumeral in basal third, the oblique humeral scarcely traceable; propygidium with moderate and shallow, widely and irregularly scattered punctures, deeper and closer on the pygidium basally but elsewhere smaller and sparse; prosternal lobe broadly rounded, the mesosternal sinus deep; external spines of the hind tibiæ not more numerous than usual. Length 5.0-5.8 mm.; width 3.75-4.5 mm. Colorado (Denver) and Manitoba (Aweme).....*solaris* Carn.

Legs black to piceo-rufous, uniform in color throughout; body slightly more elongate than in the preceding.....8

8—Humeral stria of the elytra deep and distinct in nearly apical two-thirds, very close to the first dorsal posteriorly. Body not very broadly, regularly oblong-oval, convex and black, the legs black to piceous; red areas of the elytra not quite reaching the sides or apex, the median plaga at base extending behind the middle, nubilously defined and as long as wide; head with entire and coarse ambient stria; prothorax transverse as usual, feebly trapezoidal, the sides feebly arcuate, more rounding apically; lateral striæ coarse and deep, especially the outer one, the broad intervening surface apparently never having anterior rugulosity; elytra with the three entire striæ coarse and strong, the fourth present apically and also sometimes the fifth; sutural stria fine, wanting in basal two-fifths and at apex, the subhumeral represented by a short dash near the anterior limit of the humeral, the oblique humeral long and distinct but fine; punctures of the propygidium rather coarse and widely separated, those of the pygidium not quite so large but deeper, moderately separated; sterna as in the preceding, the prosternal lobe not so broadly rounded. Length 5.7-6.0 mm.; width 3.8-4.0 mm. New Mexico to Wyoming (Laramie).....*ulkei* Horn

Humeral stria obsolete, traceable only by a short dash near the middle and sometimes a few very fine widely separated traces posteriorly. Body more broadly oblong-oval than in *ulkei*, the coloration throughout similar, except that the nubilous black elytral plaga extends less posteriorly and is not quite as long as wide, not broadened posteriorly as it is in *solaris*; head and mandibles sparsely and very minutely punctulate, the ambient stria entire but finer than usual; prothorax as in the preceding but broader; outer stria coarse and entire, the inner finer and not attaining the base, the intermediate surface perfectly smooth, though with the usual extremely minute sparse

punctulation; elytra not evidently inflated subbasally and scarcely wider than the prothorax, fully a fourth wider than long, the arcuate sides rather converging posteriorly; three entire striae not very coarse, the fourth and fifth represented by the faintest traces at apex only, the sutural very short, extending from near the middle to well before the apex, the subhumeral present in a very short line near basal third, the oblique humeral long and very fine but distinct; pygidia sparsely and moderately punctured, very nearly as in *solaris*; sterna as in the preceding, the prosternal lobe rather broadly rounded; external side of the hind tibiae with two series of short, very thick and remotely separated spinules. Length 6.2 mm.; width 4.2 mm. Kansas.....**coruscans** n. sp.

- 9—Pygidia coarsely, more closely and very conspicuously punctured. Body rather elongate, oblong-oval, convex, polished, black, the abdomen and legs rufo-picescent; elytra nubilously blackish along the sides, the red areas nubilously merging into black at apex, the medio-basal black plaga extending behind the middle, wider than long and slightly inflated posteriorly; head finely, not very sparsely punctulate, the mandibles closely and conspicuously, the ambient line entire; prothorax of the usual form, the sides evenly and evidently arcuate, rounding apically; outer lateral stria coarse and entire, the inner less coarse, not quite entire, its posterior end tending to form a short hook inward; elytra scarcely one-half longer than the prothorax and barely wider, not at all inflated subbasally, the three entire striae coarse and well impressed, the fourth and fifth wholly obsolete, the sutural rather deep, extending from basal two-fifths to near the apex, the humeral represented by a series of small and elongate, widely separated punctures in apical half, all trace of humeral and subhumeral wanting in fully basal half, the oblique humeral long and fine but distinct; prosternal lobe parabolically rounded, the mesosternal sinus deep; hind tibiae with the external spines stout and widely spaced. Length 5.2–7.0 mm.; width 3.8–4.35 mm. New Mexico (Fort Wingate and Cimarron). The Cimarron examples are exactly like the type, but have the punctures of the pygidia not quite so coarse and more widely separated.

**sculpticauda** Csy.

- Pygidia less coarsely and more sparsely, the propygidium as a rule remotely, punctate.....10
- 10—Form subquadrate-oval, convex, shining and black, the legs black throughout; red areas of the elytra not quite attaining the sides or apex, the black basal plaga extending behind the middle and not much inflated posteriorly, about as long as wide; head with entire ambient line, the surface minutely, sparsely punctulate, the mandibles equally minutely but closely so; prothorax of the usual outline, the converging sides arcuate, more so apically, the lateral striae only moderately coarse, abruptly formed, the inner generally not quite attaining the base, the intervening flat surface wholly devoid of anterior rugulosity; elytra a fourth wider than long and, near the middle, slightly wider than the prothorax, not inflated subbasally, the three entire striae rather coarse, the fourth and fifth feebly

represented at apex and sometimes still more briefly at base, the sutural short, generally post-medial, the humeral and subhumeral wholly wanting, the oblique humeral long and fine but distinct; propygidium evenly, feebly convex from side to side, the punctures moderately coarse, always widely and irregularly separated, those of the pygidium not quite so large but deeper and less separated; prosternal lobe not very broadly rounded and broadly margined, the mesosternal sinus deep. Length 4.8–5.5 mm.; width 3.6–4.0 mm. New Jersey to Kansas (Salina). Four examples.

**biplagiatus** Lec.

Form more narrowly oblong-oval, the coloration similar, except that the legs are rufo-piceous and the black plaga of the elytra shorter than wide, rather more inflated posteriorly and extending barely behind the middle; head with entire ambient line, the punctulation rather close except basally, the mandibular punctures dense and distinct; prothorax somewhat narrower than in the preceding, the sides almost evenly continuing those of the elytra in curvature, gradually more rounding anteriorly; lateral stria entire, about midway between the margin and the inner stria, which almost attains the base and is there hooked inwardly to some degree, the intervening surfaces nowhere rugulose, the three widely spaced punctures inside of the marginal stria distinct; elytra a third wider than long, the sides very evenly arcuate, more converging posteriorly, the three entire striae moderate and somewhat crenulate, the fourth and fifth completely wanting and without vestige, the sutural distinct from basal third to apical fifth, the humeral and subhumeral completely wanting, the oblique humeral long, very fine; propygidium coarsely, sparsely and unevenly punctate, the surface impressed near each side posteriorly; pygidium with coarse, deeper and close-set punctures, becoming fine and sparse posteriorly; prosternal lobe moderately rounded, finely margined; mesosternal sinus deep; hind tibiae with the external spinules widely spaced; lateral fringe of the prothorax short. Length 4.7 mm.; width 3.4 mm. Iowa.....**iowensis** n. sp.

II—Outline evenly elongate-oval, the sides of the prothorax and elytra even in curvature; body and legs deep black, the anterior tibiae rufescent; red areas of the elytra not quite attaining the sides or apex, the basal black plaga wider than long, lobately inflated posteriorly; head smooth, the ambient stria fine but entire, the mandibles rather long, smooth; prothorax of the usual form in the preceding species but more convex along the sides, the three punctures adjoining the very fine marginal stria; inner lateral stria remote from the margin, slightly sinuous, the outer very short and apical, widely separated from the sides, the latter not fimbriate as they are in the preceding section; elytra of the usual outline, strongly arcuate at the sides, the three entire striae coarse and impressed, the fourth feebly traceable near base and apex, the fifth wanting, the sutural crenulate, extending from before the middle nearly to the apex, the humeral and subhumeral wholly wanting; propygidium somewhat coarsely but sparsely punctate, more finely medially, the pygidium very moderately and loosely throughout; mesosternal sinus deep; hind

- tibiæ much more slender and less inflated distally than in the preceding section. the external spinules numerous; basal of the three teeth of the anterior tibiæ small though evident. Length 5.8 mm.; width 3.5 mm. Arizona.....**militaris** Horn
- Outline less elongate, more quadrate-oval, similar in coloration throughout; head similar, smooth, feebly impressed anteriorly, the stria entire; mandibles more slender and apically more arcuate, smooth; prothorax narrower but otherwise similar, the sides continuing the arcuate sides of the elytra; short anterior outer lateral stria a little nearer the sides than in *militaris*; elytra nearly similar and similarly striate, the sutural stria scarcely at all crenulate; punctures of the propygidium smaller and very remotely scattered, those of the pygidium differing very much, being almost completely obsolete except toward base, where they are evident though sparse; in *militaris* they are much more even in size and are distinct throughout; under surface and legs nearly as in *militaris*, the lateral fringe of the prothorax similarly obsolete; large apical tooth of the anterior tibiæ similarly feebly and narrowly bifid at tip, not having the abrupt smooth rounded extension seen in the preceding section. Length 4.2-4.9 mm.; width 3.0-3.2 mm. New Mexico (Fort Wingate, Las Vegas and Cimarron). Five examples...**quadratus** n. sp.
- 12—Narrowly oblong-suboval, convex, shining, black, the legs piceous; red areas of the elytra not attaining the sides and still further removed from the apex, the black plaga wider than long, extending behind the middle; head smooth, very feebly impressed anteriorly, the stria entire, transverse and rectilinear on the front; mandibles with the internal tooth large and at the middle; prothorax transverse, the sides feebly converging, arcuate, more so anteriorly; surface with small confused punctures along the basal margin, the outer lateral stria apical, not extending to the middle, the inner subentire, slightly sinuous; space between the two striae confusedly punctate; elytra transverse, a third longer than the prothorax and, at basal fourth where there is a feeble but rather abrupt inflation, slightly wider; two inner of the three entire striae unusually bent, the fourth and fifth more or less developed behind the middle but not at base, the sutural distinct from before the middle nearly to the apex, the humeral represented by a very short basal remnant close to the first dorsal, the subhumeral wholly wanting; pygidia not very finely, deeply, evenly, very densely punctate, the pygidium smooth apically, the propygidium with two small basal smooth areas at each side; prosternal lobe broadly rounded and finely margined; mesosternum rather deeply sinuate; hind tibiæ somewhat slender, the anterior obtriangular, with a few minute wart-like projections along the outer margin basally but with only one true tooth, the bifid apical; lower tibial surface smooth. Length 4.5 mm.; width 2.7 mm. Oregon.....**oregonus** Csy.
- 13—Rather broadly oblong-oval, polished, black, the femora black, the tibiæ piceous and the spinules fulvous; red areas attaining the sides at base and posteriorly but not medially, far removed from the apex and, as usual, separated at the suture, the black plaga wider than

long, not inflated posteriorly and extending slightly behind the middle; head and mandibles with the punctulation extremely minute, sparse, the anterior impression broad and feeble, the frontal part of the entire stria transverse or just visibly and broadly sinuous; prothorax with the usual outline, the feebly arcuate sides gradually rounding anteriorly; surface closely and confusedly punctate along the basal margin; outer lateral stria fine, apical, not extending to the middle, the inner remote from the outer, fine and attaining the basal punctures, the wide flat space between the inner stria and the margin extremely minutely, evenly and sparsely punctulate throughout; elytra only about a fourth wider than long, not inflated subbasally, the striation throughout almost exactly as in the preceding species, the sutural stria relatively shorter, being subequal to the apical fourth and fifth and in transverse line with them; pygidia rather coarsely, very deeply and closely punctate, propygidium with two small basal areas at each side almost devoid of punctures; prosternal lobe obtusely rounded, the marginal bead broad laterally, becoming extremely fine at the middle of the apex; mesosternal sinus deep; hind tibiæ moderately slender, the anterior obtriangular, with five subequal external serrules, each bearing a short obtuse pale spine. Length 4.8 mm.; width 3.2 mm. Washington State... *electus* Csy.

Besides the fourteen species above defined from material at hand, there are four other described species belonging to this subgenus as follows:

**Hister instratus** Lec.—Somewhat similar to *biplagiatus* though much larger, 7–8 mm. in length according to LeConte, but probably overstated. The lateral fringe of the prothorax is unusually dense and the external spines of the hind tibiæ more close-set and numerous than in allied species; the hind femora are more swollen and pallescent; it occurs in Kansas. It is inscribed, probably in error, as a synonym of *biplagiatus* in the Bickhardt catalogue.

**Hister gloveri** Horn—Stout, the pronotum with two entire striae, ciliate at the sides; elytra with three entire discal and a short sutural stria; subhumeral obsolete, replaced by a few punctures; prosternal lobe acutely produced; hind tibiæ as usual. Length 6.5 mm. Kansas and Oklahoma. The type was said to be entirely black, but it was added that a specimen in the LeConte collection had red and black elytra. I have never noticed any marked variation in the coloration of the elytra of these red and black species. Sometimes a saturation with exuded grease will obscure the coloration.

**Hister lucanus** Horn—Prothorax sparsely fimbriate; lateral pronotal striae both entire; base coarsely punctured; elytra colored nearly as in *biplagiatus*, having three entire discal striae, the sutural extending in front of the middle; subhumeral wholly wanting; anterior tibiæ tridentate; hind tibiæ as usual; body beneath and legs black. Length 3 mm. Cape San Lucas, Lower California.

**Hister simplicipes** Fall—The original description of this species (Occ. Papers Cal. Acad., 1901, p. 235) answers almost completely to the species

defined by me under the name *oregonus*, except that the hind tibiae are said to be bispinulose. It is 4 mm. in length and from San Diego Co., California.

The abruptly smooth rounded extension of the external anterior tibial teeth in the *arcuatus* section, as though the obtusely worn basal part of gigantic spiniform processes, is a remarkable feature of those species, also visible in the tridentate and other sections of the subgenus, though in greatly reduced form; it is probably the accidental wearing away or loss of this apical spine that gives rise to the bifid tip generally seen in the terminal tooth of the tridentate species of this subgenus. Frequently, however, as in *sexstriatus*, the large terminal tooth is truly bifid, each prominence having a worn terminal spine.

Subgenus **Hister** in sp.

Group *Sexstriatus*.

The examples serving as exponents of *sexstriatus* in most cabinets, exhibit extraordinary diversity in size of the body, and this alone might arouse suspicion concerning their specific unity; I find that there are three forms among my material as follows:

- Frontal stria interrupted medially, the ends bent backward. Body narrower, more parallel and oblong; marginal stria of the pronotum attaining the base or very nearly; elytra with the fourth, fifth and sutural striae represented by feeble apical remnants; propygidium coarsely, shallowly and rather loosely punctate, the pygidium not quite so coarsely but more closely; prosternal lobe with the marginal bead interrupted medially; anterior tibiae with three small teeth and one broad, apical and broadly bifid. Length 5.7-6.0 mm.; width 3.9-4.15 mm. California (two examples taken by the writer at San Francisco).....**maritimus** n. sp.
- Frontal stria rectilinearly transverse or very nearly so, entire or interrupted; body more broadly oblong-oval.....2
- 2—Body of large size; prothorax only moderately transverse, the sides arcuate, the inner lateral stria widely distant from the marginal, which attains the base or very nearly; elytra with distinct apical remnant of the fourth stria but without even an evident trace of the fifth or the sutural; pygidia almost similarly but more loosely punctate, the pygidium also somewhat more coarsely; sterna nearly similar; anterior tibiae with three or four smaller teeth and one, large and broadly bifid, at apex. Length 7.3-8.5 mm.; width 4.7-5.3 mm. California (near San Francisco). Four examples. **sexstriatus** Lec.
- Body of very much smaller size and relatively still broader outline, the elytra more prominently inflated subbasally; cephalic stria deep and coarse, evenly arcuate at the sides, transversely evenly, feebly ar-

arcuate and perfectly continuous anteriorly; prothorax nearly as in the preceding but with the inner stria rather less distant from the marginal, which is much abbreviated, ending near basal third or fourth; elytra shorter, having feeble apical remnants of the fourth, fifth and sutural striæ; pygidia almost similarly sculptured, the propygidium perhaps somewhat more coarsely and deeply; prosternal lobe more broadly rounded and with the beading more widely interrupted; tibiæ almost similar. Length 5.2 mm.; width 4.0 mm. California (San Diego). A single example taken by the writer ..... *jacobianus* n. sp.

Although decided structural peculiarities may be lacking, a view of the comparative habitus of these species, is rather convincing evidence that in this group several taxonomic forms have developed, which may be considered specific provisionally.

#### Group *Merdarius*.

The following species is much narrower and more parallel than any other of this group, as in *remotus* of the *fædatus* group:

**Hister rectus** n. sp.—Elongate-oblong, parallel, with but feebly arcuate sides, black throughout; head smooth, the strong ambient line sinuate medially but not interrupted; prothorax only very moderately transverse, the arcuate sides becoming subparallel basally; surface not punctate at base or near the striæ, the outer lateral stria almost entire, not quite attaining the basal margin and not at all hooked, the inner nearly entire, separated from the outer by one-half more than the space between the latter and the sides; anti-scutellar elongate puncture distinct; elytra nearly as long as wide, barely at all wider than the prothorax, only feebly swollen near basal third, the apex very broad; subhumeral stria almost entire, the humeral completely wanting, the four discal straighter than usual, the fourth not quite attaining the base, the fifth and sutural equal, short and apical; propygidium moderately and rather feebly and sparsely punctate; pygidium somewhat finely, loosely punctate and evenly so throughout, except at the rather abruptly smooth tip; prosternal lobe evenly rounded and finely beaded, finely, loosely punctate; mesosternum broadly and moderately sinuate; hind tibiæ moderately thick, the external spines of the double series moderate; anterior tibiæ with the outer margin very smoothly, broadly and feebly bisinuate, as though obtusely tridentate or quadridentate, with the teeth worn almost completely away, the anterior tarsi long, fully two-thirds as long as the tibiæ. Length 5.7 mm.; width 3.4 mm. Kansas (Douglas Co.).

The remarkable anterior tibiæ, as described above, may be simply the result of wear in the unique type, but there is no special evidence pointing to this conclusion. The species may be placed near *felipæ* Lewis. It seems to be rather closely allied to *felipæ* (Ann. Mag.

Nat. Hist., 1901, p. 373; 6–6.5 mm.; Iowa), but differs in having no evident cephalic impressions and only very short apical fifth and sutural elytral striæ; in *felipæ* the head is said to have two shallow foveæ placed transversely, the fifth stria half the length of the elytra and sometimes traceable to the base and the sutural extending before the middle. There is some confusion of language, I fear, relating to the humeral striæ; that which is subentire—abruptly ending at some distance from the base—in *rectus*, is the subhumeral of Horn; perhaps this is the inner humeral of Lewis; there is a distinct stria far down on the inflexed and punctured flanks of *rectus* and perhaps this may be the outer humeral of Lewis. The true inner and outer humerals—humeral and subhumeral of Horn—are best seen in *abbreviatus*; can it be that two striæ in these positions are both entire in *felipæ*? That at least seems to be implied by the language used.

The following species is founded upon the individual taken in Kansas, which was associated by me with the Oregonian *pluto* in my former work on the genus:

**Hister oblitus** n. sp.—Slightly narrower and more elongate than *pluto*, deep black and shining throughout, elongate, oblong-oval; head nearly smooth, the stria deeply sinuate at the middle of the front but not broken as it is in *pluto*; prothorax of usual outline, only moderately transverse, with converging arcuate sides, the surface not plentifully punctate laterally as in *pluto* but nearly smooth, the coarse lateral striæ not quite attaining the base, the basal angles similarly broadly rounded; elytra as in *pluto* but relatively somewhat more abbreviated, the minute sparse punctulation almost as distinct, but the fourth stria much more nearly attains the base; in that species it only extends from near the apex to slightly before the middle; propygidium almost similarly but rather more closely punctate, the pygidium distinctly more closely and somewhat more finely; prosternal lobe similarly narrowly rounded at tip, but with the marginal beading entire; in *pluto* it is broadly interrupted; mesosternal sinus very abruptly limited and deep; anterior tibiæ with four large teeth. Length 8.5 mm.; width 5.2 mm. Kansas.

This species can be distinguished from *pluto* by its more elongate outline, longer fourth elytral stria, unmarginated apex of the prosternal lobe and by having only four anterior tibial teeth.

#### Group *Fædatus*.

This is a rather large group, though when first proposed by Dr. Horn it was supposed to include but four species, of which *margin-*



*icollis* is to be found in but very few collections. The group contains those wholly black species having the prothorax unciliated, the mesosternum sinuate, the subhumeral stria entire, the elytra with four entire discal striæ and the outer pronotal stria wanting or greatly abbreviated. The two following species seem to be distinct from any hitherto characterized:

**Hister texensis** n. sp.—Broadly oblong-oval, convex, polished, the legs deep black; head smooth, the ambient stria entire, transverse or but feebly sinuate on the front; prothorax rather short, almost twice as wide as long, trapezoidal, with evenly and feebly arcuate sides throughout; surface becoming rather strongly punctate toward the inner lateral stria, which is abbreviated basally, the outer stria ending very near the margin slightly behind the middle, the intervening surface not notably convex; elytra transverse, the sides almost evenly continuing the curve of the thoracic sides; discal striæ coarse, three reaching the base, the fourth very nearly, fifth and sutural distinct in about apical half, subequal in length, subhumeral coarse, subentire, humeral wanting, the oblique humeral fine, only slightly oblique; pygidia both opaque and with dense moderate punctures; prosternal lobe not margined; mesosternum very broadly and moderately sinuate; hind tibiæ slightly arcuate and moderately thickened, the anterior with six small equal serrules. Length 6.0 mm.; width 4.25 mm. Texas,—Soltau.

Comes near *fædatus* but larger and differing in the densely opaque, more finely punctate pygidia and more broadly, though not more shallowly, sinuate mesosternum, and more numerous serrulations of the anterior tibiæ. *Fædatus* does not seem to be at all common. My few examples are from Rhode Island and Michigan. A very extended distribution was given it by Dr. Horn, who doubtless included several mutually distinct species among his material.

**Hister umbratilis** n. sp.—Not very broadly, rather evenly oval, convex, shining, the legs deep black; head nearly smooth, the lateral parts of the stria strongly converging as usual in this group, transverse on the front, entire; prothorax relatively rather small, strongly transverse, its arcuate converging sides continuing the curve of the elytral sides; surface minutely, remotely punctulate throughout, with but very few stronger punctures along the inner lateral stria, which is coarse, very nearly attaining the base, the outer very fine throughout, very close to the outer edge, extending slightly behind the middle and ending anteriorly in a cluster of punctures; elytra slightly transverse, with the sides evenly and strongly rounded; subhumeral stria subentire; dorsal striæ deeply impressed, the first three entire, the fourth abbreviated slightly at base and much curved posteriorly, the fifth and sixth subequal, extending from behind the middle nearly to the apical margin; pygidia very closely, subevenly and rather coarsely though not deeply punctate; prosternal

lobe sparsely punctate, not beaded at apex; mesosternal sinus broad and very shallow; arcuate hind tibiæ but slightly thickened distally, the anterior with five small sharp subequal serrulations. Length 4.7 mm.; width 3.35 mm. California (locality unrecorded),—McBride.

This species is allied to *umbilicatus*, also a native of California in the vicinity of San Francisco, but it differs in its less elongate-oval form, more transverse prothorax, unmarginated prosternal lobe and less definitely limited sinus of the mesosternum; the prosternal beading is very distinct in *umbilicatus*. From the Oregonian *umbrosus*, it differs in its much shorter prothorax and elytra and less definite mesosternal sinus. *Umbrosus* differs from *umbilicatus* in its unmarginated prosternal lobe and also in the very much denser pygidial sculpture; I have recently received a good series taken by Moznette at Corvallis, Oregon.

#### Group *Abbreviatus*.

The species *cænosus* Er., is one of the most widely distributed, the material in my collection showing that it extends, practically without variation, from North Carolina to Arizona and Durango. The outer edge of the anterior tibiæ is minutely and evenly multi-serrulate. In the following species the general characters are nearly as in *cænosus*, but there are numerous differences as may be noted:

\***Hister opacicauda** n. sp.—Similar in form and color to *cænosus* but not quite so broadly oval, convex, shining, the pygidia opaculate, having a ground sculpture of fine and irregularly wavy strigilation; head with the frontal stria feebly interrupted, the surface of the front smooth but feebly concave; prothorax nearly as in *cænosus* throughout, the inner stria parallel to the edge but rather less removed therefrom; elytra similar in every way, except that the striæ are not quite so coarse, the fourth discal being notably fine and almost obliterated, more distinct toward base and apex, and that the humeral stria bifurcates just before the middle, the upper ramus very short, the lower, representing the sub-humeral, extending to basal fourth; pygidia finely, sparsely punctured, nearly as in *cænosus*, the propygidium less transverse; under surface and legs nearly similar, except that the outer apical angle of the anterior tibiæ is less broadly rounded and the outer edge throughout smooth and without serrulation. Length 6.8 mm.; width 4.7 mm. Mexico (Cuernavaca). The collector unrecorded.

It is possible that the fine tibial serrulation characterizing *cænosus*, may have become worn off in the single example serving as the type, but in this case it is not easily conceivable why the outer angle

should be less and not more rounded. The ground sculpture of the pygidia is similar in *cænosus*, but the prothorax is shorter, the front is not impressed and there is no trace of the peculiar bifurcation of the humeral stria, which is bilaterally constant in the type of *opacicauda*.

The following species may be placed near *punctifer* Payk.:

\**Hister lateralis* n. sp.—Rather narrowly oblong-oval, moderately convex, deep black and with a varnish-like lustre; head not clearly punctate, unimpressed, the frontal part of the stria fine, transversely rectilinear and entire; prothorax three-fourths wider than long, the moderately converging sides subevenly arcuate; surface smooth, without basal line of punctures, the inner stria parallel and very close to the edge, coarse, not quite attaining the base, the outer fine, short and anterior, the surface between the inner and the sides unusually convex; elytra not much abbreviated, one-half longer than the prothorax, with evenly arcuate sides, having three entire smooth discal striae, the fourth a short isolated line behind the middle, the fifth wholly obsolete, the sutural represented by only a feeble trace very near the apex; humeral stria obsolete, the subhumeral a short line just before the middle, the oblique humeral long and fine; inflexed sides concave, sharply limited above and with two entire striae; mesosternal sinus gradual, distinct, the margin entire; prosternum strongly convex; anterior tibiae with four large sharp external serrules, the apical bifid. Length 5.6 mm.; width 3.8 mm. Mexico (Durango City, Durango),—Wickham.

There is no species known to me at all closely allied to this; the very narrow convex surface between the inner lateral thoracic stria and the edge is a conspicuous feature.

#### Group *Depurator*.

As organized by Horn this large group is composite. *Semisculptus* and *dispar*, having only a single pronotal stria at each side, constitute one section; the former is extremely rare in individuals and I do not have it in my collection. My two examples of *dispar* are from Louisiana; the pygidia are coarsely, rather closely punctate but shining. Then *depurator*, *incertus*, *curtatus*, *furtivus* and allied species, having two thoracic striae, variable though always evident mesosternal sinus and a truncate prosternal lobe in the males of at least most of the species, but with the prosternum unmodified, constitute another section. Finally, forms allied to *servus*, usually having two thoracic striae, the surface of the prosternum bistriate, between and anterior to the coxæ, and the feeblest possible sinus of

the mesosternum, form a third section, which has fully the status of a separate group. All of the following three species belong to the restricted *depurator* group as limited above:

**Hister circinans** n. sp.—Form very broadly rounded and sometimes almost circular, convex, polished, black throughout; head with the punctulation extremely fine and sparse, the stria entire; prothorax only moderately transverse, with the sides strongly converging from the base and almost evenly arcuate; surface smooth, having a series of fine punctures along the basal margin, the striae well impressed, slightly crenulate, the inner entire, the outer abbreviated, not very close to the margin; elytra only slightly transverse, with very strongly, subevenly arcuate sides, the three entire striae rather coarse, shallow, crenulate, the next three more or less evident apically, the humeral represented by a series of small punctures apically only, the oblique humeral extremely fine but distinct; propygidium with the moderate punctures widely separated, mingled with sparse minute punctulation, those of the pygidium well separated, fine, becoming slightly coarse basally, the entire surface convex and polished; femora in great part finely punctate; sterna and legs as in *depurator*, the prosternal truncature in the male broad, transverse and limited by small sharp denticles. Length 6.0–7.8 mm.; width 4.7–5.3 mm. Rhode Island (Boston Neck) and Pennsylvania (Linglestown).

Allied to *depurator* but differing in the more broadly subcircular outline, more separated punctures of the more polished pygidia and other characters; the male in outline is scarcely narrower than the female. *Depurator* is abundant from New York to Colorado (Boulder Co.) and British Columbia (Golden), and I have an example from New Mexico and another one from Mississippi; the pygidium is alutaceous in lustre.

**Hister perbrevis** n. sp.—Very short, broad and convex, almost as wide as long, polished; head with the fine punctulation distinct and close-set, the stria entire; prothorax nearly twice as wide as long, the sides strongly converging and feebly arcuate from the base, more rounded at apex; surface minutely punctulate, with a few more evident punctures along the basal margin, except medially; apical stria finely crenulate, the inner lateral fine, entire, the outer as in the preceding; elytra fully two-fifths wider than long, the sides strongly arcuate, the apex broad, with the usual acute reëntrant at the suture; three entire striae coarse, the fourth present but often disintegrated in apical half, the fifth in a feeble apical remnant, the sutural short and post-medial, the humeral represented by a series of punctures in apical half, the oblique humeral long but very fine; propygidium with the moderate punctures widely separated, without intermingled punctulation, those of the very convex and shining pygidium fine, widely separated, gradually a little stronger basally; prosternum rather wide between the coxae, the mesosternal sinus broad and rather shallow but distinct; anterior tibiae obtriangular, the three teeth extremely

unequal, the apical large, the basal minute. Length 4.7 mm.; width 3.7 mm. Michigan (Ionia).

The type of this species in pale rufo-testaceous in color throughout, undoubtedly the result of immaturity, though the integuments are solid. It belongs near *depurator* but is much smaller and more abbreviated.

The following species, by reason of the short outer thoracic stria of the preceding and the notably remote pygidial sculpture may be placed near *curtatus* and *incertus* in the lists:

**Hister lacustris** n. sp.—Form much narrower and more oblong than in either of the preceding, oblong-suboval, moderately convex, shining and everywhere with fine sparse feeble punctulation; head with the fine punctulation rather close-set, the stria entire; prothorax much less than twice as wide as long, the moderately converging sides only feebly arcuate, rounding strongly at apex; outer stria very short, not extending to the middle and rather distant from the sides, the inner somewhat sinuous and not attaining the base, fine; elytra scarcely one-half longer than the prothorax, the sides moderately arcuate, the three entire striæ not very coarse but unusually deep, the fourth present from near the base to well behind the middle, the fifth represented by a short dash just behind the middle, the sutural distinct from the middle to near the apex; humeral wholly obsolete, the subhumeral present in a very short feeble dash near basal third, the oblique humeral extremely fine; propygidium with notably fine and very remotely scattered punctures, the pygidium convex and polished, with excessively minute sparse punctulation, becoming evident fine sparse punctures basally; prosternal lobe rather narrowly rounded, with a rather wide entire marginal bead; mesosternal sinus abruptly formed and distinct, only moderately deep, fully three times as wide as deep; anterior tibiæ with the three teeth small, rather feeble and subequal. Length 4.8 mm.; width 3.4 mm. Michigan (Marquette),—Sherman.

I do not know of any species with which to compare this closely and it seems to be rather isolated in its relationships, though as stated above, it may be placed near *curtatus*. It is represented by a single specimen of undetermined sex.

#### Group *Servus*.

The species of this group are small or moderate in size, intermediate in many of their characters between the *depurator* and *americanus* groups, especially in the extremely feebly sinuate mesosternum, but they are decidedly isolated as a group by the bistriate prosternum. I have proceeded under the assumption that the true West Indian

*servus* Er., does not occur in America, although we have some that are apparently closely allied thereto, as for example the two following:

**Hister densicauda** n. sp.—Body small in size, broadly oblong-oval, convex, shining, the integuments above perfectly smooth and devoid of any trace of minute punctulation; head not definitely impressed, the sides of the unbroken stria very oblique and straight, the anterior part rectilinearly transverse; prothorax only moderately transverse, the moderately converging sides nearly straight, gradually arcuate and then strongly rounding anteriorly; outer stria subentire, not very distant from the edge, the inner coarser, subsinuous, entire and obsoletely subpunctate; base with a single series of distinct punctures but with no impression before the scutellum; elytra transverse, only a third longer than the prothorax, the four entire dorsals very deeply impressed, without trace of punctures or crenulation, the fifth distinct in apical half, the sutural obsolete in anterior third; flanks without trace of striae, the oblique humeral obsolete or barely traceable; inflexed sides with two shallow, sulciform, abbreviated and confusedly punctulate striae, besides the very fine external stria; propygidium flat, with very coarse punctures, separated by a fourth to half of their diameters, the pygidium with smaller though coarse, deep punctures, which are almost in mutual contact, only the extreme tip smooth; prosternal lobe finely beaded, the mesosternal sinus very feeble; three teeth of the anterior tibiae large but obtusely worn in the type. Length 3.8 mm.; width 3.0 mm.

A single specimen, without locality label but probably from our Atlantic region, was received some years ago. It represents a species undoubtedly allied to *servus* but much smaller. *Servus* is described by Marseul as 5 mm. in length and 3.75 mm. in width, with the front impressed, the stria semicircular, the outer lateral pronotal stria abbreviated, the propygidium bifoveolate, the four entire elytral striae punctate—or probably more properly crenulate—and the entire upper surface is minutely punctulate.

**Hister cribricauda** n. sp.—Form broadly oval, convex, polished and deep black as usual, the minute punctulation evident on the head and pronotum, closer on the head, the ambient stria forming a very transverse straight-sided pentagon; prothorax in outline nearly as in the preceding, the lateral striae similar, the fine outer stria entire to more or less evidently abbreviated; base with a minute indentation just before the scutellum as in *servus*, the punctures of the basal series rather strong; elytra transverse though longer than in the preceding, the sides strongly arcuate, the four entire striae less impressed and with their inner edges feebly crenulate, the other striae as in the preceding, except those of the inflexed sides, which are quite different, these being a single very coarse deep sulcus, continued to the base by a less coarse and shallower sulcus and, along the edge, the usual very fine stria; propygidium feebly, very evenly

convex, without trace of indentation, the punctures very coarse, rather deep and close-set, with an area at each side of the base impunctate; the very convex pygidium is almost as coarsely and still more closely and very deeply punctate, with a large, abruptly smooth area at apex, the surfaces more polished than in the preceding species and the sculpture not quite so dense; prosternal lobe finely but strongly beaded throughout, the mesosternal sinus broad and very feeble though evident; three tibial teeth rather large, high and very acute, the distal minutely bifid. Length 3.75-4.5 mm.; width 3.0-3.35 mm. Kansas (Sedgwick Co. and Mt. Hope).

This species, while allied to the preceding, differs in the evident minute punctulation of the anterior parts, slightly less densely sculptured and more polished pygidia, with much larger terminal smooth area and, very radically, in the sulcus of the inflexed elytral flanks; the sulci in *densicauda* are wholly obsolete in basal two-fifths or more.

The following species is allied to the two preceding but is materially larger:

\***Hister sternalis** n. sp.—Oblong-oval, convex, black and very shining, the legs barely less than black; head smooth, unimpressed, with the stria strong and entire, transverse on the front; prothorax rather long, two-thirds wider than the median length, smooth, with a single basal line of fine feeble punctures; inner lateral stria not very far removed from the edge, parallel, more or less sinuous medially and not quite attaining the base, the outer fine, close to the edge and not extending posteriorly as far as the middle, the intermediate surface not more convex; elytra much abbreviated, two-fifths longer than the prothorax, with broadly arcuate sides; four discal striae entire, smooth, gradually less coarse inwardly, the fifth represented by a very short fine line at apex, the sutural a fine line from just before the middle and not attaining the apex; humeral and subhumeral striae wholly wanting, the oblique humeral very fine; propygidium very coarsely, closely punctate, more finely near the base, in the male slightly impressed laterally and with a smooth basal space at each side, these characters obsolete in the female; pygidium with very coarse and close-set punctures, abruptly smooth at apex in both sexes; two striae of the prosternum distinct, diverging basally; mesosternal bead entire, the sinus broad, gradual and rather shallow, very distinct; anterior tibiae with four external teeth, the basal a minute denticle, the apical short and broad, obtusely bifid. Length 3.8-4.8 mm.; width 3.0-3.35 mm. Mexico (Durango City, Durango),—Wickham.

Differs from *densicauda* in its still much coarser punctures of the pygidia, less coarsely impressed elytral striae, the fifth and sutural much less developed, and in the very short outer thoracic stria. From *cribricauda* it differs in the still coarser punctures of the pygidia and short outer thoracic stria; the elytral striae are nearly

similar in *cribricauda* but the fifth and sutural are more developed. In *cribricauda* the outer thoracic stria is about as long as the inner. The mesosternal sinus is deeper in *sternalis* than in either of the species mentioned.

Four other American species also belong to this group, all having two entire striæ on the inflexed elytral flanks—*indistinctus* Say, of the Carolinas, having strongly, somewhat closely punctate propygidium, finely, rather loosely punctate pygidium, subentire outer pronotal stria and four strong entire elytral striæ; *defectus* Lec., having the pygidia sparsely punctate, the pygidium very minutely, and four entire and equal elytral striæ, of the Atlantic regions; *fungicola* Schf., having three entire striæ and the basal part of a fourth, with very sparsely punctate pygidia, described from New Jersey, but also taken by Manee at Southern Pines, North Carolina, the last two having abbreviated and subapical outer thoracic stria, and the following more southern species, allied to *defectus*:

**Hister nanulus** n. sp.—Small, broadly oblong-oval, convex, polished, deep black, the upper surface devoid of evident punctulation; head with entire subcircular stria and with a small central fovea on the vertex; prothorax short, twice as wide as the median length; sides rather strongly converging and feebly arcuate, more rounded at apex; surface smooth, the punctures of the basal series fine, obsolete in lateral fourth; outer stria apical, midway between the fine entire inner stria and the sides; disk with two or three small impressions near each side medially; elytra rather transverse, with strongly arcuate sides, the entire dorsals rather fine, the fourth very fine and feeble, disintegrated posteriorly, continuous basally, the fifth wholly wanting, the sutural subentire, not quite attaining base or apex; humeral stria wholly wanting, the subhumeral represented by a fine dash near basal third, the oblique humeral fine but evident; propygidium with rather large but extremely shallow and remotely scattered punctures, the pygidium small, convex, with fine sparse punctures; prosternal lobe not beaded, the two striæ distinct; mesosternal sinus extremely feeble; anterior tibiæ tridentate, the distal tooth finely, unequally bifid. Length 3.0 mm.; width 2.2 mm. Florida.

Allied to *defectus* but smaller, with shorter prothorax, very feeble fourth stria and subentire sutural. In the nature of the fourth stria it resembles *fungicola* somewhat, but the prothorax is much shorter, the sutural stria still more developed and the pygidium is smaller. This is the smallest true *Hister* known to me.



Group *Americanus*.

In this group, composed principally of fungivorous species, there are at least two very sharply marked divisions, one having five entire elytral striæ, besides the sutural, and the other with only three or four entire striæ. The species are all rather small, *pollutus* being the largest, with a maximum length of about 5 mm. *Sedecimstriatus* is remarkable in the very coarse deep and crenate elytral striæ and punctate elytral apices; it is moderately abundant from Rhode Island at least as far west as Indiana. *Perplexus* has finer striæ, and the entire surface is feebly punctulate. *Americanus* is very abundant, it has the surface smooth and the striæ moderate, the fifth arching at base to meet the sutural as in *perplexus* and *sedecimstriatus*. The following is allied to *americanus* in these respects, but differs very much in the nature of the fifth stria and in the sculpture of the pygidia:

**Hister diffractus** n. sp.—Very evenly oval, convex, moderately stout, shining, black throughout, the scattered punctulation extremely fine but traceable on the head and pronotum; head with even surface, the stria coarse, entire, rectilinearly transverse in a long line on the front; mandibular carinæ very feeble; prothorax strongly trapezoidal, with but feebly arcuate sides, more rounded apically, much less than twice as wide as the median length; basal margin finely punctulate; surface even, the outer lateral stria not extending quite to the middle, closely approaching the outer edge, the inner straight, not quite entire; elytra moderately transverse, with strongly rounding sides continuous with those of the prothorax, the striæ smooth, rather deeply incised, the fifth entire but comminuted, being formed by a succession of punctures and short striæ, the sutural incised and with small, widely separated punctures along its bottom; humeral stria represented by a series of fine and very faint punctures medially only, the subhumeral obsolete; inflexed sides nearly flat, tristriate; propygidium with very widely scattered small punctures, still smaller medially; pygidium convex, smooth, becoming minutely and remotely punctulate basally; mesosternum evenly truncate; anterior tibiæ coarsely and sharply tridentate. Length 4.0 mm.; width 3.2 mm. Kansas.

Differs from *americanus* in the disintegrated fifth stria and punctate sutural, also in the finer and sparser pygidial sculpture.

**Hister biabbreviatus** n. sp.—More narrowly oblong-oval, more elongate than in *americanus*, the type piceo-rufous above and beneath, the legs and abdomen clearer rufous; surfaces highly polished, the minute punctulation evident on the head and pronotum, the ambient stria of the former fine but deep, broadly transverse on the front; mandibular carinæ fine; pro-

thorax not twice as wide as long, the moderately converging sides feebly arcuate, rounding apically; outer stria very fine, rather close to the margin and not attaining the middle, the inner rather fine, straight and virtually entire; elytra only moderately transverse, the rounded sides more converging posteriorly; striae smooth and rather fine though deeply incised, four entire, fifth and sutural of equal length, both abruptly obsolete in rather more than basal third; humeral and subhumeral entirely obsolete, the oblique humeral extremely fine; inflexed flanks slightly concave, somewhat finely tristriate; propygidium slightly concave toward each side, the punctures rather coarse but everywhere remotely separated; pygidium small, very convex, smooth, gradually finely, then more evidently though sparsely, punctate basally; prosternal lobe unusually acutely rounded, strongly beaded throughout; mesosternum rectilinearly truncate; anterior tibiae with four very moderate teeth, the distal finely and equally bifid. Length 3.7 mm.; width 2.6 mm. New York (Catskill Mts.),—H. H. Smith.

This species is entirely isolated in the *americanus* group, not only in elytral striation but in the acutely rounded and strongly margined prosternal lobe. The coloration may possibly be due to immaturity, at least in part.

The second division of this group, indicated above, is the larger, and of the seven species in my collection only three—*pollutus* and *nubilus* of LeConte and *davisi* Schf.—have as yet been described; the other four, of which the first is somewhat aberrant in group characters, may be defined as follows:

**Hister abducens** n. sp.—Broadly oblong-oval, convex, polished and black throughout, the upper surface without evident minute punctulation except feebly on the head, which is even on the surface, with the stria entire, transverse on the front; the left mandible is carinate only in basal third; prothorax only moderately transverse, the moderately converging sides very feebly arcuate, but little more so toward the apical angles, which are blunt and narrowly rounded; outer stria fine, rather close to the edge, not extending to the middle, the inner fine, not quite entire, the intermediate surface flat and with some sparse and extremely minute punctulation; elytra transverse, only two-fifths longer than the prothorax, the sides strongly arcuate, more converging posteriorly, the three entire dorsals moderate and shallow, subeven, the fourth fine, present only near base and toward apex, the fifth completely obsolete, the sutural fine, wanting in basal third and toward apex; humeral and subhumeral striae completely obsolete, the oblique humeral distinct though very fine; inflexed sides flat, finely tristriate; pygidia shining, the propygidium with very evenly distributed equal and moderate punctures, separated by two to three times their diameters; pygidium convex, smooth, gradually finely, then more distinctly, loosely, punctate basally; prosternal lobe obtusely rounded, not margined, the mesosternum with an excessively feeble and indefinite medial sinuation; anterior tibiae moderately tri-

dentate. Length 3.7 mm.; width 2.8 mm. Texas (Harris Co.),—G. Birkmann.

Although the mesosternum is slightly sinuate, the prosternum non-bistriate and the anterior tibiæ tridentate, the general characters of this species ally it more closely with the *americanus* than the *depurator* group; the sinus of the mesosternum is, in fact, so feeble as to be barely traceable.

In the three following species the mesosternum is truncate:

**Hister vestigialis** n. sp.—Broadly oval, moderately convex, highly polished, black, the under surface and legs partially rufo-piceous, the minute punctulation almost obsolete, extremely minute and sparse on the head, a little closer on the epistoma, the cephalic stria entire, broadly, feebly sinuate on the front; mandibles carinate throughout their length; prothorax distinctly less than twice as wide as long, the sides rather strongly converging from the base, evenly and very feebly arcuate, a little more so behind the slightly blunt apical angles; outer stria very fine, near the edge and extending to about the middle, the inner fine, straight and subentire, the intermediate surface nearly flat; elytra transverse, not quite one-half longer than the prothorax, the sides very strongly, evenly arcuate, more converging behind, widest before the middle; three entire dorsals parallel, moderate shallow, very feebly punctate, the first unusually remote from the sides, the fourth represented by a series of excessively fine and obsolescent striae and becoming distinct only in a sharply marked deep elongate basal fovea, the fifth obsolete, the sutural distinct and with minute punctures from basal third not quite to the apex; humeral and subhumeral wanting, the oblique humeral very fine and faint; inflexed sides nearly flat, with two very fine double striae; pygidia shining, the propygidium with moderate, even, rather sparse and somewhat unequally separated punctures; pygidium with minute, sparse punctures, obsolete apically and larger basally; prosternal lobe obtusely rounded, not margined apically; anterior tibiæ with five serruliform teeth, the basal minute, the distal finely bifid. Length 4.4 mm.; width 3.5 mm. Texas (Dallas).

A distinct species, easily recognizable by the peculiar form of the fourth discal stria, tibial dentition, very broad outline, wide surface between the sides and first dorsal stria and other characters.

**Hister lævicauda** n. sp.—Broadly oval, more convex than the preceding, shining, black, the legs piceo-rufous; punctulation very feeble as in the preceding, more evident on the mandibles, which are carinate throughout; head with the stria entire, transverse on the front; prothorax moderately transverse, the sides strongly converging, straight basally, gradually rounding anteriorly, the apical angles sharp; lateral striae very fine, the outer short, not extending to the middle, the inner not quite attaining the base; elytra moderately transverse, with strongly and evenly rounding sides, widest near basal third, the three entire striae moderate, rather deep

and almost smooth, the fourth distinct in basal third to nearly half, disintegrated thence posteriorly, the fifth obsolete, though sometimes more or less traceable apically, the sutural subentire, extending from basal to apical fifth or sixth; humeral and subhumeral wholly wanting, the oblique humeral long but very fine and feeble; inflexed sides nearly flat but not sharply defined, having two striæ, the outer fine, the inner broad and shallow; propygidium even, rather strongly transverse, the punctures small and extremely remote, very minute medially; pygidium smooth, convex, minutely and very sparsely punctulate basally; prosternal lobe obtusely rounded, unmarginated; anterior tibiæ with four teeth, the basal minute, the distal very high, not evidently bifid. Length 3.8-4.2 mm.; width 3.0-3.1 mm. Kansas (Salina). Three examples.

The fine and extremely sparse punctures of the propygidium will easily serve to identify this species; the mandibles are strongly carinate and unusually punctate.

*Hister fluviatilis* n. sp.—Somewhat less broadly oval than the preceding, similar in color, lustre and subobsolete minute punctulation; head with the frontal part of the ambient stria long, straight and entire; mandibles less carinate and less punctate than in the preceding; prothorax just visibly shorter than in *lævicauda*, though much less than twice as wide as long, the sides much less converging from the base and subevenly, feebly arcuate, the apical angles blunt and narrowly rounded; striæ nearly similar; elytra shorter than in the preceding but otherwise nearly similar in outline and in the dorsal striation throughout; humerals wanting; inflexed sides with two rather broad shallow striæ; pygidia narrower, the propygidium with moderately strong punctures, separated by about two or three times their diameters; pygidium only moderately convex, very finely but deeply punctate throughout, more finely apically, slightly more distinctly basally, the punctures everywhere rather sparse; prosternal lobe obtusely rounded, not margined medially; anterior tibiæ quadridentate, the teeth short and broad, the basal minute, the distal a little larger, narrowly and equally bifid. Length 3.8-4.0 mm.; width 2.75-2.85 mm. Missouri (St. Louis) and Mississippi (Vicksburg). Five examples.

This species seems to be peculiar to the Mississippi Valley in the neighborhood of the great river; it is not to be confounded with any other, except *lævicauda* and *nubilus*, and, from the former, is easily distinguished by its less broadly oval form, stronger, less sparse pygidial sculpture, less converging and more arcuate sides of the prothorax, less carinate or punctate mandibles and many other characters.

*Nubilus* Lec., is distinguished from the two preceding species, which it much resembles, by the four entire dorsal striæ and, from *lævicauda* in addition, by the much stronger and less sparse pygidial,

and especially propygidial, sculpture; it resembles *fluviatilis* in the latter respect but, besides the entire fourth dorsal, it differs from that species in the much longer outer pronotal stria.

### Phelister Mars.

The species of this genus are numerous and, although distributed very widely throughout the world, are more essentially North and South American. The East Indian species were separated by Mr. Lewis under the subgeneric name *Eblisia*. While most of the structural characters are reproduced in aberrant species coming under the generic complex known as *Hister*, there is one feature regarding *Phelister* that distinguishes the species as a group apart from *Hister*—the size of the body. So uniformly small are all the forms of *Phelister* known to me, when compared with even the smallest of true *Hister*, that this apparently trivial character becomes one of generic significance. The North American species in my collection may be separated very clearly by the following tabular statement:\*

Color black or piceous, nubilously reddish on the elytra as a rule . . . . .	2
Color metallic green or æneous; elytra punctate apically; anterior tibial denticles widely spaced distally . . . . .	11
2—Elytra not punctulate . . . . .	3
Elytra, as well as the pronotum, very finely punctulate throughout . . . . .	10
3—Elytra with five entire dorsal striæ, the fifth barely traceable basally in <i>sayi</i> and <i>simplex</i> , outer subhumeral alone visible and only toward apex . . . . .	4
Elytra with four entire dorsal striæ, the fifth and sutural abbreviated basally; pronotum not punctulate medially . . . . .	6
4—Disk of the pronotum finely punctulate throughout, with the usual larger scattered punctures toward the sides, which however are in this case notably small; elytral striæ fine as in <i>subrotundus</i> , but with the fifth obsolescent basally, with a more distinct basal foveola; outer subhumeral extremely fine and faint; stria of the inflexed sides coarse, deep and subentire; lateral thoracic stria fine, broadly inwardly arcuate at apex; propygidium finely, sparsely punctate; prosternal striæ slightly diverging posteriorly, parallel anteriorly; body very small in size, colored as in <i>subrotundus</i> . Length 1.4 mm.; width 0.95 mm. Alabama (Mobile). A single example . . . . .	<i>sayi</i> Carn.
Disk of the pronotum faintly punctulate, without trace of the usual lateral stria of the preceding and following forms, having merely the extremely fine marginal stria, and lacking also any trace of the	

\* The species from this point onward have the striæ behind the humeri, or on the upper part of the flanks, feebly developed as a rule, so that neither has much close relationship with the humeri. When they exist at all, I have therefore called them *subhumeral* striæ—the outer and inner, as either or both may be evident.

three punctures always visible on the narrow surface between the lateral and the very fine marginal stria in those species. Body elongate-oval, moderately convex, piceous-black, with rufous legs, the elytra rufescent narrowly along the apical margin; head only very faintly concave, the supra-ocular lines not prolonged inward anteriorly, the front however with two widely separated oblique lines, derived from such prolongations but now isolated; prothorax distinctly less than twice as wide as long, the converging sides nearly straight, arcuate apically; lateral punctures very fine and remote; basal scutellar fovea distinct; elytra but little shorter than wide, the striae rather fine but deeply impressed, nearly smooth, the fifth tending to become obsolete basally, the outer subhumeral very fine, a third as long as the elytra; prosternal striae long, diverging posteriorly, the included surface nearly smooth, convex; numerous subequal anterior tibial spicules moderate in length; propygidium finely, sparsely punctate. Length 2.0-2.5 mm.; width 1.3-1.45 mm. Texas (Lee Co.). Three examples.....**simplex** n. sp.

Disk of the pronotum not very evidently punctulate medially, having fine and scattered punctures laterally, more evident in *wickhami*; prosternal striae as in the preceding; mesosternum bisinuate at apex, the marginal and discal transverse striae entire; fifth stria of the elytra entire and distinct throughout, the sutural extending well before the middle, the outer subhumeral short and apical but distinct, the single coarse stria of the inflexed sides subentire; lateral thoracic stria curved inward at apex; propygidium finely, sparsely punctate..... 5

5—Cephalic striae not extending inward anteriorly. Body rather briefly oval, the elytra subprominently inflated basally, black when mature, the elytra rufescent externally and apically, the legs rufous; head concave, not evidently punctate; prothorax not twice as wide as long, the evenly converging sides feebly arcuate, rapidly rounding at apex; elytra shorter than wide, much wider than the prothorax, the discal striae not crenate; anterior tibiae finely multi-spinulodenticulate as in the preceding. Length 1.7-2.1 mm.; width 1.15-1.35 mm. Rhode Island to Iowa and Texas. Abundant.

**subrotundus** Say

A—Similar in every way to *subrotundus*, but distinctly less minute in size and having the fifth elytral stria more or less evidently hooked at base. Length 2.35-2.5 mm.; width 1.35-1.5 mm. New York (Catskill Mts.). Three examples.....**frosti** Carn.

Cephalic striae extending inward slightly, though very widely separated on the rather strongly concave front, the punctulation very minute. Body evenly somewhat elongate-oval, convex, smooth and polished, piceous-black, with the elytra gradually rufescent apically; prothorax not quite twice as wide as the median length, the strongly converging sides straight, becoming arcuate anteriorly; lateral stria abbreviated basally, much curved inward at apex; surface with the punctulation very fine, though traceable with a hand lens, the lateral punctures small and sparse, those along the base fine and linearly arranged, the fovea very shallow; elytra with almost evenly rounded sides,

converging posteriorly, the striæ rather fine, very finely and feebly crenulate; outer subhumeral half as long as the elytra; prosternal striæ much shorter than usual, barely more than half as long as the prosternum, unusually approximate anteriorly, less so and transversely united posteriorly; discal mesosternal stria entire, bent backward at the sides; propygidium finely, not very sparsely punctate. Length 2.0 mm.; width 1.35 mm. Texas (Lee Co.). One example.

*contractus* n. sp.

Cephalic striæ extending inward anteriorly and becoming more or less approximate medially. Body black, with the elytra dull rufous, nubilously black toward the scutellum, more elongate-oval than in *subrotundus*, with the elytra not prominently inflated at the sides basally; head minutely punctulate, concave only anteriorly; prothorax more transverse than in *subrotundus* and almost as wide as the elytra, the sides more arcuate, not abruptly more rounding apically; elytra distinctly shorter than wide, the striæ somewhat coarse and deep but not in the least crenulate; prosternal striæ long as usual, diverging at base. Length 1.8–2.35 mm.; width 1.25–1.35 mm. Mexico (Tepehuanes, Durango),—Wickham. Five examples. . . . . \**wickhami* n. sp.

6—Prosternal striæ converging anteriorly, widely distant at the posterior margin, the intervening surface nearly smooth; anterior tibial spinules numerous and subequal. . . . . 7

Prosternal striæ parallel, widely separated throughout, the intervening surface closely punctulate; tibial spinules numerous and subequal. 8

Prosternal striæ very short, converging, the space between them finely punctulate, the base of the process not beaded; tibial spinules as in the preceding sections. . . . . 9

7—Body briefly oblong-oval, very smooth and polished, piceo-rufous, the prothorax clearer; head concave, barely perceptibly and sparsely punctulate, the anterior transverse stria entire but, at the sides, separated from the striæ along the eyes; pronotum abruptly sparsely but distinctly punctate toward the sides, the lateral stria extremely fine, but at apex curved far inward and wholly disconnected from the marginal stria of the apex; basal margin without trace of punctures, the ante-scutellar fovea minute and vestigial; elytra evenly rounded at the sides, much narrowed apically, the striæ finely and feebly crenulate, the fourth hooked inward to some extent at base, the outer subhumeral very short, fine, apical and close to the coarse crenate stria of the inflexed sides; mesosternum with the coarse and entire crenate marginal stria arcuate, flexed backward at the sides, the discal transverse stria wholly wanting; propygidium densely and relatively coarsely punctate. Length 1.8 mm.; width 1.3 mm. Texas (Austin). One specimen. . . . . *geometricus* Csy.

Body broadly, evenly oblong-oval, convex, deep polished black throughout, the legs dull rufous; head flat, feebly concave anteriorly, finely, feebly punctulate, the ocular striæ not extending inward anteriorly, the transverse frontal stria wholly wanting; prothorax not quite twice as wide as long, the converging sides gradually more arcuate anteriorly; lateral stria wanting, the marginal very fine, uniting

at the apex of the angles with the apical marginal stria as usual; surface very smooth, finely punctate laterally and with a medially interrupted basal line of fine punctures, the ante-scutellar fovea large but shallow; elytra with evenly rounded sides, moderately narrowed apically, the striae coarse, crenulate, the fifth and sutural ending at basal two-fifths and third respectively, the former represented at base by a puncture; apical outer subhumeral half as long as the elytra and strong, the marginal stria deep and abrupt, subentire; mesosternum with the marginal stria fine, not flexed backward at the sides, the discal stria transversely and feebly arcuate, entire, abruptly flexed posteriorly, oblique and straight at each side; propygidium with notably fine and moderately sparse punctures; anterior tibial spinules numerous and rather long. Length 1.8-2.4 mm.; width 1.25-1.6 mm. Texas (Brownsville),—Wickham. Six examples.....**atrolucens** n. sp.

Body evenly but less broadly oblong-oval, convex and very smooth, piceo-rufous, the prothorax and pygidia usually clearer rufous, the legs pale; head only obsoletely concave, with the supra-orbital striae obliquely converging anteriorly, rather approximate on the front; prothorax two-thirds wider than long, smooth, with minute scattered punctures sublaterally, becoming obsolete basally, the basal margin with a line of fine punctures which are obsolete medially, the fovea rounded, distinct; converging sides feebly arcuate, more so anteriorly; lateral stria wholly wanting, the fine marginal as in the preceding species and *simplex*; elytra much shorter than wide, very smooth, the four entire discal striae strongly impressed, not crenulate, the fifth and sutural ending abruptly at about basal third, the former represented at base by a feeble puncture, the fourth not hooked at base; outer subhumeral short, apical and extremely fine; propygidium finely, rather sparsely punctate; prosternal striae parallel and unusually approximate, rapidly diverging toward the base which is not transversely beaded; both mesosternal striae entire and crenate; anterior tibiae pluridenticulate. Length 1.8-2.25 mm.; width 1.28-1.4 mm. Alabama (Mobile) and Florida (Pensacola). Five examples.....**mobilensis** n. sp.

8—Outline rather evenly elongate-oval, moderately convex, very smooth and shining, black, with rufous legs, the elytra finely pallescent along the apical margin; head very smooth, broadly concave anteriorly, the strongly arcuate striae along the eyes not curved inward anteriorly; prothorax only two-thirds wider than long, the converging sides distinctly more rounded apically, the lateral stria curving inward at apex but not joining the apical marginal stria; surface smooth, the scattered lateral punctures unusually distinct; at the middle of the base there is a transverse punctulate area, the fovea feeble; elytra with evenly rounded sides, the striae moderate and nearly smooth, the fifth and sutural wanting in basal two-fifths, the fifth represented at base by a feeble puncture, the outer subhumeral fine in almost apical half, the stria of the inflexed sides feeble; mesosternal striae nearly as in *atrolucens*; anterior tibial spines fine; the propygidium is finely, feebly and sparsely punctate.



- Length 1.65 mm.; width 1.2 mm. Arizona (Tuçson). Two examples taken by the author in the suburbs. . . . . **pimalis** n. sp.
- Outline and general characters nearly as in the preceding but differing in color, black, with rufous legs, the elytra rufous, broadly clouded with black medio-basally; head nearly as in *pimalis*, the pronotum almost similar in outline but larger and more transverse, the sparse punctures toward the sides sparser and much more minute, the basal margin with a series of small and feeble irregular punctures almost throughout the width, the ante-scutellar fovea rather large and rounded but feeble, the marginal striation nearly as in *pimalis*; elytra and sterna virtually as in that species; propygidium more distinctly and not quite so sparsely punctate. Length 1.7–1.85 mm.; width 1.15–1.25 mm. Mexico (San Angel, Federal District), —Wickham. Two examples. . . . . **\*aztecanus** n. sp.
- 9—Body evenly subelongate-oval and convex, very smooth and shining, obscure rufous in color, the under surface darker; head but feebly concave anteriorly, smooth, the lateral striæ transversely inflexed anteriorly across the front and narrowly separated at the middle; prothorax not quite twice as wide as long, the converging sides nearly straight, rounding anteriorly; surface smooth, becoming sparsely punctulate toward the sides, the basal line of punctures very fine, feeble and medially interrupted, the fovea evident but small; lateral stria wholly wanting, the marginal very fine; elytra shorter than wide, with evenly rounded sides, the four entire discal striæ rather fine but strongly impressed, smooth, the fifth and sutural ending abruptly just before the middle and near basal third respectively, the former represented at base by a small and feeble puncture, the fourth not hooked at base; outer subhumeral short, apical and very fine; marginal stria of the mesosternum fine, even, the discal coarse and crenulate, both entire; propygidium finely but deeply, loosely punctate. Length 2.3 mm.; width 1.38 mm. Arizona (Tuçson), —Wickham. A single specimen. . . . . **brevistriatus** n. sp.
- 10—Outline oblong-oval, convex, black, the legs dull rufous, the elytra pallescent along the apical margin; entire upper surface finely but not densely punctulate; head feebly concave anteriorly, the lateral striæ very short, not inflexed anteriorly, but sometimes there are traces on the front of two small and transverse, widely separated lines; prothorax three-fourths wider than long, the converging sides nearly straight, rounding anteriorly, without trace of lateral stria, the marginal very fine; a sublateral area from apex to base is rather strongly, sparsely punctate; scutellar fovea distinct though shallow, elytra shorter than wide, evenly rounded at the sides, the striæ rather deep, all feebly crenulate, the fifth and sutural abruptly ending before the middle, the fourth not hooked at base; outer subhumeral as usual but very fine; prosternum finely punctulate, the anterior lobe without trace of the usual beading, the striæ rather long and coarse, unusually approximate, diverging rapidly toward base, the latter not margined; pygidium finely, very sparsely punctulate; mesosternum and tibiæ as in the preceding. Length 1.75–

- 2.0 mm.; width 1.2-1.35 mm. Long Island to Texas (Columbus).  
 Five examples. . . . . *vernus* Say
- 11—Body broadly oblong-oval, moderately convex, smooth and polished, metallic blue-green above, the under surface nearly black, the legs obscure; head feebly concave, with coarse scattered punctures, the lateral striæ coarse, angulate, the anterior obliquity not long; prothorax twice as wide as long, the converging sides arcuate; surface impressed anteriorly near the sides, having sparsely scattered punctures laterally and finer sparse punctures toward apex; lateral stria wanting, the marginal very fine; elytra shorter than wide, only moderately narrowed behind, the surface with rather strong scattered punctures apically, the striæ fine, minutely crenulate, the two inner abbreviated basally, the sutural the shorter, the fourth not hooked at base; subhumeral stria short, fine, not extending to the apex; propygidium rather coarsely, moderately closely punctate; prosternal striæ coarse, parallel, very widely separated, the marginal stria of the mesosternum interrupted at the middle, the discal arcuate, crenate and abbreviated at each side. Length 2.2-2.6 mm.; width 1.4-1.65 mm. North Carolina (Southern Pines).—Manee. Six specimens. . . . . *venustus* Lec.
- A—Coloration as in the preceding, the general structural characters and sculpture also nearly similar, but the body is smaller and more narrowly oblong-oval, the punctures of the head, sides of the pronotum, elytral apices and propygidium finer and less distinct, and the surface between the prosternal striæ, which is sparsely punctate in *venustus*, is here wholly impunctate. Length 1.9 mm.; width 1.25 mm. Louisiana. One example. . . *chalybæus* n. subsp.

*Saunieri* Mars., is apparently not represented in my collection; it was taken at Rochester, New York; it is closely allied to *vernus*, but is larger and with more densely punctulate pygidium. *Venus-tus* is aberrant in the anterior impressions of the prothorax, dentition of the anterior tibiæ, in coloration and in the punctuation of the elytra and pronotum, as well as several other features. I do not have *æneomicans* Horn, at present, but it seems to belong to the *venustus* group; it occurs rarely in the District of Columbia and was taken by the late Mr. Henry Ulke. The rather numerous Mexican species, described by Schmidt in Entomologische Nachrichten, all seem to differ from any of those described above in one way or another; *parallelisternus* has the prosternal striæ as in *aztecanus* and *pimalis*, but the elytral striation is different. *Phelister gentilis* of Horn, from Arizona, is quite certainly not a true *Phelister*; there are said to be six entire dorsal striæ and a sutural stria, which is joined at base to the inner dorsal by an arcuate line.

If I have properly identified the two forms described by Mr.

Carnochan (Psyche, Dec. 1915) as varieties of *subrotundus*, under the names *sayi* and *frosti*—and my specimens at least agree with the described characters—there is but little doubt, in my opinion, that *sayi* should be regarded as a species and not as a subspecies; my representative indicates the smallest of the American forms of the genus, and this, in connection with the punctulate prothorax and basal evanescence of the fifth dorsal stria, indicates a specific status for *sayi*. In regard to *frosti* Carn., my three examples indicate a form very close to *subrotundus*, though materially larger in size. Mr. Lewis (Ann. Mag. Nat. Hist., 1902 and 1908) has described three American species of *Phelister*, *hospes* and *conquisitus*, taken by H. H. Smith in Ulster Co., N. Y., just south of the Catskill Mts., and *rubricatus*, collected by Wickham in Wisconsin and Iowa. The first is a very isolated species in having a complete stria on the front, in its clearly and rather densely ocellate-punctate propygidium and minutely and densely rugose pygidium, with a few punctures visible here and there; the fifth and sutural striæ are abbreviated basally and the lateral thoracic stria arches anteriorly; the prosternal striæ are united at both ends. In the second, the front is not at all striate, the lateral thoracic stria interrupted at both ends and elytral striæ 1-3 are entire, the fourth widely interrupted at the middle, the fifth apical and the sutural abbreviated before the middle; the mesosternum is densely punctulate; it is 2.3 mm. in length. The third, *rubricatus*, in all its characters agrees well with the three specimens which I here identify as *frosti* Carn.; it is 2-2.3 mm. in length, oval, convex, black, the elytra rufous, blackish medio-basally; the cephalic stria is interrupted medially and the lateral thoracic stria arches apically and is abbreviated basally; dorsal striæ 1-5 are complete; the propygidium is evenly, not densely punctate and the pygidium is nearly smooth; the prosternal striæ are joined at base and parallel anteriorly—exactly as in my Catskill specimens referred to *frosti*. It would therefore be well to examine further into the possible identity of *rubricatus* and *frosti*.

#### Hetærius Erichs.

The species of this genus are all true ant-guests and are modified in a peculiar way, especially in the longitudinally trilobate pronotum

and in the legs as a rule. My collection contains representatives of the common eastern *brunneipennis* and *blanchardi*, *minimus* Fall, from Colorado, a species represented by two examples from Helena, Mont., which I think represent *horni* Wick., described from Wyoming, and another allied closely to the latter as follows:

*Hetærius loripes* n. sp.—Body oblong, stout, thick, with the upper surface feebly convex, rufo-ferruginous in color throughout; head concave, finely, densely rugulose and opaque, with a few short hairs; prothorax two-fifths wider than long, the converging straight grooves, from near the sides of the base, entire and very coarse, the middle section smooth and subglabrous medially, punctulate and with short stout hairs laterally and basally, the lateral lobes divided by a deep transverse sulcus at basal third, the basal section convex, pubescent, extending laterally somewhat beyond the base of the anterior portion, which is flat, densely punctate, expanded anteriorly and bristling with very short coarse hairs; elytra moderately abbreviated, slightly inflated near the base, having a posteriorly evanescent inner, and a short outer, subhumeral stria, a sub-entire first and third, and an intermediate fine dorsal stria, the latter abbreviated at apical third; the first and third dorsals are coarse and have their external sides much swollen and very densely clothed with short erect squamiform hairs, which are plumose about their edges, the outer side of the humeral is also cariniform but more finely; intermediate surfaces shining, subglabrous, punctate and with short coarse squamæ posteriorly; flanks vertical, in part flat, shining and sparsely punctate; propygidium moderately punctate, each puncture bearing a very short thick hair; pygidium almost smooth; prosternum elevated, flat, with two parallel striæ, at apex tumid and with its apical truncate surface, below the mandibles, concave and opaque; legs long, the tibiæ broad and more or less flattened, the anterior subparallel in apical two-thirds, rapidly narrowed basally, the posterior obtusely angulate externally, the angle at the middle of the length; all the hairs and scales of the body and legs are pale fulvous-yellow in color. Length 2.4 mm.; width 1.8 mm. California (Tulare Co.). One example received about fifteen years ago, without data concerning the host and with no record of the collector.

This species is smaller than *morsus* Lec., but belongs to the same section of the genus. In *morsus*, according to Horn, the elytra have striæ indicated by finely elevated lines, the first dorsal entire, the second extending three-fourths and the third nearly two-thirds the length; this striation is quite different from that of *loripes* and, according to the figure given by Dr. Horn, the hind tibiæ in *morsus* are not so expanded or externally angulate as they are here. From *tristriatus* Horn, which has nearly similar elytral striation, the present species may be known by the legs, these being normal and not long or with flattened tibiæ in *tristriatus*; the head in *loripes* is

very finely, densely rugulose, without trace of punctures, but in *tristriatus* it is said to be sparsely punctured. *Loripes* is also allied closely to the Montana specimens at hand, which appear to represent *horni* Wick., but there also the head is shining and sparsely, clearly punctate, under the erect hairs, the elytra and pronotum more uniformly punctured, the general outline less broad and the elytra more abbreviated. *Wheeleri*, from near San Francisco, and *exiguus*, from the Puget Sound region, recently described and admirably illustrated by Mr. W. M. Mann, both have broad flattened tibiæ, but very fine elytral striæ. *Californicus* of Horn, seems to have long pubescence on the upper surface. The species are probably numerous and all seem to be well characterized in various ways.

### **Epierus** Erichs.

In this very distinct genus the antennal club is clearly divided by two transverse sutures and, in repose, is sheltered partially in an undefined concavity on the anterior part of the hypomera and under the overreaching antero-lateral margin of the prosternum. The prosternum, medially, has two long strong parallel striæ, the mesosternum is broadly, feebly sinuate and the scutellum is distinct. The sexes are sometimes characterized by cephalic differences, such as are observable in the small male frontal horn in *decipiens* Lec. (*nasutus* Horn ♂) and *cornutus* Csy. *Decipiens* is entered in our lists under the name *planulus* Er., which pertains to a Venezuelan species, probably somewhat different from ours. I have not been able to identify *novellus* Zimm., but have at hand a number of hitherto undescribed species as follows:

**Epierus oblongus** n. sp.—Elongate, parallel, with evenly and very moderately arcuate sides throughout, castaneous, shining and feebly sculptured; head infinitesimally and sparsely punctulate, smoothly convex longitudinally and strongly declivous in front as usual; prothorax one-half wider than long, the sides broadly arcuate, becoming gradually only just visibly divergent basally; surface finely, sparsely punctate, obsoletely so toward the sides; elytra slightly elongate and two-thirds longer than the prothorax, moderately convex and with six entire and finely punctulate, basally free striæ, the flanks between the first discal and the lateral not at all striate; pygidia finely, sparsely punctate, the propygidium less finely; meso-metasternal suture wholly wanting, the apex distinctly margined, the lateral oblique striæ straight and almost reaching the abdomen; prosternal lobe finely, strongly beaded. Length 2.0 mm.; width 1.1 mm. Florida.

Allied rather closely to the widely diffused *pulicarius* Er., but differing in its much more parallel and elongate form, relatively larger, less transverse prothorax, much less rounded sides and straighter striæ of the elytra and other characters.

\***Epierus cubensis** n. sp.—Oblong-oval, rather convex, shining, deep black, the legs obscure rufous; head very minutely but closely punctulate, gradually convex anteriorly, the front not being more declivous; prothorax less than twice as wide as the median length, the sides rather strongly converging and feebly arcuate, rounded at apex; surface finely, evenly and closely punctulate, less evidently along the sides; elytra as long as wide, three-fourths longer than the prothorax, minutely, feebly and less closely punctulate, with six impressed and subimpunctate striæ, all entire, the two inner not so coarsely impressed as the outer; flanks above the lateral stria non-striate; mesosternal episterna coarsely, obliquely strigose, the metasternum coarsely and sparsely punctate; pygidia finely, sparsely punctate, nearly as in *pulicarius*; anterior tibiæ with the external comb of short stiff setæ as usual, the prosternal lobe finely beaded. Length 2.3–2.7 mm.; width 1.3–1.4 mm. Cuba (Havana and Cayamas),—Baker. Five specimens.

This belongs to the *pulicarius* section of the genus, but is distinct in its very black color, more coarsely impressed elytral striæ and much larger size. The front before the antennæ is transverse and parallel-sided and is separated from the vertex by an extremely fine though visible suture. The elytral striæ are all simple and free at base.

**Epierus floridanus** n. sp.—Rather broadly oval, less obtuse anteriorly than posteriorly, piceous-black, the under surface, legs and pygidia rufescent; surface polished; head very minutely, evenly punctulate, the anterior surface more abruptly and strongly deflexed than in the preceding; prothorax three-fourths wider than long, the strongly converging sides feebly arcuate, gradually a little more strongly so apically, the fine loose even sculpture formed of a slightly less, mingled with an extremely minute, punctulation; elytra not quite as long as wide, with strongly arcuate sides, three-fourths longer than the prothorax, the six moderate striæ not as impressed as in *cubensis* and finely, closely punctate, gradually less arcuate inwardly, the three inner not quite attaining the base; flanks with an extremely feeble oblique humeral stria; propygidium rather strongly but sparsely, the pygidium minutely and more closely, punctate; parallel prosternal striæ more arcuate than usual, least separated medially; metasternum sparsely and not very coarsely punctate. Length 2.35 mm.; width 1.5 mm. Florida (the locality unrecorded).

A distinctly isolated species of the *pulicarius* section, larger than *pulicarius* and very much broader than that or either of the two preceding species, the elytra broadly inflated basally and very much wider than the prothorax.

***Epierus obesulus*** n. sp.—Very broadly oval, strongly convex, more attenuate anteriorly than posteriorly, polished, deep black, the legs piceous; head minutely and closely punctate, declivous anteriorly, broadly feebly concave on the upper part; prothorax not quite twice as wide at base as the median length, the sides very strongly converging from the base and broadly, subevenly and distinctly arcuate, barely at all more so apically, the apical angles very acute, the sinus narrow, deep and circular; lateral stria a coarse groove, not quite attaining the base and slightly abbreviated at apex, the usual marginal very fine and entire; surface with fine and uniform, well separated, distinct punctures throughout; elytra not quite as long as wide, much narrowed at apex, with strongly arcuate sides, very convex longitudinally; four outer of the regular striae coarse, smooth—the first slightly punctate—and groove-like, the fifth fine, united arcuately at base to the sutural, which is fine, becoming obsolescent basally; outside the first stria there is a fine entire humeral stria; the lateral stria, above the inflexed sides, strong, the flanks loosely punctate; pygidium finely, closely punctulate, having a deep fovea at each anterior angle; prosternal striae rather fine, arcuate, widely diverging anteriorly, ending at the base of the finely beaded anterior lobe, flaring slightly, becoming a broader bead toward base, which they attain, least widely separated well behind the middle; sides of the sterna deeply, moderately closely punctate; anterior tibiae normal. Length 2.4 mm.; width 1.8 mm. Kansas (Leavenworth).

Distinguishable at once by its broadly oval and very convex form, double lateral thoracic striae and basally united fifth and sutural striae. In this latter feature it resembles *wickhami*, described by Mr. Lewis from an Indiana specimen, but cannot be identical, as the author states of *wickhami* that the lateral thoracic stria is not interrupted at the anterior angle and that the “prosternal striae meet at the base, inclosing a truncate space at the posterior end of the keel”; there is no such structure in either *obesulus* or the next species here described, the prosternal striae extending to the truncate base, but there abruptly ending, the basal margin wholly unmarginated and without beading of any kind. The length given for *wickhami* is 2.75 mm.

***Epierus duplicatus*** n. sp.—Closely allied to *obesulus* but differing in its slightly less broadly oval and more oblong-oval form, less extreme convexity of the upper surface and less deep black coloration, the prothorax being obscurely rufescent; the head is similarly feebly and broadly concave and the prothorax has likewise two lateral lines, the inner a coarse groove not attaining the apex but subentire basally, the outer the usual very fine marginal line continuous at apex with the apical marginal line, the apical angles very acute, the general outline similar, but the uniform punctulation is slightly finer and still sparser; elytra as long as wide, less strongly rounded at the sides and less conspicuously

wider than the prothorax; surface and striation similar, but with the uniform ground punctulation—very evident in *obesulus*—excessively fine, sparser and almost obsolete; pygidium nearly similar, but with the fovea at each anterior angle feebler; under surface nearly similar throughout. Length 2.1–2.25 mm.; width 1.45–1.5 mm. Louisiana (Monroe). Two examples.

The coarse groove just within the finely beaded lateral thoracic margin, not attaining the apex and generally slightly abbreviated at base, the entire humeral stria and basally united fifth and sutural striae, widely anteriorly diverging prosternal striae and stout and very convex form of the body, constitute of this species and *obesulus* a peculiar and rather isolated group of *Epierus*, for which the name **Pseudepierus** (n. subgen.) may be suggested.

**Epierus ovalis** n. sp.—Very evenly elliptic, strongly convex, widest at the middle, polished, piceous-black, a little paler beneath, the legs bright rufous; head finely and closely punctate, convexly and rapidly declivous before the antennae, the upper surface broadly flattened but scarcely concave; prothorax relatively small, twice as wide as long, the sides very rapidly converging from the base, broadly, feebly and sub-evenly arcuate throughout, the apical angles acute; sides with only the usual very fine marginal line; surface finely, evenly and rather closely punctate, with coarser and sparser punctures in a medial area at base; elytra not quite as long as wide, almost twice as long as the prothorax, the sides evenly and strongly arcuate; surface with the suffused punctulation sparse and very feeble but uniform; striae rather fine, almost smooth, the first four evenly arcuate and entire, the fifth and sutural each abruptly ending near basal third or fourth; flanks outside the first evenly convex, not striate, except a feeble trace of the oblique humeral; mesosternal side-pieces notably strongly and closely punctate, the metasternum sparsely and rather finely; prosternal striae fine, straight, flaring slightly at base, ending abruptly at two-thirds from the base; comb of the anterior tibiae very short, loose. Length 2.15 mm.; width 1.25 mm. Mississippi (Vicksburg).

A distinct species, generically less aberrant than *obesulus* because of the entire absence of the coarse lateral thoracic stria within the fine marginal, but differing greatly from the *pulicarius* type in its broadly oval outline and basally abbreviated fifth and sutural striae of the elytra. It is represented by a single example, taken by the writer, and belongs to the same section as *subtropicus* Csy., though the latter has notably longer prosternal striae and very much longer oblique metasternal striae, these ending at the middle of the length in *ovalis*.

**\*Epierus obsolescens** n. sp.—Evenly oval, notably convex, deep black, piceous beneath, the legs rufous; upper surface very smooth and polished;



head evenly and feebly convex, minutely, rather closely punctulate; an epistomal suture is feebly sinuate and extremely fine though evident; prothorax not quite twice as wide as the median length, the sides very strongly converging from the base, evenly and very feebly arcuate, a little more rounding at apex; a single fine marginal line is alone evident; surface with minute, sparse and very obsolete punctulation, a little more evident near, but not at, the sides; elytra not quite as long as wide, three-fourths longer than the prothorax, strongly and evenly rounded at the sides; striæ very fine and feeble, extremely minutely punctulate, gradually still finer internally, the fifth and sutural obsolescent though discoverable, not quite attaining the base; lateral surface between the first discal and the lateral stria broad and perfectly smooth, without trace of striation; propygidium finely, sparsely punctate, the pygidium still more finely, remotely and obsoletely; mesosternal side-piece finely, remotely strigose; metasternum finely and sparsely sculptured; prosternal striæ parallel, flaring at base, abruptly ending anteriorly at the transverse suture delimiting the finely beaded apical lobe; meso-metasternal suture obsolete, the apex transverse and just visibly sinuate. Length 2.7 mm.; width 1.65 mm. Mexico (Rio Balsas, Guerrero),—Wickham.

I do not know any described species with which this can be closely compared.

### **Carcinops Mars.**

This is a rather large genus in North America and, though having most of the structural characters of *Paromalus*, may be distinguished at once by the elytra, which are striate somewhat as in *Epiurus*, and by the distinct scutellum. *Gilensis* Lec., is very common in southern Arizona; it is elongate-oval, deep black and somewhat depressed; *consors* is abundant over a wide area—from California to Brownsville, Texas, as represented in my collection; it may be known easily by the broadly oval form and equally abbreviated fifth and sutural striæ at base; *14-striatus* seems to be cosmopolitan and there is a good series at hand from Rhode Island to Florida, Colorado and Lake Co., California; the head in the latter species is remarkable in having a continuous finely beaded margin. The anterior tibiæ in *Carcinops* differ very radically from those of *Epiurus* in being more dilated and with two remote, and a few feebler and more basal, external teeth and a long slender recurved apical spur. The species of *Carcinops* and *Epiurus* are sometimes so similar to external view, however, that an examination of the hypomera and tibiæ becomes necessary in order to determine the

genus. A considerable number of new forms have come to light during recent years as follows:

**Carcinops uteana** n. sp.—Elongate-oval, feebly convex, black, polished, the legs piceous; head evenly, feebly convex, minutely punctulate, the superciliary line inwardly oblique anteriorly; prothorax three-fourths wider than long, the sides feebly converging, feebly arcuate, gradually much more rounding apically; marginal bead thick basally, very fine apically; surface impunctate, having, broadly toward the sides, fine and widely spaced punctures; elytra fully as long as wide or longer, about three-fourths longer than the prothorax, very moderately narrowed apically, the sides very broadly and subevenly arcuate; striæ punctate, the two outer rather coarsely impressed, the next two finely, the fifth abbreviated at basal fourth, the sutural at fifth, both being barely impressed series of fine punctures; lateral surface without striæ, except a short oblique humeral; pygidium finely, feebly punctate basally, almost smooth and notably convex distally; prosternal striæ extending but slightly before the middle, outwardly feebly arcuate, straight basally; mesosternum broadly, evenly sinuate medially at the margin. Length 2.2 mm.; width 1.2 mm. Utah (Leeds),—Wickham.

Allied rather closely to the more southern *gilensis* Lec., but differing in its still more narrowly oval form, more convex pygidium and in some other characters.

**Carcinops nigra** n. sp.—Much more briefly oblong-oval, moderately convex, shining, black, the legs piceo-rufous; head nearly as in the preceding, except that the superciliary line is finer, scarcely turned inward and obsolescent anteriorly; prothorax very much more abbreviated, distinctly more than twice as wide as long, the minute sparse punctulation all but completely obsolete; sides feebly converging and not evidently arcuate from the base, gradually becoming rounded from slightly before the middle to the apex, the marginal bead fine and subequal; surface with extremely minute, remotely scattered punctulation broadly toward the sides; elytra not as long as wide, four-fifths longer than the prothorax, rather rapidly narrowed apically, with moderately arcuate sides; two external striæ rather coarse, the next two fine and minutely punctulate, the fifth—abbreviated in basal two-fifths and the sutural at the middle—very fine, both abbreviated apically also; surface with a few small punctures at apex; lateral surface without striæ, except an extremely short humeral and oblique humeral at base; prosternal striæ parallel and nearly straight, extending only slightly before the middle, the apical lobe unbeaded as usual; mesosternal side-pieces coarsely, the metasternum more finely and sparsely, punctate. Length 1.75 mm.; width 1.1 mm. Arizona (found sparingly, among a multitude of *gilensis*, by Tucker, near Tucson).

This species resembles *papagoana* Csy., to external view, but has a shorter and much more transverse prothorax and less deeply impressed internal striæ of the elytra, all the striæ being deeply

impressed in that species, although the inner are less so than the outer as usual. The propygidium is less strongly or closely punctate in *nigra* than in *pa-pagoana*.

• **Carcinops sobrina** n. sp.—Oblong, parallel, with feebly and evenly arcuate sides, polished, black, the legs piceous; head extremely finely, remotely punctulate, the fine superciliary lines feebly oblique anteriorly; prothorax four-fifths wider than long, the sides broadly arcuate throughout, but little more so anteriorly than posteriorly, where they become subparallel; marginal bead fine; surface virtually smooth, having some widely and unevenly spaced, extremely small punctules toward the sides; elytra longer than wide, four-fifths longer than the prothorax, only very moderately narrowed apically and with feebly, subevenly arcuate sides, the six striae all fine, the two inner abbreviated before the middle and also at apex; lateral surface with a very short basal humeral and an extremely fine and feeble oblique humeral, generally not discoverable however; prosternum as usual; mesosternum almost truncate; pygidium convex, polished, wider than long, with a few minute scattered punctures in about basal half; propygidium very finely, sparsely punctate. Length 1.8 mm.; width 1.05 mm. California (San Diego).—Ricksecker. A single example.

Allied to *gilensis* but narrower, much more parallel, or with more feebly arcuate sides, rather shorter prothorax, less impressed striae and finer and much sparser propygidial punctures.

**Carcinops bicultpa** n. sp.—Broadly oblong-oval, moderately convex, blackish-piceous with rufous legs, highly polished; head with a loose mixture of fine and extremely minute punctulation; frontal margin finely and strongly beaded; prothorax short, nearly twice as wide as long, the moderately converging sides rather strongly, subevenly arcuate, the marginal groove rather coarse; surface very minutely, rather closely punctulate and, at each side, there is a broad, inwardly obtusely angulate, sharply defined area, in which the punctures become abruptly relatively coarse and conspicuous though sparse; elytra scarcely as long as wide, four-fifths longer than the prothorax, the striae coarse, punctulate, the fifth and sutural gradually fine, feeble and forming two series of fine obsolete punctures anteriorly, united at base by an acute arc; humeral stria entire and very coarse, the subhumeral wanting, the oblique humeral extremely fine; surface smooth, punctured at apex, the inflexed sides very coarsely striate and carinulate basally; propygidium coarsely, rather closely punctate, the pygidium convex, with small but deep close-set punctures, gradually finer and sparser apically; mesosternum rather strongly sinuate. Length 2.3 mm.; width 1.4 mm. Arizona.

This species is closely allied to *opuntia*, and with it and the following, represents a very peculiar section of the genus, because of the coarse, deep and entire humeral stria; it differs from *opuntia* in its slightly shorter, relatively broader outline, in the sharply

defined large lateral area of rather coarse pronotal punctures, and by the much stronger and closer punctures of the pygidia; in both species the very coarse humeral stria becomes rather abruptly fine in basal third.

*Carcinops perlata* n. sp.—Similar to the preceding in general characters but still shorter and broader, oblong-oval, polished, black, the legs piceo-rufous; head similar throughout, but having the minute punctures nearly uniform; prothorax nearly twice as wide as long, the rather rapidly converging sides strongly, subevenly arcuate; surface with minute punctulation and with a large and clearly defined, inwardly angulate area at each side, which has very small and sparse but evident punctures; elytra throughout as in *bisculpta* but still broader, and with even coarser striæ laterally; pygidia similar but less strongly or closely punctate; mesosternum deeply sinuate medially; anterior tibiæ as usual in the genus. Length 2.25 mm.; width 1.5 mm. Texas (Brownsville).

When compared with *opuntia*, this species is observed at once to be very much shorter and broader; it is more abbreviated even than in *bisculpta*, and in it as well as the latter, the area of more distinct punctures toward the sides of the pronotum is more sharply defined. In *bisculpta* the head is relatively smaller than in either of the other two.

These three species, as mentioned above, form so isolated a group that I would propose for them the subgeneric name **Carcinopsida** (n. subgen.).

The two species *conjuncta* Say and *geminata* Lec., also form a very peculiar group of the genus, though by no means so isolated as the *opuntia* section. The body is still more broadly oval and rather more convex, and the mesosternum is abruptly circularly emarginate at the middle, but the head and pronotum are normal and the former is not beaded along the frontal margin; the elytra are abnormal in striation, in the broadly arched base of the fourth stria and in having a long humeral stria, but this stria is fine and is abbreviated at base and not entire and in part very coarse, as it is in *Carcinopsida*; the pygidial punctures are finer and more close-set. These two species form part of *Xestipyge* Mars., in the Bickhardt list, together with some other more or less heterogeneous species from Birma, Brazil, and Mexico; they constitute probably still another unnamed subgenus. In general habitus they are strongly remindful of the genus *Phelister*.

The genus *Xestipyge* was founded by Marseul upon *Carcinops*

*radula* Mars., said by the author to be from Cafraria and to have been communicated by Boheman. For some unexplained reason, the locality has been changed by Mr. Lewis to California. There is no similar species found in California, so far as known to me, and its characters are such as to indicate that it has no close relationship with *conjuncta* and *geminata*—not even subgenerically.

### Paromalus Erichs.

The type of this genus is the *Hister æqualis* of Say. Two allied forms, *Paromalus affinis* and *estriatus*, were subsequently described by LeConte. Careful study of the two dozen specimens in my collection, from Pennsylvania to North Carolina and westward to Colorado, reveals some interesting facts. The pygidium in thirteen specimens, which have a materially smaller size and rather narrower outline on the whole, is rather small, and virtually its entire surface is pervaded by very deep abrupt erosions, varying greatly in degree of development, while the other eleven have a larger, broader and more convex pygidium, which is perfectly smooth and finely punctate, except two very feeble transverse impressions at base and rarely a very few irregular discal scratches. From the protruded genitalia visible in two examples, it is evident that the smaller specimens, with the smaller, more triangular and very deeply sculptured pygidium, are females and not males as generally considered. Furthermore, I am unable to distinguish more than a single species, and conclude that *estriatus* is a synonym founded upon smaller specimens, several of these at hand being but .1 inch, as stated by LeConte, and that *affinis* is also a synonym. In view of the very close relationship, which in any event is known to exist between *æqualis* and *affinis*, the wide separation of these names in the Bickhardt list, the latter coming under a different subgeneric head, is unaccountable. There are many other species besides *æqualis*, placed under typical *Paromalus* by Mr. Lewis, nearly all of them East Indian, Australian or African. All our other species, now listed under *Paromalus*, are placed in a special subgenus by Mr. Lewis but, in view of the rather radical differences in the form and convexity of the body and absence of the well developed parallel prosternal lines of typical *Paromalus*, it would not be far amiss to consider it a genus as follows:

**Isolomalus** Lewis

A few species alone constitute this genus within our boundaries, but in the warmer parts of North America the species become very numerous. *Bistriatus* and *seminulum* are widely diffused over the Atlantic regions and *mancus* is abundant from northern California to British Columbia; *debilis* Lec. from Colorado seems to be allied to *mancus* but apparently is smaller and has much finer punctuation. *Complexus* Csy., is allied to *seminulum* but is more elongate; since describing the unique type, having very remarkable pygidial characters, I have received another specimen, with simple pygidium, from Louisiana. In *seminulum* there is very little sexual difference in the pygidium, this being convex, very smooth and evenly punctulate, but in two examples at hand there are also a few fine irregular discal scratches. In *teres* Lec., the female pygidium has a rounded central area covered loosely with very irregular coarse scratches. The four following species seem to be new:

\***Isolomalus nanulus** n. sp.—Narrowly oblong-oval, strongly convex, polished, deep black, the legs obscure rufous; head evenly and feebly convex, extremely minutely, sparsely punctulate, with the apical margin strongly beaded throughout; prothorax long and barely two-fifths wider than long, the moderately converging sides broadly arcuate, gradually though only slightly, more so anteriorly, the marginal line fine, entire, curving inward slightly at base; surface with very fine, well separated and uniform punctuation; elytra slightly elongate, two-thirds longer than the prothorax, narrowed at apex, with strongly and subevenly arcuate sides; sutural stria distinct, abbreviated at apical third but attaining the apex; there are also two oblique discal striae extero-basally; the very fine lateral line is arcuate downward as usual in the genus; sides of the metasternum and abdomen rather strongly, not very closely punctate, the mes-episterna almost impunctate; anterior tibiae with the arcuate external edge bearing four extremely minute spicules; pygidium convex, even, shining, finely punctulate, unmodified in the types at hand. Length 1.6–1.8 mm.; width 0.8–0.9 mm. Cuba (Havana),—Baker. Six examples.

Much smaller in size, apparently, than either of the other two species described thus far from Cuba.

**Isolomalus ovulatus** n. sp.—Evenly elongate-oval, strongly convex, polished, piceous-black, the legs dull rufous; head evenly, feebly convex, extremely minutely punctulate, the apical beading entire; prothorax fully one-half wider than the median length, the sides strongly converging from base to apex and very evenly and rather feebly arcuate throughout, the apical angles very acute, the sinus deep; beaded side margins rather

thick basally, very fine apically, the marginal stria very fine, turned inward slightly at base; surface with minute sparse feeble punctures throughout; elytra longer than wide, two-thirds longer than the prothorax, much narrowed at apex and with strongly arcuate sides; fine sutural stria abbreviated at anterior two-fifths, attaining the apex, a single short and feebly oblique basal stria also evident; punctures small and sparse though strong and conspicuous; flanks very smooth and polished; pygidium with sparse and excessively minute punctulation; sides of the metasternum and abdomen with small but strong, moderately sparse punctures, the mes-episterna with slightly smaller and sparse punctures throughout; four spinules of the anterior tibiæ very small. Length 1.9 mm.; width 1.6 mm. Kentucky (Louisville). A single example, having the pygidial surface wholly unmodified.

Allied to the preceding and to *seminulum*, but rather larger than either, and with the sides of the prothorax more strongly converging and feebly arcuate to the relatively more narrowed apex; the prothorax is much longer than in *seminulum*, corresponding with the more elongate form of the body, but it is relatively no more elongate than in *nanulus*, though more attenuated anteriorly.

\**Isolomalus durangoensis* n. sp.—Rather broadly oblong-oval, only moderately convex, shining, black, the legs small and feeble, obscure rufous; head evenly and feebly convex, very minutely, remotely punctulate, the apical beading entire; prothorax fully two-thirds wider than long, the sides moderately converging, evenly and strongly arcuate from base to apex, the marginal bead fine, subequal; surface minutely, feebly, sparsely and evenly punctulate; along the base there is a single line of small but strong punctures; elytra not longer than wide, rapidly and arcuately narrowed apically; fine sutural stria extending from the apex for three-fifths, the oblique discal basal striæ faint and barely traceable; punctures fine and sparse but distinct, the flanks smooth; pygidium in the type convex, having many coarse irregular anastomosing cracks throughout the width in basal half, the remainder more convex, even and with very fine punctures; sides of the abdomen rather strongly but loosely punctate, the sides of the sterna extremely minutely and remotely punctulate; the four or five denticles of the anterior tibiæ are very small. Length 2.2 mm.; width 1.28 mm. Mexico (Durango City, Durango),—Wickham.

This species is allied to *infirmus* Mars., of which I have a small series from southern Mexico, but it is less broad and the sutural stria completely attains the apex and is not posteriorly abbreviated as it is in *infirmus*. The sex of the type is probably female.

\**Isolomalus mysticus* n. sp.—Oblong-oval, rather strongly convex, shining and black or piceous-black, the legs obscure rufous; head very minutely, sparsely punctulate, the apical beading excessively fine but entire; prothorax three-fifths wider than long, the sides rather strongly

converging and distinctly arcuate, gradually a little more so apically; marginal bead fine, entire; surface with fine sparse feeble punctures, which toward the middle become extremely minute and subeffaced; base not linearly punctate; elytra as long as wide, three-fourths longer than the prothorax, the arcuate sides more converging apically; striæ all obsolete, the sutural wholly wanting; punctures very small and remote, becoming obsolete toward the suture basally; lateral stria with a rather abrupt downward arcuation before the middle; pygidia finely, sparsely punctulate, the pygidium convex, with a transverse discal excavation in the type, the anterior margin of which is anteriorly angulate, and the bottom has an imperfect transverse ridge; sides of the metasternum and abdomen rather strongly, not very sparsely punctate, the mes-episterna more finely and sparsely punctate; anterior tibial spinules small, the terminal spur, projecting transversely, long and slender. Length 2.0 mm.; width 1.2 mm. Mexico (Tepehuanes, Durango),—Wickham.

From the pygidial characters of what is probably the female, above described, it might be suspected that *mysticus* is closely related to *sagillatus* Lewis, described as from northern Sonora; but the figure of that species given on the plate has no resemblance whatever, indicating a very much more elongate and narrower species, with far less transverse prothorax.

### Anapleus Horn

In the catalogue of Histeridæ compiled by Mr. Lewis, *Anapleus compactus* Csy., is given as a synonym of *marginatus* Lec., the generic type, and this disposition of it is repeated in the Bickhardt list. It is however by no means a synonym of *marginatus*, differing in its less obese and more oblong outline and smaller size, but especially in the smaller and less conspicuous punctures. *Marginatus* was described as a native of Illinois, and my Texas example, taken by myself at Austin, agrees with the type of LeConte's species in every particular. The following is another still more isolated species of the genus:

\**Anapleus mexicanus* n. sp.—Evenly and rather broadly oval, convex, ferruginous; head feebly impressed, very shallowly punctate, reticulate basally, nowhere striate; antennæ well developed, the basal joint long, second cylindric, thicker than the following and one-half longer than wide, the following six joints small, equal, submoniliform, the club paler, elongate-oval, as long as the six preceding joints, flattened and trisected by two very fine transverse sutures; prothorax fully twice as wide as long, the sides very strongly converging, feebly and evenly arcuate from base to apex, the latter but little more than half as wide as the base; surface even and with not very small but extremely shallow punctures;



scutellum distinct, triangular; elytra oval, much narrowed posteriorly, with evenly and strongly arcuate sides, not quite as long as wide, the punctures rather large but well separated, excessively shallow and feebly umbilicate; flanks vertical, defined above by an obtuse cariniform line and having, along the middle, a very fine and feeble carina; disk even and not definitely striate; pygidium with the small and shallow punctures bearing each an infinitesimal yellowish hair; prosternum with a deflexed apical lobe, transversely truncate at base and unmarginated at either apex or base; lateral striæ straight, parallel, very widely separated, the intervening surface much wider than long, the anterior lateral lines detached from the parallel ones; mesosternum truncate, unmarginated, the transverse discal line distinct, entire and subcrenulate; legs short, the anterior tibiæ arcuate, slightly inflated, very narrow basally, widest behind the middle, the outer and inner edges without dentition but fringed with extremely minute oblique hairs. Length 1.3 mm.; width 0.9 mm. Mexico (Saltillo, Coahuila),—Wickham.

This distinct species differs from *marginatus* in its very feeble sculpture and smaller size, and from *compactus* in its less oblong form, smaller prothorax, finer and feebler punctures, feebly puberulent pygidium and much more transverse area between the prosternal striæ.

#### **Acritus Lec.**

Under this genus there are several corrections to be made in the results announced by Dr. Horn in his treatise on the Histeridæ. For example, a good series of four specimens of *cribripennis* Mars., shows that this species is not even closely allied to *exiguus* Er.; it is much more broadly oval and more strongly sculptured, and the oblique stria at the base of each elytron, figured by Marseul, is evident in all; *obliquus* Lec., and *cribripennis* are probably the same species, however, and I have one example from Douglas, Kansas, which appears to be specifically identical. *Aciculatus* Lec., carefully figured by Marseul, is unequivocally distinct from *exiguus* in form, size and sculpture, if accurately identified by the latter author. Finally, *conformis* Lec., is a species abundantly distinct from *strigosus*; it is a more northern species in range than *strigosus*, more sparsely punctulate and notably more narrowly oval in outline, while the strongly sculptured and more broadly oval *strigosus* is confined to more southern latitudes, although they were both described originally as from Georgia; I took *strigosus* abundantly in various parts of Texas.

The following is allied to *exiguus* but with deep black coloration:

**Acritus ellipticus** n. sp.—Outline oblong-elliptical, moderately convex, shining, black throughout, the legs rufescent; head minutely, sparsely punctate, convex; antennæ black, the club pale, the basal joint fully half as long as the funicle, second cylindrical, slightly longer than wide, third slightly less thick, quadrate, four to eight still narrower, subequal and moniliform; prothorax about three-fifths wider than long, the sides moderately converging and arcuate, more so at apex; surface finely, sparsely punctate, smooth and without transverse subbasal series; scutellum minute, equilateral; elytra slightly shorter than wide, much narrowed posteriorly, somewhat inflated near basal third or fourth; surface even, with deep and rather close-set punctures, the fine entire line on the convex flanks distinct; pygidium minutely, not closely punctate; polished surface between the parallel and internally arcuate prosternal striae much elongated; sterna laterally with small but very strong, well separated punctures. Length 0.7–0.8 mm.; width 0.4–0.5 mm. North Carolina (Southern Pines),—Manee.

The series of three examples at hand represents a species allied to *exiguus*, but somewhat more convex and a little broader and more oval, the parallel oblong outline of *exiguus*, rather depressed upper surface and less conspicuous sculpture distinguishing the latter species at once; it is abundant and widely diffused, my series being from Long Island to Louisiana, Iowa and Colorado.

**Acritus sparsellus** n. sp.—Form narrowly subrhomboid-oval, rather convex, polished, obscure testaceous in color; head extremely minutely, remotely punctured basally, more strongly and closely anteriorly; antennæ having the third joint relatively smaller than in the preceding, three to eight being subequal and moniliform; prothorax differently formed, three-fifths wider than long, the sides but very feebly converging and slightly arcuate from the base, thence gradually very arcuate and more converging from about the middle; surface very convex, smooth, minutely and very inconspicuously punctate and without transverse subbasal series; scutellum minute, equilateral; elytra in general characters nearly as in the preceding, but more convex and with the punctures unusually minute and sparse, the sides evidently though obtusely swollen behind the base, the line on the flanks distinct; space between the prosternal lines much longer than wide, the lines more diverging anteriorly than basally; sides of the metasternum with rather strong and close-set punctures; anterior tibiæ with a dense external fringe of very short hairs. Length 0.7 mm.; width 0.4 mm. North Carolina (Asheville). Two specimens.

While forming part of the *exiguus* section of the genus, this species can be separated at once by its still narrower outline, smaller size, more convex and more finely and sparsely punctate upper surface and other characters as mentioned above.

**Acritus angustus** n. sp.—Still narrower than the preceding, strongly convex, very shining, pale brownish-testaceous in color; head with the punctures everywhere minute; prothorax scarcely more than one-half wider than long, the sides almost evenly arcuate, but slightly diverging toward base; surface convex, without subbasal series, the punctures very small but distinct, rather well separated; elytra nearly as in the preceding but narrower, inflated behind the base, the punctures small and sparse; prosternum as in the preceding but with finer striæ; punctures toward the sides of the metasternum not so strong as in *sparsellus* and twice as sparse. Length 0.65 mm.; width 0.3 mm. Ohio (Cincinnati),—Soltau. One specimen.

This species is allied to the two preceding, but is narrower and is the smallest of the genus known to me. It is much more convex, very much narrower, more rhomboidal and feebly sculptured than *exiguus*.

**Acritus parallelus** n. sp.—Elongate, parallel, with evenly and feebly arcuate sides, rather convex, polished, castaneo-rufous in color, feebly sculptured; head large, more than half as wide as the prothorax, minutely, sparsely punctate, the antennæ longer than usual, the cylindrical third joint similar to the second but smaller, 4-8 still narrower, globular and moniliform, the club pale as usual; prothorax large, two-thirds wider than long, the sides very feebly converging, slightly arcuate, rounded at apex; surface without subbasal series, the punctures everywhere minute and very sparse; scutellum twice as large as in *exiguus*, equilatero-triangular; elytra narrowed but little posteriorly, not at all dilated behind the base, the ground smooth and polished like the pronotum, the punctures minute and very sparse; each elytron has an oblique impressed discal line basally; pygidia finely but strongly micro-reticulate and with almost obsolete remote punctulation; prosternum flat, densely micro-reticulate, the striæ subparallel, widely flaring at apex but not at all at base, the included surface one-half longer than wide, its base sinuate; tarsi not very slender; anterior tibiæ dilated and somewhat arcuate. Length 0.7-1.0 mm.; width 0.35-0.65 mm. Virginia (Fort Monroe). Seven specimens.

This species differs greatly from *exiguus* in its elongate parallel outline, greater convexity, more minute and very sparse punctures, larger scutellum, and, distinctly, in the form and disposition of the prosternal striæ, which do not diverge at all basally; it varies very much in size, as may be noted. *Parallelus* may belong to the same section of the genus as the Californian *maritimus*, which is placed in the subgenus *Halocritus* Schm., in the Bickhardt list.

The two following species, allied to *discus* Lec., differ very much from those that precede in their larger size, broadly rounded outline, long transverse subbasal series of punctures on the pronotum, more

elongate, sharply angulate scutellum and relatively less elongate interstitial space on the prosternum. Behind the middle coxæ on the metasternum, there is a raised subimpunctate and rounded plaque. The elytra, toward base externally, generally have a few oblique and unevenly eroded lines and, on the convex flanks, the entire single line is very distinct. They form a distinct subgeneric group of *Acritus*, which may be known as **Pycnacritus** (n. subgen.), with type *Acritus discus* Lec. The true *Acritus* may be regarded as having *exiguus* Er., for its type species.

**Acritus sternalis** n. sp.—Body very broadly and evenly elliptic, moderately convex, shining, pale testaceo-ferruginous in color; head micro-reticulate, feebly punctulate; antennal joints three to eight forming an equal and slender funicle, the segments of which alternate in length throughout; prothorax not quite twice as wide as long, the sides strongly converging from base to apex and evenly, moderately arcuate; punctures very fine, becoming even finer and not closer laterally, the ground sculpture feebly micro-reticulate, becoming slightly more strigilate laterally; elytra distinctly shorter than wide, much narrowed at the truncate apex, circularly rounded at the sides, the punctures very fine, rather close set, mingled with feeble anastomosing scratches; pygidia very feebly punctulate, micro-reticulate; prosternal interstitial surface about a third longer than wide, narrowest far anteriorly, the striæ greatly diverging thence to the base, which is very much wider than the apex. Length 1.15 mm.; width 0.78 mm. New York (Catskill Mts.),—H. H. Smith.

Differs from *discus* Lec., from Georgia and Alabama, which is piceous-black and with the surface flatter, in its larger size, less close or substrigilate elytral sculpture toward the suture and, particularly, in the posteriorly more diverging prosternal striæ; the plaque behind the middle coxæ is more broadly rounded at apex. The apex of the mesosternum in this group is truncate medially, with a small sinus at each side, along a slightly concave surface defined by feeble oblique carinæ extending to the coxal cavities.

**Acritus repletus** n. sp.—Broadly oval, rather convex, shining, black, the legs dull rufous; head micro-reticulate, very sparsely punctulate, closely toward the eyes; antennæ piceous, the funicle nearly as in the preceding but somewhat more elongate; prothorax nearly similar in outline, micro-reticulate, very finely punctulate, rather closely so medially, more finely and sparsely laterally; elytra nearly similar, much shorter than wide, the punctures very fine but deep, not very close-set, mingled toward the suture with very fine longitudinal scratches, which are independent of the punctures; ground sculpture feebly, that of the pygidium strongly and densely, micro-reticulate, the latter impunctate;

prosternum nearly as in *discus*. Length 0.95 mm.; width 0.68 mm. Two examples, received in the Levette collection, unlabeled but almost undoubtedly from Indiana.

This species differs conspicuously from the preceding in its black coloration, and the elytral sculpture is more even and less strigose suturally than in *discus*; the prosternal striæ are nearly as in the latter and much less divergent basally than in *sternalis*; the upper surface is much more convex than in *discus*. From *finetarius* it differs in its more broadly oval form, finer and sparser elytral punctures, and in having the ground surface of the elytra micro-reticulate.

### Æletes Horn

This group of species is regarded as a subgenus of *Acritus* in the Bickhardt list, but as the scutellum is constantly invisible, the facies somewhat different, the antennal club more developed, with the funicle relatively shorter and the mesosternum somewhat different toward the sides, the concavity of the surface behind each sinus not being visible, it would seem well to avoid complicating nomenclature by considering it as a genus, especially as the large and steeply declivous front is margined by an entire ambient line, which is wanting or indistinct in *Acritus*.

The following may be regarded as a varietal form of *politus* Lec., which is extremely abundant almost everywhere in the Atlantic regions:

**Æletes politus** ssp. **robustus** nov.—Body exactly as in *politus* in every way, except that the outline is more broadly oval, the size slightly larger and the head just visibly more developed. It however differs also in the longer antennæ, the slender shaft, consisting of joints 3-8, being distinctly longer than the club, while in *politus* it has the joints distinctly shorter and is barely at all longer than the club; the integuments are completely devoid of sculpture in the same way as in *politus*. Length 0.7 mm.; width 0.4 mm. Iowa. Wickham. Two examples.

The two following species are among the more strongly differentiated of the genus:

**Æletes insignis** n. sp.—Body subrhomboid-oval, rather convex, highly polished and smooth, pale testaceous in color throughout; upper surface everywhere with extremely minute remote punctulation; head nearly smooth, relatively small in size; prothorax three-fourths wider than long, the sides strongly converging, distinctly and subevenly arcuate from base to apex; in median third, near the base, there is a deeply

crenate arcuate line, not quite joining the base at its ends; elytra nearly as long as wide, widest near basal fourth, the sides broadly rounded, moderately converging behind; cariniform line on the flanks, delimiting the epipleura, strongly marked and entire, the disk smooth; pygidium smooth and rather acutely parabolic; prosternal striæ strongly arcuate, more diverging basally, the included surface distinctly elongate; post-coxal plaque of the metasternum short, very broadly rounded, adjoining at the sides a similar raised surface on the mes-episterna, the line defining the two continuous and very evenly rounded. Length 0.98 mm.; width 0.55 mm. Arizona (Williams),—Wickham. A single example.

There is no described species with which this can be compared closely. The general outline is somewhat as in *politus*, but the size is materially larger and the surface is evidently though very minutely and sparsely punctulate. The transverse arcuate crenulopunctate pronotal line, near the base, is longer and less arcuate than in *basalis*, from Yuma, and the size of the body is much greater. *Basalis* is as small as *Acritus angustus*, and these two are probably the most minute Histerids known as yet in our fauna.

***Æletes tenebrosus*** n. sp.—Body moderately broadly oval, convex, shining, black throughout, the legs dark rufous and longer than usual; head with a basal, laterally unmarginated and minutely, sparsely punctate part, and an apical quadrate and more deflexed part before the line of the antennæ, which has a strong entire ambient stria and a surface strongly and rather closely punctate; prothorax scarcely more than one-half wider than long, the sides very strongly converging, evenly and moderately arcuate from base to apex, the surface very minutely, loosely punctate and having, near the base, a long and nearly straight line of strong crenulation, the crenules prolonged anteriorly in short striæ; elytra slightly shorter than wide, rather strongly inflated near basal fourth, moderately narrowed apically, the sides broadly rounded; surface smooth, with fine but strong and somewhat close-set punctures; cariniform line on the flanks, delimiting the wide, flat and perfectly smooth epipleura; prosternal striæ parallel, barely arcuate and not much diverging apically or basally, the included surface but little longer than wide; hind tarsi unusually long, very slender and with a stiff oblique fringe of hairs beneath, the basal joint fully as long as the entire remainder. Length 1.0 mm.; width 0.68 mm. North Carolina (Tryon).

The large size, black color, strongly punctured surface and very elongate filiform hind tarsi, as well as the circularly ambient frontal sulcus, would cause this species to be a very marked exception in *Æletes*, though, as in that genus, there is no trace of scutellum and the hind tarsi are similarly 4-jointed. These peculiarities, however, would seem to demand subgeneric rank for *tenebrosus*, and I would therefore suggest the name **Acritinus** (new subgen.) for it. *Acritus*

*florida* Mars., also belongs to this subgenus, but it is less elongate than *tenebrosus*, paler in color, and the transversely arcuate crenate line of the pronotum is shorter, ending within the median line of each elytron, while in *tenebrosus* it extends fully to that point, with the crenules prolonged anteriorly, being notably different in this respect; it is however perfectly congeneric in the absence of scutellum, long basal joint of the hind tarsi and in the margined front.

### Gnathoncus Duval

The species of this genus are widely scattered over the entire northern hemisphere, and two species, which however may not be truly generic, occur in the Australian region. Dr. Horn considered them a section of his very composite Group II of *Saprinus*, and proposed some very erroneous synonymy among our described forms, calling them all *rotundatus* Kug. A specimen of the European *rotundatus*, carefully determined by Mr. Fauvel, shows that it is a somewhat larger and more remotely punctate species than any of ours, but differing more particularly in the more elongate and gradually tapering outline of the pygidium. I have not seen *communis* Mars., from Albany, New York, which is more closely punctate throughout than any here described and considered a fully valid species in the Bickhardt list, or *interceptus* Lec., from San Diego, California, which is said by the author to have the very short basal sutural stria united with the inner dorsal, which if true however, would cause *interceptus* to be an exception in the genus, one of the most persistent characters of which is a very small arcuation at base, midway between the anterior ends of the sutural and inner dorsal striæ, the sutural having a minute hook at base, similar to this isolated intermediate arc. *Deletus* Lec., is not a synonym of *rotundatus*, as stated by Horn and Bickhardt, but is valid as a species and occurs only in the northern Atlantic region of North America; it is represented in my collection from Maine (Wales—Frost), New York (Peekskill—Sherman), Illinois, Iowa (Keokuk) and Wisconsin (Beaver Dam—Snyder). The following are three additional species:

**Gnathoncus idiopygus** n. sp.—Oblong-oval, rather convex, piceous-black, the pygidium dull rufous, the legs red; head minutely, loosely punctulate; prothorax about twice as wide as long, the sides slightly

converging for about half the length, thence broadly rounding to the apex, finely margined; surface with fine sparse punctures, becoming rather coarse and close toward the sides and fine again narrowly along the margin; scutellum very small, elongate and sharply angulate; elytra two-thirds longer than the prothorax, only slightly abbreviated, feebly dilated near the base, with rounded sides, the four discal striae coarse, extending far behind the middle, the outer subhumeral effaced, the inner distinct from the end of the ruguliform oblique humeral, which is parallel to the outer dorsal, to about apical third; sutural stria extremely short, basal; surface with rather close-set, moderate punctures, becoming fine and sparse suturo-basally, the discal striae continued posteriorly by punctureless lines; prosternal striae obliquely converging in front and united at apex as usual, the surface feebly convex, almost smooth, the arcuate base fitting against the broad mesosternal sinuation; metasternum strongly punctate like the mesosternum, the former punctureless medially; meso-metasternal suture distinct, crenate; anterior tibiae with only four or five external denticles apically, all feeble except the subapical. Length 2.5 mm.; width 1.68 mm. District of Columbia.

This species is distinguished particularly by the form and sculpture of the pygidium, which is convex, very slightly longer than wide, with coarse and very close, strongly umbilicate punctures, which, apically, become less coarse, transversely linear and arranged concentrically about the centre of the unmodified, bluntly angulate and less convex apex. No other species known to me has pygidial characters of this kind, or at any rate developed to this degree.

**Gnathoncus ovulatus** n. sp.—Similarly much stouter than in *deletus*, rather convex, shining, black, the pygidium and legs obscure rufous; head minutely, sparsely punctate; prothorax distinctly less than twice as wide as long, much longer than in the preceding and with the sparse punctures more evenly distributed, a little stronger and less sparse laterally, the fine marginal line not quite reaching the base; sides moderately converging to rather beyond the middle, thence broadly rounding to the apex, but less strongly than in the preceding species; scutellum minute, acute, less elongate than in the preceding; elytra nearly as in the preceding and also inflated basally, but less narrowed behind and with broader apex, the punctures much finer and sparser, gradually becoming wholly obsolete medio-basally; the four discal striae are coarse, subequal and extend to distinctly behind the middle, not continued by punctureless streaks, the outer subhumeral fine but distinct in basal fifth, the inner very fine, oblique from near the middle to apical third, the oblique humeral fine, subparallel, the sutural limited to the narrow basal arcuation, the intermediate arc clearly isolated; pygidium convex, polished, barely longer than wide, the transverse umbilicate punctures smaller and less close than in *idiopygus*, irregularly confused apically; sterna nearly similar, except that the mesosternum is less abbreviated and much more sparsely punctate, with the suture more feebly and



distantly crenulate; anterior tibiæ with the external denticles more numerous. Length 2.5 mm.; width 1.7 mm. California (San Francisco).

The differences between this species and *idiopygus* are stated in the description; from *deletus* it differs in its stouter form, more widely separated prosternal striæ and longer, apically more narrowly rounded pygidium, among many other features.

**Gnathoncus insolarcus** n. sp.—Form more narrowly oval than in either of the preceding, similar in coloration and convexity; head minutely, not very sparsely punctate; prothorax relatively short, nearly twice as wide as long, the sides moderately converging and slightly, subevenly arcuate from base to apex, a little more rounding apically, the marginal groove coarser; punctures fine and sparse but distinct, gradually stronger and closer laterally to the sides and with some scattered coarser punctures along the base; scutellum acute, but slightly elongate, much less minute or narrow than in *idiopygus*; elytra distinctly wider than the prothorax and almost twice as long, but very slightly shorter than wide, feebly inflated basally and with very broad truncate apex; punctures strong, even, not very close, distinct though minute and sparser basally; four discal striæ rather fine, shorter than usual and barely extending to the middle; outer subhumeral fine, basal, the inner extremely fine and short, at the middle, the oblique humeral very short and close to the first dorsal; sutural stria and basal arcs as in *deletus*; pygidium convex, as wide as long, obtusely rounded at tip, with the umbilicate punctures rather strong and somewhat close-set, somewhat confused apically; prosternum punctate between the striæ; anterior tibiæ with four or five denticles. Length 2.35 mm.; width 1.55 mm. California (Lake Co.),—Fuchs.

The chief distinguishing character of this species is the short discal striæ of the elytra, also the relatively large elytra and smaller prothorax. It is more narrowly oval than the two other species here described, being more nearly like *deletus* in this respect, but with a shorter and narrower prothorax, broader elytra, with more evenly disseminated punctures and very much shorter and finer four discal elytral striæ.

### **Saprinus** Erichs.

Subgen. **Saprinus** in sp.

This subgenus is confined to those species with anteriorly unmarginated head and they are very numerous. Those here brought to notice may be separated into several groups, which in general conform to those defined by Horn as follows:

T. L. Casey, Mem. Col. VII, Nov. 1916.

Group I (*discoidalis*).

The distinguishing characters of this group are the long, parallel and slightly curved prosternal striæ, least widely separated near the middle and more diverging basally than apically, the unusually slender hind tibiæ, only feebly and remotely spinulose externally, and a peculiar system of elytral sculpture—the middle interstitial surface partly smooth. It is singular that Dr. Horn should have placed *alienus* Lec., in another group, for its affinities and structure are in entire harmony with *discoidalis*. The following is a third species:

**Saprinus cupreolus** n. sp.—Much less broadly rounded than in *discoidalis*, convex, polished, cupreous above, piceous beneath, the legs and tarsi black; head finely punctato-rugulose, with a large subbasal discal fovea, the supraorbital stria turned inward slightly anteriorly; prothorax twice as wide as the median length, the sides fimbriate, converging and feebly arcuate from the base, more rounded apically, the marginal groove subentire, the surface smooth and polished, becoming rapidly densely and longitudinally rugose toward the sides—smoother apically—and with some punctures along the base except medially; scutellum small, equilateral; elytra shorter than wide, inflated behind the base and wider than the prothorax, the discal striæ nearly as in *discoidalis* but finer, the first not so greatly curving inward apically, the fourth sometimes—as in the type—curving inward and almost uniting with the sutural at base; large discal mirror not limited by the inner discal stria as in *discoidalis*, but extending unbroken to the second stria, excepting slight opacity and punctuation at the base of all the intervals; area of opacity confined to a longitudinal streak involving most of the first interval and thence oblique posteriorly, this opaque area with very fine sparse punctures; pygidium with the punctures nearly as in *discoidalis*, the sterna and legs almost similar. Length 4.8 mm.; width 3.1 mm. Utah (southwestern),—Weidt.

Smaller and much narrower than *discoidalis*, with much more restricted elytral opacity and with very bright cupreous lustre; of *discoidalis*, I have a considerable series taken at various localities from southern California to Jemez Springs, New Mexico and El Paso, Texas. The following is a well marked subspecies of *discoidalis*:

**Saprinus discoidalis** ssp. **amplus** nov.—Body very broadly oval and large in size as in *discoidalis*, but with a bright cupreo-æneous lustre above and having the opacity of the inner interval—which in that species is continuous excepting a short interruption at basal third—almost entirely wanting, except basally, but with some of the punctures of *discoidalis* remaining. Length 5.9–6.9 mm.; width 4.0–4.7 mm. California (near Yuma). Two examples.

The impression at each side of the thoracic apex is deeper than in typical *discoidalis* and the prothorax is a little shorter.

Group II of Horn has as types *planisternus* and perhaps also *rugipennis*, both aberrant species; *behrensi* belongs to Group IV. Group III consists of the aberrant *interstitialis* of LeConte.

#### Group IV (*pectoralis*).

In this group the prosternal striæ are long, parallel and nearly straight. The species are moderately numerous and rather above the average of the genus in point of size, though not so large as those of the *lugens* group; the two following are hitherto undescribed:

**Saprinus cheyennensis** n. sp.—Oval, convex, shining, black, the elytra and under surface faintly picescent, the legs piceo-rufous; head finely, not densely punctate, with a discal fovea on the occiput and an oblique anterior stria at each side; prothorax less than twice as wide as long, the sides moderately converging and feebly arcuate, more rounding anteriorly, the coarse marginal groove not quite attaining the base; surface with very minute sparse punctures, abruptly coarse and dense toward the sides, the base confusedly punctate throughout the width; surface anteriorly not impressed; scutellum small, equilateral; elytra one-half longer than the prothorax, slightly inflated at base, not very coarsely but strongly, evenly and moderately closely punctate, very gradually finely and obsolete basally; near the suture the punctures are traceable almost but not quite to the base; discal striæ parallel in curvature, the first extending to apical fourth and very coarse, two to four gradually shorter and rather fine throughout, the fourth united at base with the sutural, which extends to apical fifth; outer subhumeral wholly wanting and forming part of the lateral stria, the inner disintegrated but traceable from the end of the oblique humeral to apical fourth; pygidia densely, not coarsely punctate, the propygidium very densely; mesosternum strongly, closely punctate, its marginal groove broadly sinuate, the suture fine, straight and distinct; anterior tibiæ with about seven serrules. Length 4.2 mm.; width 3.0 mm. Wyoming (southeastern).

This species is allied to *pectoralis* Lec., but is larger, and the elytral punctures are somewhat less coarse and very much closer, more gradually disappearing anteriorly; the thoracic punctures are much coarser and denser toward the sides, and the elytral striæ are distinctly longer; the inner subhumeral stria is long and evident and not wanting as it is in *pectoralis*, which is more southern in habitat.

**Saprinus suffusus** n. sp.—Broadly oblong-oval, moderately convex, smooth and shining, black, the elytra externally and nubilously, and the legs, red; head finely punctulate, not striate laterally, the occiput

not foveate; prothorax not twice as wide as the median length, the sides strongly converging and nearly straight, gradually rounded moderately beyond about the middle; surface finely and rather sparsely punctured, gradually more strongly but not densely so toward the sides and with confused punctures along the base, not at all impressed antero-laterad; marginal groove fine; scutellum very small, subequilateral; elytra one-half longer than the prothorax, broadly rounded and but feebly inflated at the sides basally, extremely smooth and polished, with only extremely minute sparse punctulation visible posteriorly, the four discal striæ fine, smooth, inwardly hooked at base, gradually but rapidly shorter, the outer extending to apical fifth, the fourth arcuately uniting at base with the sutural, which is feeble except basally, though extending very nearly to the apex; outer subhumeral short and fine, subbasal and very close to the lateral stria, the inner a very short fine line just behind the middle, the oblique humeral excessively fine; mesosternum scarcely more than twice as wide as long, sparsely and strongly punctate; anterior tibiæ with obtuse external crenulation in the type; pygidia not very coarsely but strongly and densely punctate. Length 3.2 mm.; width 2.5 mm. California (Palm Springs). A single example.

This remarkably isolated species, not only in sculpture but in coloration, the latter reminding us somewhat of *palmatus* Say (*dimidiatipennis* Lec.), may stand at the end of Group IV.

Two examples at hand, from Michigan and Golden, Colorado, answer rather well to the description of *posthumus* Mars., as given by Horn; in the former example, there is however no trace of an external subhumeral stria, said to be distinct in *posthumus* by Marseul. There are evidently a number of forms allied to *posthumus* and *obsidianus*, the latter being very distinct by reason of the transverse, medially interrupted frontal stria and total absence of either the outer or inner subhumeral stria of the elytra.

**Saprinus moniliatus** n. sp.—Small, convex, ovoidal, very shining, black, the legs piceous; head even, without striæ of any kind, finely, loosely punctate; prothorax distinctly less than twice as wide as long, the moderately converging sides nearly straight, gradually more and more arcuate beyond about the middle, the marginal groove strong, inwardly slightly hooked behind and not quite attaining the base; surface minutely, sparsely punctulate, the punctures gradually becoming coarse and close broadly toward the sides, the base with confused punctures, coarser medially than laterally, without medio-basal or antero-lateral depressions; elytra not quite one-half longer than the prothorax, broadly and feebly inflated basally, strongly and closely punctate, the punctures abruptly obsolete at the ends of the striæ, and at about basal third near the suture; four discal striæ evenly curved, parallel, punctate, not hooked at base, the first extending three-fifths, the other three equal and extending to the middle, the fourth arched at base, joining the sutural, which is

an impressed series of punctures extending almost to the apex; outer subhumeral short, basal and close to the lateral stria, the inner very short and medial; pygidia strongly and densely punctate; prosternal striæ parallel, not widely distant, diverging at base, slightly converging anteriorly, ending at apical fourth, the included surface distinctly convex; apical edge finely beaded; mesosternum strongly, rather closely punctate; anterior tibiæ much dilated and with rounded outline distally, having seven or eight short and very stout external spinules. Length 3.0 mm.; width 2.0 mm. Massachusetts (Framingham),—Frost. One example.

Not closely allied to any other species; from *pæminosus*, near which it should stand, it is distinguishable at once by its strong close punctuation and shorter elytral striæ.

*Saprinus obsoletus* n. sp.—Oval, convex, the form, size, color and brilliant lustre almost as in *moniliatus*; head finely, rather sparsely punctate, with a small occipital fovea and two fine feeble oblique anterior striæ; prothorax distinctly less than twice as wide as long, the sides strongly converging from the base, barely at all arcuate, gradually rounding anteriorly, the marginal line fine, almost entire; surface with remote and extremely minute punctulation, which gradually becomes distinct, though rather fine and well separated punctures, broadly toward the sides, the confused punctures along the base coarser medially; impressions all wanting; elytra one-half longer than the prothorax, barely visibly inflated subbasally, punctate only in apical three-fifths suturally and two-fifths in line with the second stria, outside of which the surface is very smooth and polished, without trace of inner or outer subhumeral striæ, the oblique humeral distinct; four discal striæ strong, punctate, somewhat hooked at base, the first extending two-thirds, the others to distinctly behind the middle, the fourth arching at base and joining an extremely short basal remnant of the sutural. which is entirely obsolete except from just before the middle nearly to the apex; punctures sparse and coarse, becoming finer and closer toward tip; propygidium coarsely, densely punctate, gradually finely so toward base, the pygidium convex, coarsely and densely punctate basally, gradually almost punctureless apically; prosternal striæ extending almost to the apex, but not to the base, which region is smooth and punctureless, the striæ most approximate slightly behind the middle, the included surface convex and punctate; anterior tibiæ with seven or eight small external serrules. Length 2.8 mm.; width 1.9 mm. New York (Peekskill),—Sherman.

This species also is widely distinct from any other, but may be associated with the Californian *pæminosus*, differing however in many ways, as may be inferred.

#### Group V (*lugens*).

In this group the prosternal striæ diverge in front but do not end in evident foveæ, as they do in the next group. A few undescribed species are at hand as follows:

**Saprinus lecontei** n. sp.—Oblong-oval, moderately convex, very shining and with feeble bronzy lustre, black, the legs not paler; head finely, loosely punctate, the occipital fovea very small and feeble, the front not transversely striate; prothorax much less than twice as wide as long, the sides moderately converging and but very feebly arcuate, but rounding apically, the marginal stria fine; surface smooth and completely punctureless, becoming rapidly coarsely, closely punctate laterally, except at base, the sides finely punctate, the coarsely punctured area subconnected with the confused basal line of punctures and, anteriorly, having a large strong impression; elytra one-half longer than the prothorax, the punctures strong and rather close-set, extending before the middle at the first stria, to the middle at the suture, but only to apical two-fifths at two-fifths from the suture; four striae coarse and punctulate, subequal, extending evidently behind the middle, the fourth arched at base nearly to the scutellum, the sutural entire, except that it is generally obsolete at base; lateral convexity very smooth, the lower flanks closely punctate; outer subhumeral short, impressed, the inner coarse and forming a prolongation of the oblique humeral, extending well behind the middle; prosternum slightly convex between the striae; anterior tibiae with about nine stout and rather long external spines. Length 4.5–5.4 mm.; width 3.2–4.0 mm. Pennsylvania, Virginia, North Carolina and Louisiana. Not uncommon.

This distinct and conspicuous species has sometimes been confounded with the western *oregonensis*, but it is much larger and may always be distinguished at once by the strong antero-lateral impressions of the pronotum, also by the coarse inner subhumeral stria, this being a perfect continuation of the oblique humeral. From *impressus* Lec., it may be known by its very much larger size, basally interrupted sutural stria, more arcuate and diverging fourth dorsal and much coarser antero-lateral punctures of the pronotum. In *oregonensis* there is a fine entire transverse frontal stria, and the pronotum is never impressed at the sides anteriorly.

The two following are of a remarkably aberrant type and are probably somewhat allied to certain West Indian forms:

**Saprinus repens** n. sp.—Body rather elongate, oblong-oval, convex, shining, nearly black, the legs dull rufous; head extremely finely, sparsely punctulate, the strong supra-orbital striae obliquely flexed anteriorly; prothorax barely two-thirds wider than long, the sides rather strongly converging, long and nearly straight, rounding at apex, the marginal groove fine, entire, somewhat hooked at base; surface minutely, remotely and almost invisibly punctulate, abruptly strongly and densely but not very coarsely so near the sides and, again, narrowly very finely and sparsely along the edges, the more punctate area not impressed anteriorly; basal margin with a single line of fine punctures, the scutellar impression distinct; elytra only moderately abbreviated, though less

than one-half longer than the prothorax, very feebly inflated basally, the surface very smooth but with some fine sparse punctures inwardly toward apex; four discal striae very long, subequal, extending to apical sixth, the two outer feebly, the inner more, arcuate, the fourth arched and uniting with the deep sutural, which extends very nearly to the apex; in the space between the fourth and sutural striae there is a long straight stria, extending from basal to apical third and slightly oblique; outer subhumeral wanting, the inner very long and, like the first dorsal, extending from near the base to near the apex; all the striae are punctate, excepting the oblique humeral, which extends between the inner subhumeral and the first dorsal and is obsolescent basally; pygidium finely, not densely punctate, bitumorse at apical third, thence flat and more strongly punctate to the rounded apex, which is paralleled at some distance internally by an arcuate stria; sterna normal for this group, the side-pieces of the hind body not coarsely but extremely densely punctate; anterior tibiae with the last three or four serrules larger than the others. Length 3.6 mm.; width 2.4 mm. Florida (Funiak).

The formation of the lateral striae, very elongate discal striae and the isolated stria between the fourth and sutural, are very remarkable characters of this species, not suggested in any other known to me; perhaps the singular pygidial structure in the unique type may be sexual in character.

**Saprinus insolitus** n. sp.—Form, convexity and general characters somewhat as in the preceding, rather smaller, strongly convex, blackish-piceous, the pygidium and legs rufous; head as in *repens*; prothorax shorter, though less than twice as wide as long, the sides moderately converging and feebly arcuate, more rounded apically; marginal groove fine, entire; surface smooth, gradually becoming finely, sparsely punctulate toward the sides, and again nearly smooth along the edge, these more visible punctures in the form of fine and longitudinal sublunuliform lines; base and fovea as in *repens*, the elytra similar in form, striation and sculpture, except that the punctures toward the inner apical angles are still finer and sparser; discal striae all equally arcuate, long as in *repens* and punctate, the fourth, sutural and also the isolated intermediate stria similar, but, between the isolated stria and the sutural, there is another, shorter and more oblique isolated stria; outer subhumeral wanting, the inner beginning at the end of the oblique humeral and extending to apical fifth; pygidium convex, with very feeble and moderately close scratch-like punctures, the surface tumid apically in the form of a compressed longitudinal umbo; sterna normal, the tibiae nearly as in *repens*. Length 2.8 mm.; width 1.9 mm. Florida (Clearwater).

Although agreeing with *repens* in most of its characters, this species differs radically in the form of the pygidium and in the position and extent of the inner subhumeral stria; it also differs in the much feebler punctuation, smaller size, shorter prothorax and sparser punctuation of the sternal side-pieces.

Group VI (*assimilis*).

The striae of the prosternum are here rather shorter than in the preceding group, diverge rather more rapidly anteriad, and each ends in a small fovea; this is seen very clearly in *assimilis*, which is one of the larger species; most of the species are notably small in size and there are a great many of them, more probably than in any other group of the subgenus. There are two new species in my collection, which may be described as follows:

**Saprinus brevicollis** n. sp.—Strongly ovoidal, more obtuse behind than in front, strongly convex, the legs rufous, the pygidium piceous; head finely but strongly, closely punctate, the cariniform line of the base and sides becoming oblique and straight on the front; prothorax relatively small, twice as wide as long, the sides very strongly converging from the base, feebly arcuate, more so distally, the marginal line fine; surface rather finely but strongly and not very sparsely punctate, a little more strongly and distinctly more closely so toward the sides, slightly more finely again near the edges; base without larger punctures, except a few medially; before the scutellum there is a small smooth spot; elytra rather short, though nearly two-thirds longer than the prothorax, strongly rounded at the sides, scarcely inflated at base, distinctly wider than the prothorax, minutely and remotely punctate, the punctures gradually becoming stronger and less sparse in more than apical half and inner three-fourths, the sides smoother; four discal striae groove-like, impunctate, except the fourth, which arches at base; sutural represented by only a short, very fine and feeble line at the middle, the first three extending nearly three-fourths, the fourth slightly beyond the middle; outer sub-humeral wanting, the inner a very fine disintegrated short line, barely traceable behind the middle, the oblique humeral very feeble; pygidia somewhat strongly and densely punctate, the propygidium impunctate basally; prosternal striae each ending in a rather large deep fovea just behind the apical margin; included surface convex; mesosternum very minutely and remotely punctulate; anterior tibiae with numerous very small serrules externally. Length 2.4 mm.; width 1.9 mm. Michigan (Marquette),—Sherman.

This species, because of its short and rapidly narrowed prothorax and ample elytra, has a rather peculiar appearance, though not unremindful of *detractus* Csy. The latter, however, has a normally large prothorax and greatly abbreviated first dorsal stria—a rather unusual character. From *laridus* the present species differs in its broadly oval form, black color, longer and coarser discal striae and in many other features; the head is even less developed than in any of the allied species.

*Saprinus contractus*, which I described from a unique, personally



taken at Tucson, Arizona, has since been found by Wickham at Great Salt Lake, Utah.

\**Saprinus oppidanus* n. sp.—Oblong-oval, convex, black, with the legs piceo-rufous; head without carinæ, either lateral or apical, very finely, sparsely punctate and having a small feeble occipital fovea; prothorax very nearly twice as wide as long, the sides broadly rounded, becoming feebly divergent and less arcuate basally, with the marginal groove fine, slightly hooked at base; surface nowhere impressed, impunctate, gradually finely, not densely but distinctly punctate toward the sides, the base with an irregular line of fine sparse punctures; elytra one-half longer than the prothorax, inflated behind the base, strongly, rather closely punctate in fully apical half, impunctate anteriorly, the punctures on the flanks smaller and denser; four discal striæ rather coarse, the first extending nearly three-fourths, second but little shorter, the third and fourth subequal and extending slightly behind the middle, the fourth arching at base along the scutellum, the sutural feeble, rather short and tending to become obsolete basally, not extending to the apex; outer subhumeral fine, adjacent to the lateral stria, the inner a short feeble line just behind the middle; pygidia with moderate but deep dense punctures, finer and feebler apically on the pygidium; prosternal surface convex, the striæ widely diverging and ending anteriorly in rather large foveæ; anterior tibiæ finely serrulate. Length 2.4 mm.; width 1.4 mm. Mexico (Guadalupe, Federal District).—Wickham.

This species may be placed near *socius* Csy., but differs in its black coloration and some other characters.

#### Group VII (*fimbriatus*).

The prosternum in this group, which is properly a continuation of Group VI, is so compressed between the rapidly diverging striæ as to be subcariniform along the median line. The species are moderately numerous and those in my collection belong to three widely different types, represented by *fimbriatus*, *psyche*—to be described below, having a large rounded and very abruptly limited scutellar mirror, as in *fitchi* of the next subgenus—and the *cærulescens*, *vestitus* and *intritus* section, having the upper surface punctured and subopaque throughout. I have not seen *neglectus* and *rubriculus*, said by Horn to have glabrous thoracic margins; in all the other sections mentioned the prothorax is fimbriate at the sides, at least to some extent. The species in the *fimbriatus* section frequently become very closely allied among themselves. There is, for instance, extremely little difference between *lubricus* and *plenus* of LeConte, and, in my opinion, *plenus* should be considered

as not more than a subspecies of *lubricus*; *vitiosus* is rather more distinct in its somewhat elongate-rhomboid form and in coloration, besides the interrupted third stria; it should be held specifically valid. The true *fimbriatus* of LeConte, is limited to the Pacific coast fauna and occurs not very abundantly at and below San Francisco; it is more briefly and broadly oblong than the widely diffused and very abundant *desertorum* Mars., and is without the more pallid coloration and strong æneous lustre of the latter; *orbiculatus* Mars., of which I have a small series taken at Austin, Texas, is more abbreviated than *desertorum*, darker in color and has little or no æneous lustre; the last two are subspecies of *fimbriatus* and the following is another:

**Saprinus fimbriatus** ssp. *dakotanus* nov.—Similar to *desertorum* in its general characters relating to form and sculpture but blacker, less metallic and with the entire basal half of the elytra completely devoid of punctuation, excepting some very fine punctures at the humeri and a few extremely minute and sparsely scattered over the external stria interspace; oblique humeral and parallel basal part of the first discal very coarsely excavated. Length 3.8 mm.; width 2.7 mm. Dakota.

There is probably some variability in the extent of punctuation here, as well as in *desertorum*, *lubricus* and the others of this section, but the coarse striae mentioned, and a certain habitus, lead me to think that the form is subspecifically valid, though represented at present only by a single example.

The two following are, I think, valid species of this *fimbriatus* section:

**Saprinus effusus** n. sp.—Still larger and more broadly oblong-oval than *fimbriatus*, black throughout, with the legs piceo-rufous, the upper surface with feeble bronzy lustre; head evenly convex, closely punctured, not at all striate; prothorax short, more than twice as wide as the median length, the apical sinus deep; sides strongly converging and nearly straight, broadly inwardly rounded at apex; surface finely but distinctly, sparsely punctured, becoming rather gradually coarsely and closely so broadly toward the sides, the base with confused coarse punctures, becoming gradually finer anteriorly on the disk; lateral erect hairs long, pale as usual; elytra one-half longer than the prothorax, throughout nearly as in *fimbriatus*; outer subhumeral coarse, very distinct and distant from the lateral stria, the inner as in *fimbriatus*; pygidia more coarsely though scarcely so densely punctured as in that species; mesosternum coarsely and closely punctate. Length 3.7 mm.; width 2.9 mm. California (San Francisco).

Differs strikingly from *fimbriatus* in the punctuation of the

pronotum, the confused basal punctures in that species being abruptly limited to a basal band; here they are gradually confused with the general punctuation, which is obsolete discally in *fimbriatus*.

**Saprinus testudo** n. sp.—Form much more narrowly oval than in *fimbriatus*, convex, black, the legs blackish-piceous; lustre of the upper surface only faintly bronzed; head as in *fimbriatus*; prothorax as in the latter but less transverse, barely twice as wide as the median length, the apical sinus not so deep; sculpture nearly similar, the lateral punctures somewhat coarser and less numerous, more evanescent basally; punctures of the confused line along the base similarly abruptly limited but not so coarse; disk partially smooth and punctureless in the same manner; elytra shorter, less than one-half longer than the prothorax, swollen at the sides subbasally; striation similar, the punctures similarly disposed though sparser, becoming finer and closer apically; outer subhumeral clearly defined and well impressed but extremely close to the lateral stria, the inner a fine line medially; anterior tibiæ rather less inflated, having numerous coarse spines externally, the sterna nearly as in *fimbriatus*. Length 3.0–3.2 mm.; width 2.0–2.15 mm. Florida (Dry Tortugas),—Wickham.

Readily distinguishable from *fimbriatus* by its less broadly oval outline, sparser punctures, though on the pygidium the rather strong close punctures become much finer and sparser apically, and by the less developed fimbriation of the prothorax.

**Saprinus psyche** n. sp.—Broadly oblong-suboval, moderately convex, black, the legs piceous; upper surface with scarcely any metallic lustre, excepting on the densely punctate areas of the elytra, which are bright steel-blue; head convex, not at all striate, closely and moderately punctate; prothorax more than twice as wide as the median length, the sides moderately converging and feebly arcuate, more rounded anteriorly, having a sharply defined and very transverse polished and punctureless discal area, extending nearly to the sides subbasally and to apical third at the middle, the punctures finer and sparser however at the middle toward apex, the punctures laterally coarse and very dense in an obliquely limited area, not coarse but dense also and confused evenly along the base; lateral hairs short and few in number; elytra one-half longer than the prothorax, much inflated behind the base, the discal striæ moderately distinct, oblique, extending slightly behind the middle and not attaining the base, the fourth arching very broadly at base and joining the sutural, which is entire, finely incised and impunctate; outer subhumeral rather long, distinct and close to the lateral stria, the inner forming a rather long distinct line at the middle, the oblique humeral broadly diffused; punctures very uniform, coarse and extremely dense throughout, except in an abruptly smooth apical border and in a large and very abrupt scutellar mirror bounded by the fourth dorsal, departing from the latter posteriorly and thence rounding to the suture; this mirror extends to apical third and laterally to the median line of

each elytron; at the humeri the punctures become fine and feeble; pygidium bluish, strongly and very densely punctate, sometimes finely carinulate apically, the punctures rather abruptly fine and sparse at apex; prosternum compressed, the striæ rapidly diverging anteriorly, each ending in a small deep fovea; anterior tibiæ with many subequal narrow external spines. Length 2.5–3.0 mm.; width 1.7–2.4 mm. Arizona (Tuçson),—Tucker.

A good series of this very fine distinct species was recently sent me; there is none closely allied to it thus far described. The pygidial carinule is probably a sexual character, as it is seldom visible. The following may be a subspecies:

\***Saprinus psyche** ssp. *tardus* nov.—Similar to *psyche* in general characters and sculpture throughout, but rather less broadly oval and with the lustre of the upper surface bright bronzy-æneous throughout, without trace of the blue tint on the punctured areas of the elytra; prothorax with the sculpture exactly similar but it is more abbreviated, the sides less convergent from the base, the apical sinus similarly deep; elytra as in *psyche* in every respect, except that the dense punctures are rather less coarse. Length 2.4–2.6 mm.; width 1.8–1.9 mm. Mexico (Federal District).

There can be no doubt that this is a form closely related to *psyche*, and it may be considered subspecific provisionally.

\***Saprinus bispeculatus** n. sp.—Broadly rhomboidal, moderately convex, black, the legs nearly black, the upper surface with bronzy lustre, slightly bluish on the densely punctate areas; head very densely punctate; prothorax rather more than twice as wide as the median length, trapezoidal, the strongly converging sides rounded anteriorly; surface with a large transverse smooth and polished discal area sharply defined, the sides of which are rounded and at about lateral sixth of the width, the remainder, including the base, with extremely dense uniform punctures, which are not very coarse, becoming smaller and sparser at the middle of the apex; elytra nearly as in *psyche* but with the punctures even denser and not quite so large, the extremely sharply defined oval scutellar mirror very large, extending nearly to apical fourth and, laterally, beyond the median line; oblique striæ less distinct, almost obliterated; humeral swelling polished and impunctate; pygidium not coarsely but extremely deeply and densely punctate, rapidly finely and feebly so at apex; sterna and tibiæ nearly as in *psyche*. Length 2.8 mm.; width 2.25 mm. Mexico (Federal District).

This species, while allied rather closely to *psyche*, is more obliquely rhomboidal in outline, with the punctures of the elytra finer and even denser, and the polished area of the pronotum not angulate and near the edge at its lateral limits, but laterally rounded and remote from the edge; the scutellar mirror is even larger than in

*psyche*. I cannot think that neither this species nor *tardus* has been before the describers of the Mexican species of *Saprinus*, and conclude that the specimens must have been too hastily assumed to represent the *lubricus* of LeConte (or *plenus?*), which on comparison will be seen to resemble them in scarcely any particular; there is a Mexican specimen of *lubricus* in my collection, taken by Wickham at Monterey.

### Group VIII (*patruelis*).

#### Subgen. *Hypocaccus* Thoms.

I am disposed to unite under this group the species placed by Horn in his Group VIII, and all under Group IX of that author down to *æneipunctatus* Horn, the last five species of Group IX—*æneipunctatus*, *palmatus* Say (*dimidiatipennis* Lec.), *gaudens*, *ser-rulatus* and *sulcifrons*—constituting, in our fauna, the valid subgenus *Pachylopus* Er. *Pachylopus palmatus* is abundant on the New Jersey seashore, and I have three examples from Rhode Island, which represent a smaller and especially narrower and more polished variety, with the punctures on the elytra postero-suturally rather more distinct; this may be regarded as the *deserticola* of Marseul; the latter, as stated by Horn, was described from an erroneous locality.

In Group VIII, as above extended, there are several sections very well defined by general habitus—the *sphæroides* section, not unremindful of some of the feebly sculptured species of Groups VI and VII, and the *fraternus* section, similar in appearance to the preceding *lubricus* and *psyche* section, while in *lucidulus* we have a close approach to *Pachylopus*. The distinguishing character of the group or subgenus is the strong transverse cariniform frontal line, which extends unbroken from side to side.

The species are abundant and a considerable number in my collection are still undescribed as follows:

***Saprinus lustrans*** n. sp.—Oblong-oval, convex, very polished and feebly sculptured, blackish-piceous, the legs more rufous; head smooth and impunctate, the front with a transverse reversed trapezoid behind the anterior transverse line; prothorax three-fourths wider than long, the moderately converging long sides but just visibly arcuate, rapidly rounding inward at apex; surface wholly smooth and polished, excepting a longitudinal area, near, but not extending to, the sides, which is sparsely,

very finely and extremely feebly punctulate; base with a confused line of very fine punctures; elytra distinctly less than one-half longer than the prothorax, the sides broadly and evenly rounded, not inflated subbasally; discal striae extremely fine, the first extending to or slightly behind the middle, the second through three-fifths, the fourth fully to the middle, arching transversely at base and joining the extremely fine and feeble sutural stria, which, except basally, is simply an unimpressed series of very fine punctures, not extending to the apex; outer subhumeral forming a slight basal enlargement of the lateral stria, the inner a fine short straight line at the middle, the oblique humeral fine, not reaching the inner subhumeral; punctures fine, sparse and feeble, occupying only a postero-sutural area, extending three-fifths from the apex suturally and outer third or fourth apically; pygidium with fine and rather close-set punctures, gradually very minute and sparse apically; mesosternum wholly impunctate; prosternum moderately convex, with two nearly straight approximate and gradually converging lines, almost meeting just behind the apex, the lateral upwardly ascending lines meeting at the middle of the apex; anterior tibiae with the serrules rapidly larger apically. Length 2.9-3.1 mm.; width 2.0-2.25 mm. Florida (Dry Tortugas),—Wickham.

This notably distinct species is undoubtedly associable with *ferrugineus* Mars., from Texas, but it is larger in size and the chevron behind the frontal transverse line is not posteriorly angulate but formed by a long transverse and perfectly straight line, and the elytral striae are not very well marked and crenulate, but extremely fine and very finely, not closely punctulate; the mesosternum is impunctate and not finely but sparsely punctate; *ferrugineus* is described as ferruginous-red in color and is 2.25 mm. in length.

**Saprinus sparsus** n. sp.—Not very broadly oval, strongly convex, piceous-black, with bronzy lustre, the pygidium and legs rufous; head smooth and impunctate, the straight transverse line behind the frontal carina not approaching the latter at any point and very irregular; prothorax three-fourths wider than long, the moderately converging sides long and nearly straight, rapidly and strongly rounded at apex; surface smooth and polished in a transverse discal area, the remainder anteriorly and laterally with very fine sparse strigiliform punctules, which, toward the sides, become longer and stronger though not at all coarse and only moderately close; confused punctures along the base entirely different, rounded, deep, coarse and close-set; elytra barely a third longer than the prothorax, the sides evenly and almost circularly rounded; stria one extending two-thirds, two nearly as far, three to slightly beyond, and four not quite to, the middle, one and two very fine and impunctate, three with fine distant, and four with coarse and close, punctures, four arching at base, joining the fine but continuous sutural, extending two-thirds; oblique humeral a very fine line close to stria one; outer subhumeral obsolete, the inner a short fine line at the middle;

punctures extending slightly before the middle suturally and to outer third posteriorly, strong and sparse anteriorly, rapidly becoming excessively minute thence almost to the apex; pygidium small, convex, shining, finely, rather distantly punctate, gradually impunctate apically; prosternal striæ very long and approximate, feebly diverging antero-posteriorly and more rapidly flaring near the base; mesosternum with strong sparse punctures; anterior tibiæ with three strong and one or two feeble and more basal denticles. Length 2.15–2.3 mm.; width 1.5–1.6 mm. Florida (Palm Beach),—Kinzel. Two specimens.

The general characters of this species ally it with *sphæroides*, but not at all closely; it is very much smaller, with longer prothorax and much smaller pygidium, as well as more elongate prosternal striæ.

**Saprinus divulsus** n. sp.—More broadly oval and very convex, black throughout, with feeble bronzy lustre above, the pygidium large and black, the legs dull rufous; head smooth, the transverse discal line oblique toward the frontal carina at lateral fourth of the latter; behind this arcuate line there are a few scattered transverse rugæ; prothorax not quite twice as wide as long, the sides very moderately converging and slightly arcuate from the base, gradually rounding anteriorly; surface throughout with feeble and rather sparse strigæ, becoming long, strong and close-set laterally, the disk becoming nearly smooth only along the confused basal line of rather strong rounded punctures; elytra almost one-half longer than the prothorax, slightly inflated at the sides behind the base; striæ one and two extending two-thirds, three and four to just beyond the middle, all rather strong, closely punctulate and finely hooked at base, the fourth arched at base, joining the sutural, which is fine, though extending to the apex; humerals nearly as in *sparsus*; punctures confined to the same region as in that species but more uniform in size, rather strong and closer though not dense; pygidium with strong, deep, dense punctures, scarcely different apically; prosternal striæ very approximate where they end at apical fourth, moderately flaring toward base, not attaining the latter, the ascending lateral anterior striæ meeting at the middle of the strongly deflexed apex; mesosternum minutely and remotely punctulate; anterior tibiæ widely dilated, with the three strong teeth of the preceding species and, similarly, with two or three small and more basal denticles. Length 2.65–2.8 mm.; width 1.7–2.0 mm. Texas (Del Rio),—Wickham.

Also allied to *sphæroides*, and almost perfectly similar in general outline and the comparative size and form of the prothorax and elytra; it differs in the still shorter smooth area of the pronotum, distinctly punctate elytral striæ, these being very fine and simple in that species, and in the much stronger and denser punctures of the pygidium; it is also smaller in size and the oblique lateral anterior lines of the prosternum meet at the middle of the apex;

they are there widely separated in *sphæroides*. I have taken the latter species at Fort Monroe, Virginia, and it also occurs in Pennsylvania and Canada.

We arrive here at a distinct section of this subgenus *Hypocaccus*—Groups VIII and IX (pars) of Horn—represented by densely punctate species, having a more or less sharply defined scutellar mirror, remindful of some species of Group VII, and represented by *fraternus*, *bigemmeus*, *fitchi* and other similar forms. *Fitchi* Mars.—Germanized into "*fitschi*" by Bickhardt—is remarkable even in this isolated section, in having no trace whatever of a sutural stria. The following is another species, allied closely to *fitchi* in general characters and also without trace of sutural stria, but differing radically in its prosternal characters:

**Saprinus omissus** n. sp.—Not very broadly oblong-oval, black, the pygidium piceous, the legs red; upper surface feebly æneous and very smooth in the impunctate mirrors of the pronotum and elytra, but densely micro-reticulate and dull on the punctural interspaces elsewhere; head nearly smooth, the transversely arcuate discal line irregular; prothorax nearly twice as wide as long, the moderately converging sides feebly arcuate, gradually becoming strongly and broadly rounded inward at apex; surface with fine and simple close-set punctures medially in apical two-fifths, gradually becoming a little stronger and more conspicuous elongate slender punctures laterally, the basal punctures close and confused; discal mirror distinctly defined, transversely triangular; elytra one-half longer than the prothorax, the sides almost evenly rounded; striæ distinct, one and two extending three-fifths, three and four to about the middle; punctures rather fine but strong and close-set, the abruptly defined scutellar mirror transversely oval, not extending to the middle and not limited wholly by the fourth stria, which arches at base, the sutural completely wanting; outer humeral not evident, the inner at the middle and a third as long as the elytra; pygidium convex, with rather small but deep, close-set punctures, feebler apically; prosternum compressed and rather prominently ridged along the middle, without medial striæ, the lateral ascending striæ meeting anteriorly at the apical margin in an obtuse parabola; anterior tibiæ with five or six moderate external teeth, rather gradually and evenly increasing in size to about the middle, the last two larger. Length 2.25 mm.; width 1.65 mm. Dakota.

To one casually examining the type of this species, it would inevitably be assigned to *fitchi*, because of its general appearance and the complete absence of sutural stria, but an inspection of the prosternum, which has two long and approximate medial striæ in *fitchi*, exactly as in all the preceding species of the group here



described, would immediately betray its distinctness and its validity as a species. *Fitchi* is represented in my collection by an adequate series from North Carolina, Michigan and Louisiana; it is much more broadly oval than *omissus* and the punctures of the elytra are still denser and much coarser.

The two following species are allied to *bigemmeus* Lec., a species common on the California seashore, and having very dense strigili-form elytral punctures and a small, posteriorly not sharply defined, scutellar mirror. In this species the prosternal striæ become gradually more approximate to far beyond the middle, where they begin to recede from each other again and form a closed anterior loop, of which the distal end is tangent to the apical margin. In the following species, one of the most minute of the genus, these striæ are quite different as will appear:

**Saprinus parvus** n. sp.—Oblong-oval, rather convex, highly polished, black, the legs piceous, the upper surface with brilliant æneous lustre; narrow interspaces between the punctures highly polished and nowhere in the least reticulate; head strongly, loosely and irregularly punctate posterior to the very imperfect arcuate discal line behind the entire apical carina; prothorax three-fourths wider than long, the moderately converging sides just visibly arcuate to the apex, where they are rapidly and transversely rounded; surface in about apical half very finely and feebly, strigosely punctulate, gradually becoming well separated feeble longitudinal lines toward the sides, smooth in a large and transversely subtriangular ante-basal region, the confused basal punctures strong and extending some distance from the base; elytra evidently less than one-half longer than the prothorax, feebly inflated subbasally, the punctures densely compressed, forming a strigilate sculpture, the separating convex interspaces polished, the scutellar mirrors nearly as in *bigemmeus*; flanks smooth; striæ rather fine, scarcely extending to the middle, the fourth arched and joining the sutural, which is entire; outer subhumeral very short but separated from the base of the lateral, the inner a fine oblique medial line; pygidium small, strongly convex, shining, finely and somewhat loosely punctate; prosternal striæ extremely approximate throughout, not more distant anteriorly, or forming a closed loop at apex, which they do not quite attain, gradually and moderately diverging basally, the oblique lateral lines upwardly converging and forming a narrow parabola at the apical margin; mesosternum very minutely, sparsely punctulate; anterior tibiæ with about six denticles, not abruptly larger distally. Length 1.7 mm.; width 1.2 mm. California (Los Angeles Co.).

Distinguishable at once from *bigemmeus* by its minute size, less closely punctate head, polished and not micro-reticulate interstices of the elytral punctures, straighter sides of the prothorax, and

very radically by the prosternal characters as stated; the lateral ascending prosternal striæ are more widely separated at apex in *bigemmeus* than in *parvus*.

**Saprinus strigilarius** n. sp.—Rather broadly oblong-oval, convex, black, the legs also black throughout; upper surface with bronzy lustre; head transversely and irregularly rugose antero-medially, coarsely and closely punctate laterally and smooth and minutely, remotely punctate on the occiput; prothorax evidently less than twice as wide as long, the moderately converging sides very feebly arcuate, gradually strongly rounded at apex; surface minutely, closely punctulate anteriorly and strongly and densely so, though not very coarsely, broadly toward the sides, these punctures elongate but not lineiform; those at base small, deep, close and confused for a considerable distance from the margin, the smooth space not well defined, short and transverse; elytra not quite one-half longer than the prothorax, the sides faintly and obtusely swollen basally; surface with compressed longitudinal rugulosity, the channels of which have distinct small deep rounded punctures, the scutellar mirror nearly as in *bigemmeus*; flanks smooth basally; striæ rather short, very oblique and not sharply marked, the fourth arching and joining the fine sutural, which is evanescent posteriorly; outer sub-humeral distinct, not very close to the lateral, the inner a rather long oblique line at the middle; pygidium convex, not very coarsely but deeply and closely punctate; prosternal striæ strong, straight, parallel, rapidly diverging at base, the free anterior ends at apical fourth, the oblique lateral lines bent, the apical part straight, the two coming together at the anterior margin in an acute angle; mesosternum minutely, sparsely punctulate; anterior tibiæ with the teeth small, seven or eight in number and not very unequal. Length 2.3–2.6 mm.; width 1.6–1.75 mm. Idaho (Cœur d'Alene). Two examples.

Allied to *bigemmeus* and greatly resembling it in sculpture, but differing in the formation of the prosternum and also in the anteriorly more narrowed prothorax; the elytral sculpture is not so fine and the punctures are very much more distinct among the longitudinal rugæ.

The two following species are very aberrant in the densely and evenly rugose head behind the transverse entire frontal carina, which is finer and more sharply elevated than in any other species of this subgenus, but, as they differ greatly between themselves in prosternal structure, I can at present perceive no structural departures sufficiently radical to warrant a separate subgenus for them:

**Saprinus scabriceps** n. sp.—Oblong, convex, piceous-black, the pygidium dull, the legs bright, rufous; entire upper surface micro-reticulate and feebly alutaceous; head densely and strongly rugose, becoming

punctate at the base of the occiput; prothorax long, barely more than one-half wider than long, the long sides moderately converging and broadly, subevenly arcuate from base to apex, but little more rounded apically; surface strongly convex, with close-set ruguliform punctuation, becoming rather strong very broadly toward the sides, the basal confused punctures rather indistinct, becoming obsolete medially; the transverse smoother subbasal area is not definite and has some very minute punctulation; elytra only a third or fourth longer than the prothorax, rather strongly inflated subbasally, finely, sparsely and subevenly punctured throughout, the punctures apically becoming slightly strigilate; striæ one to four gradually a little longer, the first extending to the middle, the fourth distinctly beyond, arched at base, joining the sutural, which is entire though very fine and feeble throughout; all the striæ very fine, the short outer subhumeral distinct, diverging slightly from the lateral, the inner a short oblique median line, the basal part of the oblique humeral and first dorsal lying in a slight depression; pygidium not finely but shallowly, loosely punctate, convex; prosternum compressed and cariniform anteriorly and without medial striæ, flat posteriorly and with two fine striæ, not extending to the middle and gradually feebly converging from the base; lateral lines strongly cariniform, parallel, the concavity within each terminating in an anterior fovea; mesosternum finely, sparsely punctate; hypomera flat, sparsely punctate, glabrous, excepting a loose line of short lateral cilia; anterior tibiæ with about five short and broad obtuse denticles. Length 2.7 mm.; width 1.8 mm. Nevada (Elko),—Wickham.

The type of this species was sent to me under the name *ciliatus* Lec., to which however it bears little resemblance; the apical marginal stria of the elytra is entire, but it is said to be obsolete in *ciliatus* and the frontal line is there said to be only visible at the sides; here there is a very strongly elevated equal carina from side to side; *ciliatus* is from California. This is one of the species out of harmony with the grouping of Marseul, LeConte and Horn; if it were not for the strong entire frontal carina, it would be an aberrant member of either Group VI or VII of Horn, its prosternal characters tending to unite the two.

**Saprinus laciniatus** n. sp.—Rather narrowly oblong-oval, moderately convex, pale ferruginous throughout; head strongly but not very densely rugose, the occiput with a small smooth spot at the middle; frontal carina thin, even and entire; eyes nearly flat, very finely faceted; large basal joint of the antennæ bearing a long tuft of very coarse yellowish setæ; prothorax large, three-fourths wider than long, the sides almost evenly arcuate, becoming subparallel basally; apical angles rather narrowly rounded; surface shining, the punctures laterally not very strong, well spaced transversely, and in the form of feebly lunuliform longitudinal lines, very fine, sparse and subobsolete medially; basal punctures not evident; sides bristling with very long erect yellow hairs; elytra a

third longer than the prothorax, inflated near the base, not much narrowed behind; surface minutely, sparsely punctured throughout and, posteriorly, becoming reticulate and feebly alutaceous, the apical margin abruptly and steeply beveled and polished, the stria obsolete; striae very oblique and extremely fine, extending behind the middle, the fourth only to the middle, arched at base and joining the excessively fine but entire sutural; outer subhumeral forming an inner concavity along the lateral carina, the inner very oblique, fine and medial; pygidium convex, finely, rather sparsely punctate; prosternum with two long striae, approximate, diverging basally, also diverging anteriorly in about apical third, there forming a large elongate closed loop, which is tangent to the apical margin; intermediate surface nearly flat throughout the length; hypomera flat, closely and rugosely punctate and with very stiff pale setae throughout; anterior tibiae with moderate external spinules. Length 2.1 mm.; width 1.25 mm. New Mexico (Las Cruces),—Cockerell.

This is one of the most isolated of our *Saprinus* species, for there is none other with which it can be associated in any way closely, and its peculiarities suggest some such biological status as that of an ant-guest. The head is very much as in *scabriceps* in sculpture and in the nature of the unbroken frontal carina, but the prosternum is wholly different, reminding us of that characterizing *bigemmeus*, as above described.

### Teretriosoma Horn

The position of this genus in the Histeridae seems to be uncertain. LeConte, Horn, and, in more recent years, Lewis, in the "Biologia," place it after *Saprinus*, but in the Bickhardt catalogue it is given a place near the beginning of the series and before *Hister*; which of these concepts is correct I have no inclination to surmise at present. This genus is more extensive than *Teretrius*, and its species have usually a stouter habitus and more brilliantly metallic coloration as a rule. The division between the two sections of the pygidium is made generally by a transversely arcuate angulation of the surface, but in *sexualis* Schf., represented before me only by numerous females, there is an acute central umbo forming the division. The following species is allied to *chalybaea* Horn, but is stouter:

*Teretriosoma pinguis* n. sp.—Short and broad, very convex, with parallel and feebly arcuate sides, black, polished and with strong blue-green lustre above and beneath, the legs red; head evenly convex, strongly and sparsely punctate, more closely on the obtuse ridge above the more sloping apex; prothorax nearly a third wider than long, sparsely, not coarsely and subevenly punctured throughout; base broadly, feebly

arcuate toward the sides, which are obtusely angulate near basal third, the marginal stria fine; scutellum minute, subequilateral; elytra shorter than wide and barely visibly longer than the prothorax, rather sparsely and strongly, evenly and moderately coarsely punctate throughout, with a smooth and feeble humeral swelling, around which externally there is a distinct impression, this gradually becoming wholly obsolete at about inner third of each elytron; discal striæ nowhere visible; pygidium strongly and rather closely but not densely punctate, the dividing ridge sharp and evenly arcuate from side to side, the lower concave part shining and coarsely, deeply punctate, the punctures as widely separated and rather coarser than those of the anterior segment; mesosternal projection obtuse; anterior and middle tibiæ with an external even comb of about ten short stout spines, those of the hind tibiæ about seven in number; abdomen strongly, loosely punctate, like the rest of the surface, the segments behind the first extremely short and crowded medially into a space only a third as long as the length of the lower concave part of the pygidium, the first segment very large as usual. Length 2.75 mm.; width 1.65 mm. Texas (Brownsville),—Wickham.

I am uncertain whether or not this may be the species alluded to by Mr. Schaeffer (J. N. Y. Ent. Soc., 1904, p. 202) as *chalybæa* Horn, but *pinguis*, at any rate, is not *chalybæa*; it is much stouter according to the drawing of Dr. Horn, and the lower part of the pygidium in *chalybæa* is said to be piceous, less distinctly punctate than the upper part and subopaque, all of which characters are completely at variance with the corresponding ones of *pinguis* as above described.

### **Teretrius** Erichs.

As the species of *Tetriosoma* are more essentially tropical and those of *Teretrius* generally subarctic in habitat, the greater number of *Teretrius* species within our borders might be anticipated. I have in my collection *obliquulus* and *americanus* Lec., *montanus* and *levatus* Horn, and the two following, which seem to be undescribed hitherto:

**Teretrius cylindrellus** n. sp.—Slender, rectilinearly cylindrical and very convex, polished, blackish-piceous, the under surface, legs and pygidium rufous; head very evenly and moderately convex throughout to the apex of the narrowed anterior part, finely, deeply and rather closely punctate; prothorax a fourth wider than long, parallel, with feebly arcuate sides from above, the latter slightly angulate near basal third, viewed laterally, the stria strong, turning inward slightly at base; punctures fine and rather close-set, gradually less so posteriorly; scutellum very small, equilateral; elytra fully a third longer than wide and nearly one-half longer than the prothorax, the parallel sides straight, rounding

slightly at apex; punctures small but deep and strong, rather sparse, becoming more condensed toward base, the external impression about the smooth humeral spot very vague and feeble; dorsal striæ wholly wanting; pygidium finely but strongly, loosely punctate, the propygidium rather the more closely; prosternum sparsely punctate, with two feeble parallel discal lines extending about three-fourths from the emarginate base, the surface between them impressed at base, the lateral straight, feebly diverging lines distinct; mesosternal projection acute; anterior tibiæ with four sharp external spinules in less than apical half, the intermediate with three larger and more widely spaced denticles, the posterior with about four slender spines apically. Length 1.65–1.9 mm.; width 0.7–0.9 mm. California (San Francisco).

Two examples were taken by the writer many years ago in the suburban districts; the species differs from *levatus*—described from Cape San Lucas, but of which I have a seemingly typical, though smaller, example collected by Wickham at Yuma, California—in its much more slender form and absence of the oblique basal stria of the elytra.

**Teretrius minutus** n. sp.—Oblong, cylindrical, rather stout, shining, piceous, paler beneath; head evenly convex and finely, closely punctate throughout; prothorax a third wider than long, the parallel sides rounding strongly at apex, broadly sinuate viewed laterally and not prominent near basal third, the stria gradually arcuate inward basally; surface very finely, strongly, closely punctate, gradually rather less finely, more sparsely posteriorly; elytra slightly longer than wide and two-fifths longer than the prothorax, finely, evenly and rather sparsely punctate, the punctures slightly closer along the base, the humeral umbo small, smooth and at a long distance from the base, the impression before it broad and very feeble; discal striæ wanting; pygidium strongly convex, finely and rather sparsely punctate; prosternum coarsely punctate, broadly convex, not medially striate but canaliculate basally, slightly elongate between the lateral feebly diverging lines; mesosternal projection strong, acutely triangular with blunt apex; anterior tibiæ with about five small external spinules. Length 1.35 mm.; width 0.7 mm. A single specimen, doubtful as to locality, but probably from the northern Atlantic States.

This species is notable on account of its very small size, rather robust form—somewhat as in most of the genus *Teretriosoma*—and other characters as stated.

### Plegaderus Erichs.

The numerous very small species constituting this genus are remarkably homogeneous among themselves after eliminating *Eubranchium* Woll., founded upon the *Hister pusillus* of Rossi, which

was placed in *Plegaderus* by Erichson and Marseul; this species has no trace of the transverse thoracic sulcus of the other species, though the more normal *Plegaderus pusillus* of LeConte also lacks this dorsal sulcus. In North America the species of *Plegaderus* are very numerous, and the following seven appear to be undescribed.

***Plegaderus obesus*** n. sp.—Broadly oval, rather convex and polished, black in color, the under surface and legs piceo-rufous; head finely, sparsely punctate, more strongly and closely on the sloping anterior part; prothorax a fourth wider than long, expanded slightly at base, the sides rounded anteriorly; lateral stria and marginal punctate surface well developed; disk divided at three-fifths from the base by a very feeble impressed line, the anterior lobe finely and sparsely though evidently punctulate, the posterior extremely minutely and remotely; lateral groove scarcely obvious at the base; elytra slightly wider than long, a third longer than the prothorax and, at the strong post-basal dilatation, much wider; base with two fine oblique striæ; punctures fine, rather close-set, subelongate; laterally, they are connected by longitudinal scratches, producing a loosely strigilate effect; pygidium strongly, rather closely punctate; prosternum tumid and punctate in anterior two-fifths, the remainder to the base occupied by a very large deep polished excavation, with dense yellow hair anteriorly and with the bottom convex along the median line opposite two longitudinal lines on the mesosternum; legs slender, the anterior tibiæ moderately inflated in apical two-fifths, not modified on the external edge. Length 1.5–1.6 mm.; width 0.8–0.9 mm. New Mexico (Fort Wingate),—Woodgate, and Nebraska (Pine Ridge).

This species is closely allied to the Californian *nitidus* Horn, but differs in its rather more elongate form, less inflated elytra, the surface of which is more closely and strigilately sculptured, and in some other minor features. These two constitute, structurally, one of the more aberrant types of the genus in the peculiar conformation of the prosternum. *Nitidus* is northern in California, extending apparently to northern Idaho.

***Plegaderus egenus*** n. sp.—Oblong, not very stout or convex, shining, piceous-black, the legs paler; head finely, rather closely punctate, slightly concave along the median line; prothorax a third wider than long, the sides parallel, rounding rapidly at apex, the lateral groove fully attaining the base, the marginal surface strongly and closely punctate; disk divided at apical two-fifths by a deep conspicuous transverse groove, the anterior lobe finely, rather closely, the posterior sparsely and rather more finely, punctate, the latter with some coarser punctures scattered toward base; elytra very nearly as long as wide, fully a third longer than the prothorax, rather sharply though moderately inflated at the sides behind the base, thence much narrowed, with arcuate sides, to the apex; surface strongly, evenly punctate, the punctures separated by about twice their

diameters, the two oblique basal striæ distinct; pygidium rather strongly and closely punctate; prosternum convex between the coarse grooves, this part distinctly punctate, divided by a transverse sulcus at basal two-fifths, the basal part slightly more depressed and less punctate than the apical part, the lateral ridges also impressed in line with the sulcus; post-sterna canaliculate along the median line and with an oblique coarse groove at each side; anterior tibiæ feebly dilated and with a few external setæ in less than apical half. Length 1.35-1.4 mm.; width 0.68 mm. California (Calaveras Co.). Two examples.

Differs from *fraternus* in its somewhat larger size and less slender form, less medially divided prosternum, with much broader posterior lobe, this being very narrow in *fraternus*, also in the very much more strongly and closely punctate head, which is noticeably concave between the eyes, though feebly so. *Molestus* Csy., from Lake Tahoe, is smaller and has very much more strongly and densely punctate elytra, but the small and very narrow posterior lobe of the prosternum is more nearly as in *fraternus*, which has still more sparsely punctate elytra than in *egenus*.

***Plegaderus convergens*** n. sp.—Short and stout, rather convex, obscure ferruginous, the elytra more blackish; head finely, very sparsely punctate, feebly impressed on the median line basally; prothorax two-fifths wider than long, the sides parallel basally, unusually gradually rounding inward anteriorly, the lateral groove deep, attaining the base, the marginal surface well developed, closely punctured; disk divided by a deeply impressed, transverse and posteriorly arcuate groove, very little before the middle of the length; both lobes convex and with fine, sparse and equal punctures, which are however a little larger basally; elytra shorter than wide, a third longer than the prothorax, broadly and moderately inflated subbasally, the sides thence very strongly converging and broadly arcuate to the apex, which is much narrowed; surface with coarse, dense and deep punctures equally throughout, the oblique basal striæ obsolete; prosternum with extremely deep longitudinal grooves, the intermediate surface distinctly punctate, the dividing sulcus post-median, the basal lobe narrower as well as shorter than the anterior; anterior tibiæ feebly dilated apically, and there having a loose external fringe of short stiff setæ. Length 1.2-1.35 mm.; width 0.65-0.77 mm. Colorado (Boulder Co.). Two examples.

The types represent a species, not closely allied to any other, being distinguished by its short, stout form and very strongly apically narrowed and densely, coarsely cribrate elytra; it may be placed near *cribratus* among the species already described.

**\**Plegaderus densus*** n. sp.—Rather stout, only moderately convex or shining, dark castaneous in color, the legs more rufous; head finely but deeply, not very closely punctate; prothorax two-fifths wider than long,



the parallel sides becoming obliquely rounded in more than apical third; lateral groove deep, entire, the external surface convex and densely, strongly punctate; disk divided by a coarse deep sinuate groove well before the middle, the punctures on both rather convex lobes fine but deep, rather close-set, becoming coarser at the pronotal base; scutellum minute, equilateral; elytra very nearly as long as wide, about two-fifths longer than the prothorax, broadly inflated basally, rather strongly narrowed and with arcuate sides thence to the apex, a short coarse oblique stria near the humeri alone distinct; surface coarsely, deeply and very closely cribrate; pygidium strongly, closely punctate; prosternum between the very large longitudinal grooves divided just behind the middle, the anterior lobe much longer and more convex than the posterior, the latter nearly as wide as long and more depressed than the anterior, both distinctly and rather closely punctate; legs as usual. Length 1.4 mm.; width 0.8 mm. Mexico (Colonia Garcia, Sierra Madre Mts., Chihuahua),—C. H. T. Townsend.

A very distinct species, allied perhaps more especially to *convergens*, which it resembles in the strong dense elytral punctuation; it differs, however, in its more elongate-oblong form, slighter convexity, stronger and closer pronotal punctures and somewhat larger size; in both, the elytral suture is strongly elevated by reason of the adjoining depression of the surface throughout the length; this is however a general character, at least to some extent.

\**Plegaderus vegrandis* n. sp.—Rather narrow and moderately convex, polished, deep black, the legs rufous; head finely, sparsely punctate; prothorax nearly a third wider than long, the parallel sides rounding rapidly at apex, the lateral groove deep, the marginal surface well developed, rather strongly and closely punctate anteriorly, gradually more finely and sparsely toward base; disk divided by a sinuate and moderately impressed line near apical two-fifths, both lobes being very minutely, sparsely punctulate; elytra slightly shorter than wide, two-fifths longer than the prothorax, strongly and prominently inflated laterally behind the base, the sides thence rather strongly converging and very feebly arcuate, more rounding at apex; two oblique striae at base are distinct; punctures fine but deep, separated by two or three times their diameters; prosternum with the usual structure, both the anterior and the much smaller posterior lobes elongate. Length 1.5–1.6 mm.; width 0.7–0.73 mm. Mexico (Tres Marias, Morelos),—Wickham. Two examples.

Closely allied to *consors* Horn, from our Rocky Mountain Sonoran fauna, and almost exactly resembling it in general appearance, but the head is much more finely and still more sparsely punctate, and the marginal surface of the pronotum is more unequally punctate; the outline is stouter and the two oblique striae at the base

of the elytra are much more developed. From *comonforti* Mars., it differs in the more unequal thoracic lobes, sparser elytral punctures and deep black coloration, among other characters.

**Plegaderus pygidialis** n. sp.—Oblong, black, polished, the legs rufous; head coarsely, closely punctate; prothorax a third wider than long, the parallel sides evenly rounding apically, the lateral sulcus deep, not very broad, the lateral surface strongly and densely punctate; disk divided at anterior two-fifths by a deep and abruptly defined, feebly sinuate sulcus, the anterior lobe finely, strongly and closely, the posterior sparsely and strongly, and toward base coarsely, punctate; elytra shorter than wide, a fourth longer than the prothorax, subangularly dilated at the sides behind the base, thence moderately and arcuately narrowed posteriorly; surface rather coarsely, deeply and evenly punctate, the punctures somewhat close but separated by more than their diameters; suture cariniform except in basal fifth, where it becomes abruptly perfectly flat; two short oblique basal striæ are distinct; pygidium small, flat, with extremely coarse and polygonally crowded punctures; prosternal space between the sulci divided far behind the middle by a very broad and opaque sulcus, the posterior lobe small and narrow, in slope gradually merging anteriorly into the broad sulcus. Length 1.2 mm.; width 0.6 mm. Arizona (Williams),—Wickham. A single example.

One of our smallest species and very distinct in the polished black surface, coarse punctures, which are well separated on the elytra, and the very densely and coarsely cribrate flat pygidium.

*Sayi* Mars., is one of the most isolated of our species in the unequal punctures of the two pronotal lobes, coarse, close elytral punctures and very coarsely, closely cribrate metasternum; it is rare, but has been taken by Mr. Frost at Monmouth, Maine, and I have recently received a specimen through the kindness of Mr. Carnochan. The large flat metasternum in *sayi* has a coarse deep stria along the median line from the very short, anteriorly sinuate mesosternum, nearly to the abdomen.

**Plegaderus sulcatus** n. sp.—Ovoidal, convex, polished, black, the under surface and legs rufo-castaneous; head somewhat concave transversely, strongly and rather closely punctate; prothorax distinctly narrower than the elytra, only a fourth or fifth wider than long, expanded slightly at base, the sides rounding in nearly apical third, the lateral surface densely and deeply punctate and having, along the marginal line, a deep smooth sulcus, which is coarse basally, disappearing anteriorly; inner sulcus deep; disk divided by a deep sinuate sulcus slightly before the middle, the anterior lobe finely and closely, the posterior almost equally finely—except basally—but very sparsely, punctate; elytra large, convex, but little shorter than wide, fully a third longer than the prothorax, distinctly but obtusely inflated behind the base, the sides strongly

converging and broadly arcuate thence to the narrowed apex, having at base a single long deep oblique stria near the humeri; punctures not very coarse but deep, even and moderately separated; suture slightly elevated, except at the scutellum; pygidium strongly, closely punctate; transverse prosternal sulcus very deep and abrupt, only just behind the middle, the posterior lobe high, narrow and elongate; mesosternum very short, the large metasternum and first abdominal segment with moderate, rather close-set, slightly oval punctures; anterior tibiae feebly enlarged distally, where there are about five slender erect spinules. Length 1.35 mm.; width 1.65-1.7 mm. Colorado (Boulder Co.). Two specimens.

This conspicuous species has the punctures of the two pronotal lobes very different in density as in *sayi*, but in all its other characters it differs greatly. The elytral punctures are sparser and rather smaller than in *convergens*. The outer or marginal of the two lateral pronotal sulci, is coarser basally than in most of the other species.

## ADDENDA

## I

After my description of *Parafilumis estriata* (ante p. 107) had been printed, I received a copy of Bull. Bk. Ent. Soc., for October 1916, in which Dr. Van Dyke describes another species of the genus under the name *punctata* (*Nemozoma*), from Ashland, Oregon. Happily however, there is no conflict or resulting synonymy, for *punctata* differs very much from *estriata* in its elongate head, obliquely basally narrowed prothorax and relatively less elongate elytra, larger size, stouter form and conspicuously in coloration. Although the very minute elytral punctures in *estriata* are confused in arrangement, the cellular structure of the integument showing through, gives an impression of wide and indefinite longitudinal lines, and between these lines the diffused punctures seem to be somewhat less close-set among themselves.

In the paper alluded to the author also describes a new species of

*Ostomodes* Reitter, under the name *Grynocharis expansa*, from a specimen taken on Mt. San Jacinto in southern California, giving, at the same time, the differences between it and *pallidus* Mots. (*pilosulus* Cr.). Mr. Reitter in characterizing the genus *Ostomodes* describes two apparently new species, *dohrni* and *lagrioides*, from California, which, however, are now considered synonyms of *pallidus*. The following is another hitherto undescribed species:

***Ostomodes angustus*** n. sp.—Narrow, parallel, rather convex, pale fulvous in color throughout the body and legs, except that all the sterna are deep black, the head blackish and the median parts of the pronotum indefinitely fuscate; pale pubescence rather fine, short, decumbent and very sparse throughout, without intermingled erect setæ on the elytra; head but little more than half as wide as the prothorax, the labrum, mandibles and antennæ abruptly pale, the first joint of the club narrower than the second; prothorax short, nearly twice as wide as long, the sides parallel and very feebly crenulate, the surface strongly and rather closely punctate, deplanate at the sides; elytra nearly twice as long as wide, very slightly wider than the prothorax, obtusely parabolic in about apical third, the surface even and with very coarse deep punctures, separated by about their own diameters; legs rather short and slender, the hind tarsi slender and longer than the tibiæ. Length 4.5 mm.; width 1.6 mm. Idaho (Coeur d'Alene).

Differs from *pallidus* Mots., in its narrow parallel form, more quadrate prothorax, smaller head, narrower first joint of the antennal club, absence of the erect setæ and much finer sparser pubescence of the elytra, the punctures of which are relatively even coarser, smaller tarsal claws and many other characters.

The species noted in our lists as *Grynocharis oregonensis* Cr., is unknown to me and has never been described, the only reference in the Léveillé catalogue being to the Crotch check-list, where it appears as a simple catalogue name. It seems, moreover, to be a true *Grynocharis*, represented otherwise in this country only by *quadrilineata* Mels.

While dealing with this part of the Ostomidæ, the following may as well be described:

***Ostoma nigrina*** n. sp.—Form oblong-oval, rather elongate, moderately convex, shining, black in color, the broad concave sides, and the under surface, picco-rufous, the legs and tarsi black; head flat above, coarsely, very densely punctate, the eyes only moderately convex and minutely faceted; antennæ about as long as the sides of the prothorax, the latter three times as wide as the median length, throughout nearly as in *feruginea*, except that the sides converge more obliquely from the rounded

basal angles to the apex and are less arcuate, and that the punctures in the concave deplanature are much smaller and sparser, tending to form transverse incised lines; scutellum less transverse, semicircular; elytra scarcely as wide as the prothorax, with parallel straight sides, circularly rounded in about apical two-fifths, and not from about the middle as in *ferruginea*, the general aspect as in that species, except that the punctures between the costæ are larger, feebler and more lineiform, the subsutural costa very irregular and more feebly defined and the humeral angles narrowly and not broadly rounded; sparse punctures of the abdomen stronger. Length 9.5 mm.; width 5.4 mm. British Columbia (Aldermere),—Keen.

The characters as detailed above will distinguish this species very clearly from *ferruginea* Linn., or any of its varieties. A specimen of *ferruginea* from Boulder Co., Colorado, resembles the eastern and European specimens in general form, but it is darker in color and has the punctures at the sides of the pronotum and elytra much finer and sparser than in the normal examples.

We have two species of *Calitys* Thoms. (*Nosodes* Lec.), the common ochraceous-brown eastern and European *scabra* Thunb., and *serrata* Lec., a larger and broader black species occurring in the Sierran regions of California and Oregon; the latter is not a synonym of *scabra* as is usually stated in the lists.

## II

The *incertus* section of the *depurator* group of *Hister*, is distinguishable at once from the *depurator* section—comprising also *circinans* and *perbrevis*—by the marginal stria of the mesosternum intervening between the coarser submarginal stria and the apex. This stria is always interrupted medially but is very evident; in the *depurator* section it exists only as a vestige far down on the sloping sides of the mesosternal apex. I find that there are several distinct species belonging to the *incertus* section, heretofore mingled together in most collections, and having the following general features in common:

Elytra with three entire striæ, the humerals wanting or in part feebly traceable; lateral thoracic stria not attaining the base, the marginal near the edge and extending only to about the middle; cephalic stria entire; mesosternum variably sinuate, the anterior tibiæ tridentate, the lower tooth bifid at tip.

The species and subspecies are as follows:

- Fourth discal stria of the elytra generally wholly wanting, except in disintegrated form posteriorly, sometimes barely traceable almost to the base in feeble remote and barely discoverable punctulation; sutural stria short, extending brokenly from about the middle not quite to the apex; humeral stria traceable apically as an unimpressed series of very small feeble punctures, the subhumeral wanting, the oblique humeral long and very fine though distinct; inflexed sides bistriate; prosternal lobe finely punctate, not beaded at apex; marginal mesosternal stria broadly interrupted; body very broadly rounded and polished; propygidium with evenly distributed and rather small sparse punctures, becoming smaller medially, the pygidium with minute and remote punctulation; interspaces on both polished and without distinct punctulation. Length 5.6–6.5 mm.; width 4.4–5.2 mm. Alabama (Mobile) and Louisiana. Not uncommon.....**nitens** n. sp.
- Fourth discal stria distinct, deep and continuous for a shorter or longer distance from near the base to near the middle, rarely continued nearly to the apex by a more broken stria.....2
- 2—Sutural stria short, extending forward to barely beyond the middle, ending well before the apex. Body almost circularly rounded, convex, very shining, the pygidia polished and without interstitial punctulation; humeral striæ as in the preceding, the humeral apical, the fine remote punctulation composing it barely traceable; inflexed sides bistriate; prosternal lobe punctulate, the lateral broad flat margin gradually narrowing to the middle of the apex; marginal stria of the mesosternum broadly interrupted; propygidium with subeven, sparse, moderate punctures throughout, not becoming materially smaller medially; pygidium very convex, with fine and sparse, even and distinct punctures throughout. Length 6.0 mm.; width 4.8 mm. Texas (Austin).....**rotundus** n. sp.
- A—Similar to *rotundus* in general features but less broadly rounded and with relatively less abbreviated prothorax, differing especially in having the fourth discal stria subentire, extending as a deeply incised line from basal fifth or sixth to the posterior part of the elytra, where it becomes somewhat disintegrated or irregular, the sutural stria also longer, extending deeply from near the apical margin to basal third. Length 6.0 mm.; width 4.5 mm. Texas (the locality unrecorded).....**subinteger** n. subsp.
- Sutural stria long, extending from basal fourth to sixth not quite to the apex; marginal stria of the mesosternum less widely interrupted than in any of the preceding species.....3
- 3—Propygidium with the punctures coarse and sparse, gradually becoming fine posteriorly throughout the width; body larger in size. Broadly rounded, very smooth and shining; three discal striæ rather fine, smooth, all abbreviated slightly behind the basal margin, the fourth a short incised line from basal eighth to two-fifths, with a continuation to the apex by remote, extremely minute, feeble punctulation, only discoverable by oblique illumination, the sutural extending from basal fourth or fifth nearly to the apex; posterior humeral and the rather short submedial subhumeral striæ barely

traceable as series of extremely minute feeble punctulation; inflexed sides finely tristriate; prosternal lobe finely, closely and deeply punctate, finely margined at apex, more broadly laterad, the prosternum along the middle strongly convex; mesosternal sinus rather feeble. Length 6.6 mm.; width 4.7 mm. Pennsylvania.

**incertus** Mars.

Propygidium with strong, sparse and subevenly distributed punctures; body much smaller in size; third discal stria attaining the basal margin or very nearly. Broadly rounded, highly polished; three discal striae smooth, moderate, the fourth a short and fine incised line before the middle and, as usual, well removed from the base, the sutural abruptly ending at basal fifth or sixth and apical eighth; humeral represented by a long obsolescent series of fine feeble punctures, the subhumeral wanting; inflexed sides tristriate; pygidium convex, very minutely, remotely punctulate throughout; prosternal lobe nearly as in *incertus*; mesosternum feebly sinuate. Length 4.7-4.85 mm.; width 3.7-4.0 mm. Alabama (Mobile).

**orbiculus** n. sp.

A—Body throughout nearly as in *orbiculus*, but slightly less broadly rounded, and with the fourth discal stria longer, extending from near the base to behind the middle, the sutural also longer than in any other of this section, extending from near the apex almost to the base, where it is more or less bent outward; on the disk, just within the anterior end of the fourth discal stria, there is a small diffuse fovea; transverse distance between the fourth and sutural striae less than in *orbiculus*. Length 4.5 mm.; width 3.5 mm. Mississippi (Agricultural College),—H. E. Weed.

**fretus** n. subsp.

In *nitens*, the prosternal lobe is obtusely rounded at apex in one sex and abruptly transversely truncate in the other. The propygidial sculpture of *incertus* differs markedly from that of any other form above mentioned, and the striation of *nitens* is wholly peculiar to itself. *Fretus* and *subinteger* are only provisionally assigned subordinate rank, because of the lack of confirmatory material.

The species of the *merdarius* section of that group, are rather narrowly oblong-oval in form and of very moderate size as a rule, but never so small as the broadly oval and more convex *stygius*. They are rather numerous but individually rare, as stated by Marseul of the European *merdarius*. That author confused several exotic species with *merdarius*, among others the American *memnonius* of Say, which differs in having the fourth discal stria much more abbreviated at base and the very coarse propygidial punctures sparse, and not "assez serrés" as stated of *merdarius*. So far as represented in my collection our species of this section may be differentiated among themselves as follows:

Anterior tibiæ widest at apex, having four external teeth, of which the apical is most prominent and bifid. Body less narrow than in any of the following species, oblong, with parallel arcuate sides, moderately convex, with varnish-like lustre; head nearly smooth, without fovea, the ambient stria entire, more or less reëntrant medially; prothorax with the sides moderately converging and much rounded, especially in the male, the surface laterally with scattered punctures, the striæ approximate behind, not attaining the base, coarse and somewhat sinuous, the outer much further from the inner than from the edge, as in all the following species; elytra as in *merdarius*, the subhumeral coarse anteriorly, and there downwardly bent in even arc, the fourth discal much abbreviated at base, the fifth and sutural extending to or beyond the middle; surface smooth, wholly impunctate; pygidial punctures very coarse, notably sparse on the propygidium, rather close and deeper on the pygidium; mesosternal marginal stria narrowly interrupted medially. Length 5.2–6.2 mm.; width 3.4–4.3 mm. Pennsylvania, Massachusetts, Michigan and Indiana. Four examples. The male is smaller and narrower than the female and with more anteriorly narrowed prothorax. [*Hister merdarius* Mars. nec Say].....**memnonius** Say

Anterior tibiæ arcuate in external outline, the apical tooth not as prominent as the penultimate; fourth discal stria less abbreviated at base; fifth and sutural shorter, seldom attaining the middle.....2

2—Elytra with small sparse scattered punctures apically. Body oblong-oval, convex, polished, the head with the entire stria more pentagonal than in the preceding, the frontal part very feebly sinuate; prothorax as in the preceding but rather less transverse, the sides somewhat more converging and more evenly arcuate, the scattered lateral punctures far less obvious; elytra similar throughout but with the the fourth stria more nearly entire; propygidium with the punctures less coarse and twice as numerous, the pygidium more convex, with the deep punctures close and moderate and much smaller than in *memnonius*, the interspaces with fine sparse punctulation; prosteron obtusely convex, the marginal mesosternal stria entire; anterior tibiæ with five even external serrules, the basal ones very small; antennæ rufous, the club nearly black. Length 5.6–6.0 mm.; width 3.7–3.8 mm. Connecticut (Bridgewater) and Michigan (Agricultural College),—Weed. Two examples....**egregius** n. sp.

Elytra with the sparse apical punctures less numerous or diffused than in *egregius*. Body still more narrowly oval and convex; head flat except basally, the ambient stria very fine, arcuate, not at all pentagonal, clearly interrupted at the middle; prothorax only moderately transverse, the sides moderately converging and nearly straight, rounding apically; surface and striæ nearly as in *egregius*, except that the striæ are parallel, not more approximate posteriorly; short ante-scutellar stria strong; elytra as in *egregius*, except that all the striæ are finer and less impressed, the row of small remote punctures representing the humeral stria more distinct, the fifth and sutural still shorter, the inflexed sides much less concave and with far fewer scattered punctures; propygidium with moderate and rather close-set



- punctures, not much larger or sparser than those of the pygidium; prosternal lobe strongly margined at apex; mesosternal marginal stria strong and entire, the sinus deep as usual; anterior tibiae with five coarse acute denticles. Length 5.7 mm.; width 3.7 mm. Oregon..... **fidelis** n. sp.
- Elytra perfectly smooth apically, without trace of diffused punctulation; striae notably fine..... 3
- 3—Anterior tibiae with five serrules which are rather coarse and more widely spaced distally. Body oblong-oval, convex, shining; head with the fine ambient stria very widely interrupted; prothorax with moderately converging sides, which are moderately arcuate, rapidly more rounding apically; surface without punctures laterally, the striae rather fine, unequally spaced, not entire and not approximate behind, the inner sinuous medially and crenulate; ante-scutellar stria as usual; elytra with all the striae of the *merdarius* section, but finer than usual, subcrenulate, the fifth and sutural fine and apical, the fourth not quite attaining the base; row of punctures representing the humeral stria barely traceable, the subhumeral as usual, though much finer and straighter than in *memmonius*; inflexed sides with very few and extremely minute punctures; propygidium with rather small and well separated punctures, those of the pygidium fine and not dense, the apex smooth and more polished; prosternal lobe broadly and continuously margined; prosternum transversely, feebly convex, the mesosternal marginal stria deep and entire. Length 4.8 mm.; width 3.3 mm. British Columbia (Victoria),—Wickham. One specimen..... **planifrons** Lewis
- Anterior tibiae with six or seven smaller, very evenly spaced and regular serrules. Body rather more elongate-oval, less convex, polished; head with a fine subpentagonal ambient stria, narrowly interrupted on the front; prothorax as in the preceding, but with the sides more evenly arcuate, the striae similar, the sinuation of the inner more marked; surface micro-punctulate; elytra as in *planifrons*, but with the line of punctules representing the humeral stria better marked, the inflexed sides with numerous much coarser punctures; propygidium with strong and close-set punctures, the pygidium convex, with the rather small punctures even denser and subequal, the apex not smooth; prosternal lobe beaded throughout at apex, the mesosternal marginal stria entire, feebly crenulate, the sinus deep, acutely limited at its sides. Length 5.8 mm.; width 3.8 mm. California (Lake Tahoe)..... **fractifrons** Csy.

The dentition of the anterior tibiae is inconstant in this section, as may be observed from the table, and the west coast forms, as a subsection, differ from the eastern species in having the thoracic striae parallel, not becoming approximate posteriorly; it is probably some one of these western species that was confounded with *immunis* by Dr. Horn. As *memmonius* Say is a valid species, it becomes

necessary to replace the name of the European *memnonius* Er., by *luctuosus* Mars.

Not having seen the paper (Ann. Mag. Nat. Hist., 1898, II) in which Mr. Lewis describes two species, listed as from "North America," belonging to the subgenus *Spilodiscus* (ante p. 206), I inadvertently omitted them from the table. They both belong to the *militaris* section of the subgenus, having an unusually broad head, generally feebly impressed anteriorly and with entire stria, short apical outer lateral thoracic stria, three entire dorsal, short and apical fourth and fifth, longer but medial sutural and obsolete humeral, striae, and tridentate anterior tibiae. On reading the descriptions of *sarcinatus* and *tunicatus* Lewis, and reinvestigating my material in *militaris* and *quadratulus*, I find an unexpected variety of forms, presumably specific; in fact there are three combined under my former conception of *quadratulus*, no one of which seems to be the same as either of the Lewis species, the chief differentiative characters residing in the pygidial sculpture, nature of the mesosternal sinus and its paralleling stria and the size and general outline of the body.

*Militaris* Horn, is the largest of the section, oval, convex, with the propygidial punctures coarse and sparse, those of the pygidium distinct, strong and moderately separated throughout, somewhat coarser basally and finer apically, the apex impunctate, the mesosternal sinus deep, rather narrow and sharply defined, the parallel stria more distant from the edge laterally than along the sinus. In the last character it agrees with *tunicatus*, from Cañon City, Colorado, but there the size is smaller—4.5 mm.—and the pygidial punctures are apparently finer and less conspicuous. In *sarcinatus*, from Winslow, Arizona, the mesosternal sinus is broader and shallower and the stria is equidistant from the edge from side to side, as in *quadratulus*, but in the former the body is 5.25 mm. in length and the pygidial punctures become gradually fine apically. In *quadratulus*, represented only by three examples from Fort Wingate, New Mexico, the size is much smaller—4.2–4.5 mm.—the form oblong and but slightly oval, and the pygidial sculpture is peculiar; the punctures are not large but distinct, sparse and limited to about basal two-fifths medially to rather more than half at the sides, the rest of the surface virtually impunctate. My example from Las

Vegas is a little larger than the Fort Wingate specimens—4.9 by 3.0 mm., with more coarsely and deeply impressed three dorsal striae, the fourth and fifth being feebly impressed series of indefinite punctures and each more than a third as long as the elytra, the sutural finer and more punctulate from basal third to apical sixth, the postero-lateral lobes of the black plaga much thinner, strongly diverging and more parallel-sided than in any other, the propygidial punctures coarse and sparse, those of the pygidium strong, becoming gradually fine in about apical half and the mesosternum is nearly as in *quadratus* and *sarcinatus*; it may be named **bilobatus** (n. sp.). The specimen from Cimarron, New Mexico, is also larger than *quadratus* and more broadly oval, the striation as in the latter species, the very sparse pygidial punctures also similar, though finer, but the mesosternum is as in *militaris* and *tunicatus*. It also probably represents a distinct species.

The species described by me under the name *Hister virginiae* (Ann. N. Y. Acad. Sci., VII, 1894, p. 541) proves to be the same as *obtusatus* Harris (Trans. Hart. Nat. Hist. Soc., 1837, p. 76). It is very much stouter than *interruptus* Beauv., with the pygidial punctures much coarser and denser, and it is one of the most distinctly characterized species of the group; its suppression as a synonym of *interruptus* must be condemned as a careless oversight, to say the least. *Obtusatus* is abundant from Virginia northward to New York and Massachusetts.

### III

Within the last few days, Mr. Carnochan, on looking over my collection, stated that I had correctly determined his *Phelister frosti*, but that my *sayi* Carn. (ante p. 229) was not that form, nor closely allied thereto. It is our smallest species of the genus by far, and it gives me pleasure to name it **carnochani** (nom. nov.).

In drawing up the table of *Phelister* species (l. c.), I gave but little attention to the striation of the inflexed sides of the elytra, which however should be considered carefully in a more general monograph of the genus. In *subrotundus* there is but a single very coarse entire sulcus. In *vernus* there is the same coarse sulcus, but below it appears a short feeble stria. In *simplex* there are two fine entire lines, but, with greater amplification, these prove to be simply the

upper and lower bounding lines of a very broad entire sulcus; *atrolucens* is like *simplex* in this respect. In *venustus* there are certainly two entire and separate striæ, the upper a broad deep sulcus, the lower a finer sulcus, both coarsely punctate. I can find no correlation between these elytral lines and the lateral thoracic striæ, of which there are two distinct types in the genus: one having a very fine marginal stria and within this a coarser stria, which is free at both ends, represented by *subrotundus*; the other having simply the very fine marginal stria, continuous with the fine apical bounding line, represented by most of the other species of the genus.

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All generic and specific names without designation of authorship in the following index, refer to new descriptions in the preceding pages of this work. Names merely incidentally mentioned are frequently omitted.

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