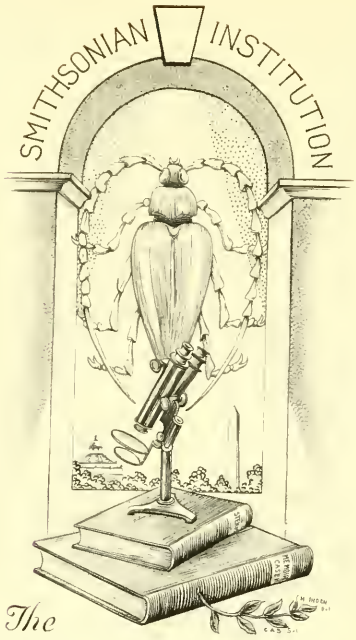

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COLEOPTEROLOGICAL NOTICES.

II.

BY

THOS. L. CASEY.

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

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VII.—*Coleopterological Notices.*

II.

BY THOMAS L. CASEY.

Read October 6, 1890.

The greater part of the present paper is devoted to the Tenebrionidæ, in an attempt to elucidate the more obscure portions of the family as represented in the United States. The foundation for this somewhat laborious work rests upon a large amount of material, brought together by the writer during several years' residence in California, supplemented and greatly increased in value by the collections of the National Museum, which were placed in my hands for study and identification through the liberality of Prof. C. V. Riley.

It gives me pleasure also to acknowledge my indebtedness to many other friends for specimens which have still further augmented the material, and consequently enhanced the utility of the systematic revisions. Prominent among these are Messrs. H. F. Wickham, E. A. Schwarz, and Wilhelm Jülich.

New York, August 11, 1890.

Note.

As generic and specific words are mere symbols for the designation of a species, it seems desirable that they should be withdrawn as far as possible from exceptions to general rules of grammar, and, that in this respect at least, they should be treated in the abstract as mere aggregations of letters. The rules of gender should be made uniform, so that generic symbols ending in a certain manner shall demand a certain definite and invariable gender in the specific symbol.

Let us take, for instance, the word *Adonis*. To apply this word to a genus of beetles with any idea of its absolute meaning, would of course be absurd, and, if this be granted, there can be no tenable reason for regarding its gender as masculine and consequently exceptional to the general rule for words

ending in *is*. In fact, in the present state of the science, it is impossible to convey any usefully discriminating meaning by a generic word, for it is evident that such combinations as *Platysoma*, *Megacephalus*, *Brachycerus* and hundreds of others, could each be applied with equal force of meaning to a great number of widely diverse genera.

The only course left, therefore, is to consider the generic name as a simple harmonious combination of letters, having a Latin form, constructed without absolutely essential reference to rigidly correct orthography in the language from which it may have been derived, whether Greek, Latin, or aboriginal American, and subject to constant rules of gender which shall be independent of linguistic caprice. The word may or may not have a meaning in the original language from which it is taken, although in any event, the meaning is of but little material importance. In regard to gender some such rule as the following might be suggested:—

Masculine.—All words ending in *as*, *es*, *os*, *us*, *r* or *o*.

Feminine.—All words ending in *a*, *is* or *s* preceded by a consonant, including *y*, and, in addition, words ending in *e* or *x*.

Neuter.—All words ending in *m* or *n*.

An attempt at uniformity involving a suppression of the rules of orthography, and made in a spirit similar to that which has prompted the above remarks, has recently come into quite general use—I allude to the growing custom of writing all specific names, whether proper or common, with a small initial letter. All such rules as this, which have for their object the attainment of simplicity and uniformity in scientific nomenclature, are undoubtedly very desirable.

In conclusion I cannot forbear alluding to the unspeakable confusion, into which the gratuitous meddling of mere linguistic purists, has thrown a great deal of what should be rigid and unchangeable symbolization. If we can by any means avoid the unnecessary alteration of original spelling of generic words in the future, it is all that can be hoped for.

COLYDIIDÆ.

The Colydiidæ comprise an extremely heterogeneous assemblage of species, in treating which we must either greatly amplify and generalize our conception of the value of generic characters as derived from experience in the order at large, or must create a relatively great number of genera each very limited in extent. There can be but little question of the propriety of the latter course, if we wish to make the value of generic characters—somewhat indefinite at best—as nearly uniform as possible throughout the order, although it necessitates at the same time a greater complexity of nomenclature. A similar condition is of constant recurrence throughout the order. In the Carabidæ it occurs among the

Lebiini, in the Pselaphidæ among the Ctenistini, and in the Staphylinidæ among the Omalini; it is even more pronounced in many parts of the Cerambycidæ, Tenebrionidæ, and Otiorhynchidæ.

In regard to the genus Murmidius and its allies, it is quite clear that their affinities are wholly with Cerylon and Philothermus, and not at all with the Histeridæ, although a few modifications of structure which are characteristic of that family reappear in them. These resemblances are limited to the prosternal lobe and elevated lines alone, for the antennæ are received in deep prosternal excavations in true Colydiides, as, for example, in Megataphrus, and the retractibility of the legs is of very variable extent and consequently of subordinate value as will appear below. The prosternal lobe, even, is fully developed only in one of the four genera. On the other hand the antennæ, in general form and position, the trophi, and the structure of the abdomen, are entirely similar to those of the Cerylonini.

MEGATAPHRUS n. gen. (Megataphrini).

Head porrect; sides far overreaching the base of the antennæ, the eyes very rudimentary, consisting of four or five very large circular facets arcuately bordering the anterior basal margin of a small tubercle situated at the sides of the extreme base. Antennæ inserted far in advance of the eye, very slender, 11-jointed, the club abrupt, consisting of two separate but rather approximate joints, one to eight very slender, nearly nude and very sparsely setose, cylindrical, one to five longer than wide, three longer than two and nearly as long as four and five together, six to eight gradually shorter but equal in width, nine slightly transverse, ten abruptly much wider, transverse, eleventh much wider than long, longer than and fully as wide as the tenth, apical joints more densely pubescent. Antennal grooves at the sides of the head very wide and deep, continued directly on to the hypomera, where they are extremely large and deeply excavated, the excavation nearly straight, parallel to the lateral edges, continuing through anterior three-fifths of the prothoracic length and extremely disproportionate to the size of the antennæ, being fully ten times as voluminous and of very great depth. Mentum transverse, with a very strong angulate carina extending from the basal angles to the middle of the apex; interior of the angulate portion concave, not carinate. Ligula short, with a rounded discal tubercle. Palpi moderate; last joint of the maxillary rather large, slightly longer than wide, much longer and wider than the third, ovoidal, obliquely and broadly truncate at apex. Mandibles obtusely notched at apex. Labrum short and transverse, the basal half feebly declivous; the apical vertical. Coxæ moderately widely separated throughout, the anterior as widely so as the intermediate, small, globular, very deeply inserted, the process wide, truncate, scarcely extending beyond the coxæ, the cavities open

behind, the posterior oval, rapidly attenuate laterally and scarcely attaining the metasternal episterna which are rather wide. Abdomen composed of five segments which are free or very nearly so, separated by very coarse, deeply impressed and straight sutures; basal segment nearly as long as the next three together. Legs short, moderately robust; tibiæ slender, the spurs not distinct; tarsi slender, tetramerous; joints of the posterior all elongate, the fourth much shorter than the first three combined.

On comparing these characters with the corresponding ones of Rhagodera and Anchomma, it is readily seen that the antennæ differ radically, for, besides being of a usual type and not in the least perfoliate, they have the last joint wide, while in the genera mentioned the last joint is small, exactly as in the Asidini of the Tenebrionidæ; in this connection attention is called to the small terminal joint in Narthecius. Megataphrus further differs from the Rhagoderini in having antennal fossæ at the sides of the head and prosternum not only present, but developed to an extraordinary degree, and in the elongate basal segment of the abdomen; it however resembles the tribe mentioned in having the antennæ inserted at a great distance from the eyes, which in the present instance are all but obsolete, and in the structure of the anterior coxæ, acetabula and prosternal process, also in its roughly scabrous appearance. There seems to be no course left, therefore, but to consider it the representative of a distinct synthetic tribe.[1]

M. tenuicornis n. sp.—Oblong, rather robust, parallel, strongly, unevenly convex, piceous-black, dull and roughly scabrous. *Head* moderate, wider than long, very coarsely punctato-tuberculose, the sides tumid over the antennæ, the occiput with a small median fovea. *Prothorax* anteriorly somewhat as in Coxelus, about one-fourth wider than long; base and apex equal, the latter truncate between the large and greatly advanced apical angles, which are rather acute and not rounded; base pedunculate, the peduncle short, three-fifths as wide as the disk, transversely truncate; sides parallel, evenly and distinctly arcuate, minutely but strongly serrate, the teeth tri-

[1] The European genus Tarphius, which appears to approach Megataphrus in some respects, differs in its broader form of body with non-pedunculated pronotum, in its well-developed eyes which are more approximate to the point of antennal insertion, and in the very short basal joint of the tarsi; in Megataphrus the hind tarsi are slender, the basal joint being subequal in length to the next two together. In Tarphius, which is considered a member of the Synchitini, the antennal grooves are, according to Wollaston, not really excavations, but more feeble impressions. It cannot be denied, however, that the tribe Megataphrini is also closely allied to the Synchitini, of which it might perhaps with almost equal plausibility form a group.

angular and erect, strongly emarginate posteriorly just before the basal angles of the peduncle; disk strongly elevated in middle third, with a large fovea at each side in the middle, very coarsely tuberculose and dull. Scutellum exceedingly minute, angulate and attenuate at apex. *Elytra* scarcely as wide as the prothorax and about three-fourths longer; sides nearly straight; apex evenly rounded; base truncate between the humeri which are rounded but anteriorly prominent, each elytron with three moderately elevated discal costæ the two outer, as well as the lateral edge—viewed laterally—broadly sinuous in the middle; intervals each with a double series of extremely coarse approximate punctures, the sutural interval with a single series. Under surface dull and roughly scabrous. Length 2.4 mm.

California (Humboldt Co.).

A single representative only was taken by the author near the bay, probably under loose and greatly decayed bark. The integuments throughout, including the femora and tibiæ, are clothed with very short and sparse, robust, but not squamiform setæ, the tarsi very finely, sparsely pubescent beneath and nearly glabrous above.

LYCOPTIS n. gen. (Lycoptini).

The very aberrant genus which I have been forced to regard as the representative of a distinct tribe of the Colydiidæ, may be essentially defined in few words as follows:—

Sides of the head anteriorly not at all extended and but feebly developed horizontally, the basal joint of the antennæ almost entirely exposed from above, although inserted under the sides. Antennæ slender, rather short, 7-jointed, joints three to six slender, seventh forming an abrupt, elongate-oval, solid club, which is apparently composed of three fused joints with a feeble terminal process possibly representing a tenth joint; antennal grooves not well developed. Eyes rather large and prominent, coarsely faceted. Palpi with the last joint elongate-oval, gradually and obtusely pointed at apex and much longer but not thicker than the penultimate. Mandibles finely notched at apex. Coxæ all narrowly separated, the anterior small, transversely oval, gradually pointed externally, the cavities narrowly open behind; posterior strongly transverse, attaining the margin of the epipleuræ. Metasternum large, with a short coarse ante-coxal transverse groove; episterna not very narrow, gradually diminishing in width posteriorly throughout the length, attaining the coxæ, the epimera obsolete. Legs rather slender but short, free; tarsi tetramerous, the basal joint extremely small, the fourth about twice as long as the first three together; tibial spurs extremely short.

The prosternal process is rather narrow and extends behind the coxæ, the apex abruptly expanded and received in a small moderately deeply impressed excavation of the mesosternum; its surface

is transversely tumid, and the lateral angles acute. The metasternal process is short, angulate and transversely tumid or subcarinate. The epipleuræ are horizontal and nearly equal in width throughout, except near the base, where they become a little wider and almost vertical.

The tribe Lycoptini is related in some of its characters to the Synchitini, but differs in the structure of the anterior coxæ which are transversely oval and pointed externally, a character which is extremely rare if not unique in the family. The 7-jointed antennæ also constitute a peculiar character, and there are only the feeblest indications of division in the club visible under special conditions of illumination, the amalgamation being complete; the third joint is slender and much longer than the fourth. Lycoptis appears to be one of those connective forms which, with increasing discovery, will in all probability ultimately unite many of the small families of Clavicorns.

L. villosa n. sp.—Oblong, parallel, rather depressed, rufo-ferruginous throughout, feebly shining, the elytra more strongly so; entire upper surface herissate with very long, erect, somewhat sparse but conspicuous hairs. *Head* wider than long, the eyes prominent and convex, the sides before them short and strongly convergent anteriorly from their inner margin; apex broadly truncate; epistoma short, the suture transverse and distinct; sides of the front at each side of the epistoma very slightly tumid; labrum very short and transverse; upper surface feebly, evenly convex, coarsely and densely punctate. *Prothorax* four-fifths wider than long, two-thirds wider than the head, united to the hind body by a short peduncle less than one-half as wide as the base; apex slightly narrower than the base, truncate between the slightly advanced and narrowly rounded apical angles; base transversely truncate throughout the width, the basal angles distinctly and rather broadly rounded; sides extremely feebly, evenly arcuate; disk very feebly convex but strongly declivous laterally, the margins narrowly reflexo-explanate, the lateral edges minutely crenulate, coarsely, very densely punctate throughout, without trace of impressions. Scutellum transversely oval. *Elytra* rather more than three times as long as the prothorax and exactly equal to it in width; sides parallel and straight; apex evenly, semi-circularly rounded; base truncate; humeri right, not rounded; disk nearly flat above, strongly declivous laterally from the sublateral carina; on each elytron there is at lateral third a strongly elevated carina, the surface thence to the suture marked with five feebly elevated lines, interrupted by distant punctures, the intervals each with a single series of rather coarse punctures, the surface thence to the sides having a single feebly elevated but uninterrupted line, the two intervals each with three even series of punctures. Under surface moderately shining, feebly

granulato-reticulate, very minutely and sparsely punctate. *Abdomen* composed of five nearly equal segments, the sutures strong and perfectly straight throughout. Length 2.1 mm.

South Carolina. Mr. Morrison.

A single specimen of this species was kindly presented by Mr. Schwarz.

LASCONOTUS Erich.

This is without doubt one of the largest genera of Colydiidæ, and is particularly well represented in the Californian coast regions; it is withal a clearly limited and but slightly composite genus, although its species differ considerably in habit. The species belonging to the *linearis* group, for instance, are not found under bark, but inhabit the leafy branches of trees, particularly pines, and it will be observed that the general form of these species is more cylindrically convex than those of subcortical habits.

Although the structural characters of the under surface are comparatively constant, there is very great variety in the sculpture of the upper surface, which sometimes becomes very complex.

L. pertenuis n. sp.—Very slender, parallel, rather convex, dull and scabrous, pale brownish-ferruginous throughout; pubescence short, robust, rather sparse but more conspicuous in single narrow lines along the crests of the elytral costæ. *Head* rather large, a little wider than long, slightly constricted at base, flat above, coarsely, densely and indistinctly punctate, the epistoma surrounded posteriorly by a deeply impressed, arcuate groove; eyes rather large, moderately convex, the tempora about one-half as long; antennæ short and robust, the club oval, strong, the ninth joint much shorter and narrower than the tenth. *Prothorax* a little longer than wide; base equal in width to the head; apex a little wider, broadly arcuate; sides just visibly and broadly sinuate; basal angles not at all rounded in the male, rounded in the female; disk very coarsely, rather densely but indistinctly punctate, the interspaces very dull; pubescence forming an intricate and feebly marked tracery; surface broadly, feebly impressed along the middle, the impression becoming narrower and vanishing toward base, where, on each side of it, there is a narrow elongate feeble impression. *Elytra* about two and one-half times as long as the prothorax and just visibly wider, very distinctly wider than the base of the latter; humeri narrowly rounded; apex evenly rounded in circular arc; disk cylindrically convex, each with four fine, feebly elevated, entire ridges, the intervals each with two approximate series of coarse, very close-set, non-setigerous punctures, the setæ borne by very minute punctures at the sides of the interval separating the series, one for every coarse puncture, the setæ subrecumbent and directed obliquely toward the ridges. *Abdomen* rather coarsely but sparsely and indistinctly punctate. Length 2.4–2.6 mm.

California (Monterey).

The most slender species known to me, belonging near *linearis* Cr., but smaller, pale throughout and with finer, sparser punctuation, especially of the abdomen. As in the species mentioned the real punctures of the pronotum are very fine, each situated on the summit of a relatively coarse tubercle.

Structurally, this species differs from *linearis* in the antennæ and maxillary palpi, the antennal club being parallel and with joints nine and ten almost equal in *linearis*. In *pertenuis* the terminal joint of the maxillary palpi is shorter, more parallel and more broadly truncate at apex; these differences are quite conspicuous in degree.

L. nucleatus n. sp.—Rather slender, parallel, convex, piceous-brown, dull; pubescence coarse, short and recumbent but not squamiform. *Head* a little narrower than the base of the prothorax, parallel, broadly truncate, very slightly wider than long, feebly constricted at base; upper surface rather flat, coarsely, densely punctate and scabrous; eyes small, a little shorter than the tempora, slightly prominent; antennæ rather long and slender, very sparsely clothed with long herissate setæ which are very conspicuous on the club, the latter elongate, subparallel and loose, joints one to six or seven longer than wide. *Prothorax* fully as wide as long, strongly narrowed from apex to base, the sides broadly but rather strongly sinuate throughout; apex much wider than the base, broadly, feebly arcuate; basal angles rather acute, not rounded; disk with complex tracery and very feeble impressions nearly as in *pertenuis*, coarsely granulato-punctate. *Elytra* nearly three times as long as the prothorax and a very little wider than the disk of the latter; sides parallel and almost straight; humeri narrowly rounded; apex very slightly conjointly produced in the middle as a squarely truncate lobe; disk without trace of longitudinal costæ, but in their place having slightly broader flattened nude and impunctate intervals, which are interrupted at long distances by small tumid elevations, bearing a dense tuft of whitish setæ; spaces between the flat tumuliferous intervals occupied by a double line of coarse, non-setigerous punctures, the two series very approximate, the interval separating them bearing a very closely-spaced double line of coarse yellowish setæ, which are pointed longitudinally backward. *Abdomen* very dull and scabrous, the punctures rather sparse and indistinct. Length 2.7–3.4 mm.

California (Monterey).

I obtained a small series of this species from the blossoming branches of the Monterey pine. Although belonging to the *linearis* division of the genus, it is at once distinguishable from any other described form, by the densely pubescent nuclei of the elytra and the absence of costal lines. It is more robust than *linearis*.

L. apicalis n. sp.—Parallel, moderately slender, rather depressed, flat above, the elytra vertical at the sides, dark rufo-ferruginous throughout, very slightly shining; pubescence very short and sparse, moderately coarse. *Head* moderate, nearly as long as wide, quite distinctly narrower before than behind the eyes, the latter moderate, very slightly convex and about two-thirds longer than the tempora; occiput slightly constricted at base; upper surface feebly impressed at the sides of the epistoma, finely, sparsely punctate, the punctures becoming denser and coarsely tuberculous toward the sides; antennæ well developed, rather stout, the pubescence rather dense, moderate in length, club wide, nearly parallel, rather loose, the ninth joint distinctly shorter although but little narrower than the tenth, third scarcely one-half longer than wide. *Prothorax* scarcely visibly longer than wide; sides extremely feebly convergent from apex to base, straight in direction although slightly undulated; base with a very short wide truncate median lobe; basal angles slightly obtuse but not rounded; apex nearly transverse but feebly bilobed, the margin of the lobes tumid; disk finely, rather sparsely punctate, each puncture at the summit of a small elevated tubercle; the tubercles dense; surface broadly, feebly impressed in the middle in anterior two-thirds, also with three feeble impressions near the base forming a posteriorly pointed triangle, otherwise even. *Elytra* about two and one-half times as long as the prothorax and nearly two-fifths wider; apex semi-circularly rounded; humeri very narrowly rounded; sides parallel and nearly straight; disk with broadly elevated suture and four rather strong straight costæ on each elytron, the summit of the costæ distinctly, densely punctate, not very conspicuously setose, the intervals each with two very approximate series of coarse close-set punctures, the small subrecumbent setæ arranged as in *pertenuis;* scutellar series long and distinct; first discal costa abruptly obsolete at apical fifth, the surface between the thence feebly elevated suture and the second costa nearly flat, polished and extremely sparsely, finely punctate thence to the apex. Under surface throughout very coarsely, densely, deeply and distinctly punctate, the punctures slightly transverse and feebly reniform, the small inconspicuous setæ arising from their anterior margins. *Legs* moderate; tarsi slender. Length 3.4–3.7 mm.

California (Santa Cruz Co.).

In some characters this remarkably distinct species is intermediate between the ordinary forms with all the elytral costæ entire, and the *pusillus* group in which the first discal costa is abbreviated; this abbreviation is most extreme in *concavus*.

L. concavus n. sp.—Rather robust, depressed, subparallel, black; legs and antennæ rufo-testaceous; upper surface alutaceous, the pubescence not very coarse, extremely short, very dense throughout. *Head* slightly wider than long, the sides arcuate and convergent before the eyes which are well developed but not at all prominent, the tempora very short; base rather strongly, abruptly constricted; surface nearly flat, with two very large feeble impressions separated by a longitudinal and feeble elevation; punctures sim-

ple throughout, fine but deep and rather dense; antennæ rather short, the club broad and almost parallel, third joint short, scarcely as long as wide, very slightly longer and wider than the fourth. *Prothorax* very slightly wider than long; sides rounded anteriorly, thence feebly convergent and nearly straight to the broadly rounded basal angles; basal pedunculiform lobe extremely short and broad, truncate; apex transverse; disk abruptly and very deeply excavated throughout the length, the excavation but slightly longer than wide, and three-fifths as wide as the entire prothorax; punctures rather fine but deep and very dense throughout, simple and not in the least tuberculous. *Elytra* about two and one-half times as long as the prothorax and very slightly wider; sides subparallel, nearly straight, feebly arcuate near the humeri which are narrowly rounded; apex gradually, evenly rounded; base broadly, rather strongly emarginate; disk very broadly, strongly concave between the second discal costæ throughout the length, the first costa feeble and extending from the base for one-seventh or one-eighth the length, totally obsolete elsewhere; costæ two to four well developed; surface finely, very densely punctate, the concavity having extremely indistinct unimpressed series of very slightly larger punctures, the intervals between the lateral ridges biseriately and rather finely punctate. *Abdomen* and metasternum polished, rather coarsely, moderately densely and very distinctly punctate. *Legs* moderate, the femora very robust. Length 2.8 mm.

New Mexico (Las Vegas). Mr. H. Meéske.

This small species belongs to the *pusillus* group and represents an extreme development of its structural peculiarities; it is very much broader than *laqueatus* Lec.

The three species of the *pusillus* group may be distinguished as follows:—

First elytral costa feeble but traceable behind the middle.
Elytra gradually, rather strongly concave toward apex; base strongly emarginate; pronotal punctuation simple throughout, without trace of elevated tubercles..... **pusillus**
Elytra not distinctly concave, just visibly sinuate at base; pronotal punctures fine, situated on the summits of coarse feebly elevated tubercles. **laqueatus**
First elytral costa only visible near the base; pronotal punctures simple. **concavus**

Besides the more elongate and narrower form of *pusillus*, there are many other characters distinguishing it from *laqueatus*.

CERYLON Latr.

C. californicum n. sp.—Elongate, subparallel, feebly convex, piceous, polished, the upper surface with erect and rather long but extremely sparse and inconspicuous hairs, growing from the punctures. *Head* transverse, feebly

convex, rather coarsely but very sparsely punctate; antennæ very robust, basal joint large, angulate behind, joints two to eight equal in width and almost equal in length, subquadrate, compactly joined, ninth a little wider, slightly wider than long, the posterior side longer than the anterior, club abrupt, one-half longer than wide, distinctly composed of two fused joints. *Prothorax* quadrate, just visibly wider at apical fourth than at base; sides thence nearly straight to the base, rounded and convergent anteriorly; apex very feebly incurvate; base transverse, the median lobe very feeble; disk feebly convex, abruptly nearly perpendicular at the very shallow flanks, the marginal bead extremely fine; punctures very coarse, perforate, sparse but rather dense toward the sides, except near the base. Scutellum moderate, transversely oval. *Elytra* nearly twice as long as the prothorax and, in the middle, nearly one-fourth wider than the latter; sides parallel and very distinctly arcuate; apex evenly rounded; disk with extremely feebly-impressed series of rather fine, somewhat distant punctures; intervals nearly flat, each with a single series of very minute widely distant punctures. Under surface throughout coarsely but rather sparsely punctate. Length 3.0 mm.

California (Lake Tahoe and Siskiyou).

A conspicuously distinct species, distinguished from *unicolor* by its much larger size, piceous color, coarse punctuation, erect hairs of the upper surface and many other characters.

LAPETHUS n. gen. (Murmidiini).

Body oval, compact; head deflexed, the trophi in part concealed in repose by the short prosternal lobe. Antennæ inserted in deep foveæ on the front, just before and between the eyes the condyle of the basal joint exposed when the organ is reflexed, rather slender, straight, cylindrical, 10-jointed, the last three joints fused into a robust, compact, oval and very abrupt club. Maxillary palpi with the first two joints rather slender, the third abruptly very large, oval, compressed, the fourth slender, subulate, obliquely inserted in the apex of the third. Labial palpi with the first joint very small, second very large, oval, compressed, the third subulate and oblique. Mentum small, angulate at apex, finely and strongly carinate along the middle. Labrum as long as wide, the sides straight and strongly convergent from base to apex, the latter narrow and with a deep angulate notch; between its upper surface and the epistoma there is a short transversely truncate basal piece which is corneous; both this and the labrum proper are retractile. Eyes rather small, coarsely faceted. Pronotum widely separating the small globular coxæ, the cavities apparently open behind, the process wide, extending far behind the coxæ, the apex broadly rounded and closely fitted in a corresponding emargination of the mesosternum, its surface continuous with that of the mesosternum; hypomera wide, excavated throughout the width in anterior half for the reception of the antennal club, the anterior portion of the excavation separated from the median lobe by a deep elongate cleft for the reception of the funicle;

lateral angles of the median lobe rather acute and prominent, the apex truncate. Middle and hind coxæ very widely distant, the latter small, transverse and attaining the metasternal episterna, the latter extremely narrow and linear but dilated behind, the suture fine but distinct. Anterior and middle legs retractile, the posterior free; tibiæ compressed, slender toward base, swollen and obliquely truncate externally toward apex, the truncate surface smooth and polished and bordered on each side by a fringe of short setæ, the external edge carinate from base to the truncation just mentioned; tarsi slender, the first three joints small, subequal and, in the posterior, together about one-half as long as the fourth; claws slender, normal.

The last vestige of the posterior crural excavation is visible as a fine straight line, extending obliquely from the inner side of the coxa and vanishing near apical third of the first segment.

In the structure of the palpi, maxillary lobes, insertion of the antennæ and carination of the mentum this genus is an analogue of Cerylon, but in the retractile legs and antennal excavations it is allied to Murmidius; in fact it constitutes an almost conclusive proof that the Murmidiini are merely a group of the Colydiidæ and closely related to the Cerylonini, the principal distinctive features being the 10-jointed antennæ received in excavations. In Cerylon the antennæ are 11-jointed, the club being composed of two amalgamated joints as in Murmidius. In Lapethus the club is composed of three fused joints.

The three genera Cerylon, Lapethus and Murmidius differ however in sternal structure to an astonishing degree, for in Cerylon the prosternal process extends over the surface of the mesosternum and in Lapethus is received in an emargination of the latter, while in Murmidius the mesosternum extends over the surface of the prosternum, advancing considerably upon it and partially concealing the anterior coxæ.

L. discretus n. sp.—Rather broadly oval, moderately convex, dark rufotestaceous throughout, highly polished, the upper surface with rather long, fine, erect and stiff setæ which are very sparsely distributed. *Head* feebly convex, extremely finely and sparsely punctate but coarsely and more densely so toward base; epistomal suture completely obliterated. *Prothorax* nearly one-half wider than long, at base nearly three times as wide as the head, very strongly narrowed from base to apex, the latter broadly, feebly emarginate, nearly one-half as wide as the base, the latter transverse, broadly, arcuately lobed in the middle, closely fitted to the base of the elytra throughout the width; sides rather strongly arcuate, nearly parallel in basal third; disk very vaguely, transversely impressed almost throughout the width near the base, very sparsely, moderately finely punctate, the sides margined with a

thick acute bead. Scutellum moderate, very distinct, almost circular. *Elytra* subequal in width to the prothorax and twice as long, gradually rather strongly rounded at apex, the sides anteriorly very feebly arcuate; base equal in width to that of the prothorax; disk with rows of very coarse punctures which become feeble near the sides and almost completely obliterated in apical third or fourth. Under surface extremely sparsely and inconspicuously punctate, polished. *Legs* short, the femora rather robust. Length 1.8–2.0 mm.

California (Humboldt Co.).

I obtained two specimens of this extremely interesting species under old bark near Humboldt Bay.

BOTRODUS n. gen. (Murmidiini).

Body oblong-oval, rather strongly convex. Head deflexed, the trophi partially concealed in repose by the moderately developed prosternum. Eyes rather large, rounded, coarsely faceted. Antennæ inserted at the sides of the front in very small foveæ adjacent to anterior margin of the eye, 10-jointed, the club moderate in size, abrupt, oval, solid and consisting of two amalgamated joints; basal joint rather large, broadly angulate anteriorly; second much smaller, conical; three to eight slender, very compactly joined, affixed obliquely to the apex of the second joint; antennal grooves wanting, the club received in a small deep excavation in the apical angles of the prothorax, visible anteriorly but not from above. Palpi not very robust, the last joint slender, acuminate, conical and slightly oblique, in the maxillary nearly equal in length to the penultimate and a little more slender. Mentum extremely small. Mandibles finely notched at apex. Labrum very short and transverse. Epistoma extremely large, fully one-half as long as the entire head and continuous with it in convexity, the suture very fine and extending between the antennal foveæ. Anterior coxæ very small, globular, very distant, the cavities apparently open behind, the prosternum with two very fine widely distant lines, diverging from the coxæ, the process very wide, extending under the mesosternum. Mesosternum between the coxæ very broad, advancing anteriorly beyond the coxæ as a broadly rounded, heavily beaded lobe, which extends partially over the prosternum, the metasternal suture very feeble. Metasternum very large, the episterna narrow, inflexed behind to meet the coxæ; suture very feeble; posterior coxæ small, transversely oval, widely separated. Abdomen consisting of five segments with straight, rather feeble sutures, the basal segment not quite as long as the remainder together. Legs rather short, not received in excavations, the femora robust, extending laterally beyond the sides of the elytra; crural cavities perfectly obsolete but represented by feebly elevated lines, extending obliquely on the metasternum and first ventral segment, from the inner limits of the coxæ.

This genus has several characters in common with Mychocerus, such for instance as the position and extent of the antennal excava-

tion, but as the legs are entirely free I do not think that it can properly be considered identical, especially as the general habitus is quite different.

The structure of the mesosternum anteriorly reminds us somewhat of Phalacrus, but is perfectly similar to the same part in *Murmidius ovalis;* in both, the fine sutural line separating the sterna is posteriorly angulate, unimpressed and is situated at the middle of the coxal cavities as in Cerylon; it is very feebly marked in the present genus. In Cerylon the mesosternum is very much longer and the prosternal process extends over its surface for a short distance, as before remarked.

The absence of crural excavations and the imperfectly retractile legs in this genus, together with the corresponding structure as described in Lapethus, seem to prove that the retractibility of the legs is not a character of even tribal importance. In fact the 10-jointed antennæ and presence of antennal excavations are the only characters of value which separate the Murmidiini from the Cerylonini, and these two intimately related tribes are separated from the majority of Colydiidæ by the frontal insertion of the antennæ. In this connection it should be stated that in the Bothriderini the palpi are of similar structure, except that the last joint has become larger, but it is still finely attenuate and conical; this, together with the exposed insertion of the antennæ, indicates a close relationship.

B. estriatus n. sp.—Oblong-oval, rather convex, strongly shining, piceous; pubescence consisting of excessively minute, sparse, fine and recumbent hairs growing from the punctures. *Head* much wider than long, feebly, evenly convex, feebly and coarsely reticulate, very finely, sparsely punctate. *Prothorax* a little more than twice as wide as the median length, slightly narrowed from base to apex, the latter broadly, feebly sinuate, the bottom of the sinus broadly arcuate; apical angles rather broadly rounded; base broadly angularly lobed in the middle, closely fitted to the base of the elytra throughout the width; sides nearly straight, arcuate anteriorly; disk evenly, broadly convex, feebly reticulate, very finely, sparsely punctate, the sides margined with a thick convex bead which extends along the apex as a very fine bead; base not margined. Scutellum very small, elongate, finely acuminate. *Elytra* fully three and one-half times as long as the prothorax; base a very little wider than the base of the latter, the humeri just visibly exposed; sides parallel and very feebly arcuate; apex broadly, evenly rounded; disk evenly, transversely convex, minutely and very sparsely punctate, the punctures evenly distributed but without the slightest trace of serial arrangement. Under surface extremely minutely and sparsely punctate throughout, polished. Length 1.3 mm.

Texas (Columbus).

The tibiæ and tarsi are slender, the tarsi tetramerous, the fourth joint of the posterior a little longer than the first three together, the basal joint about as long as the next two, slightly dilated and with a brush of long hair beneath, the remaining joints slender and almost glabrous throughout. The tibial spurs are not distinct.

I am indebted to Mr. Schwarz, whose generous gifts of specimens have often been referred to, for a representative of this very interesting species.

The genera of Murmidiini may be distinguished as follows:—

Antennal cavity dorsal; legs retractile ..... **Murmidius**
Antennal cavity apical.
  Legs retractile; elytra with series of coarse punctures..... **Mychocerus**
  Legs free, the femora extending beyond the body; elytral punctures without trace of serial arrangement ..... **Botrodus**
Antennal cavity inferior; anterior and intermediate legs retractile, posterior free; elytra with rows of coarse punctures ..... **Lapethus**

CUCUJIDÆ.

As organized at present this family is perhaps the most composite of the Clavicorns, several of the subfamilies exhibiting such strong transitional affinities toward other families that there is really very little reason for considering the latter distinct. The Passandrinæ, for example, exhibit a very close relationship with the Colydiidæ, and two of the four genera composing it in our fauna have the tarsi tetramerous; as further proof of this relationship it should be stated that some genera of Colydiidæ, as for instance Sosylus, have a rudimentary process corresponding to the jugular plates of the Passandrinæ.

NARTHECIUS Lec.

This very isolated genus should be removed from the Cucujinæ and placed in the Passandrinæ, with the characters of which it is in stricter harmony. The jugular plates in Narthecius, although feebly developed, are distinct. The tarsi are perfectly tetramerous throughout,[1] with the basal joint small and the fourth long. The

[1] In my revision of the Cucujidæ the tarsus of this genus is drawn with five joints; the drawing is however incorrect, the division between the third and fourth joints being an optical illusion in the somewhat imperfect specimen

elytra have each five fine ridges, the intervals being finely, sparsely and sublinearly punctate. The epipleuræ are extremely narrow and do not occupy the entire inflexed sides except at the humeri where they become rapidly dilated as in many Tenebrionides. The metasternum is extremely long, the side-pieces rather wide anteriorly, but rapidly narrowing thence to the apex, where they are generally more or less covered by the elytra. The lateral margins of the prothorax are marked by an extremely feeble fold which is generally completely obsolete near the apex. In the presence of a fine longitudinal line near the sides of the pronotum Narthecius exhibits a line of consanguinity with the true Cucujinæ, and the synthetic nature of the genus is proved in addition by several other structural characters.

The sexual modifications of the Passandrinæ are not very conspicuous and are generally extremely feeble, in marked contrast to the Cucujinæ where these differences become extreme. I have but little doubt therefore, that the characters which are employed in the following table will be found practically independent of sex. The three species before me may be thus distinguished:—

Median apical process of epistoma broader, bifid at apex.

Head very long; occiput with a distinct broadly impressed median groove toward base; antennæ scarcely as long as the head; nuchal constriction distant from the eye by nearly twice the length of the latter; supra-orbital carinæ extending behind the eye a distance far exceeding its length. Prothorax much shorter than the head; pronotum unevenly punctate, more coarsely near the middle, finely so elsewhere. Elytra shorter than the head and prothorax together. Length 2.8 mm. Pennsylvania ..... **grandiceps** Lec.

Head scarcely longer than wide; occiput without median groove; nuchal constriction distant from the eye by scarcely more than the length of the latter; supra-orbital ridge arcuate, obsolete at less than the length of the eye behind its posterior margin; antennæ nearly one-half longer than the head, the basal joint much longer than wide, convex, last joint oval, longer than wide, much narrower than the tenth. Prothorax longer than the head, longer than wide, nearly as in *grandiceps*, but evenly and very densely punctate throughout. Elytra distinctly longer than the head and prothorax together. Length 2.6 mm. California (Santa Cruz Co.) ..... **simulator** n. sp.

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figured. In this connection it may be said that any statements made at the present time, which are in conflict with the language or delineations of the revision referred to, must be considered as abrogating the latter.

Median process of the epistoma narrower and more acuminate, absolutely simple and obtusely subtruncate at apex. Head not longer than wide, the occiput without median groove; eyes larger, more convex; nuchal constriction more feeble, situated at scarcely more than the length of the eye behind the latter; supra-orbital ridge arcuate, obsolete at less than the length of the eye behind its posterior margin; antennæ robust, about one-half longer than the head, the basal joint short and wide, flattened. Prothorax much longer than the head, longer than wide, moderately densely punctate, more coarsely so toward the middle. Elytra equal in length to the head and prothorax together. Length 1.7 mm. Florida (Haw Creek).

breviceps n. sp.

The basal joint of the antenna is very different in *simulator* and *breviceps* and, in the former, somewhat resembles that of *grandiceps*.

PTINIDÆ.

PTINODES Lec.

The following species is referred to Ptinodes with some doubt; it however belongs to the group Anobia, and the abdomen and metasternum are unexcavated, the antennæ simple with elongate club and received in repose between the widely separated anterior coxæ, the femora clavate and the tarsi dilated.

P. cristatus n. sp.—Very robust, compact, subcylindrical, densely pubescent and clothed in addition with long, erect hairs and fasciculate tufts of setæ, of which four on the pronotum are very approximate and prominent; integuments piceous-black, the vestiture confusedly variegated with white, brown and black, the sides of the pronotum, humeral regions and two sutural spots white and more prominent; pubescence of the under surface short, fine, extremely dense, cinereous in color. *Head* moderate, feebly convex; eyes large, prominent, coarsely faceted; antennæ somewhat robust, the three outer joints together much longer than the entire remainder, basal joint robust. *Prothorax* about three-fourths wider than long; sides rounded at anterior third, thence rather strongly convergent and nearly straight to the base, the latter broadly, evenly arcuate, about as wide as the apex, in close contact with the elytra throughout; apex very feebly emarginate; apical angles right, not rounded; disk strongly gibbous in the middle, impressed near each apical angle, not canaliculate, having small, unevenly scattered tubercles, each bearing a long hair, the short matted pubescence growing from the interspaces. Scutellum as long as wide, parabolic. *Elytra* scarcely one-half longer than wide, fully one-third wider than the prothorax, broadly rounded behind; sides parallel and nearly straight; base broadly emarginate for the prothorax; humeri broadly exposed, rounded; disk with small widely scattered tubercles, tufts of setæ, erect hairs and fine densely matted pubescence. *Abdomen* exces-

sively finely, densely punctate, also sparsely and more coarsely punctate, these punctures becoming tubercles toward the sides. *Legs* robust; tibiæ with long coarse hairs and an extremely dense fringe of shorter ones externally; spurs very minute, slender, subequal; tarsi very robust. Length 5.0–6.0 mm.; width 2.7–3.2 mm.

California (Santa Cruz Co.).

An ample series of this well-marked species has recently been sent to me by Mr. Harford; the vestiture is singularly complex.

LYCTUS Fab.

The exterior apical angles of the anterior tibiæ are acute and slightly produced in Trogoxylon as well as Lyctus, the difference between the two genera being so slight in this respect, that it will not serve as a distinguishing character; they may be separated as follows:—

Anterior coxæ contiguous or very narrowly separated .....**Lyctus**
Anterior coxæ very widely separated .....**Trogoxylon**

The species of Lyctus within our territories may be easily identified as follows:—

Elytra with even series of rather large, very shallow, rounded punctures, the intervals each with a single uneven line of fine, coarsely setigerous punctures.....**striatus** Melsh.

Elytra with series of very minute, setigerous punctures, the punctures of the intervals coarse, deep, perforate, elongate and either confusedly arranged or disposed in two uneven lines.

Prothorax with the sides nearly straight, very feebly narrowed behind from apex to base.

Anterior coxæ separated by scarcely one-fourth their width; antennæ long and slender, with joints one to nine longer than wide, the tenth not wider than long; prothorax quadrate slightly narrower than the elytra, with a rather pronounced elongate-oval discal impression.
cavicollis Lec.

Anterior coxæ separated by about one-third their width; antennæ short and robust, outer joints of funicle subquadrate, not longer than wide, tenth distinctly wider than long; prothorax longer than wide, very much narrower than the elytra, dull and densely punctate, the median line very obsoletely impressed .....**opaculus** Lec.

Anterior coxæ distant by about one-half their width; antennæ moderate, the tenth joint very distinctly wider than long; prothorax but very slightly narrower than the elytra, distinctly wider than long, shining, rather sparsely punctate, feebly, longitudinally impressed in the middle.
planicollis Lec.

Prothorax with the sides broadly rounded anteriorly, thence very strongly convergent behind to the base, the disk anteriorly not narrower than the elytra, distinctly wider than long, convex, not impressed in the middle, very dull and extremely densely punctato-scabrous; antennæ long and slender, the ninth joint much longer than wide, the tenth about as long as wide; anterior coxæ separated by rather less than one-third their width ..... **parvulus** Cas.

The individuals of all the species vary remarkably in size. The type of the species described by me as *parvulus* was labeled "Arizona," but as I have subsequently received an ample series from the vicinity of Monterey, California, there may possibly be some error in the former locality. This species is very isolated in many of its characters, and is more widely separated from *opaculus*, with which it has been considered synonymous, than any other known species except *striatus;* its length is 2.4–4.7 mm.

It is almost superfluous to add that *cavicollis* Lec. is in no way allied to *striatus*, the punctuation of the elytra being of a totally different kind.

TENEBRIONIDÆ.

This large and interesting family is probably comparatively modern in geological development, and may possibly be contemporaneous with the Scarabæidæ. The investigations made known in the following pages are intended to exhibit—in an imperfect and fragmentary way—the correlative affinities of the old and new world faunæ, as far as it has been possible to procure representatives of the foreign genera, and especially in that obscure portion involving the first few tribes of the subfamily Tenebrioninæ; also to classify the species pertaining to the more neglected of the North American genera, such as the Thinobates, Coniontis and the Blapstini.

In comparing the Tenebrionidæ of the palæarctic fauna with those of North America, it seems that as far as structural variety and singularity of form are concerned, the nearctic species are considerably less highly evolutionized. Such specialized types as Araeoschizus and Usechus, for instance, are represented with us by two small genera, while in Europe there are several, exhibiting great variety, such as Adelostoma, Eutagenia, Stenosis, Oogaster, Dichillus and the curious Leptodes. The very diversified and conspicuous Pimeliini, the isolated Pedinus and very aberrant Cossy-

phus, are peculiar to Europe and without any immediate allies in North America, while the interesting genera Arthrodeis, Erodius and Adesmia are represented by a few species of Edrotes, of very much smaller size and much less conspicuous variety.

The European Asida and Blaps are almost exactly equaled in extent and variety by the American Asida and Eleodes, but while there are very few other palæarctic genera exhibiting much persistence of type, a considerable part of the remainder of the nearctic fauna is made up of large genera, composed of small, less striking and more monotonous forms, such as Eurymetopon, Emmenastus, Coniontis, and Blapstinus. Even Opatrum, which appears to replace our Blapstinus to a great extent, is composed of very much larger and more varied species. On the other hand, however, such peculiar forms as Sepidium, Elenophorus and Cephalostenus may fairly said to be offset by our much more numerous Zopherini and Embaphion.

A greater diversity of climatic and other physical conditions prevailing in Europe is, in all probability, the direct cause of the condition referred to, and the Tenebrionidæ are not the only family which exhibits this superior elaboration, if such an expression be allowable, for the same is observable to some extent in the Carabidæ; but, as a partial compensation, the American Staphylinidæ exceed the European in abundance and in diversity of type, to a corresponding degree.

This may possibly be a collateral proof that the Staphylinidæ are older geologically than the Tenebrionidæ (see Ann. N. Y. Acad. V, p. 195), especially if we assume that early and comprehensive types are more readily modified by environment than the later and more specialized, for during the epochs immediately succeeding the Carboniferous, North America probably possessed conditions far more varied than those which then prevailed in Europe; consequently the primitive and synthetic types of any family which may happen to have existed at that time, would be more diversified, and would transmit to the present a still more numerous and varied set of typical forms. As the conditions which now make Europe superior to America in evolutionizing power, were not brought about until the Tertiary, it follows that any family which had its origin near this epoch would be at present the more differentiated in Europe.

TRIOROPHUS Lec.

The males of Triorophus are distinguished from the females by a small, abruptly limited, slightly elongate-oval spot in the middle of the basal segment of the abdomen; which is extremely finely, densely punctate and excessively finely, velvety-pubescent. In this connection attention is called to the fact that in a great many species of Blapstinus, the ordinary punctures become slightly more densely aggregated in the same region and probably for a similar reason. The sexual differences in the present genus are otherwise very feeble, the male being but just visibly less robust than the female. The following species, represented by a male and female, belongs to the *lævis* group:—

T. lecontei n. sp.—Robust, very convex, elytra strongly inflated, intense black throughout; integuments strongly shining. *Head* very slightly narrower than the prothorax, finely, sparsely punctate throughout, nearly smooth, the frontal umbo large, very strongly elevated and subangulate when viewed laterally, the median lobe of the epistoma long, angulate at apex; mandibles extremely densely punctate; eyes rather small, less prominent than the lateral lobes in front of them, the supra-orbital ridge strong and straight, with one or two very short inner folds near the base only; antennæ very long, the tenth joint triangular, longer than wide, shorter than the eleventh which is elongate-oval. *Prothorax* nearly one-third wider than long; apex one-third wider than the base, truncate, the apical angles small but acute, anteriorly prominent and dentiform, bearing a cluster of long slender setæ which extend partly over the eye; base transversely truncate, the basal angles slightly obtuse but not rounded and a little prominent; sides moderately arcuate, more convergent in basal half; disk very convex, coarsely, very deeply punctate, the punctures distinctly separated throughout, finer toward the middle; base margined with an extremely thick convex bead. *Elytra* oval, two and one-half times as long as the prothorax and, in the middle, rather more than one-half wider; base truncate and equal to that of the prothorax; disk with nine unimpressed series of very coarse deep punctures, the series obsolete at apical fourth; intervals from four to five times as wide as the serial punctures and excessively minutely, sparsely and feebly punctate. *Legs* long and slender. Length 8.0–8.5 mm.; width 3.7–4.0 mm.

Texas (El Paso). Mr. Dunn.

The vibrissæ near the apical thoracic angles are similar to those of many Otiorhynchides; they appear to be generic and have not been referred to in any published descriptions which I have seen.

This species differs from *lævis* in its much more robust and inflated elytra, coarser punctuation, more prominent apical angles

of the prothorax, and more angulate frontal umbo; in *lævis* the elytral series become obsolete slightly behind the middle and are composed of much finer punctures than in *lecontei*. In the very large series of *lævis* from various localities which I have before me, there are indications of several more or less distinct varieties.

Epitragini.

There seems to be a certain bond of affinity uniting the genera Eurymetopon, Emmenastus, Auchmobius, Cnemodus, Epitragus, Schœnicus, Chilometopon and Trimytis, which is expressed not only by a general similarity of habitus, but also by important structural peculiarities. The abdominal process for example is acute or acutely rounded in all, the posterior coxæ, in a transverse sense, are long, subparallel and linear, being also generally more or less oblique, and the metasternum has a broadly interrupted transverse groove,[1] parallel and very near to the posterior margin; this groove becomes subobsolete only in a few aberrant species of Emmenastus and in Trimytis,—both of which must be considered as degradational types,—where it is represented by a series of finer punctures which is generally more or less broadly impressed. The wings are very exceptionally absent and are usually well developed. In the opinion of the writer these genera should constitute, therefore, but a single tribe as named above, which may readily be subdivided into groups. The Epitragini are peculiarly American.

The Gnathosiini, comprising the genera Gnathosia, Stibia, Triorophus, Triphalus, Pachychila, Anatolica, Tentyria, Microdera,

[1] This groove, although possibly corresponding to the transverse metasternal line of the Carabidæ, is not at all similar to it. In the case of the Carabidæ, the line is perfectly continuous, and completely separates from the main body of the metasternum a transversely triangular "ante-coxal piece;" here, however, there are really two independent grooves, which generally—though not always—begin at the posterior margin near the inner side of the acetabulum, and extend outward, parallel in curvature with its anterior edge, abruptly terminating before attaining the episternum. The exact taxonomic value of these grooves I have not ventured to determine, but they constitute a very constant character throughout the greater part of the Tenebrioninæ, and the Epitragini, in which they are also well developed, seem to approach that subfamily in abdominal structure more closely than any other tribe not included within its limits, for in some specimens, especially of Chilometopon, there appears to be a rudimentary coriaceous margin at the middle of the third and fourth ventral segments.

Colposcelis, Calyptopsis, Capnisa and others, is distinguished by the narrow but truncate abdominal process, the short broadly oval and outwardly pointed posterior coxæ, a complete obliteration of the metasternal groove, the entire and universal absence of wings, and the thicker and denser integuments. In the genus Capnisa, however, there is a feeble indication of the groove as a very fine short impressed line opposite the inner part of the coxæ; this simply denotes that Capnisa may have a remote line of affinity with some other tribe, and is a matter of but little consequence when developed to such a rudimentary degree. It will require but a short study of the European genera, in conjunction with that of the single genus Eurymetopon, to show that the nature of the front is of quite uncertain value in a tribal sense.

Edrotes must be placed in a distinct tribe on account of its very peculiar mesosternal structure, but I can perceive no great necessity for separating Craniotus from the Gnathosiini, except it be the more widely separated posterior coxæ.[1] Usechus should be united with the Zopherini.

Thinobates.

The two genera at present composing this group of the Epitragini, as represented in the United States and Mexico, are both extremely heterogeneous and are resolvable into some eight or nine distinctly limited sections, which are at least of subgeneric value. All of the species are more or less local and most of them extremely so; indeed the entire genus Eurymetopon is very circumscribed in habitat, being confined to the country bordering the Mexican boundary of the United States to the westward of San Antonio in Texas, and with its principal focus in southern Arizona. Emmenastus, however, is more widely diffused, extending from the southwestern parts of the United States through Mexico and Central America and

[1] The acute and prominent lateral lobes of the front, urged by Horn (Trans. Am. Ent. Soc., 1874, p. 29) as an important tribal character, is apparently not entitled to such rank; the same difference can be observed between the front of *Epitragus submetallicus* and *E. pruinosus*; the form of the metasternal episterna also seems to have been given too great value in this connection. The genus is quite abnormal, however, and should certainly constitute an isolated group of the tribe Gnathosiini.

northward along the Pacific coast to Alaska. The two genera may be distinguished essentially as follows:—

Anterior tibiæ acutely produced and prominent externally at apex. **Eurymetopon**

Anterior tibiæ normal, truncate at apex ..... **Emmenastus**

EURYMETOPON Esch.

In this genus the transverse metasternal groove is always deep and strongly developed, but becomes a little finer in section III. In this connection it should be stated that the relative length of the metasternum and first ventral segment, which is of considerable importance in separating the species, sometimes varies slightly with sex, the first segment being a little shorter in the female; this difference is however very insignificant, and does not affect the comparative measures as given in the table.

The antennæ are remarkably uniform in structure throughout, but have a slightly more abrupt and broader club in the subgenus Cryptadius. The elytra are often much wider at base than the contiguous base of the prothorax, a character unknown in Emmenastus.

The subgeneric sections may be defined as follows:—

Apical margin of the head entire; pronotal punctures coarse, deep and perforate, not at all scabrous or asperate ..... **I**

Apical margin of the head with two small, widely distant emarginations.

Emarginations angulate and narrow, receiving the upper ridge of the mandibles; metasternum long; wings always well developed; pronotal punctures fine, shallow and slightly scabrous ..... **II**

Emarginations broadly sinuate, not receiving the mandibles, the upper ridge of the latter finer, more external, less prominent dorsally and on a much lower plane than the margin of the epistoma; metasternum very short; hind wings completely obsolete; pronotal punctures slightly coarser, each puncture bounded externally by a fine acutely elevated longitudinal carina ..... **III**

It will be noticed that these three subgenera differ not only in abruptly limited structural characters of unquestionable value, but also in general habitus, the punctuation, for example, especially of the pronotum, being of a distinctly different kind in each. The species are rather numerous and may be distinguished as follows:—

Section I.

Eurymetopon Esch.

Metasternum between coxa and groove longer than the post-coxal portion of the first ventral segment; wings well developed.

Metasternum very much longer than the first segment.

Elytra not more than three times as long as the prothorax.

Form elongate; sides of the prothorax feebly arcuate; elytra fully two-thirds longer than wide.....**rufipes**

Form broad and oblong; prothorax more transverse, the sides strongly arcuate; elytra not more than one-half longer than wide.

congener

Elytra nearly four times as long as the prothorax; form slender and elongate.....**dubium**

Metasternum but slightly longer than the first segment, especially in the male.

Pronotum extremely coarsely, deeply perforate toward the sides, the punctures moderately coalescent; form very strongly convex.

Larger species; sides of the prothorax feebly arcuate...**perforatum**

Smaller, more slender and cylindrical; sides of the prothorax strongly arcuate.....**emarginatum**

Pronotum more finely punctate and more distinctly rugulose laterally; form more depressed, the pronotum more explanate laterally; size small.....**fusculum**

Metasternum generally just visibly shorter than, sometimes subequal to, the first ventral segment; form very convex, generally more oval; wings more or less rudimentary.

Bicolored, ferruginous, the elytra black; lustre rather dull.....**bicolor**

Unicolorous; lustre generally much more shining.

Pronotum densely punctate, the punctures but slightly finer and sparser in the middle.....**convexicolle**

Pronotum finely, very sparsely punctate in the middle, very coarsely and more densely so laterally.

Elytra at base equal in width to the base of the prothorax.

cylindricum

Elytra at base distinctly wider than the base of the prothorax, the humeri exposed.....**politum**

Section II.

Telabis n. subgen.

Metasternum nearly twice as long as the first segment; elytra five times as long as the prothorax.....**longipenne**

Metasternum about one-half longer than the first segment.

Pronotum very densely punctate throughout the disk; male with the fourth ventral segment lobed in the middle.....**punctulatum**

Pronotum sparsely punctate in the middle; male apparently without abdominal modification.

Elytra at base scarcely perceptibly wider than the contiguous base of the prothorax; disk of the pronotum without distinct impunctate line and otherwise unmodified ..... **histricum**

Elytra at base much wider than the base of the prothorax, the humeri broadly exposed.

Pronotum with a narrow but entire median impunctate line, which is neither impressed nor elevated..... **muricatulum**

Pronotum with a fine feebly impressed median line, which is not impunctate ..... **discors**

Metasternum but very slightly longer than the first segment; small species.

Sides of the prothorax not distinctly serrulate.

Elytra at base very much wider than the base of the prothorax, the humeri broadly exposed; surface moderately convex..... **debile**

Elytral and thoracic bases equal in width; form very strongly convex.

Form oblong-oval, the elytra in the middle very much wider than the prothorax, the anterior angles of the latter very obtuse, not at all prominent ..... **sodalis**

Form narrower and more cylindrical, the elytra in the middle but slightly wider than the prothorax, the anterior angles of the latter acute and prominent..... **crassulum**

Sides of the prothorax finely but rather strongly serrulate ..... **serratum**

Section III.

Cryptadius Lec.

Form broadly, evenly elliptical, strongly convex..... **inflatum**

The species published under the name *brevicolle* by Champion, apparently belongs to Telabis; it is the only described form not found within our faunal limits.

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Eu. rufipes Esch.—Zool. Atl. IV, p. 8; *abnorme* Lec.: Ann. Lyc. N. Y. V, p. 138.—Oblong-elongate, parallel, moderately convex, piceous to black, the legs and antennæ rufous and slightly paler; integuments polished, the elytra dull toward apex. *Head* short, very strongly transverse, broadly truncate at apex, coarsely, deeply, very densely and subconfluently punctate, usually with a small impunctate spot near the base of the occiput; eyes moderate, just visibly more prominent than the sides before them; antennæ long, moderately slender, third joint rather more than three times as long as wide, second about equal to the fifth, eighth longer than wide. *Prothorax* two-thirds wider than long, the apex slightly narrower than the base, very feebly emarginate in circular arc, the angles right and not at all rounded; base truncate, with a rather narrow and feeble rounded median lobe, on either side of which the edge is narrowly, feebly sinuate; basal angles slightly obtuse, not

at all rounded, not prominent; sides parallel and feebly arcuate, more convergent near the apex; disk coarsely, very deeply punctate, the punctures separated by about twice their diameters, rather abruptly extremely dense and longitudinally confluent in lateral fourth; edges margined with a very thin reflexed bead. *Elytra* equal in width to the prothorax and three times as long; sides parallel and nearly straight; apex obtusely ogival; disk coarsely punctate, more coarsely, very densely and slightly muricately so toward the sides, forming unimpressed series throughout the width, the punctures of the intervals as large as those of the series, confused toward the suture uniseriate laterally, the lateral series almost attaining the apex. *Abdomen* finely, sparsely punctate; metasternum rather finely and very sparsely punctate, more coarsely, densely so laterally, fully one-half longer than the first ventral segment, the transverse interrupted groove deeply impressed. *Legs* slender. Length 7.2–8.5 mm.; width 3.0–3.5 mm.

California (San Bernardino and The Needles).

This is the form which has been regarded as *rufipes* and agrees with the description of Eschscholtz, but I have never taken it near San Francisco, which is the locality assigned it in the original diagnosis, and do not think that it occurs there. In all probability it belongs exclusively to the fauna of southern California.

Eu. congener n. sp.—Form oblong, parallel, very broad, rather strongly convex, piceous-black; legs and antennæ dark rufous; integuments polished, the elytra alutaceous toward apex. *Head* moderate, strongly transverse, broadly truncate at apex, rather coarsely, moderately densely punctate, the punctures circular and rather widely separated, not in the least coalescent; eyes moderate, not prominent, the upper folds acute and strongly cariniform; antennæ as in *rufipes* but relatively longer. *Prothorax* from three-fourths to five-sixths wider than long, nearly as in *rufipes* but with the sides more strongly arcuate and the punctuation coarser, sparse toward the middle, densely crowded, tending to coalesce and very coarse near the sides. *Elytra* one-half longer than wide, nearly three times as long as the prothorax, very abruptly and broadly ogival at apex; sides parallel and nearly straight; disk slightly wider than the pronotum, punctured nearly as in *rufipes* but more coarsely. *Abdomen* rather coarsely, deeply, moderately densely punctate throughout; metasternum fully one-half longer than the first ventral segment, rather coarsely, deeply punctate, sparsely so toward the middle, very densely laterally. *Legs* slender. Length 7.0–7.5 mm.; width 3.2–3.4 mm.

Texas (El Paso). Mr. Dunn.

Resembles *rufipes* in general characters, but differs in its very distinctly shorter and broader form, shorter and more strongly rounded prothorax and coarser punctuation. It very closely resembles *convexicolle*, but differs in its well-developed wings which are

as long as the elytra, the longer metasternum and free elytra. The three specimens do not indicate any great variation.

Eu. dubium Casey.—Cont. Descr. Col. N. A., I, p. 44; *carbonatum* Cas.; l. c., p. 43.—Elongate, parallel, convex, polished, the elytra dull toward apex, intense black; legs and antennæ dark rufous. *Head* nearly as in *rufipes*, the punctures not quite so dense; antennæ slender, the third joint three times as long as wide, second distinctly shorter and more robust than the fifth. *Prothorax* nearly as in *rufipes*, the punctures toward the sides not quite so coalescent and also distinctly sparser toward the middle, the disk more transverse, fully three-fourths wider than long. *Elytra* usually distinctly wider than the prothorax and nearly four times as long; sides parallel and nearly straight, punctured nearly as in *rufipes*. Length 7.6–8.5 mm.; width 2.8–3.4 mm.

Arizona. Mr. Morrison.

This species, while allied to *rufipes*, differs in its slightly narrower form, and especially in the relatively smaller, more transverse prothorax and longer elytra. The prothorax varies considerably in size and convexity.

Eu. perforatum n. sp.—Oblong-elongate, parallel, strongly convex, shining, intense black throughout; legs piceous; antennæ dark rufous. *Head* short, rather strongly transverse, very coarsely, densely cribrate, the punctures circular and generally narrowly separated, not longitudinally confluent; apex transversely truncate, entire; eyes moderate; antennæ slender, the third joint about two and one-half times as long as wide, generally but very slightly longer than the fourth. *Prothorax* from three-fifths to two-thirds wider than long; apex about five-sixths as wide as the base, evenly, feebly but distinctly emarginate in circular arc, the angles right, not at all rounded and generally slightly prominent, the sides behind them being very broadly, feebly sinuate; base transverse, very distinctly sinuate for a short distance at each side of the narrow feeble median lobe; basal angles right, not rounded and just visibly prominent; sides very feebly arcuate, straight in basal half, convergent anteriorly; disk very slightly wider in the middle than at base, very coarsely, deeply perforate, the punctures well separated near the middle but gradually extremely dense and more or less longitudinally coalescent laterally. *Elytra* just visibly wider than the prothorax and three times as long; sides parallel and nearly straight, broadly ogival at apex; disk very coarsely, deeply punctate in very approximate series near the sides, more sparsely, finely and irregularly near the suture. *Abdomen* rather finely, sparsely punctate, the last segment densely cribrate as in *rufipes;* metasternum moderately long, coarsely, sparsely punctate. *Legs* long, the posterior tarsi distinctly shorter than the tibiæ. Length 6.5–7.7 mm.; width 2.6–3.2 mm.

Arizona.

Allied to *rufipes* and replacing that species in the mountainous regions of southern Arizona; the series of fourteen specimens is

quite homogeneous. *Perforatum* is almost similar in outline to *rufipes* but differs in its smaller size, greater convexity, very much coarser and more cribrate punctuation, more prominent thoracic angles and shorter third antennal joint. The elytral series are very slightly impressed especially toward the suture, this feature being feebly apparent also in several other species.

Eu. emarginatum Casey.—Cont. Descr. Col. N. A., I, p. 41; *piceum*, *papagonum* and *sculptile* Cas.: l. c., pp. 40–45.—Elongate, parallel, very convex and subcylindrical, polished except near the apex, black, sometimes pale ferruginous from immaturity; legs and antennæ dark rufous. *Head* relatively large, nearly three-fourths as wide as the prothorax, somewhat coarsely, densely punctate; antennæ rather robust, shorter than usual. *Prothorax* about two-thirds wider than long, strongly convex, evenly and strongly arcuate at the sides, very coarsely, deeply punctate, the punctures sparse toward the middle, very densely crowded and longitudinally coalescent laterally. *Elytra* subequal in width to the prothorax and about three times as long, rather obtusely to acutely ogival at apex; sides parallel and nearly straight; disk coarsely, deeply punctate, the punctures forming approximate series toward the sides. *Abdomen* very feebly alutaceous, more or less finely, sparsely but distinctly punctate; metasternum rather short, a little longer than the first ventral segment. *Legs* rather short and robust, the posterior tarsi very distinctly shorter than the tibiæ. Length 5.9–6.2 mm.; width 2.2–2.5 mm.

Arizona. Mr. Morrison.

A small subcylindrical species, allied in structural characters to *perforatum*, but differing greatly in appearance. The types of *sculptile* and *papagonum* are distinctly narrower, more slender and more depressed than those of *emarginatum* and *piceum*, the difference being sexual. In *sculptile* the surface is very dull throughout, the type being apparently an abnormal specimen.

Eu. fusculum n. sp.—Oblong-elongate, parallel, rather strongly convex, polished, dark rufo-castaneous throughout. *Head* moderate, transverse, broadly, evenly truncate at apex, moderately coarsely, deeply, densely, somewhat unevenly punctate and subrugulose; eyes and superior folds well developed; antennæ moderate, the third joint nearly three times as long as wide. *Prothorax* nearly four-fifths wider than long, the apex slightly narrower than the base, broadly, very feebly emarginate in circular arc, the angles very slightly obtuse but not in the least blunt; base transverse, very feebly sinuate at each side of the middle, the angles distinctly obtuse but not at all rounded; sides evenly and rather strongly arcuate throughout; disk very convex, deeply punctate, the punctures not very coarse, rather sparse except near the sides where they are but slightly coarser, very densely crowded and longitudinally coalescent. *Elytra* subequal in width to the prothorax and rather more than

three times as long, punctured nearly as in *rufipes*, all the punctures very fine and sparse toward the suture where the striæ are extremely feebly subimpressed, the punctures much coarser, denser and strongly asperate laterally. *Abdomen* finely, sparsely punctate. *Legs* long and slender, the posterior tarsi slightly shorter than the tibiæ. Length 6.0–6.7 mm.; width 2.5–2.8 mm.

Arizona.

Although belonging to the *rufipes* section of the genus, this species is not allied very closely to any other, and in some characters is intermediate between that group and *convexicolle*. The metasternum is much shorter than in *dubium* or *rufipes*, but longer than in *convexicolle*, the distance from the posterior margin of the coxa to the transverse groove being but slightly greater than the length of the first ventral segment, while in the species mentioned it is fully one-half longer than the segment. The pronotal punctuation is finer than usual in this section of the genus, and the size is much smaller.

Eu. bicolor Horn.—Trans. Am. Phil. Soc., XIV, p. 268.—Oblong-oval, strongly convex, rather feebly shining and alutaceous, piceous-black; head, pronotum, sterna, legs and antennæ paler, rufo-ferruginous. *Head* very short and transverse, strongly narrowed from base to apex, the latter more than usually narrowly truncate or extremely feebly sinuate; surface coarsely, very densely punctate, a spot near the base of the occiput usually impunctate; antennæ rather short and robust. *Prothorax* about four-fifths wider than long, the apex scarcely more than four-fifths as wide as the base, feebly emarginate in circular arc, the angles slightly obtuse but not at all rounded; base truncate, feebly sinuate for a short distance at each side of the middle; basal angles slightly acute, not in the least rounded and just visibly prominent; sides parallel and very feebly arcuate, then strongly convergent and more strongly arcuate in apical third; disk rather coarsely, deeply, somewhat sparsely punctate toward the middle, much more coarsely, extremely densely but not very confluently so laterally. *Elytra* scarcely three times as long as the prothorax and, behind the middle, nearly one-fifth wider; sides rather strongly arcuate; apex broadly, very obtusely ogival; disk not very coarsely, rather feebly punctate, somewhat confusedly near the suture, in approximate and more asperate series laterally. *Abdomen* finely, feebly, sparsely punctate, more coarsely, densely so laterally; metasternum just visibly longer than the first ventral segment. *Legs* moderate, the posterior tarsi unusually short, scarcely two-thirds as long as the tibiæ. Length 6.5 mm.; width 3.2 mm.

Arizona.

The elytra are unusually inflated and the species may be readily distinguished from any other by its convex form, alutaceous lustre and peculiar coloration.

Eu. convexicolle Lec.—Ann. Lyc. N. Y., V, p. 139.—Oblong-oval, strongly convex, piceous-black, sometimes paler, shining. *Head* moderately transverse, coarsely, deeply, perforately punctate, the punctures rather dense but not contiguous; apex truncate, entire; eyes moderate, very slightly more prominent than the sides before them, the superior folds advancing well beyond them and strongly arcuate; antennæ rather slender, the third joint fully three times as long as wide and much longer than the fourth. *Prothorax* from four, to nearly five-fifths wider than long, the apex about five-sixths as wide as the base, very feebly emarginate, the angles right and not blunt; base transversely truncate, broadly, very feebly sinuate at each side of the middle, the basal angles broadly obtuse but not at all rounded; sides distinctly arcuate, more convergent and straighter toward apex; disk coarsely, deeply punctured throughout, the punctures toward the sides gradually very closely crowded and longitudinally confluent, but not much larger than those toward the middle where they are usually separated by from once to twice their own diameters. *Elytra* usually very slightly wider than the prothorax and rather more than three times as long, generally about one-half longer than wide; sides very feebly arcuate; apex obtusely ogival; disk rather finely, sparsely and irregularly punctate toward the suture, but much more coarsely and asperately so laterally where the punctures are arranged in approximate series, especially coarse and dense toward the humeri. *Abdomen* finely, sparsely punctured; metasternum from coxa to impressed groove just visibly shorter than the first ventral segment. *Legs* moderate, rather robust, the posterior tarsi much shorter than the tibiæ. Length 6.4–7.5 mm.; width 2.8–3.3 mm.

California (Barstow, San Bernardino and the Colorado Desert).

The series of eleven specimens exhibits considerable variation, not only in color but in general form, but is not sufficiently extensive to enable me to define any distinct varieties; the species may be readily known by its robust, convex form, strongly transverse and densely, very coarsely punctured pronotum. The hind wings are by no means obsolete, although rudimentary; they are broad, hyaline and about two-thirds as long as the elytra, the latter subconnate.

Eu. cylindricum n. sp.—Elongate, parallel, very strongly, cylindrically convex, shining, the head very dull, black to piceous throughout. *Head* transverse, truncate, generally finely and decidedly sparsely punctate, the punctures sometimes rather coarse but always distant; eyes moderate, the fold very acute, long and feebly arcuate; antennæ rather slender, the third joint but slightly more than twice as long as wide and only slightly longer than the third. *Prothorax* from two-thirds to four-fifths wider than long, the apex very feebly incurvate, the angles right and not at all blunt, the base transverse, the two median sinuations very feeble; basal angles slightly obtuse, not at all rounded and frequently very slightly prominent; sides parallel and very feebly arcuate, more convergent and straighter in apical

half; disk very finely, feebly and sparsely punctate, except very abruptly in lateral fourth, where the punctures become extremely coarse and deep, elongate-oval and not very coalescent. *Elytra* equal in width to the prothorax and about three times as long; sides parallel and nearly straight; apex obtusely ogival; disk punctured nearly as in *convexicolle* but more coarsely, less densely and less asperately so laterally, and still more finely and sparsely so toward the suture. *Abdomen* finely, sparsely punctate, the metasternum from coxa to transverse groove distinctly shorter than the first ventral segment. *Legs* slender. Length 6.5–7.5 mm.; width 2.7–3.4 mm.

California (Kern Co.).

This species is represented by a large series and cannot fail to be easily recognized by the very peculiar punctuation of the pronotum, subcylindrical form and more than usually elongate prothorax. The punctures toward the sides of the pronotum are very abruptly five or six times as large as those of the broad median portion, the latter being very sparse as well as fine.

Eu. politum n. sp.—Elongate-oval, strongly convex, castaneous, highly polished, feebly alutaceous toward the apex of the elytra. *Head* moderately transverse, shining, entire and broadly truncate at apex, rather finely and densely punctate, the punctures distinctly separated; eyes moderate, the superior fold distinct, strongly arcuate in front of the eye; antennæ slender, third joint fully three times as long as wide, much longer than the fourth, second elongate. *Prothorax* fully three-fourths wider than long, the apex distinctly narrower than the base, just visibly emarginate, the angles slightly obtuse but not in the least rounded; base transverse, with the usual feeble median sinuations; basal angles obtuse, the apex rather acute, not in the least rounded and just perceptibly prominent; sides evenly and strongly arcuate throughout; disk much wider in the middle than at base, convex, rather finely and sparsely punctate, the punctures gradually becoming coarser, about twice as large and dense but not coalescent toward the sides. *Elytra* slightly wider than the prothorax and a little more than three times as long, gradually rather acutely rounded behind; sides parallel and feebly arcuate; width across the humeri, which are narrowly rounded and not prominent, quite distinctly greater than the base of the prothorax; disk convex, finely, rather irregularly and sparsely punctured toward the suture, the punctures very coarse and forming approximate series laterally where they are not perceptibly asperate, except feebly so toward apex. *Abdomen* rather finely but strongly, sparsely punctate, the metasternum between coxa and groove equal in length to the first ventral segment. *Legs* slender, the femora rather robust, polished, very minutely and extremely sparsely punctate; posterior tarsi long and slender, slightly shorter than the tibiæ. Length 6.5 mm.; width 2.8 mm.

Texas (El Paso).

The single specimen which I took in loose sand, at the roots of

some slender perennial plants growing near the banks of the Rio Grande, represents a species which cannot well be compared with any other here described. It is narrower and much more sparsely punctate than *convexicolle,* and moreover differs from both that species and *cylindricum* in the much broader elytral base, with exposed humeri, and in its shining head; in the two species mentioned the head is more transverse, and is rendered very dull by a peculiar system of excessively minute but strong granuliform reticulations; in *politum* the reticulations are flat and much larger. The metasternum in *politum* is slightly longer than in *convexicolle.*

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Eu. longipenne n. sp.—Oblong-elongate, parallel, moderately convex, piceous-black; under surface anteriorly, legs and antennæ dark rufous; integuments subalutaceous. *Head* short and very transverse, broadly, arcuately impressed anteriorly, the sides before the eyes rounded and broadly, feebly reflexed, the epistoma transversely, feebly tumid and very broadly arcuate between the emarginations which are broadly angulate and feeble; surface finely, densely punctate, the punctures shallow, annular and scabrous; eyes rather large, feebly prominent, the upper fold very short; antennæ slender, the third joint very elongate. *Prothorax* fully twice as wide as long, the apex slightly narrower than the base, evenly, rather strongly emarginate in circular arc, the angles acute and distinctly prominent; base transverse, with the usual two feeble approximate sinuations; basal angles right, slightly everted and distinctly prominent; sides very distinctly, rather evenly arcuate; disk distinctly wider behind the middle than at base, rather finely but distinctly, very densely punctate, without trace of median line, the punctures scabrous, extremely dense and crowded laterally, the marginal bead very acute and strongly elevated. *Elytra* about one-fourth wider than the prothorax and about five times as long, wider across the humeri than any portion of the prothorax, the humeri narrowly rounded; apex obtusely rounded; sides straight and parallel; disk with distant and indistinct series of small feeble punctures, the series broadly, feebly and unevenly impressed; intervals very minutely, sparsely punctate. *Abdomen* feebly, the metasternum very finely and sparsely punctate, the latter polished and nearly twice as long as the first ventral segment. *Legs* long and slender. Length 9.2 mm.; width 3.8 mm.

New Mexico.

This well-marked species is the largest of the genus yet described, and is very distinct in its long elytra, short prothorax, long metasternum and several other characters. The anterior tibiæ are strongly, unevenly serrato-crenulate along the outer edge, and the disk of the pronotum is very feebly impressed and more sparsely punctate just before the scutellum.

Eu. punctulatum Lec.—New Spec. Col., 1866, p. 105.—Oblong-oval, rather depressed, dark rufo-ferruginous throughout; integuments thin, rather smooth but very dull; wings well developed. *Head* strongly transverse, narrowed from base to apex, finely, very densely punctate, truncate at apex and with two small distant emarginations; eyes rather large and distinctly more prominent than the sides before them; antennæ slender, slightly longer in the male, the second joint elongate, scarcely more than one-half as long as the third and much shorter than the fourth, second joint in the female fully three-fourths as long as the third and very nearly as long as the fourth. *Prothorax* from four to five-fifths wider than long, the apex distinctly narrower than the base, feebly but distinctly emarginate in circular arc, the angles obtuse but not rounded and subprominent; base transverse, very feebly bisinuate in the middle; basal angles very obtuse but not distinctly blunt; sides strongly arcuate in the middle, feebly convergent and very feebly arcuate thence to the base, more strongly convergent and straight or very broadly sinuate in apical third; disk distinctly wider in the middle than at base, finely, rather feebly, submuricately and very densely punctate throughout, with a very narrow and imperfect median impunctate line, the punctures slightly coarser laterally. *Elytra* from one-fifth to one-third wider than the prothorax and four times as long, distinctly wider at base than the thoracic base, the humeri exposed, narrowly rounded; sides parallel and nearly straight; disk very finely, feebly, submuricately punctate, the punctures with extremely feebly defined serial arrangement. *Abdomen* excessively minutely, sparsely punctate; metasternum more coarsely punctate, between coxa and groove nearly one-half longer than the first ventral segment. *Legs* long and slender. Length 6.4–7.5 mm.; width 3.0–3.2 mm.

Lower California (Cape San Lucas). Cab. LeConte.

In its distinct male sexual characters this species, so far as known, stands alone; the male is larger than the female, more parallel, with longer antennæ, and has the apex of the fourth ventral segment produced in the middle in a small feebly reflexed strongly rounded lobe, extending slightly over the fifth. Although the elytra have but slight traces of serial punctuation, the series are often indicated as broad dark streaks, due to the interference of light and the coarse cellular structure of the inferior surface. Superficially, *punctulatum* may be readily known by its very dull lustre and extremely dense, almost even, pronotal punctuation.

Eu. histricum n. sp.—Oblong, parallel, rather strongly convex, piceo-castaneous, slightly paler and more rufous beneath; integuments distinctly alutaceous. *Head* short and very transverse, narrowed from base to apex, finely, not very densely punctate, extremely densely so on the epistoma; apex truncate, the lateral emarginations very feeble, the lateral oblique sutures however distinctly impressed; eyes moderate, rather prominent, the superior fold very strongly arcuate and almost attaining the lateral margin;

antennæ slender, the third joint very elongate. *Prothorax* three-fourths to four-fifths wider than long, the apex slightly narrower than the base, evenly but feebly emarginate, the angles rather acute and prominent; base transverse, feebly bisinuate in the middle, the basal angles slightly obtuse, not in the least rounded; sides rather strongly, evenly arcuate, more convergent and straighter near the apex; disk feebly, transversely impressed just before the base, rather longitudinally convex, somewhat finely but strongly, sparsely punctate, the punctures becoming gradually coarser, scabrous and extremely densely crowded laterally. *Elytra* slightly but distinctly wider than the prothorax and about three and one-half times as long, at base but just visibly wider than the contiguous base of the latter, the humeri very slightly exposed, obtusely subangulate; apex broadly, obtusely rounded; sides parallel and straight, feebly convergent and arcuate toward the humeri; disk with distant and somewhat uneven unimpressed series of punctures, the latter very fine and not very close-set near the suture, but becoming coarse, rather scabrous, extremely approximate and more irregularly placed toward the sides and especially toward the humeri; intervals more finely, sparsely and very feebly punctate. *Abdomen* finely punctate; metasternum very densely punctate laterally, fully one-half longer than the first ventral segment. *Legs* slender. Length 7.3–7.7 mm.; width 3.2 mm.

Arizona.

This species is to be placed near *muricatulum*, but differs greatly in its more robust and convex form, alutaceous lustre and very much denser, coarser and more coalescent punctuation toward the sides of the body. The lateral emarginations of the epistoma are very feeble; they are normally developed in *muricatulum*.

Eu. muricatulum n. sp.—Oblong, elongate, subparallel, moderately convex, shining, piceous-black; under surface, legs and antennæ dark rufous. *Head* short and transverse, narrowed from base to apex, the latter truncate and with two very feeble distant emarginations; surface finely, rather feebly, somewhat densely and submuricately punctate; eyes moderate, rather distinctly prominent; antennæ long and slender, the third joint very elongate, the fourth shorter. *Prothorax* three-fourths to four-fifths wider than long; apex slightly narrower than the base, feebly, evenly but distinctly emarginate, the angles not at all rounded, slightly obtuse when viewed laterally but acute and prominent vertically; base transverse, with the two approximate median sinuations rather pronounced; basal angles obtuse, not rounded; sides moderately arcuate, more convergent anteriorly; disk a little wider slightly behind the middle than at base, very finely, sparsely punctate, with a narrow impunctate line, the punctures becoming gradually coarser and muricate but still small and rather well separated laterally. *Elytra* somewhat distinctly wider than the prothorax and four times as long or slightly less; humeri exposed, obtuse but not rounded; sides parallel and feebly arcuate, rather obtusely rounded at apex; disk with distant series of small, approxi-

mate, submuricate punctures, the series sometimes very feebly impressed; intervals very finely, sparsely punctate throughout the width. *Abdomen* excessively minutely, feebly punctate; metasternum a little more coarsely so, nearly one-half longer than the first ventral segment. *Legs* long and slender, the posterior tarsi distinctly shorter than the tibiæ. Length 6.6–7.2 mm.; width 2.7–3.2 mm.

Arizona (Benson). Mr. Dunn.

This species, which is represented by a good series, is allied only to *histricum*, but is more slender and much more polished. A portion of the series was communicated by Mr. Dunn as having been taken at El Paso, Texas, but I am inclined to think that they were all taken at the locality indicated. The sexual characters are not distinctly pronounced.

Eu. discors n. sp.—Oblong-elongate, parallel, moderately convex, rather shining, castaneous throughout; integuments thin; wings well developed. *Head* nearly as in *longipenne*, but less impressed and with the broad, indefinite, transverse tumidity of the epistoma more acute and cariniform. *Prothorax* just visibly less than twice as wide as long, the apex much narrower than the base, moderately emarginate, the angles right, not rounded and slightly prominent; base truncate, feebly bisinuate in the middle, the basal angles very broadly obtuse but with the extreme apex right and slightly prominent, the sides before them broadly and very feebly sinuate; sides very strongly arcuate and strongly convergent toward base and apex; disk much wider at or a little behind the middle than at base, very obsoletely impressed just before the scutellum and with a feeble impressed median line; punctures scabrous, rather fine and decidedly sparse toward the middle, coarser, much denser but still not very crowded laterally; marginal bead moderate in elevation, very thin, the outer edge very finely and feebly serrulate especially anteriorly. *Elytra* but very slightly wider than the prothorax and between four and five times as long, across the humeri about equal to it in width, and much wider than its base, the humeri narrowly rounded; apex broadly, obtusely rounded; sides parallel and subrectilinear; disk with series of broad, very feeble, impressed sulcations and equally wide intervals, very finely, not very densely, subasperately punctate throughout, with vaguely defined series along the middle of the sulci. *Abdomen* extremely minutely, the metasternum finely but distinctly, rather sparsely, punctate, the latter between coxa and groove scarcely one-half longer than the first ventral segment; ventral segments long. Length 6.7–7.8 mm.; width 2.8–3.2 mm.

Texas (El Paso).

The peculiar feeble sulcation of the elytra is similar to that of *longipenne*, but more pronounced; on the other hand, however, the series of punctures are much less definite than in that species. *Discors* is related to *longipenne*, but differs in the much more

arcuate sides of the prothorax, sparser punctuation, smaller size, relatively narrower and shorter elytra, much shorter metasternum, and in the presence of an impressed median line on the pronotum; this line is very feeble and may sometimes be scarcely traceable. There is no trace of an impunctate median line in either *discors* or *longipenne*.

Eu. debile n. sp.—Oblong-oval, moderately convex, piceous-black, the legs and antennæ dark rufous; integuments rather dull, the elytra more shining. *Head* moderately narrowed from base to apex, the sides before the eyes feebly arcuate; median lobe at apex very slightly produced, broadly truncate, the emarginations very small but distinct; eyes moderate; surface finely, extremely densely punctate throughout; antennæ slender. *Prothorax* about three-fourths wider than long; apex slightly narrower than the base, evenly and strongly emarginate in circular arc, the angles right, not at all rounded and anteriorly prominent; base transverse, extremely feebly sinuate at each side of the middle; basal angles rather obtuse but not at all rounded; sides nearly evenly and moderately arcuate; disk rather convex longitudinally, with the feeblest trace of a fine, elevated, median line, finely, densely punctate, the punctures scabrous and extremely densely crowded toward the sides, very dense but distinctly separated toward the middle, not at all impressed although very sparsely punctate in a small area opposite the scutellum. *Elytra* nearly one-fourth wider than the prothorax and rather more than three times as long, across the humeri a little wider than any portion of the disk of the latter, the humeri broadly exposed and very narrowly rounded; apex obtusely rounded; sides parallel and nearly straight; disk with extremely confused, approximate, unimpressed rows of somewhat coarse, subscabrous and rather approximate punctures. *Abdomen* very finely and sparsely punctate; metasternum between coxa and groove nearly one-fourth longer than the first ventral segment. *Legs* slender, the posterior tarsi much shorter than the corresponding tibiæ. Length 5.6 mm.; width 2.5 mm.

Arizona (Peach Springs). Mr. Wickham.

This distinct species is allied to *punctulatum* and *longipenne*, but is very much smaller; from *crassulum* and *sodalis* it may be readily known by its widely exposed humeri and more depressed form. It is a connecting link between the larger species of this section, with very long metasternum, and the small very convex species with shorter metasternum.

Eu. sodalis Horn.—Trans. Am. Phil. Soc., XIV, p. 268.—Oblong-oval, robust, very convex, subalutaceous, the elytra polished, pale brownish-testaceous throughout. *Head* rather small, moderately transverse, narrowed from base to apex, the latter truncate, the median lobe extremely broad, very slightly advanced, broadly rounded toward the emarginations which are dis-

tinct; lateral lobes narrow, very narrowly rounded at apex, the sides nearly straight thence to the eyes, the latter moderate, scarcely visibly prominent; surface rather finely, extremely densely punctate and scabrous, not transversely tumid anteriorly, the sides not reflexed; antennæ moderate, the third joint elongate. *Prothorax* nearly twice as wide as the head, very nearly twice as wide as long, the apex slightly narrower than the base, extremely feebly, evenly emarginate in circular arc, the angles obtuse, not rounded but not in the least prominent; base transverse, the two median sinuations almost obsolete; basal angles very broadly obtuse and narrowly rounded; sides rather strongly and evenly arcuate; disk slightly behind the middle distinctly wider than at base, rather finely and feebly punctate, the punctures scabrous, extremely densely crowded laterally, slightly separated toward the middle, without trace of median line; along the basal margin there is a rather thick bead. *Elytra* about one-fourth wider than the prothorax and nearly four times as long, at base equal in width to the base of the latter, the humeri not exposed; apex broadly, obtusely rounded; sides subparallel and feebly arcuate; disk very convex, with ill-defined rows of small but deep punctures; intervals finely, confusedly punctate; punctures much smaller and feebler toward the suture, not distinctly asperate laterally. *Abdomen* very finely rather sparsely punctate; metasternum between coxa and groove just visibly longer than the first ventral segment. *Legs* slender, moderate in length. Length 5.4 mm.; width 2.7 mm.

California (Owen's Valley). Cab. Horn and LeConte.

A rather small species, remarkable for its somewhat robust, compact, very convex form and broadly obtuse thoracic angles.

Eu. crassulum n. sp.—Oblong-oval, very convex, subalutaceous; castaneous to piceous-black; legs and antennæ dark rufous. *Head* rather large, moderately transverse; sides nearly straight and strongly convergent from base to apex, the eyes moderately prominent; median lobe of apex truncate, very slightly produced, moderate in width, the lateral lobes moderate in width and not reflexed at the sides; surface even, rather finely, very densely punctate and scabrous; antennæ rather short but slender, the third joint elongate. *Prothorax* scarcely two-thirds wider than the head, rather less than twice as wide as long, the apex much narrower than the base, evenly and very distinctly emarginate, the angles right, not at all rounded and distinctly prominent anteriorly; base transverse, with two feeble median sinuations; basal angles obtuse but not in the least rounded; sides rather strongly arcuate; disk much wider behind the middle than at base, finely but distinctly punctate, the punctures scabrous, very densely crowded laterally, slightly separated toward the middle; transverse basal bead distinct. *Elytra* but very slightly wider than the prothorax and slightly more than three times as long, at base equal in width to the base of the latter; apex broadly rounded; sides very feebly arcuate, parallel; disk very densely punctate, the punctures rather distinctly asperate, arranged in approximate, moderately defined series

toward the sides. Metasternum between coxa and groove slightly longer than the first ventral segment; wings well developed. Length 4.7–5.3 mm.; width 2.1–2.3 mm.

Texas (El Paso); Arizona.

This species, which is represented before me by an ample series, is one of the smallest of the genus and is remarkable for its very convex, subcylindrical form and dense punctuation. It differs from *sodalis*, to which it is allied, in its much smaller size and narrower form, larger head which is more strongly narrowed from base to apex, in its denser duller and darker integuments, and prominent thoracic angles. The median lobe of the front is narrower and the lateral lobes much broader than in *sodalis*.

In these small species the basal bead of the pronotum and its corresponding fine groove are more pronounced than in the others.

Eu. serratum Lec.—New Spec. Col., 1866, p. 106.—Elongate-oval, very strongly convex, pale brownish-testaceous throughout, polished. *Head* moderately narrowed from base to apex; sides straight; median lobe of apex slightly produced, truncate; lateral emarginations distinct; eyes large and slightly prominent; antennæ long and very slender; surface finely and rather sparsely punctate. *Prothorax* about two-thirds wider than the head and twice as wide as long; apex considerably narrower than the base, evenly and distinctly emarginate in circular arc, the angles obtuse, not at all rounded but not very prominent; base transverse, very feebly lobed in the middle, the basal angles extremely obtuse and rather blunt; sides strongly arcuate, straighter and more convergent toward apex; disk much wider behind the middle than at base, with obsolete traces of a fine elevated median line and a small foveiform impression just before the scutellum, rather coarsely but feebly and roughly punctate laterally, the punctures slightly separated, finer and decidedly sparse toward the middle; lateral edges finely but distinctly serrulate and with short erect setæ. *Elytra* slightly wider than the prothorax and rather less than four times as long; humeri but slightly exposed, rounded; apex parabolically rounded; sides feebly arcuate; disk with rather well defined, unimpressed, approximate rows of punctures, the latter becoming finer, sparser and more diffused toward the suture; punctures distant throughout in the rows. Metasternum between coxa and groove about one-fourth longer than the first ventral segment. *Legs* very slender throughout, the posterior tarsi subequal in length to the tibiæ. Length 4.4–5.0 mm.; width 2.0–2.2 mm.

Arizona (Gila Valley); Texas (El Paso).

As usual throughout this section of the genus the anterior tibiæ are finely serrato-crenulate externally. One specimen in the cabinet of Dr. LeConte, marked "Atlanta, Idaho," and probably collected by Mr. L. Allgewahr, indicates a very exceptional range for this

genus. Other specimens from Holbrook and Albuquerque, New Mexico, appear to represent a distinct variety with denser piceous integuments, denser punctuation and slightly larger size, with shorter posterior tarsi, the metasternum being equal in length to the first ventral segment.

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Eu. inflatum Lec.—*Cryptadius inflat.:* Ann. Lyc. N. Y., V, p. 140.—Broadly, evenly elliptical, strongly convex, rather shining, piceous-black, sometimes pale from immaturity; under surface, legs and antennæ dark rufous. *Head* moderately transverse, coarsely, somewhat sparsely punctate, the punctures carinate outwardly; eyes moderate, very slightly prominent, the fold strongly cariniform, strongly arcuate before them; apex broadly transverse, remotely bisinuate, middle lobe broadly arcuate; antennæ long but somewhat robust, rather strongly clavate, the tenth joint distinctly wider than long. *Prothorax* nearly two and one-half times wider than long, the apex scarcely more than two-thirds as wide as the base, evenly, strongly emarginate in circular arc, the angles slightly obtuse, a little blunt but very pronounced; base transverse, feebly and anteriorly oblique and slightly arcuate toward the basal angles, which are obtuse and distinctly rounded; sides very strongly convergent from base to apex, evenly and moderately arcuate; disk rather coarsely punctate, the punctures simple and slightly separated toward the middle, denser, coarser and externally cariniferous laterally, widest slightly before the base. *Elytra* about one-fifth wider than the prothorax and three times as long, at base truncate and fully as wide as the disk of the latter, rather acutely angulate at apex; sides parallel and feebly arcuate in basal two-thirds; disk evenly and almost equally punctate throughout without trace of series, the punctures moderate in size, rather dense and distinctly granuliform. *Abdomen* very finely, sparsely punctate; metasternum very short, between coxa and groove but slightly more than one-half as long as the first ventral segment; epipleuræ dilated at base, very wide. *Legs* long and slender, the posterior tarsi slightly shorter than the corresponding tibiæ which are very slender and feebly arcuate throughout the length. Length 6.5–7.0 mm.; width 3.6–4.0 mm.

California (San Diego).

A most interesting and aberrant species which is very certainly entitled to subgeneric distinction, the characters relating to the front as given in the table differing from those of Telabis to a remarkable degree.

In two of the specimens before me, which are perfectly black, there are no traces whatever of serial arrangement of the elytral punctures, but in three others, which are uniformly pale ferruginous, there are very feebly defined lateral series in which the punctures are more densely but irregularly aggregated. Although there

are, practically speaking, no distinct series, the elytra bear distinct traces of the very feeble longitudinal impressed lines, so often noticeable throughout the Epitragini.

Undetermined Species.

Eu. ochraceum Esch.

The description of Mannerheim is as follows:—

"Oblongum, pallide ochraceum, capite paulo obscuriore, thorace subcylindrico, elytris medio gibbosis posterius declivibus, subtiliter striato-punctatis, punctis basi et apice evanescentibus, interstitiis remote punctulatis, punctis subseriatis.

"Longit. $1\frac{1}{4}$ lin.

"Habitat in California ad St. Franzisco, sub lapidibus."

If this description is correct it cannot refer to any known species of Eurymetopon. The length as given indicates a very small species, smaller than the smallest known specimen of Emmenastus, and in the latter genus the elytral punctures, although frequently feebler or evanescent near the apex, are never so to the least degree toward base; they are on the contrary almost invariably stronger toward base especially near the humeri.

EMMENASTUS Mots.

The genus Emmenastus, in its present scope, is one of the most composite of the Tenebrionidæ. The sections may be thus defined:—

Antennæ long and slender, the eighth joint always distinctly longer than wide; eyes large or moderate, sometimes prominent.
Tarsi sparsely clothed beneath with short spinose setæ.
Wings well developed ..... **I**
Wings completely obsolete ..... **II**
Tarsi densely clothed with long, coarse, yellow pubescence; wings wanting ..... **III**
Antennæ short and robust, much more compact, the eighth joint never longer than wide; wings present but extremely rudimentary; eyes much smaller, never at all prominent ..... **IV**

It will be readily observed that these sections are of more than usual importance, and if not generic are at least entitled to full subgeneric recognition. I have not given them distinctive names, however, as the very extensive Mexican contingent will probably add several others, and the mutual relationship and limitation of

the various subgenera can be adequately appreciated only in a general monograph.

The metasternum[1] is usually longer in those species having well-developed wings, but this difference is not always very pronounced. The metasternal groove is as usual widely interrupted opposite the abdominal process and becomes obliterated before attaining the episterna. This groove has but little definite systematic value in Emmenastus other than specific. In section I it is always very strong and well developed, also in the single representative of section III, while in section II it is well marked in some species and more or less rudimentary in others, and, although in section IV it is generally almost obsolete, its tendency to appear is frequently indicated by a feebly impressed line of close irregularly placed punctures.

The sections as defined above are quite homogeneous with the exception of II, which is still rather composite although in characters of minor value, the individual species being in every instance widely isolated; they are much more persistent in type in sections I and IV. In section IV the hind wings appear to be constantly present but are always very rudimentary; in *obesus*, for example, they consist of an extremely small semi-membranous plate, scarcely more than one-fourth as long as the prothorax, and in *ater* of a very slender fillet of similar structure about as long as the prothorax. In this section the apical margin of the head is not truncate but broadly, more or less evenly arcuate and entire. In *piceus* and *pinguis* there are two small distant feebly developed emarginations, somewhat similar to those of Eurymetopon, but here they have no systematic value whatever, and are not approached by or connected in any way with the mandibles; the margin is almost invariably entire, and these exceptions appear to be rather in the nature of accidental and meaningless aberrations.

The known species occurring within the limits of the United States, including Lower California where they appear to be especially abundant, may be distinguished as follows:—

[1] In estimating the length of the metasternum and first ventral segment, the distances are measured on a longitudinal line passing through the coxæ, thus representing the minimum length of each, and include the entire metasternum, as the groove frequently becomes obsolete in this genus.

Section I.

Elytral striæ rather distinctly impressed; integuments pale and thin.
Epistoma subangularly and feebly lobed in the middle.....**texanus**
Epistoma rather narrowly and feebly sinuate at apex, without trace of median lobe; pronotum narrowly and feebly subexplanate at the sides.
marginatus

Elytral striæ not at all impressed.
Pronotum abruptly rugulose near the sides, the rugæ long, nearly even and strongly elevated; color rufo-piceous to piceous-black; integuments thick and dense.....**longulus**
Pronotum with merely semi-coalescent and shallower punctures or short confused rugæ toward the sides.
Prothorax widest near the base, the sides convergent and feebly arcuate thence to the apex; color pale; integuments thin; form narrow and very elongate.....**angustus**
Prothorax much shorter, with more strongly arcuate sides; integuments thick and dense, piceous-black; form short and robust.....**piceus**

Section II.

Base of the prothorax broadly distinctly bisinuate.
Oval, dark rufo-testaceous; elytra distinctly wider than the prothorax; sides of the latter broadly, evenly arcuate throughout.....**discretus**
Elongate, parallel, black; sides of the prothorax convergent and nearly straight from behind the middle to the apex.....**conicicollis**
Base of the prothorax transversely truncate.
Elytra with well-marked unimpressed series of approximate punctures.
Integuments highly polished.....**convexus**
Integuments very dull.....**subopacus**
Elytra without trace of series, evenly but irregularly punctured throughout; lustre strongly alutaceous; color pale ferruginous; form very broadly oval.....**pinguis**

Section III.

Eyes large, very prominent laterally, the tempora completely obsolete behind them.....**punctatus**

Section IV.

Basal angles of the prothorax obtuse, never prominent, sometimes very narrowly rounded.
Sides of the prothorax moderately arcuate.
Elytral striæ very distinctly impressed.....**obesus**
Elytral striæ not at all impressed.
Color black; upper surface moderately convex.
Larger species; lustre alutaceous.....**obtusus**
Smaller, polished; punctures toward the middle of the pronotum very much sparser.....**ater**

Color dark castaneous; body very convex; punctures of the pronotum rather coarse and very dense ..... **fallax**

Sides of the prothorax very strongly, evenly rounded in a circular arc having its centre near lateral third of the pronotum.

Castaneous, dull and alutaceous, the pronotum finely and extremely densely punctate throughout..... **thoracicus**

Black, highly polished; pronotum rather coarsely punctate and distinctly more sparsely so toward the middle..... **nitidus**

Basal angles of the prothorax acute and prominent, the sides before them being distinctly sinuate for a short distance.

Elytral series distinct throughout the width.

Head large; integuments very dull ..... **crassicornis**

Head small; prothorax very short; integuments polished. **coarcticollis**

Elytral series confused on the upper portion of the disk and with scarcely a trace of serial arrangement..... **acutus**

*

E. texanus Lec.—New Spec. Col., 1866, p. 108.—Oblong-oval, moderately robust, somewhat depressed, pale brownish-testaceous throughout; integuments rather thin, polished. *Head* rather small and transverse, not over one-half as wide as the prothorax, somewhat coarsely and densely punctate; eyes large and slightly more prominent than the sides; epistoma truncate, obtusely and angularly lobed in the middle, the lobe distinct and slightly deflexed; antennæ long and slender. *Prothorax* fully three-fourths wider than long, the apex scarcely more than two-thirds as wide as the base, broadly subtruncate between the acute and strongly, anteriorly prominent angles; base transverse, broadly, strongly bisinuate, the basal angles right, not at all rounded but not prominent, sides very evenly and rather strongly arcuate throughout; disk about as wide at base as behind the middle, rather coarsely and sparsely punctate, the punctures unevenly distributed and distant by from once to twice their own diameters, but rapidly becoming very dense though scarcely confluent near the sides, the latter finely, acutely beaded. *Elytra* just visibly wider than the prothorax and more than three times as long, parallel, the apex ogival; disk with distant, distinctly impressed striæ which continue to the apex and are coarsely, rather strongly and approximately punctate, the punctures variolate as usual; intervals flat, each with a more or less regular single line of much smaller punctures which are confused toward the suture. Transverse metasternal groove very deep. *Legs* very slender, the posterior tarsi slightly but distinctly shorter than the tibiæ. Length 6.6 mm.; width 2.9 mm.

Texas. Cab. LeConte.

The epistoma is evenly rounded laterally at the sutures, and not in the least emarginate; the hind wings are very well developed.

This species is quite distinct and cannot easily be confounded with any other, the feebly produced angulate lobe of the epistoma

and rather distinctly impressed and entire elytral striæ giving it a peculiar appearance. Although the eyes are distinctly more prominent than the sides before them, they are much less so than in *marginatus*.

In common with all the winged species except *longulus*, the present appears to be quite rare and I have seen only the unique type.

E. marginatus n. sp.—Oblong, parallel, somewhat depressed, dark rufo-testaceous, the legs and antennæ paler and more flavate; integuments highly polished throughout. *Head* short and broad, rather coarsely, densely punctate; sides rapidly convergent from base to apex, the eyes large, very convex and very much more prominent than the sides of the head; epistoma narrow at apex, rather feebly but distinctly sinuate; supra-orbital ridges fine but distinct, extending well beyond the eyes, obsolete at the middle of their upper margin; antennæ slender, with a loose elongate club. *Prothorax* fully four-fifths wider than long, the apex rather distinctly narrower than the base, distinctly emarginate in circular arc, the apical angles rather acute and not at all rounded; base transverse, very feebly sinuate at each side of the middle, the angles slightly obtuse but not at all rounded; sides evenly and moderately arcuate; disk very slightly wider just behind the middle than at base, coarsely, rather densely punctate, the punctures becoming gradually longitudinally confluent toward the sides, the latter very narrowly but distinctly explanate. *Elytra* about three and one-half times longer than the prothorax and subequal to it in width, very slightly wider behind; apex ogival; sides subparallel, very slightly more arcuate behind; disk with feebly but distinctly impressed striæ, which extend unbroken almost to the apex, the striæ rather coarsely and very approximately punctured, the intervals flat, each with a moderately even series of distinct but smaller punctures, those of the sutural interval confused. *Abdomen* finely very sparsely punctate, the surface slightly scabrous and the punctures larger and closer near the sides. *Legs* long and slender, the posterior tarsi almost as long as the tibiæ. Length 6.5 mm.; width 2.8 mm.

Lower California.

A very distinct species, peculiar in its very prominent eyes; in its impressed elytral striæ it somewhat resembles *texanus*, but differs greatly in the structure of the epistoma.

E. longulus Lec.—Ann. Lyc. N. Y., V, p. 139 (*Eurymetopon*).—Elongate-oval, sometimes feebly inflated behind, rather strongly convex, highly polished throughout, blackish to rufo-piceous in color, the elytral setæ extremely minute, not attaining the external limit of the punctures. *Head* scarcely one-fourth wider than long, rather finely but deeply and densely punctate; epistoma transversely truncate or extremely broadly, feebly sinuate; eyes moderate, the ridges extremely fine and feeble, not extending much beyond the eye; antennæ long and slender, the club slender and loose. *Prothorax* about two-thirds wider than long, the apex slightly narrower than the base,

extremely feebly sinuate in circular arc, the apical angles right, not rounded; base transverse, broadly, feebly bisinuate, the basal angles slightly obtuse, not at all rounded; sides rather strongly arcuate, straight and feebly convergent in basal half; disk wider at the middle than at base, finely, sparsely punctate in the middle for a space equal to one-half the total width, then abruptly very deeply, longitudinally rugulose thence to the sides, the latter margined with a very fine cariniform bead. Scutellum minute, transverse. *Elytra* about three and one-half times longer than the prothorax and very slightly wider, the two bases equal in width; apex ogival; disk with unimpressed rows of shallow, rounded approximate punctures, generally moderate in size but becoming rapidly coarse toward base and especially near the humeri, the series extending to the apex; intervals flat, each with a single quite regular line of very fine feeble punctures, those of the sutural interval generally more irregularly disposed. *Abdomen* very finely, feebly and sparsely punctate. *Legs* slender, the posterior tarsi but just visibly shorter than the tibiæ. Length 5.5–6.7 mm.; width 2.3–2.7 mm.

California (Los Angeles, Pomona and San Diego); Arizona.

The metasternum is scarcely perceptibly longer than the first ventral segment, and is feebly, very sparsely but rather coarsely punctate, the episternum similarly punctate. The transverse metasternal groove is strongly impressed.

A very common species, readily known by its slender parallel and rather convex form, very shining surface, and evenly and abruptly rugulose lateral portions of the pronotal disk. The hind wings are very well developed, being rather longer than the elytra.

E. angustus n. sp.—Very elongate-oval, moderately convex, very pale castaneous, strongly shining but not polished, the elytra distinctly alutaceous toward apex; elytral setæ very small but projecting distinctly beyond the confines of the punctures. *Head* nearly one-half wider than long, the punctures moderately fine and dense, the epistoma very broad, the apex truncate or extremely feebly sinuate; eyes large, the ridges fine but strong, advancing distinctly beyond the eye; antennæ slender. *Prothorax* scarcely three-fifths wider than long, the apex much narrower than the base, very feebly sinuate in circular arc; apical angles right, not at all rounded; the basal slightly obtuse, scarcely at all rounded; base transverse, broadly, feebly bisinuate; sides evenly convergent from base to apex, rather feebly and very evenly arcuate throughout; disk widest very near the base, finely, sparsely punctate, the punctures becoming rather abruptly much larger, coarse but shallow, extremely dense and partially coalescent in lateral fourth. *Elytra* nearly three and one-half times as long as the prothorax and, near the middle, very distinctly wider, the two bases equal in width; sides evenly, distinctly but feebly arcuate; apex ogival; disk with distant unimpressed rows of small shallow approximate punctures, which become but very slightly more distinct toward the humeri, the series becoming rather confused toward the apex;

intervals unevenly, finely, feebly and sparsely punctate, the punctures forming moderately even single series only in the lateral intervals. *Abdomen* finely, feebly punctate, the punctures sparse but much denser and more rugulose near the sides. *Legs* very slender, the posterior tarsi much shorter than the tibiæ. Length 6.8 mm.; width 2.6 mm.

Arizona.

The metasternum is quite perceptibly longer than the first ventral segment and is rather densely but not very coarsely punctate, the episternum densely punctured. This species is allied to *longulus*, but differs considerably in the longer prothorax, widest at or near the base and with the sides feebly arcuate, in the duller, more scabrous and more finely punctate elytra, with confusedly punctate intervals, in its shorter, broader head, with distinctly larger eyes, and in its paler, apparently thinner and more coriaceous integuments, being allied in this character more nearly to *texanus*. Although the punctuation toward the sides of the pronotum is very confluent and scabrous, it does not form the long, even and unbroken rugæ which are so characteristic of *longulus*.

E. piceus n. sp.—Oblong, rather robust and convex, parallel, piceous-black; legs and under surface paler, rufo-piceous; integuments feebly alutaceous. *Head* moderately transverse, rather finely, not very densely, rugulosely punctate, the punctures of the epistoma much denser, deeper, rounded and not rugulose; apex broadly, feebly, angularly emarginate at the extremities of the epistomal suture; apex subtruncate; eyes rather large, but just perceptibly more prominent than the sides of the head; antennæ rather long, moderately slender, the eighth joint much longer than wide. *Prothorax* short, nearly twice as wide as long, the apex very feeble emarginate and but slightly more than three-fourths as wide as the base, the latter transverse, broadly and very distinctly sinuate at each side of the median lobe; basal angles slightly obtuse, the apical right, both without trace of rounding; sides evenly and rather strongly arcuate, the disk widest at about basal third, rather finely and sparsely punctate, the punctures gradually dense and semi-confluent toward the sides, the latter with a very fine acute marginal bead. *Elytra* three and three-fourths times as long as the prothorax and very slightly wider, the sides very feebly, evenly arcuate throughout, broadly ogival at apex; disk with unimpressed rows of rather small, rounded, shallow punctures which are separated by about twice their own diameters, not much larger toward the humeri, the series disappearing in confused punctures before attaining the apex; intervals with moderately even single rows of extremely small, widely distant punctures. *Abdomen* extremely finely, sparsely punctate, the punctures becoming quite coarse and denser near the sides. *Legs* moderate in length, the posterior tarsi distinctly shorter than the tibiæ. Length 5.7 mm.; width 2.4 mm.

California (San Bernardino Co.).

This species is quite distinct, differing from *longulus* in the feeble emarginations at the sides of the epistoma, in the much less rugulose sides of the pronotum, in the finer and more abbreviated elytral series, in its feebly alutaceous lustre and in its shorter, broader prothorax, as well as its generally shorter and more robust form. The anterior tibiæ are perfectly simple and without trace of outward extension at apex.

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E. discretus n. sp.—Elongate-oval, very convex, highly polished, dark blackish-castaneous; under surface, legs and antennæ dark rufo-testaceous. *Head* transverse, rather finely and not very densely punctate, the punctures very dense toward the apical margin; eyes moderate, the ridges fine but strong; antennæ very slender, the club feeble and elongate, all the joints much longer than wide, the eleventh widely fusiform, a little narrower and longer than the tenth. *Prothorax* scarcely two-thirds wider than the head, two-thirds to three-fourths wider than long, the apex about four-fifths as wide as the base, feebly emarginate in circular arc, the angles varying from right to very slightly acute, not rounded; base broadly, distinctly bisinuate, the basal angles right, not at all rounded and extending posteriorly distinctly further than the median lobe; sides feebly arcuate, straighter toward base and apex; disk transversely strongly convex, extremely feebly so longitudinally, rather strongly, deeply, irregularly and sparsely punctate, the punctures somewhat abruptly rather coarser and longitudinally coalescent near the sides, forming prominent interlacing rugæ. *Elytra* evenly oval, in the middle about one-fourth wider than the prothorax, not more than three times as long, the two bases equal in width but not completely coarctate; disk with distant, unimpressed series of punctures which do not quite attain the apex and which are not traceable toward the suture, the punctures rather approximate, much larger and closer toward the humeral regions, very fine toward the suture; intervals flat, rather sparsely, confusedly punctate, the punctures closer and larger toward the sides near the base. *Abdomen* minutely, rather sparsely punctate, abruptly coarsely scabrous and duller near the sides. *Legs* decidedly short but very slender throughout, the posterior tarsi a little shorter than the tibiæ. Length 5.9–6.2 mm.; width 2.8–3.0 mm.

Arizona (Benson). Mr. Dunn.

The metasternum is very coarsely and deeply but somewhat sparsely punctate, the transverse groove not at all well developed, defined simply by a feebly impressed line of confused punctures, scarcely three-fourths as long as the first ventral segment.

This species is quite isolated and does not resemble any other

here described, but should be associated with *conicicollis* because of its strongly bisinuate base of the prothorax.

E. conicicollis n. sp.—Elongate-oval, strongly convex, polished, black, the under surface, legs and antennæ dark rufo-piceous. *Head* moderate, rather finely, deeply and densely punctate, the punctures much more crowded anteriorly; eyes moderate, scarcely perceptibly more prominent than the sides before them; epistoma broadly subtruncate; antennæ long and slender. *Prothorax* about three-fourths wider than long, trapezoidal in form, the apex but slightly more than two-thirds as wide as the base, very feebly emarginate in circular arc, the apical angles right, not in the least rounded; base transverse, broadly and very distinctly bisinuate, the basal angles right and very narrowly rounded, not at all prominent posteriorly; sides evenly convergent from near the base to the apex and almost straight, feebly arcuate near the base; disk widest a very little before the base, finely, very sparsely but distinctly punctate, the punctures becoming much coarser, very dense and semi-coalescent near the sides, the marginal bead very fine, not very strongly elevated or acute, becoming a very little more prominent near the base. *Elytra* parallel, equal in width throughout to the prothorax and barely three times as long, rather abruptly broadly angulato-parabolic at apex; disk with unimpressed series of small, rather feeble but very approximate punctures which become rather confused near the apex, the intervals flat, very minutely, sparsely and irregularly punctured. *Abdomen* extremely minutely and very sparsely punctate, the punctures becoming coarse but not very dense near the sides. *Legs* slender, the femora not robust; posterior tarsi not quite as long as the tibiæ. Length 6.2–7.0 mm.; width 2.7–3.1 mm.

Arizona.

The metasternum is, if anything, a little longer than the first ventral segment, coarsely, rather densely punctate in the anterior half, extremely minutely and sparsely so thence posteriorly to the transverse groove, which is well developed although obsolete as usual in the middle and not attaining the episterna.

This species is not closely allied to any other; *subopacus* which has a somewhat similarly shaped prothorax, has more inflated elytra, a straight transverse pronotal base and very dull lustre.

E. convexus Lec.—New Spec. Col., 1866, p. 107.—Elongate-oval, very strongly convex, polished throughout, piceous-black, often paler from immaturity; legs and antennæ dark piceo-testaceous. *Head* much wider than long, moderately convex, rather finely, very densely punctate, more densely so anteriorly; eyes moderate, barely more prominent than the broadly rounded sides before them; epistoma subtruncate or very feebly sinuate; antennæ long and very slender, the club elongate, loose and feeble, eighth joint much longer than wide. *Prothorax* from three-fifths to three-fourths wider than long, the apex about three fourths as wide as the base, feebly, evenly emarginate in

circular arc, the angles right and not prominent; base transverse, without trace of lateral sinuations; basal angles strongly obtuse, extremely narrowly rounded; sides strongly arcuate, usually a little straighter and more convergent toward apex; disk very slightly wider behind the middle than at base, very finely, densely punctate, the punctures denser but not coarser laterally where they are usually distinctly and longitudinally rugulose or coalescent; surface strongly convex longitudinally as well as transversely. *Elytra* subequal in width to the prothorax, sometimes just visibly wider, not quite three times as long; sides parallel and very feebly arcuate; apex parabolic, very strongly rounded at the immediate apex; disk with distant, unimpressed series of small, rather feeble and approximate punctures which are less distinct toward the suture and confused toward apex, the intervals flat, more finely, rather sparsely and confusedly punctate. *Abdomen* shining, finely, rather sparsely punctate, generally finely, feebly, longitudinally rugulose; punctures rather coarse toward the sides. *Legs* moderate in length, the femora somewhat robust; posterior tarsi rather distinctly shorter than the tibiæ. Length 5.4–7.0 mm.; width 2.4–3.2 mm.

Texas; New Mexico; Arizona.

The metasternum is exactly equal in length to the first ventral segment, the transverse groove very well developed and the body totally apterous.

This species is very abundantly diffused through the regions indicated, but does not seem to extend to the westward of the Colorado River. The series before me is very extensive, consisting of forty-two specimens and indicates but slight variability; in one abnormal specimen, however, the sides of the prothorax are very broadly and feebly sinuate anteriorly.

For some unaccountable reason *convexus* has been heretofore confounded with the Californian *obesus*, a species distinct in all of its characters and belonging to a different section of the genus. My comparisons have been made from the original types of both.

E. subopacus Horn.—Trans. Am. Phil. Soc., XIV, p. 269.—Suboval, wider behind, very convex, smooth but very dull, piceous-black; under surface, legs and antennæ piceo-rufous. *Head* rather more than one-half as wide as the base of the prothorax, rather short and transverse; sides parallel and nearly straight in basal two-thirds, the eyes moderate, not at all prominent; apex broadly, very feebly sinuate, not emarginate laterally; surface rather finely but strongly, very densely punctate; antennæ long, slender, the eighth joint nearly one-half longer than wide. *Prothorax* trapezoidal, three-fifths wider than long; apex about three-fourths as wide as the base, broadly, extremely feebly sinuate, the angles right, narrowly but very distinctly rounded; base truncate and perfectly straight, the basal angles right and distinctly rounded; sides evenly convergent from base to apex and almost straight; disk very

narrowly subexplanate near the basal angles, very finely but distinctly and rather sparsely punctate, the punctures becoming more than three times as large, densely crowded and subcoalescent near the sides, the latter margined with a very fine acute bead. *Elytra* about three times as long as the prothorax and, in the middle, fully one-fifth wider; sides parallel and broadly but distinctly arcuate, almost continuous in direction with those of the prothorax; apex broadly ogival; disk with distant, unimpressed rows of rather small but very distinct, rounded and approximate punctures which continue to the apex but become very indistinct; intervals flat, extremely minutely, sparsely and irregularly punctate. *Abdomen* very finely, feebly rugulose, minutely but not very sparsely punctate. *Legs* slender, the posterior tarsi much shorter than the tibiæ. Length 7.5 mm.; width 3.3 mm.

Arizona.

The metasternum is very coarsely, strongly and rather densely punctate, the punctures distinctly separated and variolate, with the transverse groove apparently well developed; it is distinctly shorter than the first ventral segment.

The trapezoidal form of the prothorax, the form of the body which is gradually narrowed in front from the middle of the elytra, the rounded prothoracic angles, dull lustre and very minute punctures of the strial intervals, will at once distinguish this species from any other of our fauna.

E. pinguis Lec.—N. Spec. Col., 1866, p. 107.—Broadly elliptical, rather strongly convex, dark rufo-ferruginous throughout, decidedly alutaceous in lustre. *Head* short and transverse, rather finely, very densely punctate; apex transversely truncate, with a small feeble angulate emargination on each side at the suture; eyes moderate, the external outline oblique but nearly straight, posteriorly divergent, the base coincident and equally prominent with the short tempus visible behind, but more prominent than the sides before them which are strongly rounded for a short distance, the fine fold or ridge short but distinct; antennæ long and very slender. *Prothorax* two and one-fourth times as wide as long, the apex scarcely two-thirds as wide as the base, very distinctly emarginate in circular arc, the angles slightly obtuse but not rounded; base transverse and truncate throughout, with excessively feeble traces of the broad lateral sinuations; basal angles obtuse and very distinctly, rather broadly rounded; sides strongly arcuate toward base, nearly straight and convergent anteriorly; disk scarcely perceptibly wider a little before the base, rather finely but strongly and very densely, uniformly punctate throughout, the punctures more crowded but not distinctly tending to coalesce laterally, the surface very feebly subexplanate near the sides which are very minutely and rather feebly beaded. *Elytra* just visibly wider than the prothorax and between three and four times as long, the sides very feebly arcuate, the apex broadly parabolic; disk finely, somewhat sparsely punctate and without trace of series, the punctures finer and much more feeble than those of the prono-

tum, evenly distributed. *Abdomen* smooth but subalutaceous, finely, sparsely punctate, the punctures just visibly larger laterally. *Legs* long but somewhat robust, the posterior tarsi much shorter than the corresponding tibiæ which are distinctly thickened toward apex, with the external edge broadly sinuous. Length 7.0 mm.; width 3.4 mm.

Lower California (Cape San Lucas). Cab. LeConte.

The metasternum is rather coarsely deeply and somewhat densely punctate throughout, about three-fourths as long as the first ventral segment and with the transverse groove apparently obsolete.

A very peculiar and isolated species in its short broad densely punctate prothorax and total absence of series of punctures on the elytra. The eyes in *pinguis* are very different in structure from those of *punctatus*, for in the latter they stand out from the head in bold relief, the tempora behind them being totally obsolete.

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E. punctatus Lec.—New Spec. Col., 1866, p. 106.—Oblong-elongate, moderately and evenly convex, rather pale rufo-castaneous throughout, strongly shining. *Head* very short and strongly transverse, somewhat coarsely and very densely punctate; epistoma broadly, transversely truncate; eyes large, strongly arcuate externally and very prominent, extending far beyond the sides, the ridges fine but distinct; antennæ very slender, nearly as long as the head and prothorax, the eighth joint almost twice as long as wide. *Prothorax* about four-fifths wider than long, the apex scarcely more than two-thirds as wide as the base, just visibly emarginate in circular arc, the angles slightly acute, not in the least rounded and slightly prominent anteriorly; base transverse, broadly, very distinctly bisinuate, the angles rather more posteriorly prominent than the median lobe, right and slightly blunt; sides evenly and moderately arcuate throughout; disk widest at or very near the base, rather coarsely and strongly punctate, the punctures somewhat sparse but densely crowded and semi-coalescent near the sides, the latter margined with a thin, acute and strongly reflexed bead which is equal throughout the length, the surface very feebly, broadly flattened, especially toward base. *Elytra* just visibly wider than the prothorax and fully three times as long, parallel, rather broadly rounded behind, the apex slightly and obtusely ogival, the sides nearly straight; disk with rather uneven, unimpressed, distant rows of small, rounded, approximate punctures traceable almost to the apex, the intervals sparsely, irregularly and slightly more finely punctate. *Abdomen* finely, sparsely punctate, the punctures but slightly coarser and not denser near the sides. *Legs* long, the femora slightly robust and coarsely, rather densely punctate; posterior tarsi slender, although much shorter than the tibiæ, clothed beneath with coarse, dense yellow hair. Length 9.0 mm.; width 3.7 mm.

Lower California (Cape San Lucas). Cab. LeConte.

The metasternum is about three-fourths as long as the first ventral segment, and is uniformly very coarsely but sparsely and feebly punctate, the transverse groove very deeply excavated.

Punctatus is a very distinct form, of larger size than usual, and remarkable in the coarse densely hairy vestiture of the tarsi, very prominent eyes, as well as the bisinuate base of the prothorax; the last of these peculiarities it however possesses in common with *conicicollis* and *discretus*. In both the latter species the tarsi are sparsely clothed beneath with short spinose setæ as usual. The elytral striæ become very feebly impressed toward apex.

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E. obesus Lec.—*Eurymetopon obes.*: Ann. Lyc. N. Y., V, p. 139; *nanulus* Casey: Descr. Not. N. A. Col., I, p. 45.—Oblong-oval, moderately robust, very convex, shining, the elytra sometimes slightly dull, piceous-black, the head and prothorax occasionally dark ferruginous from immaturity. *Head* moderately transverse, the sides nearly straight, finely but strongly, very densely punctate, the epistoma broadly truncate; eyes small, not prominent; antennæ short, robust, submoniliform, the eighth joint subquadrate, scarcely as long as wide. *Prothorax* about two-thirds wider than long, the apex nearly four-fifths as wide as the base, extremely feebly sinuate in circular arc, the angles right and very slightly blunt; base transversely truncate, sometimes very feebly, gradually sinuate toward the basal angles which in that case are just visibly prominent posteriorly, the angles right, narrowly rounded: sides evenly convergent from base to apex, evenly and very feebly arcuate throughout; disk widest at or very near the base, somewhat coarsely, densely and very strongly punctate, the punctures denser and longitudinally subcoalescent laterally, but not much larger, the sides very minutely, acutely beaded. *Elytra* just visibly wider than the prothorax and about two and one-half times as long, parallel, the sides feebly arcuate, the apex obtusely ogival; disk with distinctly impressed striæ of small, approximate, rather feebly impressed punctures, the striæ evanescent just before the apex; intervals broadly, very feebly convex, extremely minutely, sparsely and irregularly punctured. *Abdomen* finely but distinctly, not very sparsely punctate, the punctures becoming very large near the sides. *Legs* rather short, moderately slender, the posterior tarsi with sparse spinose setæ beneath, slightly shorter than the tibiæ. Length 4.5–5.5 mm.; width 1.8–2.4 mm.

California (San Diego).

The metasternum is deeply, coarsely punctate, fully three-fourths as long as the first ventral segment, and the transverse groove is only suggested by a broadly and very feebly impressed line of unevenly placed punctures. The series before me consists of ten

specimens, the greatest variation being in the lustre; the species may be known at once by the very broadly and distinctly, although moderately, impressed striæ.

E. obtusus Lec.—N. Spec. Col., 1866, p. 107.—Oblong-oval, convex, moderately dull and alutaceous, smooth, black, the legs and antennæ dark rufous. *Head* moderately transverse, rather convex, finely, deeply punctate, the punctures well separated but becoming very densely crowded on the epistoma, the latter very broadly arcuate or subangulate at apex; eyes very small, not at all prominent; antennæ short and robust. *Prothorax* about two-thirds wider than long, the apex about four-fifths as wide as the base, quite distinctly emarginate in circular arc, the angles narrowly but distinctly rounded; base truncate, just visibly and broadly oblique laterally, the basal angles very obtuse, not rounded, not in the least prominent; sides evenly and rather strongly arcuate; disk a little wider just behind the middle than at base, finely but deeply and distinctly punctate, the punctures generally separated by from two to three times their width, but becoming somewhat abruptly dense, a little larger but not confluent, in lateral fourth; sides very minutely and feebly beaded. *Elytra* perceptibly less than three times as long as the prothorax and, in the female, subequal in width, but in the male distinctly wider in the middle; sides parallel, feebly arcuate, the apex rather strongly but broadly parabolic; disk with widely distant, slightly uneven, unimpressed rows of small approximate punctures, the series confused near the apex, the intervals very finely, somewhat sparsely, unevenly and confusedly punctate. *Abdomen* very minutely, sparsely punctate, the punctures coarse but sparse and feeble laterally. *Legs* moderate, the posterior tarsi rather distinctly shorter than the tibiæ. Length 5.8–6.8 mm.; width 2.4–2.8 mm.

California (Napa and Sonoma Cos.).

One of the larger of the species having short robust antennæ, and readily distinguishable by the very distinctly arcuate sides of the prothorax, convergent toward base, and the broadly obtuse but not rounded basal angles. It is rather local and not abundant.

The metasternum is scarcely three-fourths as long as the first ventral segment; the basal groove is widely interrupted in the middle, disappearing in a row of punctures at lateral fourth.

E. ater Lec.—Ann. Lyc. N. Y., V, p. 139 (*Eurymetopon*).—Oblong-oval, strongly, cylindrically convex, polished, black, the legs and antennæ dark rufous. *Head* moderate, nearly two-thirds as wide as the prothorax, rather transverse, broadly, distinctly arcuate at apex, rather finely but deeply and very densely punctate, the punctures usually sparser toward the occiput; eyes small, the fold short and fine but distinct; antennæ short, very robust. *Prothorax* short and transverse, nearly twice as wide as long, the apex fully four-fifths as wide as the base, evenly and rather distinctly emarginate in circular arc, the angles right and narrowly rounded; base truncate, the angles obtuse,

not rounded and not prominent; sides evenly, not very strongly arcuate, feebly convergent and nearly straight toward base; disk just perceptibly wider at the middle than at base, finely and sparsely punctate in middle two-fifths, the punctures gradually larger and very dense but not coalescent laterally. *Elytra* distinctly more than three times as long as the prothorax and subequal in width to the latter, occasionally just visibly wider; apex rather acutely rounded; sides parallel and extremely feebly arcuate; disk with distant, unimpressed series of moderately large and approximate punctures, which are distinctly traceable throughout the width, but confused near the apex, where the punctures generally become finer and the surface lustre a little duller; intervals more or less evenly, uniseriately and more finely punctate. Length 4.5–5.3 mm.; width 2.0–2.3 mm.

California (San Francisco).

This is a plentiful species near the coastline of middle California, and the description refers to the typical form. The specimen marked "? S. D." in the Cabinet of LeConte, which is referred to in the original description, differs only in having the punctures of the principal series a little larger, deeper and less approximate; it is not specifically distinct and the locality is probably erroneous. I have, however, a single specimen which was taken by me in the Sierras at Truckee, which seems to indicate an extremely closely allied species, having a slightly less transverse prothorax, with the basal angles very small and slightly prominent, also another single specimen taken at San Francisco, which is distinctly larger than any other of the fifteen examples, with a distinctly longer, much more sparsely punctured prothorax; the length of this specimen is 5.8 mm.; both those last referred to are probably specifically distinct.

E. fallax n. sp.—Oblong-oval, very strongly convex, rather distinctly shining but not strongly polished, very slightly alutaceous near the elytral apex; color dark castaneous-brown, the under surface, legs and antennæ paler, rufo-ferruginous. *Head* moderate, broadly rounded at apex, finely, deeply and very densely punctate, the eyes and antennæ as usual. *Prothorax* rather more than three-fourths wider than long, the apex very distinctly narrower than the base, feebly, evenly sinuate in circular arc, the angles right and very narrowly rounded; base truncate, the angles obtuse but not rounded; sides moderately arcuate, more convergent and rather straighter toward apex; disk slightly wider just behind the middle than at base, not very finely, very deeply, perforately and densely punctate, the punctures very slightly less dense toward the middle. *Elytra* nearly three times as long as the prothorax and, in the middle, quite distinctly wider; sides parallel and feebly arcuate; apex acutely ogival; disk rather coarsely and strongly but moderately densely punctate, the punctures fine and feeble near the apex as usual, the unimpressed series not distinctly traceable except toward the sides, the punctures

of the intervals being but slightly smaller and equally widely separated. *Abdomen* rather strongly and deeply but not very densely punctate throughout. *Legs* normal. Length 6.4 mm.; width 2.8 mm.

New Mexico (Santa Fé). Miss M. W. Greene.

A robust and very convex species, bearing a deceptive external resemblance to *convexus*, but easily distinguishable by the characters given in the table.

E. thoracicus n. sp.—Oblong, rather strongly convex, dull and alutaceous, dark piceo-castaneous throughout, smooth. *Head* moderate, transverse, broadly, rather strongly arcuate at apex, finely, deeply, very densely punctate, the eyes small and antennæ robust. *Prothorax* about four-fifths wider than long, the apex slightly narrower than the base, almost transversely truncate, being just perceptibly incurvate, the angles very slightly obtuse and rather broadly rounded; base truncate, the basal angles very obtuse but not rounded and not in the least prominent; sides parallel, very strongly, evenly rounded in circular arc from base to apex; disk much wider in the middle than at base, finely, deeply and very densely punctate, the punctures equally dense throughout the width, the lateral bead extremely fine. *Elytra* equal in width to the prothorax and three times as long, the sides parallel and just perceptibly arcuate, the apex rather obtuse; disk with very feebly impressed striæ of small but deep and very approximate punctures, the series not attaining the extreme apex; intervals flat, very finely, rather sparsely and irregularly punctate. *Abdomen* rather coarsely and densely punctate throughout the width. *Legs* moderate, the posterior tarsi much shorter than the tibiæ. Length 6.6 mm.; width 2.6 mm.

California (San Gorgonio Pass?)

The metasternum is just visibly shorter than the first ventral segment, rather coarsely, deeply, very densely and conspicuously punctate, the usual transverse groove indicated by a very broadly, feebly impressed series of smaller and unevenly placed punctures.

This is one of the most distinct species of this section of the genus, distinguishable at once by the very strongly arcuate sides and obtuse basal angles of the prothorax and finely, evenly punctured disk; the very feeble impression of the elytral series may possibly be an accidental characteristic of the unique example, but at all events the series themselves are much more distinct than usual.

E. nitidus n. sp.—Elongate-ovoidal, rather strongly convex, highly polished, black, the antennæ black; legs very dark rufo-piceous. *Head* nearly two-thirds as wide as the prothorax, rather transverse, broadly arcuate throughout at apex, rather convex, finely, deeply and densely punctate; eyes small, the folds short but very distinct; antennæ short and robust. *Prothorax* short, five-sixths wider than long, the apex slightly narrower than the base,

very feebly, evenly sinuate in circular arc, the angles just visibly obtuse and quite distinctly rounded; base truncate, the angles extremely obtuse and just visibly rounded or blunt; sides evenly, very strongly rounded in circular arc from base to apex; disk very much wider in the middle than at base, very strongly convex longitudinally as well as transversely, rather coarsely, very deeply and densely punctate, the punctures distinctly separated toward the middle, the marginal bead extremely fine and feeble. *Elytra* oval, fully three times as long as the prothorax and, in the middle, not very distinctly wider; sides parallel, broadly and distinctly arcuate; apex broadly parabolic; disk with unimpressed and distant series of somewhat approximate and rather deeply impressed punctures, confused near the apex where the punctures are finer and the surface dull; intervals finely, sparsely but distinctly punctate, the punctures irregularly disposed but tending to a uniserate arrangement laterally. *Abdomen* finely, sparsely but very distinctly punctured. *Legs* moderate. Length 5.6–6.0 mm.; width 2.2–2.4 mm.

Arizona (Seligman and Cañon Cosnino). Mr. Wickham.

This species is quite distinct in its very obtuse basal angles of the prothorax and strongly arcuate sides of the latter.

E. crassicornis n. sp.—Oblong-elongate, broadly convex, parallel, smooth but very dull, black, the legs and antennæ dark rufous. *Head* nearly as in *obtusus*. *Prothorax* fully three-fourths wider than long, the apex nearly five-sixths as wide as the base, broadly and extremely feebly sinuate, the angles right and very narrowly rounded; base transversely truncate; basal angles acute, prominent and not at all rounded; sides feebly arcuate and convergent anteriorly, nearly straight and parallel posteriorly and distinctly sinuate very near the base; disk not very finely but deeply and very densely punctate, the punctures generally separated by from once to twice their own diameters, but becoming gradually extremely dense and crowded although not exactly in contact in lateral third; marginal bead very fine but distinct. *Elytra* subequal in width to the prothorax and about three times as long; sides parallel and scarcely visibly arcuate posteriorly; apex narrowly rounded; disk punctured as in *obtusus*. *Abdomen* very finely and sparsely punctate, the punctures becoming larger but not very coarse laterally. *Legs* nearly as in *obtusus*. Length 6.0 mm.; width 2.7 mm.

California (Hoopa Valley, Humboldt Co.).

This species in general appearance somewhat resembles *obtusus*, but differs in its still duller and very opaque integuments, more parallel and less arcuate sides and less strongly emarginate apex of the prothorax, the latter being more transverse, rather more coarsely and densely punctate and with the basal angles acute and slightly everted; the pronotum is less longitudinally convex, and the entire body is more parallel.

E. coarcticollis n. sp.—Oblong-oval, black, strongly convex, highly polished throughout. *Head* small, about one-half as wide as the prothorax, wider than long, rather convex, finely, deeply and densely punctate; epistoma broadly, very distinctly and evenly arcuate at apex; eyes small, the upper fold extremely short and feeble; antennæ short, very robust. *Prothorax* twice as wide as long, the apex five-sixths as wide as the base, evenly, feebly but distinctly emarginate in circular arc; base truncate, the basal angles slightly obtuse, small, not at all rounded and distinctly prominent; sides rather strongly arcuate, more convergent and straighter anteriorly, distinctly but broadly sinuate before the base; disk much wider at basal third than at base, finely, rather sparsely punctate near the middle, the punctures becoming slightly larger and very dense but not coalescent laterally. *Elytra* nearly three and one-half times longer than the prothorax and, in the middle, very distinctly wider, ovoidal, acutely rounded at apex; sides parallel and very distinctly arcuate; disk very convex, with distant, unimpressed rows of small, moderately close-set punctures which are distinctly traceable throughout the width and continuing nearly to the apex; intervals sparsely and more finely punctate, the punctures confused near the suture but tending to a uniseriate arrangement thence to the sides. *Abdomen* polished, finely, sparsely punctate, coarsely so near the sides. Length 4.8 mm.; width 2.1 mm.

New Mexico (Fort Wingate). Dr. Shufeldt.

This small species is allied to *acutus*, but differs in its much shorter more transverse prothorax and distinct elytral series, also in its smaller head and slighter coarser punctuation.

E. acutus Horn.—Trans. Am. Phil. Soc., XIV, p. 270.—Oblong-oval, more or less inflated behind, strongly convex, polished, the elytra becoming gradually dull toward apex, black, the legs dark rufous. *Head* moderate, rather convex, finely, very densely punctate; apex broadly but distinctly arcuate; eyes very small; antennæ robust and short. *Prothorax* about three-fourths wider than long, the apex fully four-fifths as wide as the base, just visibly incurvate in circular arc, almost truncate, the angles right and slightly blunt; base truncate, the angles small, right, not at all rounded and distinctly prominent; sides almost evenly and rather strongly arcuate, abruptly and distinctly sinuate for a short distance before the base; disk finely but deeply and distinctly punctate, the punctures generally separated by fully twice their own widths but becoming gradually very dense, almost contiguous, although not confluent, toward the sides. *Elytra* a little less than three times as long as the prothorax and, behind the middle, quite distinctly wider, broadly ogival at apex; sides distinctly arcuate; disk finely, rather sparsely and irregularly punctate, with very imperfectly defined, distant, unimpressed series of slightly larger punctures only toward the sides and especially near the base. *Abdomen* finely, sparsely punctate, as usual much more coarsely and generally more densely so near the sides. *Legs* moderate, the posterior tarsi very distinctly shorter than the tibiæ. Length 4.2–4.8 mm.; width 2.0–2.2 mm.

Nebraska—Cab. LeConte; Colorado.

The series of punctures on the elytra are less distinct than in any other species of this group, and on the inner half are only traceable under careful observation and with the exercise of a considerable amount of imagination. The prothorax is slightly wider just behind the middle than at base.

EPITRAGUS Latr.

The species of Epitragus are, in general, strongly isolated among themselves, in fact more conspicuously so than in any other Tenebrionide genus which I can recall to mind at present; the transverse prosternal groove is well developed in all the representatives which I have seen. The following species is not closely related to any other:—

E. fusiformis n. sp.—Elongate, fusiform, rather slender, moderately convex, piceous-black with an æneous tinge, polished between the extremely dense punctures. *Head* fully as long as wide, finely, deeply, very densely punctate; supra-orbital fold completely obsolete above the eye, feebly evident for a short distance before it; antennæ rather long, but strongly and gradually clavate, the third joint long, tenth a little wider than long. *Prothorax* about one-fifth wider than long, the apex three-fourths as wide as the base, transversely truncate between the strongly advanced and acute apical angles; base broadly, strongly lobed in the middle; basal angles right, not at all rounded, sometimes feebly prominent; sides extremely feebly, nearly evenly arcuate; disk finely but deeply and very densely punctate, the punctures finer and in close contact near the sides, distinctly separated toward the middle where there is a narrow impunctate median line. *Elytra* at base not distinctly wider than the prothorax, rather less than three times as long as the latter and, near the middle, two-fifths wider, finely, irregularly, evenly and extremely densely punctate throughout, the punctures shallow, each bearing an excessively minute robust acuminate seta which does not project much beyond the limit of the puncture; apex acutely ogival. *Abdomen* finely, very densely punctate, and with short fine inconspicuous pubescence. Length 10.5–11.2 mm.; width 4.7 mm.

Arizona.

The mesosternum is deeply and acutely excavated as usual. In *tomentosus*, however, the mesosternum is not even distinctly impressed and that species will therefore have to be placed in another genus for which I would suggest the name Epitragodes.

The only species with which *fusiformis* can be compared is *plumbeus*, but it differs very greatly from that species in its promi-

nent and acute apical angles of the prothorax, and in the very minute vestiture.[1]

CHILOMETOPON Horn.

This genus is composed of two distinct sectional groups; the metasternal groove is very distinctly impressed throughout and the wings well developed. The species may be distinguished as follows:—

Last joint of the antennæ about as long as the two preceding together.....**I**
Thoracic angles acute and prominent; metasternum between coxa and groove about one-half longer than the first ventral segment.....**pallidum**
Thoracic angles not prominent; metasternum subequal in length to the first ventral segment.....**abnorme**
Last antennal joint shorter.....**II**
Castaneous, shining; form oblong-oval.....**helopioides**

I have before me two specimens of a species which is almost undoubtedly distinct from *helopioides*, the apical angles of the

[1] The following is not described among the numerous Mexican species published by Mr. Champion; it belongs to the section having the middle lobe of the epistoma produced and rounded, and the pronotum similar in the sexes.

E. gracilis n. sp.—Fusiform, slender and elongate, moderately, evenly convex, bright æneous, polished; pubescence very short and coarse, sparse and very inconspicuous. *Head* rather finely, deeply, not very densely punctate, very sparsely so in the middle; supra-orbital fold obsolete above the eye, but feeble and slightly arcuate before it; antennæ long. *Prothorax* but slightly more than one-fourth wider than long, the apex distinctly narrower than the base, subtruncate between the very acute and greatly advanced and prominent angles; base strongly lobed in the middle, the basal angles acute and prominent; sides very feebly arcuate, sinuate near the basal and apical angles; disk with an elongate-oval, foveolate impression just before the scutellum, also impressed laterally along the basal margin, finely, very sparsely punctate, the punctures extremely fine and rather feeble toward the middle, without trace of an impunctate median line. *Elytra* at base but very slightly wider than the prothorax, less than three times as long as the latter and, in the middle, about one-third wider; apex gradually very acute; humeri rounded; disk finely, irregularly punctured, the punctures rather dense laterally, sparser and with indefinite distant series of very fine punctures toward the suture. Mesosternum deeply excavated. Length 10.0 mm.; width 4.0–4.3 mm.

Mexico—State of Guerrero. Mr. Baron.

The elytra have very broadly and feebly impressed longitudinal sulci, which are more pronounced toward the suture, the intervals there becoming very feebly convex and equal to them in width; this structure is very similar to that previously described in *Eurymetopon discors* and other allied species.

prothorax being right, not rounded, not everted and not prominent, but in the absence of a typical representative of the latter species I am unable to describe it; the specimens were collected at El Paso, Texas.

C. pallidum n. sp.—Moderately convex, pale luteo-testaceous throughout, rather shining, subglabrous, the widely scattered setæ slightly evident behind. *Head* finely, rather feebly but densely punctate; eyes large, supraorbital fold fine, short; antennæ long and slender. *Prothorax* not more than one-third wider than the head, two-fifths wider than long; apex about as wide as the base, very feebly arcuate between the advanced, acute and prominent angles; base transverse, broadly bisinuate, the basal angles slightly acute and prominent; sides strongly, subangularly arcuate at or just before the middle, thence convergent and straight or broadly, extremely feebly sinuate to base and apex; disk rather coarsely but variolately punctate, the punctures very densely crowded laterally, very slightly separated toward the middle, with a broad, subimpunctate and irregular median line. *Elytra* across the humeri almost one-fourth wider than the pronotal disk, behind the middle from one-third to one-half wider than the latter, nearly four times as long; disk rather finely, subserially punctate; humeri rounded. Length 6.4–7.0 mm.; width 2.6–3.0 mm.

Texas (El Paso).

In addition to the characters given in the table, this species differs from *abnorme* in its larger size, more robust form, paler color and shorter, almost squarely truncate middle lobe of the epistoma; in *abnorme* the middle lobe is evenly, almost semi-circularly rounded and is much longer. The series consists of five specimens and does not indicate any notable variation either in color or size.

ZOPHERUS Lap.

Z. induratus n. sp.—Robust and convex, deep black throughout, the pronotum dull and with a strong alutaceo-sericeous lustre; elytra more shining. *Head* moderate, sparsely, not very coarsely punctate; antennæ very short and robust. *Prothorax* fully as long as wide, widest and with the sides very broadly subangulate at two-fifths the length from the apex, the latter broadly emarginate, subtruncate between the advanced and narrowly rounded angles; base equally wide, very feebly arcuate; sides convergent from anterior two-fifths to the base and broadly obtusely subangulate at basal third; disk convex, coarsely but sparsely punctate, the punctures strongly muricate. *Elytra* about two-thirds longer than the prothorax and, in the middle, nearly one-fourth wider, evenly oval, convex, feebly emarginate at base; disk strongly but rather finely, densely and confusedly tuberculate, the two apical tubercles very strong, the channels very deep but rather short. *Abdomen* coarsely, sparsely, punctate. Length 16.5 mm.; width 7.0 mm.

California (Julian). Mr. Dunn.

This species is somewhat allied to *granicollis*, but differs in its shorter, less slender form relatively wider, more finely and densely tuberculose elytra and very much finer and more asperate punctures of the pronotum; the elytral tubercles are strongly shining.

In *granicollis* the elytra are but just perceptibly wider than the prothorax and are much more elongate-oval. In *induratus* the space separating the antennal cavities from the lateral thoracic margin is scarcely two-thirds as wide as in *granicollis*, and the transverse cavity of the fifth abdominal segment is bounded posteriorly by an evenly sinuous wall, while in *granicollis* the posterior wall of the cavity is abruptly and strongly toothed in the middle; this is a very important difference, for on examining a series of seven specimens of *tristis*, composed of males and females, I cannot perceive the slightest variation in the form of this curious excavation sexual or otherwise; in *tristis* the posterior wall of the cavity has a small rounded lobe in the middle, not by any means as prominent and dentiform as in *granicollis*. Four specimens of *concolor* show no variation in the form of the cavity which is nearly as in *granicollis;* it is also very similar in *opacus* and *gracilis*.

The sculpture of the pronotum in *induratus* is very nearly as in *opacus*, but the elytra are entirely different.

ARÆOSCHIZUS Lec.

The species of this singular genus are remarkably uniform in size, and at the same time strongly isolated and specialized; those before me may be easily known by the following characters:—

Anterior and intermediate tibiæ unarmed.
Vestiture of the elytral costæ erect and fimbriate; intervals each with a single line of similar but much more widely spaced setæ.
Elytral setæ finely spinose.....**costipennis**
Elytral setæ extremely coarse, truncate or subclavate at apex; pronotum with two fine even lines of setiform scales.....**fimbriatus**
Vestiture of the elytral costæ broadly squamiform and subrecumbent.
Elytral intervals each with a median line of scales.....**regularis**
Elytral intervals without a median series.
Prothorax very much shorter and narrower than the head, broadly, strongly, impressed in the middle throughout the length.
sulcicollis

Prothorax but slightly shorter and narrower than the head, evenly convex, without median impressed groove, having a feeble subfoveolate impression near the base.....**simplex**

Anterior and intermediate femora dentate.....**armatus**

The characters of *armatus* are taken from the original description.

A. fimbriatus n. sp.—Rather robust and convex, moderately shining, dark piceous-brown, the elytra much paler, rufo-ferruginous; vestiture pale flavate. *Head* slightly longer than wide, the apex with a feebly rounded emargination which is finely denticulate throughout its width; sides nearly straight and very feebly convergent behind from apical third, the basal angles rounded; surface somewhat coarsely and densely punctate, longitudinally impressed near the eyes, clothed with erect arcuate strongly clavate setæ; antennæ robust, nearly as long as the head and prothorax, densely clothed with robust erect scales, outer joints strongly transverse. *Prothorax* as wide as long, slightly narrower and very much shorter than the head; base and apex subequal and subtruncate; sides rounded anteriorly, strongly convergent and sinuate toward base; disk surrounded throughout with dense fimbriæ of extremely coarse erect hairs, those of the sides longer than those of the bases; surface rather finely, extremely densely punctate and dull, with two even parallel lines of closely placed suberect scales which are separated by about one-third the width, the interval scarcely perceptibly impressed except near the base and totally devoid of pubescence; surface thence to the sides with a few widely scattered and smaller scales. *Elytra* oval, three-fourths longer than wide, in the middle about twice as wide as the prothorax, the costæ very strong, each bearing a dense series of unusually long erect extremly robust hairs, the intervals each with two series of very coarse deep punctures and a single line of similar setæ which are much more widely spaced. *Abdomen* coarsely and densely punctate throughout. *Legs* moderate. Length 4.0 mm.

Arizona (Tucson). Mr. Wickham.

This species is not at all closely allied to any other, and may be easily distinguished by its more robust form and very prominent lateral and costal fimbriæ; also by the two even setose lines of the pronotal disk.

A. simplex n. sp.—Rather slender, very dark piceous-brown, alutaceous in lustre. *Head* slightly longer than wide; sides behind the eyes just visibly convergent for a short distance, then very gradually, broadly rounded to the neck, the hind angles entirely obsolete; antennæ very robust, cylindrical, the tenth joint wider, eleventh very small. *Prothorax* slightly but distinctly narrower and shorter than the head, slightly longer than wide; base and apex equal, truncate, densely fimbriate with long, porrect and very robust setæ; sides strongly rounded anteriorly, rather distinctly convergent and very broadly, feebly sinuate thence to the base, the basal angles rather prominent;

disk widest at less than one-third the length from the apex, moderately densely fimbriate at the sides with very coarse erect bristles, which are shorter than those of the apices, rather coarsely and sparsely punctate. *Elytra* evenly elliptical, twice as long as wide, rather more than twice as wide as the prothorax, the costæ very strongly elevated; intervals each with two rows of extremely coarse, perforate punctures. *Abdomen* rather finely, sparsely punctured. Length 3.8–4.4 mm.

Texas (El Paso); Arizona (Tucson).

Allied to *sulcicollis* but differing in the vestiture of the antennæ which, in that species, is much longer, more slender and conspicuous, also in the characters given in the table. The prothorax is much larger than in *sulcicollis*, although still distinctly smaller than the head, and the absence of a median groove will readily distinguish it.

ASIDA Latr.

A. angustula n. sp.—Slender, convex, dark castaneous throughout; sides subparallel; upper surface very sparsely covered with short, very fine, erect hairs; legs densely clothed with short, stiffer and less erect hairs which are more conspicuous on the tibiæ and tarsi; anterior tibiæ with the exterior angle acute and prominent. *Head* moderate, coarsely and rather densely punctate; antennæ short but very slender, not longer than the prothorax, not incrassate but with the tenth joint triangular and abruptly much wider than the ninth, fully as long as wide, eleventh as usual very small. *Prothorax* about two-fifths wider than long; sides parallel and rather strongly arcuate, very feebly sinuate near the basal angles which are acute and slightly prominent posteriorly, the base transversely truncate between them; apex broadly, rather strongly emarginate in circular arc; disk widest at the middle, more longitudinally convex in basal half thence declivous and transversely convex in middle two-thirds to the apex, transversely feebly impressed near the base; sides rather feebly and not very widely reflexed throughout; surface rather coarsely, deeply and densely punctate, the punctures rounded, perforate and not at all muricate. *Elytra* more than three times as long as the prothorax and, in the middle, scarcely one-third wider; sides parallel and feebly arcuate; humeri obtuse and not prominent; apex rather abruptly declivous; lateral margins fine but distinct, terminating abruptly near the apex; disk strongly, evenly, transversely convex throughout, finely, very sparsely and irregularly punctate, each puncture having immediately before it a fine but very strong, perfectly erect, obtusely-pointed tubercle; discal costæ completely wanting. *Legs* short but slender, the pubescence pale ferruginous yellow and conspicuous. Length 14.0–15.0 mm.; width 6.0–6.5 mm.

California (exact locality unknown). Mr. G. W. Dunn.

This species can be compared only with *muricatula* Lec., but differs in its much more slender form, in the shorter and sparser

hairs of the dorsal surface, and in its densely pubescent legs. The four specimens before me do not indicate any variation.

CONIONTIS Esch.

A somewhat extensive genus, restricted in habitat to the true Pacific coast fauna. In the latitude of Puget's Sound the species extend into the mountains of western Montana, where specimens of *ovalis* have been taken in the Bitter Root valley. Proceeding southward, the eastern limit of range seems to approach the coast, the area becoming gradually narrower, and finally vanishing with a few peculiar species in the neighborhood of San Diego. It has been stated that one species extends its range to the eastern slopes of the Rocky mountains, but this is doubtful, there having been in all probability some confusion of localities. Beyond the southern limit, as here defined, the genus is replaced by the closely allied Cœlotaxis, which is confined in habitat as far as known to the single small island of Guadalupe. The geological conditions existing long ago in the Tertiary, which have given rise to this isolated group of species, will be further discussed under the head of *Coniontis lata*.

There are several circumstances which render the identification of the species a very difficult and uncertain task, even for the present family, and among these should be mentioned the almost total absence of any structural differences, also the marked persistence and uniformity of type, and, at the same time, a considerable amount of individual variation. It is almost absolutely essential therefore to study large series of specimens, at least of several species, in order that the peculiar laws of variation may be adequately appreciated. The only noticeable structural variable, if such it can be called, refers to the prosternal process, which is sometimes surrounded by a fine convex bead and at other times simple, but I find that this character is of but little value.

Each puncture of the elytra bears a seta, sometimes erect, but generally recumbent, occasionally extremely short, not projecting notably beyond the puncture, but sometimes much longer; after careful study of extensive material, it seems probable to me that this scanty vestiture may afford the best means of arbitrarily grouping the species. It must be noted, however, that as these setæ are brittle and sometimes easily removable, care must be

taken in the case of old specimens, to examine them under sufficient power to reveal their condition; if broken and consequently abnormally short, which can be readily determined, it is very rare that one or two occasional setæ will not remain to indicate the nature of the normal vestiture. When perfect the setæ are finely pointed and quite constant in size throughout the individuals of a species.

The Coniontini constitute a very isolated tribe, but as we are compelled under the present classification to retain it in the Asidinæ, on account of the presence of a distinct trochantin, it would undoubtedly be more consistent to place it at the beginning of that subfamily than at the end, because of the extent and obliquity of the posterior coxæ, in which it finds many parallels among the Tentyriinæ, but stands absolutely alone in the Asidinæ.[1]

The known species of Coniontis may be identified as follows:—

Vestiture consisting of extremely minute robust setæ, generally silvery in color.
Elytra coarsely, deeply punctate.
Abdomen coarsely punctate, generally more or less rugulose; body very large and robust.....**abdominalis**
Abdomen finely punctate, not rugulose; body less robust.
Pronotal punctures rapidly very coarse and rather dense toward the sides.....**ovalis**,
Pronotal punctures extremely sparse and minute throughout the disk.
inæqualis
Elytra very finely punctate.
Form robust, scarcely ever distinctly more than twice as long as wide.
Pronotum very minutely and sparsely punctate; larger species.
Elytral margin forming a strongly arcuate line when viewed laterally.
robusta
Elytral margin forming a straight line when viewed laterally.
elliptica
Pronotum densely punctate.
Base of the prothorax strongly bisinuate.....**lata**
Base very feebly bisinuate.....**opaca**
Form slender, always distinctly more than twice as long as wide.
Sides of the head more prominent than the posterior canthus of the eye.
Very dull and finely alutaceous; prothorax short and transverse, extremely coarsely punctured toward the sides; femora very coarsely punctate.....**punctipes**
Highly polished; prothorax very long and strongly developed; femora very minutely and sparsely punctate.....**elongata**

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[1] As a general rule in this subfamily the hind coxæ are small, transverse, and ovoidal, or pointed outwardly, coming very far from attaining the sides of the body.

Sides of the head less prominent than the posterior canthus of the eye; sides of the prothorax more strongly convergent from base to apex; body more longitudinally convex ..... **viatica**

Vestiture consisting of long and distinctly visible hairs or setæ, which are usually fulvo-ferruginous in color.

Elytral punctures very coarse and deep, the surface more or less strongly rugulose.

Larger species; head relatively slightly larger and more finely punctate. **eschscholtzi**

Smaller and very slightly less convex; prothorax distinctly shorter and more transverse ..... **nemoralis**

Elytral punctures fine or moderate in size; surface generally more or less obsoletely rugulose.

Pronotal punctures very dense; elytral punctures extremely fine and unevenly distributed, being aggregated in undefined longitudinal masses; size very small; form slender ..... **puncticollis**

Pronotal punctures but moderately dense toward the sides; elytral punctuation even or very nearly so.

Elytral pubescence toward apex moderately dense, fine and recumbent.

Head moderate in size, never much less than one-half as wide as the base of the prothorax.

Form broadly evenly oval, strongly convex, and not more than twice as long as wide; very dull ..... **alutacea**

Form more or less oblong-elongate, with the sides nearly straight; body more depressed.

Prosternum very coarsely, deeply punctate; pubescence of the upper surface long and conspicuous ..... **subpubescens**

Prosternum more finely and sparsely punctate; pubescence of the upper surface much less conspicuous.

Elytral punctures very fine, distinctly smaller than those toward the sides of the pronotum.

Larger species (10.8–13.0 mm.) ..... **montana**

Small species (8.2–9.0 mm.) ..... **pallidicornis**

Elytral punctures distinct, larger than those of the pronotum.

Pronotal punctures fine ..... **genitiva**

Pronotal punctures very coarse ..... **parallela**

Head very small; prothorax strongly narrowed from base to apex, the pronotum very coarsely punctured; pubescence throughout dense, long, persistent and very conspicuous; form elliptical, convex; size small ..... **parviceps**

Elytral pubescence toward apex extremely dense, short, erect, coarse and hispid; body oval, very convex ..... **setosus**

The genus, as here considered, is confined to those species which have the eyes entire and simply emarginate anteriorly, those with completely divided eyes being treated below as a distinct genus.

In the material before me there are some other doubtful forms represented in each case by one or two specimens. Some of these will quite probably prove to be valid species, but I have preferred not to name them at present.

C. abdominalis Lec.—Proc. Ac. Phila., 1859, p. 77.—Robust, strongly convex, parallel, but slightly more than twice as long as wide, shining. *Head* rather small and coarsely punctate; antennæ black, rather robust. *Prothorax* nearly two-thirds wider than long, generally widest at about the middle, the sides thence parallel and nearly straight to the base, broadly rounded anteriorly; base transverse, the angles very feebly produced posteriorly; disk very finely and sparsely punctate, a little more coarsely and densely so laterally, the lateral edges narrowly but strongly reflexed. *Elytra* from one-third to two-fifths longer than wide, rather coarsely deeply and sparsely punctate, and distinctly rugulose, especially toward the apex. *Abdomen* coarsely but not very densely punctate, more or less rugulose. Length 14.0–17.0 mm.; width 7.0–8.3 mm.

California (Monterey; Santa Barbara; Los Angeles).

The edges of the elytra, when viewed laterally, are generally very feebly arcuate, sometimes nearly straight. The punctuation of the upper surface is rather constant, but the sculpture of the abdomen varies considerably, a specimen from Santa Barbara before me having the surface smooth, polished, almost devoid of rugulosity, and finely and very sparsely punctate. The elytra are a little more than twice as long as the prothorax in the female, relatively shorter in the male.

C. ovalis Lec.—Ann. Lyc. N. Y., V, p. 131.—Oblong-oval, strongly convex and shining; sides nearly straight in the middle. *Head* very nearly one-half as wide as the base of the prothorax, rather coarsely and densely punctate; antennæ blackish, pale at apex, moderate. *Prothorax* rather short, from three-fourths wider than, to nearly twice as wide as long; sides feebly arcuate, generally convergent from base to apex, very feebly so and sometimes nearly parallel in basal half; base truncate, very feebly sinuate near the angles which are slightly produced posteriorly; disk sparsely but rather strongly punctate toward the middle, densely and very coarsely so laterally, the sides not narrowly reflexed but strongly finely beaded. *Elytra* always distinctly more than twice as long as the prothorax, sometimes feebly inflated behind the middle, unevenly, very coarsely and deeply punctate, the punctures often irregularly coalescent, especially toward apex. *Abdomen* finely, rather sparsely punctate, the punctures subtransverse, very feebly asperate, especially toward the sides. Length 10.0–11.5 mm.; width 5.2–5.7 mm.

Oregon; State of Washington; Vancouver Island; Montana (Bitter Root valley).

Although allied to *abdominalis* this species is very much smaller, and is exclusively northern in habitat. In both, the elytra are strongly rugulose toward apex, but this uneven effect is produced by actual inequality of the surface, the punctures being smaller and scattered over the surface of the wrinkles in *abdominalis*, while in *ovalis* it is the result of actual coalescence of the larger, deeper and more broadly impressed punctures. The elytral punctures are distinctly smaller in the Montana specimens.

C. inæqualis n. sp.—Rather elongate, strongly convex, with the sides parallel and nearly straight, the apex of the elytra very unusually prolonged and acutely rounded; surface strongly shining. *Head* distinctly less than one-half as wide as the base of the prothorax, rather sparsely and finely punctate, more coarsely so anteriorly; antennæ piceous-black almost throughout, rather robust but scarcely at all incrassate toward tip. *Prothorax* about three-fourths wider than long; sides almost parallel and feebly arcuate in basal two-thirds, rounded anteriorly; base truncate, very feebly sinuate laterally, the angles slightly produced and narrowly rounded; disk very minutely and extremely sparsely punctate throughout, the punctures but slightly more evident toward the sides which are very narrowly but strongly reflexed. *Elytra* distinctly more than twice as long as the prothorax, sparsely but very deeply and coarsely punctate, the punctures very widely impressed, producing a very unevenly rugulose appearance toward apex where they are imperfectly coalescent in twos or threes. *Abdomen* polished, excessively minutely feebly and sparsely punctate. Length 13.5 mm.; width 6.2 mm.

California (exact locality unknown).

Although represented by a single specimen, there can be no reasonable doubt that this species is comparatively isolated. In general habitus it resembles *eschscholtzi*, but can at once be distinguished by its very sparse punctuation and radically different elytral setæ, as well as its polished and exceedingly minutely punctate pronotum.

C. robusta Horn.—Trans. Am. Phil. Soc., XIV, p. 296.—Robust, strongly convex, about twice as long as wide; pronotum finely alutaceous; elytra more strongly shining and more piceous-brown in color. *Head* rather small, less than one-half as wide as the prothorax, finely punctate; antennæ very robust, slightly incrassate toward apex; eleventh joint as usual much narrower. *Prothorax* about two-thirds wider than long; the sides parallel and almost straight in basal two-thirds, strongly rounded and convergent anteriorly; base transverse, rather strongly sinuate laterally, the angles being very distinctly produced posteriorly and scarcely at all rounded; disk sparsely and very minutely punctate throughout; side margins narrowly but strongly reflexed. *Elytra* scarcely more than twice as long as the prothorax, very deeply

ous behind, the apex rather acutely rounded; surface rugulose throughout, especially toward apex, and with three imperfectly defined and very feeble eroded grooves; punctures very minute and sparse throughout. *Abdomen* finely and sparsely punctate, with slight traces of rugulosity. Length 14.0 mm.; width 7.0 mm.

California (Santa Barbara Co.).

The original description of this species was drawn from a series comprising several distinct forms. The specimen designated by Dr. Horn as "1," judging from the coarseness of the dorsal punctuation, is probably a specimen of *abdominalis* in which the ventral punctuation and rugulosity has become rudimentary. The description here given is taken from a specimen in the cabinet of LeConte, and is distinguished from *abdominalis* by its very fine punctuation of the upper surface. From *elliptica* which has also been confounded with *robusta*, the latter is at once distinguishable not only by its rugulose, but at the same time more convex elytra, with strongly arcuate lateral edges.

C. elliptica Casey.—Cont. Col. N. A., I, p. 46.—Robust in the female, the male very slightly more than twice as long as wide, moderately convex, smooth, strongly shining, the pronotum feebly alutaceous, intense black throughout. *Head* small, very distinctly less than one-half as wide as the prothorax, very finely and somewhat densely punctate; antennæ slender, the outer joints scarcely perceptibly incrassate. *Prothorax* from two-thirds to nearly four-fifths wider than long; sides subparallel or very feebly convergent from the base to slightly beyond the middle, broadly rounded anteriorly; base transverse, the angles feebly prolonged posteriorly; disk excessively finely, very sparsely punctate, the punctures but slightly closer and stronger toward the sides, the lateral edges extremely narrowly and finely reflexed. *Elytra* always much more than twice as long as the prothorax, generally slightly inflated behind the middle, gradually and rather feebly declivous behind; apex acutely rounded; disk nearly smooth, very minutely and sparsely punctate. *Abdomen* smooth, polished, extremely minutely and sparsely punctate. Length 12.5–14.5 mm.; width 6.0–7.4 mm.

California (Kern and San Diego Cos.).

Most of the specimens have the elytra smooth, but in several there is a distinct indication of the three eroded grooves noted under *robusta*, and the same is the case in *ovalis* and *abdominalis*, the erosions constituting a feature which may at some time have characterized a considerable part of the genus. The variation in form is very remarkable, one female having the prothorax distinctly inflated before the middle; the nine representatives agree rigorously,

however, in the nature of the line forming the edges of the elytra, which is invariably straight from a lateral point of view.

C. lata Lec.—New Species Col., 1866, p. 113.—Broadly oval, moderately convex, smooth, subalutaceous. *Head* small, rather coarsely and sparsely punctate; antennæ rather slender, but distinctly incrassate toward apex, the tenth joint slightly longer than wide. *Prothorax* strongly transverse, nearly twice as wide as long, very strongly narrowed from base to apex, the latter not quite one-half as wide as the base which is very strongly bisinuate, the angles acute, not at all rounded and not projecting posteriorly beyond the median lobe; sides strongly, evenly arcuate; disk densely and rather strongly punctured; side margins not reflexed although very finely and acutely beaded. Scutellum very small. *Elytra* scarcely one-third longer than wide, two and one-half times as long as the prothorax, the surface smooth, rather dull and just visibly undulated toward apex, somewhat densely and very finely punctate, the punctures not quite as large as those of the prothorax. *Abdomen* shining, sparsely, finely punctate, the punctures denser and rather asperate toward the sides. Length 10.8–11.7 mm.; width 5.3–5.7 mm.

California (Island of San Clemente).

This species represents a very peculiar type, completely isolated from any of those at present known as inhabiting the neighboring continent, and peculiar to the Santa Barbara group of islands. It is immediately distinguishable by its broad evenly oval form, peculiar punctuation and strongly bisinuate base of the prothorax.

Var. **insularis.**—Similar to *lata* but much narrower, more shining, the head relatively larger and more finely punctate, the prothorax only one-half wider than long, the apex fully one-half as wide as the base, the sides less strongly arcuate. Length 10.0–11.5 mm.; width 4.7–5.1 mm.

California (Island of Santa Cruz).

While conforming to the peculiar typical facies of *lata*, the specimens from Santa Cruz differ to such an extent as to require special designation at least as a variety.

Before discussing the geological changes which the existence of these two northern forms and the genus Cœlotaxis apparently reveal to us, it would perhaps be well to note the tendency of the species of Coniontis, inhabiting the southern limit of the region near San Diego, to become conspicuously pubescent, as seen in *subpubescens* and the still more aberrant and local form described below as *parviceps*, the latter being probably a degenerative type.

It is well known that a large percentage of all the productions of the islands lying off the coast of California, although having an essentially Californian character, are specifically distinct and strictly

peculiar to them; and it is also a fact that the proportion of endemic species and the relative divergence of type become more pronounced as we proceed southward, until in Guadalupe the endemicity becomes one of the most remarkable of the faunal characteristics.[1]

A correlation of these facts seems to indicate that the islands off the coast at one time formed a continuous peninsula, trending almost directly north and south, joining the continent by a broad base between Pt. Concepcion and Cape Vincente,[2] and tapering to a point at Guadalupe. The fact that the submarine contours exhibit a series of salients in the 500, 1000, 1500 and 2000 fathom curves, extending in the general direction of Guadalupe, gives greater probability to this assumption.

At that time, which was probably at least as early as the beginning of the Pliocene, there was a free intermingling of the continental species characterizing this epoch. Shortly thereafter the peninsula began to subside, interrupting this communication, and, as the islands were successively separated, the quota of individuals remaining upon them gradually diverged under the isolated and special environmental conditions by which they became surrounded; or, in short, have become specifically distinct.

Guadalupe being the first land detached should display the most marked divergence in its productions, although by this hypothesis the essential features should remain as purely Californian as those of the other islands,—facts which have long been well known. It may be objected, however, that as the salient of the 2000-fathom continental contour is separated from the corresponding contour of

[1] Out of 296 species of plants collected by the eminent Californian botanist Mr. E. L. Greene, on the Island of Santa Cruz, 48 are peculiar to the Santa Barbara group, and 28 are peculiar to Santa Cruz alone. In Guadalupe out of 145 known species of plants, 24 are strictly endemic. Except the birds, plants, however, form perhaps the least reliable criterion for the estimation of relative endemicity, as the strongly vitalized and often comparatively indestructible seeds are so apt to be successfully introduced by currents, winds and migratory birds. The real faunistic isolation of these islands will be much more clearly demonstrated by the wingless epigeal species of Coleoptera, and of these there is not a single species at present known from Guadalupe which is not strictly peculiar to the island.

[2] To one passing along the coast of Santa Barbara Co. and viewing the very bold and precipitous slopes of the Santa Inez Mountains, the desire to liken them—in connection with the present subsidence theory,—to the escarpment of a great fault, is almost irresistible.

the island by an appreciable interval, the island being thus isolated, rising rapidly like a stupendous peak from a great depth, we should have to assume an enormous subsidence, but of course this alone would not invalidate the theory. It may be possible also that as the intermediate region subsided, there was a gradual and counter elevation of the land seaward forming the apex of the peninsula.

The subsidence of the peninsula probably continued through the Pliocene, but it was not until the early Quaternary that the islands near the coast became isolated.[1] It is only natural to assume, therefore, that which we know to be true, that the fauna of these islands should be less modified than that of Guadalupe, although remaining closely allied to it. The ancestral type of *Coniontis lata* has, in Guadalupe, become the densely pubescent genus Cœlotaxis, while upon the mainland it seems to have totally disappeared, there being no species at present known which at all resembles *C. lata* or its variety *insularis*.

A thorough exploration of these islands by a scientific entomologist would be fruitful in many interesting results bearing upon their geological history, especially would this be the case with the epigeal species which are not readily transportable by winds and ocean currents. This is perhaps the greatest desideratum in our knowledge of the nearctic fauna.

C. opaca Horn.—Trans. Am. Phil. Soc., XIV, p. 296.—Oblong-oval, strongly convex; sides subparallel; elytra sometimes slightly inflated behind; surface almost smooth, dull and finely alutaceous. *Head* finely, somewhat densely punctate; antennæ somewhat slender. *Prothorax* rather short, nearly three-fourths wider than long, the apex fully two-thirds as wide as the base, the latter almost transverse, broadly, feebly sinuate laterally, the angles subacute and scarcely projecting posteriorly beyond the median lobe; sides broadly rounded anteriorly, parallel and nearly straight in basal half; disk finely but deeply, distinctly and very densely punctured toward the sides, very minutely and more sparsely so toward the middle; lateral margin not reflexed, finely beaded. *Elytra* very distinctly more than twice as long as the prothorax, very finely punctate, the punctures finer and much feebler and sparser than those toward the sides of the pronotum. *Abdomen* polished, very finely, sparsely punctate. *Legs* slender. Length 8.3–9.8 mm.; width 4.0–4.6 mm.

California (Owen's Valley); Nevada (Reno).

This species is peculiar to the arid eastern slopes and foot hills of the Sierras, and those specimens from other regions, which have

[1] See an interesting paper bearing upon this subject, by Prof. Joseph LeConte, Bull. Cal. Acad. Sci., II, p. 515.

been recorded under this name, have, in all probability, been incorrectly identified. It is easily recognizable by its rather small size, smooth and strongly alutaceous lustre, extremely dense punctuations of the pronotum, and fine and feeble elytral punctures each of which bears an exceedingly minute seta not projecting beyond the limits of the puncture.

C. punctipes n. sp.—Oblong, moderately convex, feebly shining, smooth or very nearly so. *Head* rather broad, fully one-half as wide as the prothorax, somewhat coarsely and densely punctate; antennæ moderate, the second joint unusually long and about three-fourths as long as the third. *Prothorax* rather short, about two-thirds wider than long, the apex fully three-fourths as wide as the base, the latter transversely truncate, very feebly sinuate near the basal angles which are not at all rounded, and which project posteriorly distinctly beyond the median portion; sides evenly, rather strongly arcuate throughout, the widest part of the disk being near the middle; disk very finely and sparsely punctate toward the middle, the punctures becoming rapidly extremely coarse and somewhat dense near the sides, the lateral edges very finely beaded. *Elytra* very distinctly more than twice as long as the prothorax, finely feebly and sparsely punctate, the punctures denser and much coarser toward base near the sides. *Abdomen* very minutely, sparsely punctate. *Legs* rather slender, the femora very coarsely, deeply and rather densely punctured. Length 9.5 mm.; width 4.3 mm.

California (San Bernardino Co.).

A rather remarkable species, readily distinguishable from any other by the extremely coarse punctuation of the lateral portions of the pronotal disk and of the femora. In the type, the base of the prothorax is narrower than the middle portions, but this is in all probability an abnormal variation.

C. elongata n. sp.—Oblong-elongate with the sides straight and parallel, moderately convex, strongly polished, the pronotum very faintly subalutaceous, smooth. *Head* very minutely and sparsely punctured behind, the punctures becoming denser and much coarser on the epistoma; antennæ moderate. *Prothorax* elongate and strongly developed, from less than one-third to two-fifths wider than long, the apex about two-thirds as wide as the base, the latter transverse, very broadly, feebly sinuate laterally, the angles subacute but not distinctly more prominent than the median parts; sides broadly arcuate anteriorly, nearly parallel in basal two-thirds; disk extremely minutely, sparsely punctured toward the middle, the punctures becoming rapidly rather coarse, deep and distinct, but still somewhat sparse, near the sides; lateral edges finely but strongly beaded. *Elytra* about twice as long as the prothorax, sparsely, finely punctate, the punctures distinct, and generally rather larger than those toward the sides of the pronotum. *Abdomen* polished, very finely and sparsely punctured. Length 12.5–15.0 mm.; width 5.1–6.8 mm.

California (Napa and Humboldt Cos.).

A well-marked species allied to *viatica*, but readily identified by its larger size, much longer prothorax and coarser punctuation. I took a large series on the low ground bordering the tule lands near Benicia; when living it is very strongly pruinose.

C. viatica Esch.—Zool. Atl. III, p. 7.—Elongate, parallel, strongly convex, shining, the pronotum rather strongly alutaceous; surface nearly smooth. *Head* generally somewhat finely and sparsely punctured; antennæ rather robust. *Prothorax* from one-half to three-fifths wider than long, the apex about two-thirds as wide as the base, the latter subtruncate, broadly, very feebly sinuate laterally, the basal angles subacute and generally projecting posteriorly very slightly beyond the median portions; sides generally strongly convergent from base to apex, distinctly and evenly arcuate, sometimes slightly more strongly arcuate before the middle; disk extremely finely punctate throughout, the punctures but moderately dense toward the sides, the lateral edges very minutely beaded. *Elytra* always much more than twice as long as the prothorax, very sparsely and minutely punctured throughout. *Abdomen* very sparsely and extremely minutely punctured. *Legs* slender. Length 10.0–13.0 mm.; width 4.2–5.8 mm.

California (San Francisco).

In the large series of seventeen specimens before me, there is none which can be positively asserted to have been taken in any other locality than that indicated; it appears to be a species peculiar to the sandy coast region, perhaps extending down to Monterey or Santa Barbara. *Viatica* is very readily known by its slender parallel form and very minute punctuation; from *elongata* it may be separated at once by its much shorter prothorax and very much more pronounced longitudinal convexity.

C. eschscholtzi Mann.—Rev. Zool., 1840, p. 138; *affinis* Lec.: Ann. Lyc., V, p. 130.—Oblong-oval, rather strongly convex, moderately shining, the pronotum strongly alutaceous; elytra frequently slightly conical. *Head* anteriorly somewhat coarsely and densely punctate; antennæ rather robust. *Prothorax* from one-half to two-thirds wider than long, the apex somewhat feebly sinuate and rather less than two-thirds as wide as the base, the latter transverse or very feebly arcuate, moderately sinuate laterally, the basal angles acute and slightly prominent posteriorly; sides generally rather strongly arcuate anteriorly, more nearly straight toward base; disk very finely and rather sparsely punctate except toward the sides, where the punctures become rather coarse and denser; lateral edges with a thick convex bead bordered internally by a fine deep groove. *Elytra* always distinctly more than twice as long as the prothorax, rather densely, very coarsely and deeply punctate, the punctures unevenly subcoalescent, producing a strongly

rugulose appearance especially toward apex. *Abdomen* somewhat alutaceous, very finely, sparsely punctured. *Legs* slender and rather long. Length 10.4–14.0 mm.; width 5.0–6.5 mm.

California (San Francisco).

This species also appears to be confined to the coast regions about San Francisco, where it is very abundant. In its normal state, the setæ growing from the elytral punctures are always long and distinct, and the original type of *affinis* does not differ in the slightest character from the species described by Mannerheim as inhabiting the immediate locality alluded to. The setæ are, however, liable to be broken off or rubbed out of the punctures, which will account for several errors in the books.

C. nemoralis Esch.—Zool. Atl. III, p. 8.—Oblong-oval, moderately convex, shining, the pronotum generally alutaceous; elytra often subconical. *Head* rather small, very coarsely, deeply, somewhat densely punctate; antennæ rather slender, the eleventh joint but slightly narrower than the tenth. *Prothorax* rather short, from three-fifths to three-fourths wider than long, the apex about two-thirds as wide as the base, the latter nearly as in *eschscholtzi*, but with the basal angles generally a little more abruptly and distinctly prominent posteriorly; sides broadly rounded anteriorly, straighter and more nearly parallel toward base; disk finely but deeply, distinctly and not very sparsely punctate toward the middle, the punctures becoming gradually quite coarse and dense toward the sides; lateral edges with a moderately thick convex bead, often abnormally sinuate near the basal angles. *Elytra* a little more than twice as long as the prothorax, coarsely and not very densely punctate, strongly rugulose from the coalescence of the punctures toward apex, but very feebly so toward base, the punctures generally very unevenly distributed. *Abdomen* polished, very finely, sparsely punctate, the pubescence rather long and very fine. Length 6.8–9.8 mm.; width 3.5–4.5 mm.

California (San Francisco).

A very small species, confined to the same regions as *viatica* and *eschscholtzi* and also very abundant. Its resemblance to the latter of these species is so marked, that mistakes are very liable to occur in identifying the extremes of each; with large series, however, it is readily seen to differ by certain constant characters, among which may be mentioned the smaller, more coarsely punctured head, very slightly shorter prothorax, and distinctly more finely and sparsely punctured elytra, the setæ of both the elytra and abdomen being a little longer, more evident and more persistent; it is also constantly much smaller in size and slightly less convex. It varies remarkably in size.

C. puncticollis Lec.—Ann. Lyc. N. Y., V, p. 131.—Slender, parallel, very convex and subcylindrical, pointed behind, subalutaceous, smooth. *Head* moderate in size, rather finely, densely punctate; antennæ rather short, very robust, the tenth joint distinctly transverse. *Prothorax* from one-half to two-thirds wider than long, the apex two-thirds as wide as the base, the latter almost transversely truncate, the basal angles but very slightly prominent posteriorly; disk very finely and extremely densely punctate laterally, rather abruptly much more sparsely so along the middle; lateral margins very minutely and acutely beaded. *Elytra* distinctly more than twice as long as the prothorax, very minutely, feebly punctate, generally with several extremely feeble and rudimentary longitudinal costæ, which are more visible toward the suture and rather narrowly separated, the crests of the costæ almost impunctate, the intervals rather densely and confusedly so. *Abdomen* strongly convex, sparsely and extremely minutely punctate. *Legs* very short, slender, generally more or less rufescent. Length 7.6–10.0 mm.; width 3.3–4.2 mm.

California (San Francisco, Benicia).

This very peculiar species is one of the smallest of the genus. The elytral costæ are generally almost completely obsolete, but even when entirely invisible the punctures are left distributed in very imperfectly defined longitudinal streaks or patches. The hairs growing upon the elytra are rather short, but extend far beyond the limits of the exceedingly small and feeble punctures. It is rather abundant, and appears to be limited to the same region as *vialica*.

C. alutacea n. sp.—Oval, strongly convex, dull throughout. *Head* somewhat finely, moderately densely punctate; antennæ robust. *Prothorax* fully three-fourths wider than long, the apex strongly sinuate and about three-fifths as wide as the base, the latter transverse and broadly, feebly bisinuate, the basal angles acute and projecting posteriorly but slightly beyond the broadly arcuate median lobe; sides rather strongly arcuate anteriorly, generally a little straighter toward base; disk rather sparsely, very finely punctate toward the middle, the punctures becoming gradually much larger deep, very distinct and moderately dense laterally; side margins finely but strongly beaded, the bead bordered internally by a coarse deep groove. *Elytra* fully two and one-half times as long as the prothorax, rather abruptly and acutely pointed behind, densely punctate, the punctures rather large and distinct, very confusedly coalescent toward apex producing a densely rugulose appearance, which becomes much less pronounced anteriorly. *Abdomen* polished, very finely, sparsely punctate. *Legs* slender. Length 9.0–11.0 mm.; width 4.8–5.3 mm.

Nevada (Reno).

The series of five specimens indicates but slight variability, and the species may readily be distinguished from *opaca* by its sparser pronotal punctures, and its much more coarsely punctate and rugu-

lose elytra. It appears to be the inland representative of the maritime *eschscholtzi.*

C. subpubescens Lec.—Ann. Lyc. N. Y., V, p. 131.—Oblong-elongate, parallel, somewhat depressed, feebly shining throughout. *Head* moderate in size, very coarsely, deeply and not very densely punctured; antennæ long and slender, distinctly incrassate near the apex. *Prothorax* about two-thirds wider than long, the apex moderately sinuate, nearly two-thirds as wide as the base, the latter broadly truncate and straight, the basal angles abruptly produced and distinctly prominent posteriorly, acute; sides arcuate, straighter toward base; disk finely but distinctly, moderately densely punctate, the punctures sparse and rather finer toward the middle; lateral margins strongly but finely beaded and finely grooved within the bead. *Elytra* distinctly more than twice as long as the prothorax, broadly, feebly and unevenly undulated, the undulations becoming strong coarse rugulosities toward apex; punctures fine, not very dense, each with a very long fine recumbent hair. *Abdomen* polished, smooth, sparsely, very finely punctured. *Legs* well developed, very slender. Length 9.2–10.8 mm.; width 4.2–4.8 mm.

California (Marin, Santa Clara and San Diego Cos.).

This species, although assigned here to another section of the genus because of its conspicuous pubescence, is in reality very closely allied to *abdominalis* and *robusta*, and in the original type the three eroded grooves on the elytra, characterizing that group of species, are clearly but of course very faintly visible; another character allying it to *abdominalis* is the nature of the elytral rugulosity, which is not caused by the coalescence of deep coarse punctures; in *subpubescens* the punctures toward apex are fine and distributed over the surface of the convexities. It is distributed throughout the maritime districts of California but appears to be rather rare.

C. montana n. sp.—Oblong-elongate, rather feebly convex, sometimes distinctly flattened above, rather feebly declivous behind and gradually, acutely pointed; surface strongly alutaceous throughout; elytra frequently conical. *Head* sparsely but coarsely punctate, the punctures finer posteriorly; antennæ moderate. *Prothorax* well developed, from three-fifths to three-fourths wider than long, almost as in *subpubescens* but with the pubescence shorter; punctures excessively fine toward the middle. *Elytra* fully two and one-half times as long as the prothorax, feebly undulated, subrugulose toward apex, the punctures throughout rather sparse and extremely fine, each having a long somewhat coarse subrecumbent fulvous hair. *Abdomen* very feebly subalutaceous, finely, sparsely punctate. *Legs* moderate. Length 10.8–13.0 mm.; width 5.0–6.3 mm.

California (Lake Tahoe—elevation 6300 feet).

A good series of eight specimens shows that *montana*, although allied to *subpubescens*, is abundantly distinct; it differs in its much larger size, shorter, sparser and less conspicuous pubescence, and in the nature of the elytral punctuation which distinguishes it at once from that species. The punctures are generally distinct and deeply impressed, but toward apex they gradually become smaller, and finally extremely fine and feeble, and,—although in reality separated by about the same interval between centres—apparently much sparser. The majority of specimens display very distinct traces of the three eroded grooves.

C. pallidicornis n. sp.—Oblong-elongate, parallel, moderately convex, smooth, strongly alutaceous throughout. *Head* somewhat coarsely but not very densely punctate anteriorly; antennæ very slender, eighth joint much longer than wide, tenth not quite as wide as long. *Prothorax* moderately narrowed from base to apex, from one-half to three-fifths wider than long, the sides moderately and almost evenly arcuate; base transverse, feebly sinuate at the sides, the basal angles being right, very narrowly rounded and but very slightly prominent posteriorly; disk very minutely, sparsely punctate toward the middle, the punctures gradually coarser and quite distinct, but not very dense, laterally; marginal bead very fine. *Elytra* distinctly more than twice as long as the prothorax, almost smooth but very dull, with feeble traces of rugulosity, somewhat sparsely and very finely punctate, the punctures becoming finer toward apex, each bearing a stiff subrecumbent fulvous seta which is rather short and inconspicuous, although projecting far beyond the limits of the puncture. *Abdomen* sparsely, very minutely punctured. Length 8.2–9.0 mm.; width 3.8–4.1 mm.

Southern California.

Allied to *montana* in the gradual decrease in size of the punctures toward the apex of the elytra, but quite distinct in its smaller size, smoother surface and very much shorter and less conspicuous pubescence. It is much more elongate and less convex than *opaca*, and has the punctures toward the sides of the pronotum coarser and very much sparser. The antennæ and tarsi are testaceous throughout, the legs piceous.

C. genitiva n. sp.—Oblong-elongate, parallel, with the sides straight, rather strongly convex, the elytra rather shining, the pronotum strongly alutaceous. *Head* well developed, coarsely deeply and rather densely punctate anteriorly, much more finely and sparsely so posteriorly; antennæ rather long and very slender, the third joint much more than twice as long as the second, the tenth much longer than wide and but slightly wider than the

eighth. *Prothorax* rather long and well developed, scarcely one-half wider than long; apex about two-thirds as wide as the base, the latter transverse, broadly, feebly bisinuate, the basal angles acute but not very prominent posteriorly; sides rather strongly arcuate anteriorly, becoming parallel and nearly straight in basal three-fifths; disk very finely, sparsely punctate, the punctures becoming more distinct but still fine and rather sparse toward the sides; lateral margins coarsely beaded. *Elytra* but very slightly more than twice as long as the prothorax, not very strongly declivous and rather acutely rounded behind, very feebly subrugulose especially toward apex, the punctures sparse but rather large, deeply impressed and very distinct, each bearing a very fine elongate recumbent seta, the vestiture not at all conspicuous. *Abdomen* sparsely but unusually coarsely and distinctly punctured. Femora coarsely but sparsely punctate. Length 13.0 mm.; width 5.4 mm.

California (Lake Co.) Mr. Fuchs.

This species in general form can be compared only with *elongata*, but is distinguished from it not only by its longer elytral setæ, but by its distinctly different antennal structure, the third joint in *elongata* being less than twice as long as the second, and the tenth joint a little wider than long. In the type the two inner of the three eroded grooves are just traceable.

C. parallela n. sp.—Oblong-elongate, parallel, with the sides straight, rather depressed, the elytra slightly shining, the pronotum very strongly alutaceous. *Head* rather densely, somewhat finely punctate, the antennæ moderate. *Prothorax* rather long and well developed, scarcely one-half wider than long, the apex nearly three-fourths as wide as the base, the latter broadly, rather strongly bisinuate, the median lobe broadly arcuate, the basal angles acute and not rounded but not projecting posteriorly beyond the median lobe; sides moderately arcuate anteriorly, nearly parallel and straight in basal two-thirds; disk coarsely, very conspicuously and moderately densely punctured, more sparsely and finely but still very distinctly so toward the middle; marginal bead rather fine. *Elytra* about twice as long as the prothorax, feebly rugulose, quite distinctly so toward apex, rather strongly, unevenly and moderately densely punctate, the punctures rather coarse, each bearing a long, subrecumbent, fulvous seta, the vestiture slightly conspicuous. *Abdomen* sparsely, very finely and feebly punctate. Length 11.0 mm.; width 5.0 mm.

California (Mendocino Co.).

There is a very feeble trace of the approximate elytral ridges mentioned under *puncticollis*, but otherwise there is no resemblance between these species; in fact *parallela* is quite an isolated form, there being none other with which I can compare it, the rather depressed parallel form, distinct pubescence and coarse pro-

notal punctuation readily distinguishing it from any other. Perhaps it is most closely allied to *subpubescens*, but differs in its longer prothorax and very much coarser and sparser elytral punctures.

C. parviceps n. sp.—Elongate oval, moderately convex, rather dull and alutaceous throughout; elytra feebly undulato-rugulose, especially toward apex. *Head* small, coarsely, deeply, moderately densely punctate; antennæ moderate, third joint scarcely more than one-half longer than the second, tenth triangular, as wide as long. *Prothorax* one-half wider than long, strongly narrowed from base to apex, the latter scarcely more than one-half as wide as the former; apex very deeply sinuate; base very broadly emarginate throughout the width, the basal angles being acute and posteriorly prominent; sides evenly and rather strongly arcuate; disk rather sparsely punctate, the punctures distinct toward the middle, rather denser and decidedly coarse laterally; side margins extremely minutely, acutely beaded. *Elytra* but slightly more than twice as long as the prothorax, extremely finely, not very densely punctate, the punctures much finer than those near the sides of the pronotum and becoming, toward apex, excessively minute and feeble. *Abdomen* rather strongly convex, very finely, sparsely punctate, each puncture bearing a long hair. Length 7.0–8.0 mm.; width 3.4–4.0 mm.

California (San Diego).

The punctures of the pronotum and elytra bear each a long rather coarse fulvous seta, the vestiture being closely recumbent and very conspicuous. This is a small and comparatively isolated species.

C. setosus n. sp.—Oval, strongly convex, rather shining, the pronotum slightly alutaceous; elytra extremely feebly undulato-rugulose toward apex. *Head* well developed, finely and sparsely punctured; antennæ long and somewhat robust, third joint twice as long as the second, tenth nearly as wide as long, strongly obtrapezoidal. *Prothorax* two-thirds wider than long, the apex two-thirds as wide as the base, the latter broadly, very feebly arcuate, broadly distinctly sinuate laterally, the basal angles right, not rounded and projecting posteriorly slightly beyond the median portions; sides almost evenly and rather feebly arcuate; disk sparsely and extremely finely punctate toward the middle, the punctures becoming much denser, rather strong and distinct laterally, the setæ very short and inconspicuous; side margins finely and acutely beaded. *Elytra* fully two and one-half times as long as the prothorax, evenly and unusually obtusely rounded behind, densely and rather strongly punctate, the punctures much larger than any of those of the pronotum, and, toward apex, becoming rather fine and more feeble, each with a moderately long, robust, erect and fulvous seta, the vestiture dense but not conspicuous. *Abdomen* finely, sparsely punctate. Length 10.0 mm.; width 5.0 mm.

Idaho (Cœur d'Aléne). Lieut. Jas. A. Leyden.

This species is readily distinguishable by its oval, strongly convex form, and peculiarities of the elytral pubescence. It is probably

one of the derivatives of the ancient type of *ovalis*, which inhabits nearly the same region. The unique type exhibits decided traces of a number of feeble approximate elytral ridges similar to those of *puncticollis*. The elytra become strongly alutaceous and rather coarsely creased toward apex, and the very feeble undulating inequality of the surface, which could scarcely be called rugulosity, is not caused by partial coalescence of the punctures. In *ovalis* the elytra are polished throughout, very coarsely, deeply punctate, the punctures not becoming finer toward apex, where they are confusedly coalescent causing a strongly marked rugulosity.

CONIONTELLUS n. gen. (Coniontini).

The species described by LeConte as *Coniontis obesa*, differs structurally from the normal members of that genus in having the eyes completely divided. If this were the only difference which could be perceived, we might perhaps be warranted in considering *obesus* and its allies as a mere section of Coniontis, but as this structural peculiarity is supplemented by several other characters, I have deemed it more proper to separate the species mentioned under another name.

Coniontellus differs from Coniontis in having the eyes completely divided, the antennæ shorter, more slender, with a much greater development of the second joint and a wider eleventh joint, and in the form of the anterior tibiæ, these being broader, shorter, more strongly compressed and triangular.

The genus is peculiar to the high arid mountainous table lands and valleys of the Rocky Mountain system, and does not extend westward beyond the Sierras. The species are all small and are apparently much less numerous than those of Coniontis, those which are known to me may be distinguished as follows:—

Setæ of the elytra longer erect and distinct; pronotal punctures very coarse, with but little tendency to longitudinal coalescence.

Elytral setæ long and conspicuous, coarse and fulvous, nearly as long as the third joint of the posterior tarsus; body more robust, the elytra always rather strongly inflated behind; scutellum very small.....**inflatus**

Elytral setæ shorter, finer and sparser, not more than one-half as long as the third joint of the posterior tarsus; body less robust and more parallel; scutellum rather large.....**obesus**

Setæ of the elytra very short, robust and pointed, recumbent and not projecting distinctly beyond the confines of the punctures; pronotal punctures finer, denser and more longitudinally coalescent.....**subglaber**

C. inflatus n. sp.—Robust, strongly convex and shining, the elytra inflated. *Head* rather less than one-half as wide as the prothorax, not very coarsely but densely punctate, the punctures usually sparser toward the middle; epistoma extremely densely punctured. *Prothorax* about twice as wide as long, the apex nearly three-fourths as wide as the base, the latter broadly truncate, the angles narrowly and abruptly produced posteriorly, very acute; sides feebly arcuate, more strongly so near the apex; disk moderately densely, very coarsely and deeply punctate laterally, more sparsely and much more finely so near the middle; side margins very finely, acutely beaded. *Elytra* about three times as long as the prothorax, and, at posterior third, distinctly wider, rather coarsely but not densely punctate, the punctures becoming much smaller toward apex. *Abdomen* sparsely but rather strongly punctate. Length 6.5–7.4 mm.; width 3.4–3.9 mm.

Nevada (Reno).

Differs considerably from either *obesus* or *subglaber* in its much more robust form, inflated and relatively longer elytra, and the much more conspicuous setæ toward the apex of the latter. The scutellum in the three specimens before me is much smaller and more acute than in *obesus*, and very slightly smaller than in *subglaber*.

C. obesus Lec.—*Coniontis ob.*: Ann. Lyc. N. Y., V, p. 131 *nota*.—Robust, subparallel, convex, rather strongly shining. *Head* well developed, finely, rather densely punctate, more sparsely so near the middle. *Prothorax* fully four-fifths wider than long, the apex three-fourths as wide as the base, the latter transversely truncate, the angles very narrowly, abruptly and moderately produced posteriorly, very acute; sides feebly arcuate; disk rather densely and decidedly coarsely punctate, less coarsely and more sparsely so toward the middle; side-margin very fine and acute, extremely narrowly reflexed. *Elytra* nearly two and one-half times as long as the prothorax, abruptly narrowed in apical third which is angulate and acutely rounded at apex; disk rather coarsely, deeply and moderately densely punctate, the punctures a little more sparse and feeble toward apex. *Abdomen* sparsely, rather finely but very distinctly punctured, the punctures rounded. Length 6.0 mm.; width 3.1 mm.

Colorado (Long's Peak). Cab. LeConte.

The description refers to the original type which is unique. The elytral setæ toward apex, when viewed along a line tangent to the surface, are seen to be rather fine, erect, not dense and about one-half as long as the third joint of the posterior tarsus. The lateral pronotal punctures are coarse, very slightly longer than wide, and not at all coalescent.

C. subglaber n. sp.—Form as in *obesus*. *Head* moderate, very finely, densely punctate. *Prothorax* nearly as in *obesus*, the disk unevenly, very

densely punctate, the punctures finer, elongate and tending to coalesce longitudinally, finer, much sparser and more rounded near the middle; side-margin very fine and acute, not distinctly reflexed. *Elytra* nearly as in *obesus* but more finely punctate, each puncture bearing a very minute seta. *Abdomen* finely and sparsely punctate. Length 5.8–6.8 mm.; width 2.9–3.4 mm.

Montana (Helena). Mr. Wickham.

The elytral setæ in this species are exceedingly minute, robust and pointed, subrecumbent, and do not project much beyond the external edge of the puncture. It resembles *obesus* very much, but may be distinguished not only by the character of the vestiture, but by the different punctuation.

Tenebrionin.æ.

The fundamental characters upon which the various tribes of this great subfamily are at present based, seem to be unsatisfactory to a considerable degree, and yet the difficulties involved in striving to present a series of genera in linear form, which can no more lend themselves to such treatment than the stars disseminated through the firmament, is of course insurmountable. If, however, our own genera are difficult of taxonomical arrangement, the European genera are still more so, and are in a condition of decidedly unstable equilibrium.

It is evident that one source of confusion may be the tenacious retention, as a tribal character, of the sexual modification of the anterior tarsus. Our own genera of Blapstini prove conclusively that this is of no value whatever, either in the separation of tribes or of genera, as it is subject to complete extinction even in Blapstinus itself, as will be shown under that genus. Relegating this very alluring but misleading character to the background therefore, I believe it is possible, by giving greater prominence to other well known but insufficiently appreciated characters, to bring about a more harmonious grouping of the genera.

In examining the table on page 372 of the recent classification of LeConte and Horn, which is essentially a repetition of that given by LeConte in the first edition, we discover several inconsistencies, as follows:—

1 The character relating to the dilatation of the head, in separating tribes V and VI from I–IV, is evidently of no importance, as in tribe V the head in Opatrinus is not as prominent at the sides as in Argoporis, and many other exceptions might be cited.

2 It is difficult to draw any rigid distinction between the form of tarsal vestiture of the Amphidorini and Upes, and,

3 It does not seem proper to class together genera like Tenebrio, with the tarsi very sparsely and coarsely spinose beneath; and the Upes, in which they are densely and finely pubescent.

After a prolonged and careful study of the genera involved, I have been forced to the conclusion that a purely natural tribal classification, which shall include no exceptional cases, is a practical impossibility, but, at the same time, the following arrangement of the first few tribes of the subfamily seems, at least with the material at hand, to be less objectionable in this respect than any which I have been able to consult. The few known exceptions will be noted below:—

Posterior coxæ transverse, other characters as stated (Class. Col. N. A. p. 372).

Fourth joint of the maxillary palpi triangular or securiform.
Epipleuræ attaining the sutural angle.
Tarsi with fine, usually silken pubescence beneath.....Upini
Tarsi spinose or setose beneath.
Elytra widely embracing the body.....Blaptini
Elytra narrowly embracing the body.
Inflexed sides of the elytra only in part composed of the epipleuræ.
Middle and hind coxæ equally and widely separated; elytra strongly inflated.....Pimeliini
Middle coxæ narrowly, posterior very widely separated; elytra subequal in width to the prothorax, the latter generally loosely articulated and not overlapping the elytra.
Head long, the eyes distant from the prothorax.....Scaurini
Head short and transverse; eyes near the prothorax....Eulabini
Middle and hind coxæ equally and narrowly separated, the prothorax and elytra in very close contact throughout, the base of the former usually overlapping at the sides.....Pedinini
Inflexed sides composed entirely of the epipleuræ; posterior coxæ generally narrowly separated.....Tenebrionini
Epipleuræ not attaining the sutural angle.
Head strongly dilated and prominent at the sides before the eyes. Opatrumini
Head not prominent at the sides; body pubescent.....Amphidorini
Fourth joint of the maxillary palpi elongate-oval, more or less finely acuminate.....Leichenini

The only exceptions which it is possible to cite at present, are the genera Dendarus[1] and Colpotus of the Eulabini, which have the

[1] I am uncertain which of the two names Eulabis and Dendarus to apply to the tribe; they were both published in 1829.

tarsi densely clothed beneath with long flavate pubescence, and Heterophilus of the Opatrumini,[1] which does not have the head prominent at the sides. The remaining characters in these genera are thoroughly those of the tribes in which they are placed.

In this scheme the Upini comprise the Upes and also the European Menephilus.

The Blaptini remain as at present organized.

The Pimeliini constitute a very homogeneous and interesting tribe, composed of the European genera at present assigned to it. The epipleuræ are extremely narrow throughout the length of the elytra, but seem to be invariably entire. The fourth joint of the maxillary palpi is unusually small. Sepidium does not belong anywhere near the Pimeliini, where it is placed in the European catalogues, but is a member of the Asidinæ.

The Scaurini will include Scaurus, Cephalostenus,[2] Cerenopus and Argoporis, rendering necessary the formation of three distinct groups or subtribes. Akis is in no way related to Scaurus, but belongs to the Asidinæ, as is also the case with Morica and Cyphogenia.

The Eulabini will include Eulabis, Dendarus, Colpotus, Heliopates, Phylax—the resemblance of this genus to Eulabis is quite marked—Sinorus, Isocerus, Micrositus, and Litoborus.

The Pedinini, as here considered, will consist of the two genera Pedinus and Platyscelis only; these are quite isolated, not only by the structural characters already given, but also in general habitus. In this tribe the sexual modification of the legs in the male becomes extreme.

The Tenebrionini will comprise the genera Tenebrio, Alæphus, Eupsophus, Opatrinus and the Blapstini—including Cabirus—as well as the European Calcar, Scleron and Pachypterus. Doliema Pasc. (Adelina Lec. *nec* Woll.) and Bius[3] should be removed to the Ulomini. It will be noted in extenuation of this radical change that the general habitus of Tenebrio is very satisfactorily reproduced in

[1] This name is proposed in order to distinguish the tribe from the group Opatrini, rendered necessary by the word Opatrinus.

[2] I have not been able to study this genus in nature but infer that it is properly placed.

[3] In Bius the reflexed elytral edges and epipleuræ terminate abruptly before attaining the apex; this and many other characters ally it to Uloma and exclude it from the Tenebrionini. The European Dilamus is closely related.

the Blapstini, and especially in Mecysmus, but Eupsophus appears out of place in any of the tribes thus far proposed. The genera may be grouped as follows:—

Eyes more prominent than the sides of the head, the latter prolonged in front of them .....EUPSOPHII
Genera *Eupsophus* and *Alaphus*

Eyes less prominent than the sides of the head.
Eyes not entirely divided.
Eyes at a considerable distance from the prothorax .....TENEBRIONES
Genera *Calcar* and *Tenebrio*
Eyes very near the prothorax; head much shorter, transverse...OPATRINI
Genera *Opatrinus*, *Scleron* and *Pachypterus*
Eyes entirely divided.....BLAPSTINI
Genera as given below

The Opatrumini will include Opatrum, Gonocephalum, Scleropatrum, Pseudolamus, Melambius, Heterophilus, Opatroides, Hadrus and Ephalus. Of these genera, the only ones found within the nearctic region are Gonocephalum and Ephalus. Our single representative of Gonocephalum was described by LeConte as *Blapstinus latifrons;* it is entirely congeneric with the European forms, and appears to be not only rare but very restricted in habitat; it occurs in Vancouver Island. *Ephalus latimanus* is well known in cabinets, but is somewhat rare; it is found in the Atlantic region, and is not very closely related to any other genus.

The Amphidorini will of course remain as at present known.

The Leichenini, as here considered, consist of a few singular genera previously distributed among, or forming several groups of, the Opatrini of Lacordaire, but which have in common a very strong bond of affinity; in fact in spite of the difference in vestiture Ammodonus and Microzoum are comparatively closely allied. It will be noticed that the constancy and consequent taxonomic value of the epipleuræ becomes completely lost in the present tribe,—as is also the case in the Ulomini. The genera may be defined as follows, those which are not nearctic being indicated by an asterisk:—

Anterior tibiæ strongly dentate or produced externally at or near the apex.
Eyes nude, completely divided or extremely nearly so; epipleuræ entire.
Anterior tibiæ very short and robust; eyes rather finely faceted.
***Microzoum**
Anterior tibiæ slender; eyes much larger, coarsely faceted.
Ammodonus

Eyes emarginate anteriorly, coarsely faceted, the facets separated by coarse, and very strongly elevated carinæ; epipleuræ imperfect, wide near the base, very narrow near the apex and completely obsolete in the middle. ***Leichenum**

Anterior tibiæ very short, broadly triangular, not dentate and devoid of denti-form process.

Eyes well developed, not emarginate, the lenses separated by narrow, acute and very strongly elevated carinæ; epipleuræ completely obsolete throughout ..... **Cnemeplatia**

Eyes obsolete, represented by a small deep fovea on the subacute lateral margin near the base, the bottom of the fovea apparently sensitive; epipleuræ very faintly defined near the base only..... **Alaudes**

By this arrangement the Pimeliini and Pedinini are entirely, and the Eulabini and Opatrumini chiefly, characteristic of the eastern hemisphere, while the Upini and Tenebrionini are most numerous in the western world. The Amphidorini are peculiar to western North and South America, while the Blaptini, Scaurini and Leichenini are almost equally represented in the eastern and western continents.

ELEODES Esch.

The genera of Blaptini are closely allied and, in general, mutually distinguishable only by some single structural difference; even this is not always of definite and unequivocal value. The European Prosodes, for example, is extremely close to Eleodes and differs, as far as can be clearly perceived, only in the strong compression of the four posterior tarsi. Gnaptor differs only in the complete extinction of one of the spurs of the anterior tibiæ and the abnormal development of the remaining one, a character which the casual study of our species of Eleodes will tend to prove of doubtful importance. I think, also, that it will be found difficult to state any absolutely constant difference between the females of Blaps and Eleodes. It is true that the mentum varies, but in this respect the difference in the form of this organ among the various species of Eleodes, is vastly greater than that between *Blaps mortisaga* and *Eleodes suturalis*. The form of the mentum is in fact of very little value in this tribe, or indeed in many others of the Tenebrionidæ, as an examination of the species of Eulabis or the sexes of Uloma will amply demonstrate.

Before describing several distinct forms of Eleodes which have

come into my possession during the past five or six years, it is desirable to make a few observations:

1 The description of *E. quadricollis* given by Mannerheim reads thus, in regard to the arrangement of the elytral punctures: "Mas: elytris . . . dense striato-punctatis, punctis granuliferis. Femina: elytris . . . obsolete striato-punctatis."

I have a specimen taken by myself near San Francisco, the locality assigned by Mannerheim to *quadricollis*, which coincides exactly with the above-described male of that species, and I therefore regard it as an authentic type; its length is 15 mm. while that of Mannerheim's type is 7 lin.

The description of *quadricollis* given by Horn (Rev. Ten., p. 309) reads as follows, in regard to the elytra: "Sculpture consisting of punctures sometimes fine, at others rather coarse, rather densely but irregularly placed and *never muricate, never arranged in rows.*" The introduced italics indicate that the author quoted has mistaken some other species—probably that described below as *estriatus*—for the true *quadricollis*.

It should also be stated that a very large series of *gentilis* which I took at San Diego, shows quite clearly that this species should be associated with *quadricollis* and *vicinus*, and is out of place in the present arrangement.

Finally the species named *vicinus* by LeConte is distinct from *quadricollis* in having much finer punctures, which are sparser and much less asperate toward the sides, and also in several other characters, among which may be mentioned the form of the prothorax,—widest at anterior third in *quadricollis* and just before the middle in *vicinus*,—the much longer posterior tarsi in the male of *vicinus*, and the form of the penis which is very much more slender and attenuate in *quadricollis*. *Vicinus* is peculiar to the Gila Valley of Arizona, a region zoologically quite distinct from that inhabited by *quadricollis*.

2 The species described by me as *arcuatus* (Cont. Col. N. A., p. 47) belongs near *carbonarius*, and is not at all similar to *extricatus*. It will be observed that in *extricatus* the elytral punctures are arranged in closely approximate and equally pronounced series, giving a peculiar appearance to this species. *Cognatus* Hald. is simply a specimen in which the punctures are finer, but the disposition of them is precisely the same and *cognatus* is truly a synonym.

In *carbonarius* the elytral punctures are arranged in widely dis-

tant and strongly pronounced rows, with a very few fine punctures scattered along the intervals,—a radically different arrangement which is reproduced in *arcuatus*. *Debilis* and *arcuatus* while allied to *carbonarius* are easily distinguishable from it and from each other; they are, in fact, specifically valid in every sense and should be restored to the list.

3 The species *longicollis* and *giganteus* when normal have the elytra smooth, polished and very minutely, sparsely punctate, the punctures being distributed without order, but occasionally the elytra have closely approximate series of large very shallow dents, which are not true punctures, for on close examination the true punctures are still seen to be distributed irregularly over the surface, sometimes accidentally coinciding with the shallow foveæ, but generally not. This is a remarkable character, probably affecting also the allied *estriatus* described below, although in the specimens at hand there is no indication of it.

E. porcatus n. sp.—Body somewhat slender in the male, robust in the female, shining, the pronotum very feebly alutaceous, black throughout, moderately convex above, strongly so at the sides. *Head* moderate, somewhat densely punctate, very coarsely so on the epistoma; antennæ long and rather robust, the third joint about four times as long as wide and fully as long as the next two together, fourth nearly twice as long as wide. *Prothorax* about one-fourth wider than long, the apex just visibly narrower than the base, very feebly emarginate in circular arc, the angles slightly obtuse, very narrowly rounded; base feebly, evenly arcuate; sides more strongly arcuate before the middle, thence moderately convergent and gradually feebly sinuate to the basal angles, which are very obtuse but not distinctly rounded; disk evenly convex, finely, sparsely punctate, the punctures becoming rather coarse laterally but not very dense. *Elytra* about two and three-fourths times longer than the prothorax and, in the middle, very slightly wider in the male and nearly three-fourths wider in the female; base broadly, feebly emarginate, as wide as the contiguous base of the prothorax in the male but distinctly wider in the female, the apex very strongly declivous, not at all produced, narrowly rounded—viewed posteriorly—disk very deeply sulcate, the sulci finely, rather sparsely and muricately punctate, the intervals equal in width to the sulci, very convex, finely, sparsely punctate. Spurs of anterior tibiæ slender and pointed, unequal but more strongly so in the male. Length 18.0–19.0 mm.; width 6.0–8.8 mm.

Arizona (Fort Apache).

The three specimens before me indicate a species belonging near *obsoletus*, but not very closely allied to it. The size is very much larger, the elytra more deeply sulcate, the sulci finely punctate and

the intervals narrow and extremely convex; in *obsoletus* the sulci are always very coarsely punctate and the intervals wide and flatter. *Porcatus* further differs in its prolonged and prominent prosternal process, in its longer antennæ and in its very much longer and more robust tarsi.

E. cuneaticollis n. sp.—Rather slender in the male, robust in the female, moderately convex, rather shining, the pronotum feebly alutaceous; elytra coarsely rugulose. *Head* rather large, more than one-half as wide as the prothorax, very coarsely, deeply and rather densely punctured; antennæ short and robust, distinctly shorter than the head and prothorax, third joint two and one-half times as long as wide, fully as long as the next two, fourth but very slightly longer than the fifth. *Prothorax* from one-third to two-fifths wider than long, the apex nearly as wide as the base, broadly, very feebly emarginate in circular arc, the apical angles slightly obtuse, very narrowly rounded and not in the least prominent; base subtruncate, the angles slightly obtuse, not distinctly rounded but not noticeably prominent; sides strongly arcuate anteriorly, conspicuously convergent and almost perfectly straight in basal two-thirds; disk widest at apical third, broadly convex above, strongly convex and declivous at the sides, rather sparsely, coarsely and deeply punctate, the punctures about twice as large and distant as those of *humeralis*. *Elytra* distinctly less than twice as long as the prothorax and from one-fourth to two-fifths wider than the latter, at base equal in width to the contiguous base of the same, rather abruptly declivous and pointed at apex; humeri obtuse, not rounded, not in the least prominent; disk rather depressed above, gradually strongly convex and declivous toward the sides, very coarsely, deeply and densely punctate, the punctures irregularly arranged without trace of impressed striæ, not muricate but producing a strongly rugulose appearance by mutual semi-coalescence. *Legs* short and somewhat robust; spurs of anterior tibiæ rather slender but extremely unequal, the anterior more than twice as long as the posterior in the male, less unequal, the anterior about one-third longer than the posterior, although much more robust and obtusely pointed in the female. Length 14.0–15.0 mm.; width 5.2–6.9 mm.

California (exact locality unknown).

This species belongs near *humeralis* but differs in four important characters, viz: the much shorter and more robust antennæ and legs, the unexposed humeri, the very much coarser and deeper elytral sculpture and coarser, sparser pronotal punctures; and finally the smaller and much less unequal spurs of the anterior tibiæ in the male, the larger spur in *humeralis* being nearly four times as long as the smaller one. In considering this enormous disparity in size of the spurs, attention is redirected to the conditions existing in Gnaptor, alluded to in the introductory remarks to the present genus.

E. estriatus n. sp. Moderately robust, strongly convex, smooth and highly polished, the pronotum very slightly alutaceous. *Head* rather transverse, moderate in size, rather coarsely punctate, the punctures sparse toward the middle, very dense and setose laterally; antennæ rather short and robust, the third joint very slightly longer than the next two together, fourth less than twice as long as wide. *Prothorax* just visibly wider than long, the apex truncate, equal in width to the base which is subtruncate, sides broadly arcuate anteriorly, convergent and nearly straight in basal half, the basal angles very obtuse and not at all prominent, disk moderately convex, very finely and sparsely punctate throughout. *Elytra* about three times as long as the prothorax, widest behind the middle and about two-fifths wider than the prothorax, at base equal in width to the base of the latter, the humeri not rounded but also not prominent, apex acute but not greatly prolonged, disk moderately declivous behind, finely but distinctly and very sparsely punctate, the punctures not aspereate, not denser laterally and arranged without trace of order throughout. Length (♂ ♀) 26.0 mm.; width 6.5–9.7 mm.

California (San Francisco).

The two specimens before me differ very greatly in size but are exactly of the same form, the legs, however, in the small specimen, are relatively longer and more slender than in the larger one, in which they are unusually short and robust when compared with *longicollis* or *arguticus*, to which this species is allied. It differs from the former in its broader more anteriorly dilated prothorax, much shorter and rather more robust antennæ and coarser punctuation, and from the latter in the smaller size, less attenuate form, wider epipleuræ, less convex pronotum, less arcuate sides of the prothorax, shorter elytra and many other characters. In *arguticus* the elytra are generally but slightly less than four times as long as the prothorax.

The anterior tibial spurs in *estriatus* are rather slender, similar and very slightly unequal in length; in the larger specimen they appear to be relatively a little longer. I am therefore uncertain as to whether the two specimens are both males or both females, or whether the smaller is a male the larger a female; I am inclined however to think that the latter may be the case as if my memory is correct they were taken at the same time.

Although *arguticus* is said by Horn (Rev. Ten., p. 312) to occur near San Francisco, I have never found it in that locality, but have it from San Diego which is also the locality assigned it by LeConte in a penciled note. *Longicollis* does not occur within the true Pacific coast fauna.

E. tarsalis n. sp.—Body inflated in the female, more slender in the male, nearly smooth, strongly shining. *Head* rather strongly transverse, coarsely and strongly punctured at least toward the edges; antennæ rather short and robust. *Prothorax* distinctly wider than long, the base and apex nearly equal, subtruncate; basal angles very obtuse, sometimes very slightly prominent when viewed vertically; sides rather strongly arcuate anteriorly, straighter and rather strongly convergent in basal half, disk moderately convex, sparsely, finely but very distinctly punctate. *Elytra* about two and three fourths times as long as the prothorax, at base slightly but distinctly wider than the base of the latter, the humeri very narrowly rounded but quite prominent, disk strongly, deeply punctate, the punctures generally simple but becoming tuberculate, although not denser, toward the sides, rather sparse throughout and distributed without trace of order. Length 19.5–21.0 mm., width 7.3–9.3 mm.

California (Mount Diablo).

The single pair which I took at the indicated locality, near San Francisco, displays considerable sexual divergence, the male being moderately robust, with the elytra about two fifths wider than the prothorax and the posterior tarsi very nearly three-fourths as long as the tibiæ. In the female the prothorax is more transverse and but slightly more than one half as wide as the elytra, the posterior tarsi being much shorter.

The present species belongs near *quadricollis* but may be distinguished by the nature of the punctuation, which is not arranged in series on the elytra, and by the prominent humeri and broader base of the elytra, also by the very much longer and thicker posterior tarsi of the male. The anterior spur of the anterior tibiæ is longer and much more robust in the female, but is feebly arcuate and acutely pointed.

E. tenuipes n. sp.—Moderately slender, convex, rather smooth and shining throughout. *Head* finely, sparsely punctate, antennæ long and slender, third joint about five times as long as wide and nearly as long as the next three together. *Prothorax* rather more than twice as wide as the head, about as long as wide, apex very nearly as wide as the base, broadly, feebly emarginate in circular arc, the apical angles very acute and in the form of small everted teeth; base broadly, very feebly arcuate, basal angles extremely obtuse; sides almost evenly and distinctly arcuate; disk widest just visibly before the middle, rather strongly, evenly convex throughout; sides minutely beaded; surface feebly alutaceous, minutely and very sparsely punctate. *Elytra* elongate oval, exclusive of the caudal prolongation four fifths longer than wide, a very little more than three times longer, and, in the middle, two thirds wider than the prothorax; sides evenly arcuate; humeri not prominent, the two bases equal in width, disk with distant unimpressed rows of fine simple moderately approximate punctures, the intervals each with a single

line of still finer and extremely widely spaced punctures, which are generally simple, but which laterally toward apex become very coarse sparse asperities. Total length 30.5 mm.; width 10.0 mm.

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

The single type is a male and represents a very distinct species, combining the characters of *gracilis* and *lucæ*. The legs are long and extremely slender, the anterior femur with a strong spiniform tooth. The prothorax is almost as in *gracilis*, but is longer, while in the male the elytra are prolonged by a caudal appendage which is nearly one-fourth as long as the elytra. From *lucæ* it differs in its small dentiform and everted apical angles of the prothorax, and more feeble apical emargination.

As a very singular character, it will be noted that it is the very inconspicuous punctures of the intervals which become, toward the sides of the apical portions, the large strong and very conspicuous asperities, the fine punctures of the regular series remaining almost unmodified, but becoming slightly asperate very near the apex and on the caudal prolongation.

E. subcylindricus n. sp.—Form cylindrically convex, rather slender, finely very strongly alutaceous and smooth throughout, black; elytra castaneous. *Head* moderate, sparsely and rather finely punctate; antennæ rather long and slender, about as long as the head and prothorax, third joint nearly four times as long as wide. *Prothorax* subcylindrical, about one-fifth wider than long, transversely moderately but very evenly convex throughout, longitudinally very feebly convex; apex very nearly as wide as the base, subtruncate between the acute, very strongly advanced but not at all everted apical angles; base broadly, very feebly arcuate, the angles obtuse, not in the least rounded, not at all prominent; sides evenly and feebly arcuate throughout; disk very sparsely and extremely minutely punctate throughout. *Elytra* more than three times as long as the prothorax and rather less than one-third wider; base very feebly emarginate, exactly equal in width to the contiguous base of the pronotum; apex narrowed rather gradually in apical third, acutely rounded at tip; sides feebly convergent and arcuate near the humeri, parallel and almost perfectly straight thence to posterior third; humeri very obtuse, not rounded, not at all prominent; disk with unimpressed distant rows of very small, nearly simple punctures, the intervals with single rows of extremely widely distant but almost similar punctures, the punctuation not denser toward the sides. *Legs* long and very slender; anterior femora with a small but acute tooth slightly beyond apical third, the remaining femora simple but with the groove of the lower edge fine, very deep and conspicuous, extending almost to the base, with the cariniform edges finely, unevenly serrate; tibiæ strongly arcuate, spurs of the anterior short, nearly equal and slender. Length 21.0–23.0 mm.; width 7.5–7.8 mm.

Arizona (exact locality unknown). Mr. G. W. Dunn.

The two examples before me are almost perfectly similar in every respect, but the peculiar coloration may nevertheless be due to immaturity.

This species is totally distinct in general habitus from any other which is known to inhabit the United States, and is not described in the Biologia Centrali-Americana; although far removed from *gracilis*, it may be placed near it for the present.

E. prominens n. sp.—Form somewhat as in *dentipes*, convex, smooth and alutaceous throughout. *Head* moderate, finely, sparsely punctate, more densely so toward the sides of the epistoma; antennæ short and very robust, much shorter than the head and prothorax, third joint about twice as long as wide and equal in length to the next two. *Prothorax* about one-sixth wider than long; apex and base subequal, the former broadly arcuate, sinuate laterally, the apical angles being acute, very prominent anteriorly and distinctly everted; base broadly, evenly, very feebly arcuate; sides broadly arcuate anteriorly, rather strongly convergent in basal half and strongly sinuate near the basal angles, which are acute and prominent; disk rather strongly convex throughout, finely and sparsely punctate, strongly alutaceous, the side margins very minutely beaded. Scutellum strongly transverse, broadly rounded behind, highly polished and impunctate. *Elytra* at base broadly, feebly emarginate and about as wide as the contiguous base of the prothorax, gradually narrowed and acute at apex; sides evenly arcuate; humeri obtuse but not rounded, not prominent; disk widest at the middle, where it is rather more than one-third wider than the prothorax, feebly alutaceous, finely, sparsely punctate, the punctures nearly simple, arranged in widely distant, rather feebly defined, unimpressed rows, the intervals with a few widely distant and nearly similar punctures. *Legs* rather short and slender, the anterior femora with a short obtuse tooth near outer third; middle and hind femora simple; spurs of anterior tibiæ moderate in length, slender, similar and very nearly equal. Length 19.0 mm.; width 7.8 mm.

California (San Luis Obispo Co.).

I obtained a single specimen of this very distinct form at Port Harford. It belongs near *dentipes* but is more robust, the elytra being shorter, the prothorax is, however, much narrower, the sides being convergent and nearly straight from the middle. One of the chief differences lies in the antennal structure, the third joint being very much shorter; in *dentipes* the antennæ are very nearly as long as the entire head and prothorax and are much more slender.

E. elegans n. sp.—Moderately robust, strongly convex, strongly alutaceous, the elytra moderately shining; integuments nearly smooth. *Head* moderate, somewhat finely, sparsely punctate; antennæ rather short but slender,

not quite as long as the head and prothorax, third joint about two and one-half times as long as wide, scarcely as long as the next two, fourth much longer than the fifth. *Prothorax* nearly one-third wider than long, the apex a very little narrower than the base, transversely truncate, the apical angles small but acute, anteriorly prominent, dentiform and feebly everted; base very feebly, evenly arcuate; sides strongly, almost evenly arcuate throughout, the basal angles very obtuse, not rounded but not in the least prominent; disk rather strongly convex throughout, widest just before the middle, somewhat sparsely but deeply and rather coarsely punctate; side margins very minutely beaded. *Elytra* about three times as long as the prothorax, and at base, just visibly wider than the base of the latter, gradually acute at apex, inflated, widest in the middle where they are about three-fourths wider than the prothorax; sides evenly arcuate; humeri obtuse but not rounded, not at all prominent; disk confusedly, finely creased, rather coarsely and distinctly granulato-reticulate, very finely and sparsely punctate, the punctures nearly simple throughout and not denser laterally, arranged in very feebly defined unimpressed rows, approximate toward the suture, then widely distant, with an uneven and sparser row along the middle of the intervals. *Legs* moderate in length and very slender; anterior femora not dentate but with a very broad and obtuse rounded salient near the apex; spurs of the anterior tibiæ very slender and almost exactly equal. Length 13.0 mm.; width 6.0 mm.

California (Hoopa Valley, Humboldt Co.).

The unique type of this species is one of the most symmetrically proportioned insects of the family. There is no described species with which it can be compared, but for the present it may be placed near *dentipes*.

E. brunnipes n. sp.—Rather robust, moderately convex, coarsely, densely sculptured and dull, black; legs dark brown throughout. *Head* large, fully two-thirds as wide as the prothorax, coarsely, extremely densely punctate and scabrous; antennæ longer than the head and prothorax, rather slender, third joint about four times as long as wide. *Prothorax* scarcely one-third wider than long; base and apex very nearly equal in width, subtruncate; apical angles obtuse, not distinctly rounded, not at all prominent; basal right, not rounded; sides strongly angulate at the middle, thence very feebly arcuate to the apex and broadly sinuate to the base; disk moderately, evenly convex throughout, very coarsely, deeply and confluently punctate. *Elytra* at base nearly one-third wider than the contiguous base of the prothorax, very slightly more than twice as long as the latter, abruptly and obtusely rounded behind when viewed vertically; sides strongly arcuate behind, gradually convergent and straighter thence to the humeri, which are slightly obtuse but scarcely at all rounded; disk widest behind the middle, where it is from one-third to two-fifths wider than the prothorax, feebly convex above, strongly so laterally, coarsely, densely, asperately punctate, the asperities arranged without trace or order. *Legs* moderate in length, somewhat slender. Length 9.2–9.5 mm.; width 4.3–4.6 mm.

Idaho; Wyoming.

One of the smallest species of the genus and quite isolated; it is somewhat allied to *pimelioides* although very much smaller. In *pimelioides* the sides of the prothorax are arcuate, and only sinuate for a short distance before the basal angles, and the sculpture of the elytra consists of rounded flattened tubercles which are generally arranged in very distinctly traceable approximate rows; the legs are black and the head very much smaller when compared with the prothorax, which is much more transverse; the humeri are broadly rounded. The species described by LeConte as *viator* does not differ from *pimelioides*, the type being perfectly identical with the ordinary males of that species.

EMBAPHION Say.

E. laminatum n. sp.—Moderately robust, the male more slender, black and dull throughout. *Head* small, very finely, sparsely and subasperately punctate; antennæ slender, third joint from four to nearly five times as long as wide, eighth one-half longer than wide. *Prothorax* about one-half wider than long, the median portion very feebly convex, fully as long as wide, and having two feeble, subparallel and sinuous impressions near the middle of the disk; side margins very widely and strongly reflexed, the outer edges parallel, strongly and evenly arcuate throughout, the basal angles broadly rounded and projecting beyond the transverse median portion of the base; apex strongly emarginate, the emargination not quite three times as wide as deep; surface throughout finely, extremely sparsely and subasperately punctate. *Elytra* from one-half to four-fifths longer than wide, at base transversely truncate, the sides very thin and broadly but not abruptly reflexed, the acute lateral edges parallel and feebly arcuate in basal two-thirds, then rounded to the apex and slightly prolonged, uniting in a prolongation of the suture; humeri rounded; disk distinctly wider than the prothorax, each elytron broadly concave, the suture elevated; surface with approximate, imperfectly defined and feebly impressed rows of rather coarse, impressed punctures, also finely and sparsely asperate. Inflexed sides of the elytra nearly flat, somewhat coarsely and sparsely but unevenly punctate, the epipleuræ very imperfectly defined except near the apex. *Legs* very slender. Length 14.0–15.0 mm.; width 6.8–7.5 mm.

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

The elytral punctures referred to in the description are merely impressed foveæ, and do not appear to be in the least setigerous; the finer but strong and sparse asperities are distributed over the surface without regard to the punctures, and each bears a strong thick semi-erect seta—see third remark under Eleodes.

This species is related only to *contusum* Lec., but differs greatly in the upper surface of the elytra. In *contusum* the elytra are nearly flat, sometimes feebly and transversely convex, the side margins being very narrowly but abruptly reflexed, while in *laminatum* the upper surface is broadly, strongly concave throughout, the concavity of the general surface extending unbroken to the extreme edges; the elytral suture is however distinctly elevated, so that it might be more proper to say that each elytron is concave; the humeral portion of the side margins is as usual a little more strongly reflexed. The prothorax and the conformation of the posterior angles are almost exactly as in *contusum*, except that the sides are more widely reflexed. In *contusum* the pronotum is fully twice as densely asperate.

EULABIS Esch.

The species of this genus are not closely allied among themselves and may be easily identified from the original descriptions; the following species is, however, somewhat similar in appearance to *rufipes* although twice as large.

E. crassicornis n. sp.—Oblong-elongate, not pubescent, moderately convex, dull, very dark rufo-piceous throughout, the legs just visibly paler. *Head* moderate, about one-half as wide as the prothorax; upper surface flat, rather finely, extremely densely, confluently punctate throughout and dull; sides not perceptibly reflexed, the eyes rather depressed; antennæ not quite as long as the head and prothorax, very robust, strongly compressed and incrassate toward apex, second joint much shorter and narrower than the fifth. *Prothorax* about one-third wider than long; apex but very slightly narrower than the base, subtruncate, the apical angles narrowly rounded and slightly prominent anteriorly; base truncate, very broadly, feebly sinuate toward the basal angles which are not at all rounded and generally minutely prominent, the sides being sinuate for a short distance before them; sides strongly, evenly arcuate; disk feebly convex, rather depressed toward the very finely reflexed side margins, somewhat coarsely, very deeply and densely punctate, the punctures longitudinally coalescent. Scutellum not entering the elytral disk. *Elytra* scarcely more than twice as long as the prothorax and but just visibly wider than the latter, otherwise very nearly as in *rufipes*. *Abdomen* densely very coarsely and deeply punctate, the setæ rather long and distinct. Length 7.0–7.8 mm.; width 3.1–3.3 mm.

California (southern).

The mentum is wider than long, trilobed at apex, the lateral lobes acute and anteriorly prominent; the surface is deeply biim-

pressed, the two foveæ separated by a strong thick and tumid carina which becomes much less prominent toward base; this is also very nearly the form in *rufipes*.

This species differs from *rufipes* in antennal structure and in its larger size, more robust and depressed form, more transverse prothorax, much longer and more conspicuous abdominal setæ and in the structure of the penis; the latter in *rufipes* is very slender, perfectly flat throughout and gradually acuminate, while in *crassicornis* it is more robust and has a transverse tumid elevation on the upper side at the apex. The second antennal joint in *rufipes* is as long as the fifth and very nearly as wide in both sexes.

ARGOPORIS Horn.

The species found within the limits of the United States may be separated as follows:—

Elytra sulcate; posterior femora of the male with a large acute tooth, the edges of which are finely denticulate.....**costipennis**

Elytra not sulcate, having very feebly impressed rows of deep perforate punctures.

Upper surface finely, strongly alutaceous; posterior femora of the male with a large bifid tooth, the edges of which are finely denticulate.

alutacea

Upper surface polished.

Head sparsely punctate, the epistoma strongly, transversely convex or tumid; hind femora of the male with two small, acute and exactly equal teeth which are widely separated, the intervening edge straight.

bicolor

Head densely punctate; epistoma flat; hind femora of the male with three equidistant teeth, the one nearest the base long, slender, very abrupt, the other two equal and very small .....**nitida**

The species here described under the name *alutacea*, has been confounded by Horn (Rev. Ten., p. 325) and Champion (Biol. Cent.-Amer., Col., IV, i, p. 94) with *bicolor* Lec. On the plate figures are given of the posterior femur of all the species included in the table, and that of *bicolor* has been drawn directly from the original type in the cabinet of LeConte; this type corresponds exactly with a large series in my own cabinet, collected near the Mojave Desert, and I have never seen a specimen of *bicolor* which was taken beyond the confines of California.

A. alutacea n. sp.—Body black throughout, smooth, dull, parallel, moderately convex; elytra rather depressed toward the suture; legs dark rufous; antennæ piceous. *Head* nearly as long as wide, flattened above, the sides before the eyes convergent and broadly reflexed; surface finely, rather sparsely punctate, the punctures coarser toward the eyes; epistoma very feebly, longitudinally convex; antennæ slightly longer than the prothorax, moderately robust but strongly incrassate toward tip. *Prothorax* always fully as long as, and sometimes slightly longer than wide; apex and base subequal, the former truncate, the latter broadly, feebly emarginate, the basal angles acute and prominent posteriorly; sides distinctly convergent behind in basal two-thirds and feebly arcuate; disk extremely minutely but rather densely punctate. *Elytra* about twice as long as the prothorax and, near the middle, just perceptibly wider; humeri finely but acutely dentate, the basal margin being strongly tumid throughout, sides feebly arcuate, disk with almost completely unimpressed rows of coarse perforate punctures, the latter generally separated by fully twice their own diameters; intervals flat, the first and third slightly elevated near the apex, extremely minutely and rather sparsely punctate. *Legs* very robust. Length 12.5–15.0 mm.; width 4.0–5.0 mm.

Arizona. Mr. Morrison.

The first ventral segment is strongly and transversely tuberculate in the middle in the male. This species is larger, blacker, duller and more densely punctate than *bicolor*.

A. nitida n. sp.—Subparallel, moderately convex, polished, dark rufo-castaneous, the legs and antennæ nearly concolorous. *Head* finely, very densely punctate throughout, the sides broadly reflexed; epistoma extremely feebly, transversely convex; antennæ short, scarcely longer than the prothorax, moderately robust, incrassate toward apex. *Prothorax* as wide as long: apex truncate; base feebly emarginate, the basal angles slightly prominent posteriorly; sides broadly arcuate, more convergent and gradually very feebly sinuate toward the basal angles; disk very minutely, rather sparsely punctate, the punctures a little larger and denser toward the sides. *Elytra* elongate-oval, gradually narrowed behind and rather strongly rounded at apex, distinctly more than twice as long as the prothorax and scarcely perceptibly wider; sides very distinctly arcuate; humeri finely denticulate; disk with feebly impressed rows of very coarse, deep, perforate punctures; intervals flat, the first and third strongly elevated near the apex, extremely minutely, rather sparsely punctate throughout. *Legs* rather slender. Middle of the first ventral segment tuberculate in the male. Length 11.5 mm.; width 3.7 mm.

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

The single specimen represents a species resembling *bicolor* somewhat in general habitus, but differing in its longer and much more densely punctate head, more convex elytral intervals near the apex and several other characters.

CRATIDUS Lec.

The three species of this genus may be distinguished as follows:—

Posterior angles of the prothorax acute and prominent.
Pubescence pale tawny yellow ..... **osculans**
Pubescence piceous-black ..... **fuscipilosus**
Posterior angles rounded ..... **rotundicollis**

C. fuscipilosus n. sp.—Form robust, convex, shining, very densely clothed throughout with fine, long, erect, brown-black hairs. *Head* moderate, densely and rather coarsely punctate; antennæ rather long and robust, but very feebly incrassate toward apex, third joint fully three times as long as wide. *Prothorax* from two-fifths to one-half wider than long, convex, strongly rounded at the sides, which are very strongly convergent near the base and sinuate for a very short distance before the basal angles the latter being very small but acute and prominent; apical angles prominent acute dentiform and everted; surface coarsely, very deeply and densely punctate. *Elytra* about two and one-half times as long as the prothorax, oval, obtusely rounded at apex from above, convex, somewhat finely but densely and very deeply punctate, with imperfectly defined, unimpressed rows of similar but coarser punctures. *Legs* short and robust, clothed with similar long, dark pubescence. Length 14.0–16.0 mm.; width 7.2–8.3 mm.

Southern California.

The pubescence is nearly similar in color to that of *Amphidora nigropilosa*, but while in *C. fuscipilosus* the hairs are all alike, the pubescence is dual in composition in the species referred to, there being a system of long blackish hairs which are erect, and another system of shorter, more appressed and paler ones.

This species belongs near *osculans*, but differs not only in the color of the pubescence, which is quite constant throughout the series of four specimens before me, but in its greater density, also in the much more robust and compact form of the body, the prothorax being shorter, more transverse and more nearly equal in width to the elytra.

The hind tibiæ of the male have a strongly developed acute oblique tooth near apical third as in *osculans*.

IPHTHIMUS Truqui.

Our western forms, allied to *serratus*, may be distinguished as follows:—

Punctures of the elytral intervals coarse and deep.
Pronotum coarsely, very densely punctate throughout, the punctures generally subconfluent toward the sides, general surface lustre opaque.
serratus

Pronotum finely, sparsely punctate toward the middle, more coarsely and densely so laterally; surface somewhat shining; prothorax larger and longer; form of body more elongate ..... **sublævis**

Punctures of the pronotum and elytral intervals exceedingly minute, sparse.

Elytra normal, coarsely, deeply striate, the striæ with very coarse, impressed and uneven punctures; intervals convex ..... **lewisi**

Elytra abruptly declivous near the base, without impressed striæ, but with series of very fine, widely but unevenly spaced punctures, the intervals flat..... **lævissimus**

These four forms are specifically distinct, there being no known intergrades; *lewisi* in fact differs more radically from *sublævis* than the latter does from the European *croaticus*.

I. lævissimus n. sp.—Robust, subparallel, rather strongly convex, smooth and finely alutaceous, the pronotum rather more shining than the elytra. *Head* rather longer than wide, somewhat coarsely but sparsely punctate; antennæ very robust. *Prothorax* about one-half wider than long, the apex truncate and very distinctly narrower than the base, the latter transverse and broadly, feebly bisinuate; basal angles acute and prominent; sides parallel and strongly arcuate in apical two-thirds, then strongly convergent and sinuate to the base, very coarsely and unevenly crenulate; disk rather strongly convex, declivous toward the sides which are very narrowly reflexed, very sparsely and minutely punctate, more coarsely but scarcely more densely so very near the sides. *Elytra* just visibly wider behind, two thirds longer than wide, gradually narrowed and pointed through apical third, about three and one-half times longer and nearly one-third wider than the prothorax; humeri rounded; disk abruptly declivous from a short distance behind the base to the basal margin, very smooth but alutaceous, the striæ feebly indicated by very fine and nearly obsolete longitudinal creases. Length 23.5 mm.; width 9.3 mm.

California (Sierras). Mr. W. G. W. Harford.

This is one of the largest species known to me, and is very distinct from *lewisi* in its much more robust form, more transverse prothorax, declivous base of the elytra and unimpressed striæ.

The two species *lævissimus* and *lewisi* are further distinguished from *serratus* and *sublævis* by the somewhat longer head, less widely flattened and explanate sides of the pronotum and truncate apex, the apex of the prothorax being relatively wider and broadly, feebly sinuate in the latter of the two groups.

Blapstini.

The characters originally employed by LeConte and subsequently followed by Horn in the classification of our genera of Blapstini, do not seem to be sufficiently concise or decisive to distinguish the

genera in a satisfactory manner. The form of the intercoxal projection of the abdomen, for example, varies so little throughout the group that mistakes are absolutely unavoidable in attempting an identification from the form of this process. The characters borrowed from the general form of the antennæ are also unsatisfactory.

The group is essentially American, there being to my knowledge but a single palæarctic genus which can be included; this genus—Cabirus Muls.,—comprises a very few small species, apparently confined to Asiatic Turkey and the neighboring regions.

The following study has been carefully made with the hope that these obscure and neglected little insects may be thereby somewhat better understood. They are in no wise difficult to identify, except in certain parts of the very large genus Blapstinus, the species being unusually clearly defined and constant for the Tenebrionidæ, where the great specific variation in outward form is so familiar to us in Eleodes.

The genera are very readily separable into two distinct sections as follows:—

I.—Body always winged, the wings sometimes very rudimentary; scutellum normal, triangular, distinctly separating the elytra at base, and having a wide polished impunctate and generally semi-coriaceous border; anterior tarsi of the male usually dilated.

Anterior tibiæ bent, more strongly so in the male; pubescence dual in structure.....**Trichoton**

Anterior tibiæ straight; pubescence simple.

Base of the prothorax bisinuate and as wide as the base of the elytra.

Anterior tibiæ externally produced at apex in a dentiform process; prothorax and elytra fimbriate at the sides.....**Ulus**

Anterior tibiæ not externally produced at apex; sides not fimbriate.

Blapstinus

Base of the prothorax straight, narrower than the base of the elytra.

Mecysmus

II.—Body completely apterous; scutellum very short and broad, usually not entering the disk of the elytra; anterior tarsi never dilated in the male.

Maxillary palpi normal, the fourth joint strongly securiform.

Prothorax not fimbriate at the sides.....**Conibius**

Prothorax fimbriate at the sides with robust posteriorly recumbent and contiguous setæ, forming a narrow dense border.

Anterior tibiæ narrow, normal.....**Conibiosoma**

Anterior tibiæ broadly triangular and compressed.....**Notibius**

Maxillary palpi with the fourth joint very broadly oval, broadly truncate and having an unusual development of spongy white membrane in the apical cavity; base of the pronotum straight; scutellum nearly as in Blapstinus.....**Cybotus**

TRICHOTON Hope.

On reading the description given by Champion of the species *T. lapidicola* and *T. curvipes*, there is very little reason for doubting that our *Blapstinus sordidus* should also be referred to the same genus. In *T. sordidum* the eyes are completely divided; the genus therefore belongs to the Blapstini and in no wise to the Opatrini, where it was placed by Lacordaire.

Trichoton is very closely allied to Blapstinus, resembling it in nearly all details of structure, but departs widely therefrom in the form of the anterior tibiæ and in the nature of the vestiture. The latter is of dual structure, consisting of finer, but still rather short coarse and recumbent hairs, and longer erect and very robust bristles, irregularly scattered in clusters on the elytra; these bristles are very peculiar, as will appear below. The eleventh joint of the antennæ also differs in form.

T. sordidum Lec.—*Blapstinus sord.*: Ann. Lyc. N. Y., V, p. 146.—Oblong-oval, moderately convex; integuments somewhat shining, piceous, but almost completely concealed by the very dense ochreous-yellow vestiture, which on the elytra is finely and confusedly mottled with patches of dark brown bristles; legs and antennæ rufo-piceous. *Head* strongly transverse, strongly rounded throughout anteriorly, the epistoma deeply sinuate in the middle, somewhat finely but very deeply and densely punctate; upper lobe of eyes rather large, rounded; antennæ robust, a little shorter than the head and prothorax, somewhat feebly incrassate toward apex, third joint more than twice as long as wide but distinctly shorter than the next two together, eleventh fully as wide as the tenth, rather longer than wide, ovate, obliquely pointed at apex. *Prothorax* fully twice as wide as the head and about twice as wide as long; apex very much narrower than the base, very deeply emarginate, the angles right, not at all rounded and anteriorly prominent; base transverse, the lateral sinuations wide and very deep; basal angles nearly similar to the apical, very slightly acute; sides strongly and evenly arcuate throughout; disk widest a little before the base, very broadly and abruptly explanate at the sides throughout the length, rather finely but very deeply and densely punctate throughout, the coarse bristles and coarse recumbent hairs almost evenly intermingled, the latter condensed in two small discal spots. Scutellum triangular, distinct, densely pubescent, the smooth border very narrow. *Elytra* behind the middle very slightly wider than the prothorax, nearly three times as long; sides almost straight toward base, arcuate behind; apex rather narrowly rounded; disk with rather fine, moderately impressed striæ which are closely and not very coarsely punctate; intervals wide, alternately more strongly although moderately convex beginning with the third interval, very obscurely but rather densely punctate, each puncture

filled by the hair. *Abdomen* densely pubescent, with a denser patch at the side of each segment.

Male.—Anterior tibiæ strongly, inwardly bent near apical third, the inner outline being obtusely and angularly emarginate, the outer strongly, evenly arcuate toward apex; intermediate tibiæ with a small internal notch near the apex; anterior tarsi just visibly wider; abdomen broadly, very feebly impressed in the middle toward base.

Length 6.6–7.7 mm.; width 3.5–4.2 mm.

Arizona.

The anterior and middle tarsi in both male and female are densely clothed beneath with long fine hair, which however is a little coarser in the female; in both sexes the hind tarsi are coarsely spinose beneath. In the female the anterior tibiæ are feebly bent in apical third, the inner line being broadly sinuate; the entire tibia, however, is rather more robust than in the male.

The coarse bristles of the dorsal surface, to which allusion has been made, are of extraordinary form, being triangular in transverse section; they are equal in thickness throughout the length, and the apex is transversely truncate.

The punctures of the elytral striæ are very obscure unless the specimen be rubbed, as in nature the integuments are covered with a dull exudation.

This species is not at all rare but appears to be rather local, being confined to the Gila Valley and the higher regions to the eastward in southern Arizona.

ULUS Horn.

In this genus the form is more robust and elliptical than in Trichoton, and the presence of well-marked fimbriæ at the sides of the pronotum and elytra, together with the very dense, coarse and conspicuous pubescence, gives the species a peculiar habitus. The fimbriæ are but rudimentarily developed in Trichoton and completely wanting in Blapstinus.

The sexual characters are very feeble, the anterior tarsi being the only part which is noticeably modified in the male, and even here the dilatation is so excessively slight as to almost elude detection. The males are much less abundant than the females and are generally a very little less robust.

The species burrow in loose sand or mud, the enlarged apex of the anterior tibiæ being well suited for this purpose. They are

probably more abundant than hitherto supposed, their secluded habits and, in many cases at least, rather restricted habitat, rendering it probable that several additional ones will be discovered by future collectors. The five species before me may be thus distinguished:—

Elytral intervals equal in convexity throughout.
  Lateral fimbriæ of the prothorax rather long and very dense, conspicuous; eyes smaller, the upper lobes separated by from six to seven times their own width.
    Elytral striæ rather strongly impressed, the intervals distinctly convex. **obliquus**
    Elytral striæ scarcely at all impressed, the intervals flat... **fimbriatus**
  Lateral fimbriæ very inconspicuous, composed of very short and not very close-set setæ; eyes larger, separated by from four to five times their own width.
    Strongly convex, moderately elongate and more broadly, evenly elliptical. **maritimus**
    Moderately convex, elongate and oblong-oval; size larger. **elongatulus**
Alternate intervals of the elytra wider, more convex and more densely pubescent; intervals throughout much more densely rugulose and punctate; form more oblong and parallel..... **crassus**

U. obliquus Lec.—*Blapstinus obliq.*: New Species Col., 1866, p. 117.—Elliptical, strongly convex, piceous throughout; legs and antennæ concolorous; integuments shining, the pubescence rather short and coarse, moderately dense, evenly distributed, pale flavate and conspicuous. *Head* moderately transverse, very densely, deeply punctate; sides very feebly convergent anteriorly from the narrowly rounded basal angles; epistoma strongly sinuate; upper lobe of eyes moderate, longer than wide; antennæ in length subequal to the prothorax, rather slender, last three joints very slightly wider, third more than twice as long as wide, much shorter than the next two, eleventh wider than long, narrowly truncate at apex, fully as wide as the tenth. *Prothorax* twice as wide as the head and very nearly twice as wide as long; apex scarcely three-fourths as wide as the base, rather strongly emarginate in circular arc, the angles not notably rounded; base transverse, broadly, feebly sinuate in lateral third; basal angles right, not rounded; sides evenly and very feebly arcuate throughout; disk widest at base, rather finely, deeply and densely punctate throughout, the punctures generally separated by from once to twice their own diameters. Scutellum polished. *Elytra* in the middle distinctly wider than the prothorax, about three times as long; sides evenly arcuate, continuous with those of the prothorax; disk rather coarsely striate, the striæ distinctly and rather strongly impressed, approximately and somewhat coarsely punctured; intervals feebly evenly and equally convex throughout the width, equally punctate and pubescent, the punctures rather coarse

and sparse, the interspaces shining. *Abdomen* rather coarsely and sparsely punctate, the pubescence fine, rather long, pale and distinct. *Legs* long.

Male.—Unknown.

Length 7.7 mm.; width 4.1 mm.

Lower California (Cape San Lucas). Cab. LeConte.

The type is unique and is probably a female. It is the largest species of the genus which I have been able to study.

U. fimbriatus n. sp.—Elliptical, strongly convex and shining, piceous throughout; pubescence short and very robust, moderately dense, pale luteous and conspicuous. *Head* strongly transverse, feebly convex, somewhat coarsely and not very densely punctate; epistoma very deeply sinuate; upper lobe of eyes moderate; antennæ slender, nearly as in *obliquus* but much longer than the prothorax. *Prothorax* more than twice as wide as long; apex three-fourths as wide as the base, rather strongly emarginate in circular arc; base broadly, feebly arcuate in the middle, very slightly sinuate laterally, the basal angles not projecting as far behind as the median lobe; sides evenly and distinctly arcuate; disk rather coarsely and deeply, somewhat unevenly and sparsely punctate, the punctures denser toward the sides, but not contiguous. Scutellum broadly triangular, polished, almost completely impunctate and glabrous. *Elytra* in the middle slightly wider than the prothorax, rather more than three times as long; sides evenly arcuate; disk with unimpressed rows of rather small but deep, perforate and very distinct punctures which are circular and closely placed; intervals wide, flat, equally punctate and pubescent throughout the width, the punctures very fine and sparse, the interspaces strongly shining, not distinctly rugulose. *Abdomen* somewhat coarsely and sparsely punctate, the pubescence moderate in length, coarse, pale and distinct. *Legs* long.

Male.—Anterior tarsi extremely feebly but noticeably dilated, and having beneath a narrow line of coarse flavate squamules; intermediate robust, the second and third joints each with an extremely narrow tuft of squamules beneath; abdomen with a very small area near the base which is just visibly flattened.

Length 5.7–6.5 mm.; width 2.9–3.4 mm.

Texas (El Paso).

I took a single representative of this species at the indicated locality, and subsequently received a large series collected there by Mr. Dunn. *Fimbriatus* is somewhat allied to *obliquus* but differs in its smaller size, shorter and more transverse head and prothorax with less oblique sides of the latter, rather larger eyes, shorter and coarser vestiture, unimpressed and more finely punctured elytral striæ and flat intervals. The surface also seems to be more highly polished. The elytral striæ become feebly impressed toward the sides, but the intervals remain flat.

U. maritimus n. sp.—Elliptical, rather strongly convex, piceous throughout, polished; pubescence short, very coarse, recumbent, rather sparse but pale flavate and conspicuous. *Head* much wider than long, feebly convex, rather finely and sparsely punctate; epistoma strongly sinuate; upper lobes of eye large, separated by scarcely four times their own width, circular; antennæ slender but strongly compressed and dilated toward apex, distinctly shorter than the head and prothorax, third joint slender, nearly twice as long as wide and but slightly longer than the fourth, eleventh fully as wide as the tenth and much longer, slightly wider than long, the apex obtusely and rather obliquely rounded. *Prothorax* twice as wide as long; apex about four-fifths as wide as the base, broadly, deeply emarginate; base broadly, rather strongly arcuate in the middle, the lobe extending posteriorly distinctly beyond the basal angles, broadly sinuate laterally; basal angles slightly acute, not at all rounded; sides evenly, strongly arcuate throughout, very feebly convergent anteriorly in basal half; disk somewhat coarsely and sparsely punctate. Scutellum polished, with a few minute widely scattered punctures toward base. *Elytra* in the middle slightly wider than the prothorax, more than three times as long; sides evenly arcuate; apex acute; disk with extremely feebly impressed series of coarse deep perforate punctures, which are generally separated by nearly twice their own diameters; intervals flat, smooth, polished, minutely and sparsely punctate, equally pubescent throughout. *Abdomen* sparsely punctate, the punctures deep, gradually very coarse and denser toward base; pubescence short, sparse, pale and very stout.

Male.—Anterior tarsi robust but not distinctly dilated, with very small narrow tufts of fine yellow pubescence beneath, the basal joint very obsoletely tufted; intermediate tarsi and abdomen not modified.

Length 4.9–5.7 mm.; width 2.5–2.9 mm.

Texas; Florida.

This species is similar in form to *fimbriatus*, but differs in its smaller size, coarser and more distant strial punctures, larger eyes, shorter pronotal fimbriæ and many other characters; it is peculiar to the sand dunes which line the ocean beaches, and I have taken it in considerable abundance at Galveston. The sexual modifications of the male are extremely feeble.

U. elongatulus n. sp.—Elongate-elliptical, very moderately convex, piceous-black throughout, rather shining; pubescence short, robust, moderately dense, pale ochreous-flavate and conspicuous. *Head* strongly transverse, rather coarsely deeply and densely punctate, the punctures distinctly separated; epistoma deeply sinuate; upper lobes of eye moderately large, separated by fully five times their width; antennæ slender toward base, strongly dilated toward apex, third joint slender, more than twice as long as wide, joints three to five uniformly and somewhat rapidly decreasing in length, eleventh fully as wide as the tenth, nearly as long as wide, narrowly and squarely truncate at apex. *Prothorax* a little more than twice as wide as long; apex rather

deeply emarginate, three-fourths as wide as the base, the latter broadly lobed in the middle, feebly sinuate laterally, the basal angles not as prominent as the median lobe; sides rather strongly, evenly arcuate; disk rather coarsely and densely punctate throughout. Scutellum highly polished. *Elytra* but very slightly wider than the prothorax and much more than three times as long; sides very feebly arcuate; apex acutely rounded; disk with coarse shallowly excavated grooves, which are coarsely deeply and perforately punctured, the punctures generally separated by less than their own diameters; intervals equal, very feebly convex, rather finely, not very sparsely punctate. *Abdomen* sparsely but rather coarsely punctate, especially toward base, the pubescence rather fine, short and sparse.

Male.—Anterior tarsi robust but scarcely at all dilated, the first joint not tufted beneath, second with a single small tuft of fine yellowish pubescence, third with two similar tufts arranged transversely; intermediate tarsi not modified.

Length 5.6–6.3 mm.; width 2.7–3.1 mm.

Texas.

A considerable series of this distinct species is before me, collected at various points in Texas, and among them are several examples taken at Columbus by Mr. Schwarz. Most of the specimens are covered more or less thoroughly with a dense indurated mass of argillaceous material, which from its appearance is undoubtedly the all-pervading adobe mud, so characteristic of the southwest. Its habits are therefore somewhat different from those of the majority of species, which seem to prefer clean loose sand.

Elongatulus cannot readily be confounded with any other species here described.

U. crassus Lec.—*Blapstinus cras.*: Ann. Lyc. N. Y., V, p. 146.—Oblong-oval, moderately convex, dark brown to piceous, feebly shining; pubescence short, robust and dense, conspicuous. *Head* moderately transverse, densely punctate; epistoma broadly, deeply sinuate; upper lobe of eyes rather small; antennæ slender toward base, very moderately robust toward the apex, third joint slender but shorter than the next two, tenth scarcely more than one-third wider than long, eleventh fully as wide as the tenth, as long as wide, narrowly truncate. *Prothorax* a little more than twice as wide as long; apex broadly, moderately emarginate in circular arc; base broadly, feebly lobed and more produced in the middle than at the basal angles, broadly, very feebly sinuate laterally; sides rather strongly arcuate anteriorly, nearly parallel in basal two-thirds; disk rather finely and very densely punctate throughout, the punctures generally distinctly crowded and in mutual contact. Scutellum polished. *Elytra* just visibly wider than the prothorax and not more than three times as long; apex rather acute; disk with moderate, rather distinctly impressed striæ, which are not very coarsely but very closely punctate; intervals alternately narrower and flat, and wider and feebly but distinctly

convex, finely, densely rugulose and punctate throughout, the punctures and pubescence denser on the more convex intervals. *Abdomen* somewhat densely punctate, the punctures not greatly coarser toward base, the pubescence unusually long, dense and conspicuous.

Male.—Sexual characters nearly as in *elongatulus*.

Length 6.0–6.5 mm.; width 2.8–3.3 mm.

California; Arizona.

It is stated by Horn (Rev. Ten., p. 358) that this species occurs near San Francisco; LeConte gives San Diego as the locality in his original description. I have never seen it from the former locality, but have specimens from Arizona. I think, therefore, that the species probably belongs exclusively to the San Diego fauna.

The species is quite distinct from any other here described in its more oblong form, more parallel sides of the prothorax, and more densely punctate, pubescent and rugulose elytral intervals, which are alternately wider and more convex.

BLAPSTINUS Latr.

This is a rather large and somewhat composite genus, the chief characters, subject to variations which in their several stages may be regarded as of specific value, being the following, omitting for the present any discussion of the minor characters, such as general sculpture, punctuation, outline, magnitude of the eyes or structure of the antennæ, which can be well understood by inspecting the table of species given below.

1—In regard to the hind wings it should be stated that the usual idea, probably originating with Lacordaire, that some of the species are apterous, is erroneous, all of our species being winged. The wings are, however, extremely varied in development, sometimes consisting of a mere slender cellular or membranous plate, less than one-half as long as the prothorax, and in other cases being fully as long as the elytra, with every intermediate form. In no case do they seem to be large enough, however, to give more than a labored and feeble flight.

In the investigation of a genus such as Blapstinus, which becomes in some parts very monotonous in the uniformity of specific type, it is fortunate that we have so diversified an auxiliary character as that afforded by the wings, and, as the individuals are generally numerous, one at least can be spared for dissection in many doubtful cases. In employing this character, however, it is undoubtedly

necessary to allow a more or less extended latitude for variation in the size of the wing, especially in the more rudimentary forms, where complete inutility probably prevents the operation of any of the laws of natural selection, which act so powerfully to maintain or perfect the standard in those organs which, by reason of constant utility, are continually brought under their influence. The present, however, is perhaps not the best occasion to discuss the propriety of using differential characters relating to rudimentary organs; it is a subject requiring far wider study than I have been able to give it, and it can only be said that any truth which the preceding hypothesis may involve, has been guarded against by giving more weight to the general shape of the wing than to size, unless the latter should exhibit very decided divergence.

2—The vestiture varies conspicuously, but is always uniform in structure. It may consist of suberect scales as in *sulcatus*, or of hairs, more or less coarse or fine and generally subrecumbent, as in the majority of species; I have allowed considerable weight as an auxiliary character to decided differences in size, color and length of the hairs.

The vestiture of insects is too often confounded with, or considered analogous to the hairy covering of vertebrate animals, and knowing to how great an extent the latter may vary, depending upon climatic conditions of environment, we are sometimes too hasty in concluding that the former must vary in the same way; this is, however, not the case, as a little thought will at once demonstrate.

The hairy coat of the vertebrates, growing from a soft and sensitive skin, is designed primarily as a protection from the vicissitudes of the weather, or to retain the heat which would otherwise be dissipated, to regulate the rapidity of evaporation, and to perform other analogous functions depending upon the fact that vertebrates are warm-blooded, internal-skeletoned animals.

In the articulates,—cold-blooded, external-skeletoned animals,—the conditions are altogether different, and the vestiture, which in a large proportion, for example of the Coleoptera, constitutes one of the most diversified and wonderful characteristics of the organism,[1]

[1] The vestiture is often extremely complicated. In Sitona, for example, it is quadruplex, each of the four separate constituents probably having its own sphere of utility. First there is a ground covering of wide rounded strigose scales, generally densely placed, secondly a system of short robust piceous

subserves a different purpose and is not apparently subject to change from any of those conditions which affect the hirsute covering of the warm-blooded animals. This is true at any rate of those hairs which are termed tactile and which are very plainly of functional value, but may possibly not apply so rigidly to other forms of vestiture which, for want of any other name, we call ornamental; the degree of structural variation even in these hairs or scales is, however, comparatively slight as far as my experience has led me. It is highly probable that this ordinary or ornamental pubescence in insects is simply a degenerative modification of hairs, which in their original state were tactile and sensory, but which have become functionless through disuse and at the same time more or less changed in structure.

3—Another variable function is the degree of dilatation of the anterior and intermediate tarsi of the male and the vestiture of their under surface, these organs being,—in partial contradiction of all generic diagnoses which have been heretofore published,—occasionally completely undilated and spinose beneath, as for example in *brevicollis*. In the more widely dilated tarsus the under surface is always very densely spongy-pubescent. The two groups into which I have divided the majority of our species, depending upon the amount of dilatation, are of course unnatural, and it may occasionally be difficult to distinguish the dividing line between them, the more strongly dilated tarsi of the second group as in *arenarius*, being approached by the more feebly dilated members of the first group as in *longulus*. The only definite criterion which can be given, is that in the feebly dilated tarsus the second and third joints are never more than very slightly wider than the apex of the fifth.

The impression of the fifth segment is not strictly sexual, being often visible in the female and is always variable; the impression of the abdomen toward base is, however, peculiar to the male and generally quite constant.

pointed or truncate spicules, usually aggregated in clusters, third a system of very sparsely placed long white erect setæ, and finally, each puncture of the striæ has a peculiar minute seta which is unlike any other part of the vestiture. In addition to this the scales of the first system are, on the under surface, often most beautifully and minutely fimbriate or plumose around the circumference. To fathom the mysterious processes of nature which have resulted in such complexity, or to explain how these four systems act in mutual relationship, will most undoubtedly forever be beyond the pale of our feeble understanding—we can only wonder.

It is hoped that the following table which is founded upon very extensive material,[1] may enable the reader to recognize most of our species, but I am only too well aware, because of the considerable number of forms which from lack of material I have left undescribed, that there may be some doubt regarding absolute identifications in some parts of the series. It is to be understood of course that in a genus containing many species, and especially where each species is abundant in individuals as is generally the case in Blapstinus, that its members cannot all be equally pronounced or isolated, some of the forms having more nearly the nature of varieties or incipient species than others; but as it is quite impossible to conceive of any definite criterion for distinguishing varieties from true species,—if indeed there is any clearly limited line of demarcation,—I have preferred at present to describe each form separately. It may be stated, however, that the two strongly marked forms *pulverulentus* of the true Pacific fauna and *rufipes* of the San Diego fauna, are each the centre of several closely allied but apparently distinct species, probably developed in comparatively recent times, the first group consisting of *æqualis, funebris, pulverulentus, parallelus* and *inquisitus*, and the second of *crassicornis, rufipes* and *elongatus;* a vast amount of study must be expended upon these and other derivative forms before anything definite can be known about their true relationships. *Interruptus* also seems to be a species in process of disruption into geographical races, but in this case the various forms are not distinctly limited:—

Color uniform throughout or with the anterior portions rarely just perceptibly darker 2
Color ferruginous, the elytra black 23
2.—Anterior tarsi strongly dilated in the male.....3
Anterior tarsi of the male feebly dilated, sometimes undilated.....16
3.—Form elliptical, convex; surface smooth but very dull and evenly alutaceous; pubescence completely wanting, represented by excessively minute setæ only clearly definable under rather high power and extremely sparse; hind wings very rudimentary, the elytra almost completely connate.....4
Form more or less oblong, variable in convexity; surface dull or polished; pubescence always represented by distinct elongate hairs.....5
4.—Punctures of the elytral striæ extremely feeble, fine and sublinear, the striæ not distinctly impressed .....1 **alutaceus**
Punctures coarse, rounded, very deeply impressed; striæ strongly impressed, coarse.....2 **dispar**

[1] The material before me comprises more than four hundred specimens.

5.—Elytral striæ more or less interrupted; pubescence rather easily removable but distinct in the normal state.....6

Elytral striæ not interrupted; pubescence generally quite persistent.....7

6.—Surface lustre strongly æneous; elytral striæ generally coarsely punctured and very widely and frequently interrupted; pronotal punctures sparser .....3 **metallicus**

Surface lustre rarely æneous; color generally piceous-black, with the elytra very slightly paler; pubescence denser; elytral striæ generally more finely punctured and less widely and repeatedly interrupted, sometimes very slightly interrupted; pronotal punctures denser; size larger; form more robust, with the prothorax less strongly narrowed from base to apex. 4 **interruptus**

7.—Elytral striæ coarsely punctured; hind wings generally well developed; upper lobe of the eyes unusually large.....8

Elytral striæ strongly impressed, finely punctured toward the suture but rapidly coarsely so laterally; form robust, very convex; pubescence rather short and coarse; wings very rudimentary, the elytra subconnate. 13 **pratensis**

Elytral striæ finely punctured, usually feebly impressed; wings generally more or less rudimentary.....9

8.—Pronotum sparsely punctate, at least toward the middle.

Castaneous-brown, the anterior portions sometimes darker, piceous; size much smaller (4.5–5.0 mm.) .....5 **fuscus**

Black or piceous-black throughout; size large, never much less than 6 mm. in length.

Rather depressed, the pubescence short, sparse and stiff; abdominal punctures very coarse.....6 **longulus**

More convex, larger; pubescence long.

Elytral striæ feebly impressed and distantly punctured; body much more elongate and parallel .....7 **validus**

Elytral striæ very strongly impressed and closely punctured...8 **fortis**

Pronotum very densely punctate throughout.

Form robust, oblong; elytral striæ moderately impressed.

Pronotum rather coarsely punctate, the punctures strongly longitudinally confluent throughout, the sides very strongly arcuate, the disk widest at basal third; elytral pubescence longer but finer, consisting of yellow and piceous hairs confusedly intermingled: intervals about five times as wide as the strial punctures .....9 **dilatatus**

Pronotum rather finely punctate, the punctures not tending to coalesce longitudinally; sides much less strongly arcuate, the disk widest at base; elytral pubescence uniform, bright ochreous-yellow, short, dense, very coarse and conspicuous; intervals very wide and flat, from six to seven times as wide as the strial punctures.....10 **sonoræ**

Form elongate-oval, much narrower; pubescence fine, rather long, sparse, dark and inconspicuous.

Eyes rather smaller; pronotal punctures coarser and generally strongly, longitudinally rugulose toward the sides which are more strongly arcuate; elytral striæ rather strongly impressed.....11 **castaneus**

Eyes very large, their upper lobes separated by about four times their width; sides of the prothorax less strongly arcuate, the pronotum rather more finely and much less confluently punctate; elytral striæ scarcely perceptibly impressed .....12 **histricus**

9.—Pronotum densely punctate throughout..... 10

Pronotum sparsely punctate, at least toward the middle of the disk 13

10.—Pubescence pale cinereous or yellowish-cinereous, conspicuous..... 11

Pubescence darker, piceous to dark fulvous, not at all conspicuous 12

11.—Size small; pubescence very long; elytral striæ not distinctly impressed. 36 **hospes**

Larger; pubescence shorter, coarser and not quite so conspicuous; elytral striæ distinctly but not strongly impressed.....14 **oregonensis**

12.—Pronotum coarsely punctate, the apex very feebly incurvate, sometimes almost truncate, the apical angles distinctly rounded, the basal very obtuse and generally slightly rounded, at least in the male.

Form subdepressed; elytral striæ extremely feebly impressed.....15 **niger**

Form very convex; elytral striæ strongly impressed and more coarsely punctured; sides of the prothorax more strongly arcuate; size larger; form more robust .....16 **cribricollis**

Pronotum more finely punctate; apex more deeply emarginate in circular arc; apical angles not distinctly rounded; basal usually rather prominent, not in the least rounded and not obtuse, the basal sinuations more pronounced.

Wings nearly as long as the elytra; punctures of the elytral series widely separated .....17 **fuliginosus**

Wings rudimentary but not excessively so; strial punctures very small and closely placed.

Abdominal pubescence long, rather coarse, flavate and conspicuous. 18 **rufipes**

Abdominal pubescence short, dark fulvo-piceous and inconspicuous.

Third antennal joint of the male long, nearly equal to the next two together, tenth fully two-thirds wider than long; elytral striæ distinctly impressed.....19 **crassicornis**

Third antennal joint in the male short, very much shorter than the next two, tenth scarcely one-half wider than long; elytral striæ very feebly impressed; form of body much more elongate. 20 **elongatus**

13.—Wings but moderately rudimentary, always distinctly more than one-half as long as the elytra 14

Wings very rudimentary, always distinctly less than one-half as long as the elytra.[1] 15

14.—Elytral intervals very minutely punctate, the strial punctures much larger and rather distant.

[1] In the case of *æqualis*, *lepidus* and *funebris*, no dissection has been made to determine the form of the wings, but as the elytra are subconnate, and the other characters indicate them to be close homologues of *pulverulentus*, I think that the position here assigned them will prove correct.

Posterior angles of the prothorax somewhat prominent posteriorly; size larger; strial punctures coarser, especially toward the sides; wings narrow and scarcely two-thirds as long as the elytra .....21 **mœstus**

Posterior angles not at all prominent, the base transverse and the sinuations feebler; strial punctures finer, not much coarser laterally; form narrower, more parallel and more depressed; wings broad and fully four-fifths as long as the elytra .....22 **gregalis**

Elytral intervals rather coarsely and more densely punctate, the strial punctures finer and very closely placed, the striæ scarcely visibly impressed; wings but slightly shorter than the elytra.....23 **substriatus**

15.—Strial punctures very widely separated, the striæ scarcely visibly impressed; form narrow and parallel .....24 **lepidus**

Strial punctures approximate; form more robust.

Lustre dull and alutaceous, the strial punctures more perforate and abrupt, forming very regular, even series, the punctures of the intervals rather denser.....25 **æqualis**

Lustre strongly shining.

Size large, not less than 6 mm. at least in the female; elytral striæ extremely fine and feebly impressed .....26 **funebris**

Size smaller always less than 6 mm.

Wings wide, very small, shorter than the prothorax; elytral striæ distinctly impressed .....27 **pulverulentus**

Wings very slender, at least as long as the prothorax; elytral striæ almost unimpressed.

Wings with the lower margin strongly sinuate near the apex; size larger; form more convex and subcylindrical ....28 **parallelus**

Wings not sinuate near the apex; size smaller; form distinctly more depressed .....29 **inquisitus**

16.—Third antennal joint shorter than the next two combined, subcylindrical or very feebly obconical 17

Third antennal joint much longer than the next two together; elytra with coarse, deeply excavated, coarsely punctate grooves; head dilated and somewhat prominent before the eyes; pubescence in the form of short, robust, suberect scales 22

17.—Pubescence heterogeneous, consisting of smaller and darker, and longer and paler hairs, confusedly intermingled.....18

Pubescence homogeneous.....19

18.—Strongly convex, brown; punctures of elytral striæ small, rather distant, feeble and scarcely distinguishable from those of the intervals.
30 **auripilis**

Strongly depressed, brown; punctures of the elytral striæ distinct.
31 **intermixtus**

19.—Color dark castaneous to pale reddish-brown 20

Color black.....21

20.—Pubescence darker, piceo-fulvous, inconspicuous; form broad, oblong; prothorax very short and transverse; eyes small.....32 **brevicollis**

Pubescence denser, coarser, pale yellowish-cinereous and conspicuous.
Prothorax rather long; eyes large, the upper lobes separated by about four times their width; pubescence shorter.....33 **brunneus**
Prothorax about two-thirds wider than long; eyes smaller, the upper lobes separated by between five and six times their width; pubescence longer.
34 **hesperius**

21.—Punctures of the elytral series fine, impressed.
Pubescence coarse, short, recumbent and squamiform; form oval, very convex .....35 **vestitus**
Pubescence fine, moderate in length.
Pronotum very densely punctate throughout.....37 **pimalis**
Pronotum sparsely punctate, at least toward the middle; punctures of the elytral striæ distant, closer in the series near the suture.
Oblong-oval, convex; punctures of the series distinct; pubescence short, dark fulvous, rather dense but not conspicuous.
38 **arenarius**
More depressed, generally subcuneiform in the male, parallel in the female; punctures of the elytral series very small; pubescence rather long, moderately abundant, cinereous and somewhat conspicuous.
39 **debilis**
Pubescence excessively short and sparse, setiform, not distinctly visible except by careful examination.....40 **humilis**
Punctures of the elytral series coarse, circular, deeply perforate, very closely placed, being separated generally by scarcely one-half their own diameters; pubescence rather short and coarse, abundant, pale cinereous and extremely conspicuous.....41 **pubescens**

22.—Vestiture cinereous and conspicuous; elytral intervals scarcely wider than the grooves; pronotum narrowly reflexo-explanate at the sides.
42 **sulcatus**
Vestiture dark piceo-fulvous, very inconspicuous; elytral intervals much wider than the grooves; body more robust; pronotum more broadly explanate at the sides.....43 **hydropicus**

23.—Integuments not shining; body apparently glabrous.....44 **discolor**

1 **B. alutaceus** Casey.—*B. opacus* Lec.: Proc. Am. Phil. Soc., XVII, p. 420, 1878 (*nom. præocc.*).—Oblong-elliptical, rather strongly convex, black; antennæ fuscous, gradually and distinctly paler toward apex; integuments smooth, very minutely strongly and evenly granulato-reticulate throughout and strongly alutaceous; pubescence almost completely wanting, consisting of excessively sparse and minute erect setæ, only visible under high power. *Head* feebly convex, very minutely, rather evenly and sparsely punctate; upper lobe of eyes well developed; antennæ rather slender, gradually and somewhat feebly incrassate toward apex, joints three to five uniformly and very rapidly decreasing in length. *Prothorax* rather elongate, about three-fifths wider than long, strongly narrowed from base to apex; sides evenly and feebly arcuate; apex distinctly emarginate in circular arc; base transverse, the lateral sinuations strong; disk broadly, evenly convex, very minutely and

sparsely punctate throughout, the punctures a little larger but not distinctly denser laterally. Scutellum relatively very small, triangular, transverse, with narrow explanate polished margin. *Elytra* one-half longer than wide, slightly wider and two and one-half times longer than the prothorax; sides feebly arcuate, together gradually narrowed in apical two-fifths and acutely rounded at apex; disk without impressed striæ but having distant rows of very fine feeble sublineate punctures, which are widely and very unevenly spaced; intervals very minutely sparsely and feebly punctate. *Abdomen* more polished, sparsely and extremely minutely punctate, almost glabrous. *Legs* rather long, the tarsi moderate.

Male.—Anterior tarsi strongly dilated, the first four joints forming an elliptical patella; intermediate feebly but distinctly dilated; both pairs with pads of dense spongy-pubescence beneath; abdomen narrowly and feebly impressed in the middle toward base.

Length 6.5–6.7 mm.; width 3.0–3.2 mm.

Florida (Key West); Texas.

A remarkably aberrant species of rather large size, easily recognizable by its alutaceous, almost glabrous integuments and minute feeble punctuation. The hind wings are excessively rudimentary and relatively smaller than in any other species which I have been able to dissect: they consist of a very slender, nearly opaque, semimembranous fillet, three or four times as long as wide and not quite one-half as long as the prothorax. The elytra are almost completely connate.

2 **B. dispar** n. sp.—Elongate-elliptical, rather strongly, evenly convex, black; integuments smooth, very minutely evenly and strongly granulato-reticulate, strongly alutaceous; pubescence extremely sparse and short, cinereous, visible but very inconspicuous. *Head* feebly convex, rather finely evenly and somewhat densely punctate, the punctures generally separated by a little more than their own diameters; epistoma deeply sinuate; upper lobes of eye moderate, separated by about five times their own width; antennæ nearly as in *alutaceus*. *Prothorax* rather elongate, about three-fifths wider than long; apex rather strongly, evenly emarginate in circular arc; base transverse, the sinuations distinct; sides rather strongly convergent from base to apex, strongly arcuate especially toward base; disk widest before the base, sparsely and very minutely punctate toward the middle, much more coarsely and densely so toward the sides where the punctures are moderate in size, deep and generally separated by their own diameters. Scutellum as in *alutaceus*. *Elytra* from one-third to one-half longer than wide, just perceptibly wider, and about two and three-fourths times longer than the prothorax; sides broadly but distinctly arcuate, together gradually narrowed behind and somewhat acutely rounded at apex; disk with wide deeply impressed striæ, the striæ very coarsely punctured, the punctures circular, deeply perforate, not much wider than the striæ and distant by from two to four times their own

diameters; intervals rather distinctly convex, about four times as wide as the strial punctures, sparsely and very minutely punctate. *Abdomen* polished, longitudinally rugulose toward base, sparsely, finely punctate, the pubescence very short, sparse and inconspicuous. *Legs* moderate; tarsi long.

Male.—Anterior tarsi strongly, intermediate moderately dilated, nearly as in *alutaceus:* abdomen very feebly impressed or flattened in the middle toward base, the fifth segment almost completely unmodified.

Length 6.7–7.0 mm.; width 3.2–3.4 mm.

Florida (Biscayne Bay). Mr. Schwarz.

This species is also exceedingly distinct in all of its characters, being readily distinguishable from *alutaceus* by its coarser punctuation, visible although extremely short pubescence and strongly punctured elytral striæ. The female is a little more robust than the male, with relatively shorter elytra.

3 **B. metallicus** Fabr.—Syst. El. I, p. 143.—Oblong-oval, rather convex, strongly shining with æneous lustre; pubescence very fine, moderate in length, recumbent, cinereous, rather sparse, easily removable and not conspicuous. *Head* strongly transverse, rather finely but deeply punctate, the punctures smaller anteriorly, distinctly separated; upper lobe of eyes moderate; antennæ rather slender, moderately clavate, the second joint a little longer than wide and fully two-thirds as long as the third, the latter but very slightly longer than the fourth. *Prothorax* about three-fourths wider than long, rather strongly narrowed from base to apex; sides more strongly arcuate at apical third, nearly straight toward base and apex, the latter broadly emarginate, the angles anteriorly prominent; base transverse, the lateral sinuations strong; disk very finely and sparsely punctate toward the middle, much more coarsely and densely so toward the sides where the punctures are generally separated by scarcely more than their own widths; basal foveæ distinct. Scutellum well developed, very slightly wider than long, minutely punctate. *Elytra* fully three times as long as the prothorax and, behind the middle, just perceptibly wider, together rather obtusely rounded behind; disk without distinctly impressed striæ except toward the suture, where they become very feebly impressed, the strial punctures moderate in size, widely interrupted in sets of one to four or five, those composing the sets rather approximate and separated by about their own diameters; intervals four to five times as wide as the strial punctures, flat, sparsely and very finely punctate. *Abdomen* polished, feebly, longitudinally rugose, very finely, rather sparsely punctate; pubescence fine, sparse, moderate in length, not conspicuous. *Legs* short, the tarsi long.

Male.—Anterior tarsi strongly, the intermediate feebly dilated and densely, finely spongiose beneath; abdomen very narrowly, feebly flattened in the middle toward base, the impression of the fifth segment small, round and rather deep.

Length 4.2–4.8 mm.; width 1.8–2.1 mm.

Canada; Rhode Island; Pennsylvania; Florida.

This is an abundant species, distinguishable by its bright æneous lustre, rather oval form, sparse pubescence and several other characters. The hind wings are well developed, being fully as long as the elytra.

I have before me a well-defined geographical variety of this species from southern Florida. It is much smaller, narrower, more parallel, rather more depressed and with shorter, more parallel-sided and much more sparsely punctate prothorax, the punctures toward the sides being generally separated by fully twice their own diameters. To avoid an increase of names this may be considered as *æneolus* Melsh (Proc. Ac. Phil., III, p. 66). Length 3.7–4.0; width 1.4–1.6 mm.

4 **B. interruptus** Say.—*Opatrum interr.*: Journ. Ac. Phil., III, p. 264; *luridus* Muls.: Ann. Soc. Agr. Lyons, 1859, p. 193.—Oblong, rather robust and convex, black, the elytra more or less piceous, moderately shining or subalutaceous; pubescence rather long and dense, cinereous, conspicuous but easily removable. *Head* transverse, feebly convex, somewhat finely and densely punctate; upper lobes of eye moderate, separated by about five times their own width; epistoma broadly, deeply sinuate; antennæ short and slender, gradually and distinctly clavate toward apex, third and fourth joints subequal in length. *Prothorax* about three-fourths wider than long, very feebly narrowed from base to apex, the sides for two-thirds the length from the base almost straight and just visibly convergent, then broadly, roundly subangulate and more strongly convergent to the apical angles, which are rather prominent and acute; apex broadly emarginate, subtruncate except near the angles; base broadly arcuate in the middle, distinctly sinuate laterally, the basal angles acute and extending posteriorly slightly beyond the middle lobe; disk very deeply and not very finely punctate, the punctures moderately dense toward the middle, very dense laterally; basal foveæ well marked. Scutellum moderate, minutely punctate. *Elytra* about one-half longer than wide, not distinctly wider, and rather less than three times longer than the prothorax, rather abruptly and obtusely rounded behind; sides almost straight; disk with very fine, just visibly impressed striæ which are very finely and approximately punctured, the series more or less interrupted; intervals sparsely and rather coarsely punctate. *Abdomen* polished, finely and rather sparsely punctured, the pubescence moderate in length, fine, rather sparse but distinctly visible. *Legs* and tarsi moderate in length.

Male.—Anterior tarsi strongly, intermediate more feebly dilated and densely spongy-pubescent beneath; abdomen narrowly and almost imperceptibly flattened in the middle toward base.

Length 4.6–5.2 mm.; width 2.0–2.4 mm.

New York; Minnesota; Colorado; Wyoming.

The series before me represents a wide range of distribution and exhibits more or less variation, chiefly in coloration and in the extent of interruption of the elytral series. In some specimens, more especially the eastern, the striæ are nearly as widely and completely broken up as in *metallicus*, while those from Colorado have almost completely continuous series. The punctuation of the pronotum is rather denser in the western representatives, being sometimes almost subconfluent toward the sides, and the pubescence is generally a little denser. One specimen from New York is as strongly æneous as any specimen of *metallicus* which I have seen, but is more alutaceous in lustre.

This is an abundant species, distinguishable from *metallicus* by its broader, more oblong form, more parallel and more densely punctate prothorax and finer less interrupted strial punctuation.

5 **B. fuscus** n. sp.—Elongate-oval, rather strongly convex and shining, piceous, the elytra paler, dark red-brown; pubescence short, sparse, moderately coarse, dark fulvous in color, not very conspicuous. *Head* feebly convex, rather finely, moderately densely punctate; upper lobes of eye rather large, separated by from four and one-half to five times their own width; antennæ somewhat robust, gradually and rather strongly incrassate toward apex, the third joint very much shorter than the next two. *Prothorax* about two-thirds wider than long, the apex very distinctly narrower than the base, broadly, feebly emarginate in circular arc, the apical angles not distinctly rounded; base transverse, the sinuations broad and rather strong; basal angles obtuse but not at all rounded: sides almost evenly and feebly arcuate; disk densely punctured toward the sides where the punctures are scarcely in mutual contact, sparsely so toward the middle, the punctuation not very coarse. *Elytra* very slightly wider than the prothorax and generally rather more than three times as long; sides parallel and very feebly arcuate; disk with rather coarse and distinctly impressed striæ which are very coarsely punctate, the punctures very deep and perforate, circular and generally rather distant, being separated by nearly twice their own diameters; intervals very feebly convex, four to five times as wide as the strial punctures, sparsely and somewhat coarsely punctured. *Abdomen* polished, sparsely and rather coarsely punctured, the pubescence moderate in length, very sparse, fine, pale but inconspicuous. *Legs* moderate in length, rather robust.

Male.—Anterior tarsi strongly dilated, the second joint distinctly longer and rather wider than the third; intermediate much less strongly but distinctly dilated; both pairs with densely but rather coarsely squamulose soles; abdomen rather feebly but distinctly impressed in the middle toward base, the punctuation not very much denser toward the middle of the first segment.

Length 4.5–5.0 mm.; width 1.8–2.1 mm.

Texas (Austin).

This species is abundant in June in the valley of the Colorado River of Texas, and although resembling *castaneus* somewhat, may be easily distinguished by its generally more convex and polished surface, sparser, rather finer and much less rugulose punctuation of the pronotum and more feebly rounded sides of the latter, larger eyes, sparser pubescence, finer and sparser abdominal punctuation and several other characters. The hind wings are well developed.

6 **B. longulus** Lec.—Ann. Lyc. Nat. Hist. N. Y., V, p. 147.—Oblong-elongate, parallel, depressed, polished, piceous-black; legs dark rufous; pubescence very short, stiff and sparse, pale flavo-cinereous but not at all conspicuous. *Head* moderately transverse, feebly convex, not very coarsely, densely punctate, the punctures being densely crowded at the edges; upper lobe of eyes rather larger than usual; antennæ rather long and slender, gradually and feebly incrassate toward apex, third joint very much shorter than the next two together, seventh much longer than wide, eighth scarcely as wide as long. *Prothorax* nearly two-thirds wider than long, the apex but very slightly narrower than the base; sides very strongly arcuate, straight near the base, the latter transverse, the lateral sinuations rather feeble but distinct; basal angles right, rather prominent, not in the least rounded; apex broadly, rather strongly emarginate in circular arc; disk widest at about the middle, moderately coarsely punctate, the punctures decidedly sparse toward the middle, denser but not contiguous toward the sides; basal impressions rather distinct. Scutellum rather small, the polished margin slightly depressed. *Elytra* nearly three times as long as the prothorax, equal in width to the latter, just visibly wider in the female; sides feebly arcuate, rather obtusely, parabolically rounded at apex; disk coarsely and rather strongly striate, the striæ with large deep perforate punctures which are generally separated by a little less than twice their own diameters; intervals feebly convex, coarsely and sparsely punctured. *Abdomen* sparsely and coarsely punctate, the pubescence short, flavate, very sparse and not conspicuous. *Legs* rather long.

Male.—Anterior tarsi quite moderately, the intermediate very feebly dilated; both pairs finely, densely spongy-pubescent beneath; abdomen rather broadly, deeply excavated in the middle toward base, the punctures slightly finer and denser along the middle of the first segment, fifth with an oval apical fovea.

Length 5.8–6.8 mm.; width 2.2–2.6 mm.

California; Arizona (Yuma).

A conspicuously distinct species, easily known by its rather elongate parallel depressed form, highly polished integuments, very short and sparse pubescence, and coarse elytral and abdominal punctures. The wings are well developed, extending almost to the apex of the elytra.

In this species the pronotal hypomera are not distinctly impressed, and in several other characters it makes a closer approach to Mecysmus than any other.

7 **B. validus** n. sp.—Elongate-oval, moderately convex, dark blackish-castaneous; legs piceo-rufous; integuments rather distinctly alutaceous, the elytra strongly but very minutely granulato-reticulate; pubescence rather long, especially toward the elytral apex, moderately coarse, pale flavate, very sparse but distinct. *Head* transverse, feebly convex, rather coarsely, deeply punctate, the punctures finer and denser toward the edges; upper lobes of eye large, separated by scarcely four times their own width; antennæ rather slender, gradually and feebly dilated toward apex, third joint rather long, nearly as long as the first two together and but slightly shorter than the fourth and fifth, seventh much longer than wide. *Prothorax* nearly three-fourths wider than long, the apex very much narrower than the base, the sides evenly and very strongly arcuate throughout; base transverse, the lateral sinuations distinct; disk much wider just behind the middle than at base, the lateral basal impressions completely obsolete, the punctures rather coarse, sparse near the middle where they are separated by about twice their own widths, thence gradually dense toward the sides but not very coalescent. *Elytra* fully three times as long as the prothorax and, at apical two-fifths, very slightly wider than the latter; disk with rather feebly impressed striæ which are rather coarsely punctate, the punctures deep, perforate and generally separated by about twice their own diameters; intervals five or six times as wide as the strial punctures, nearly flat, finely and sparsely punctured. *Abdomen* finely and very sparsely punctate, the pubescence moderate in length, very sparse, flavate. *Legs* moderate.

Male.—Anterior and intermediate tarsi nearly as in *longulus;* abdomen rather narrowly and feebly impressed in the middle toward base, the punctures broadly dense and rather coarser toward the middle of the basal segment, fifth with a rounded impressed apical fovea.

Length 7.5 mm.; width 3.2 mm.

California (southern).

The single specimen serving as the type of this species differs from the male of *longulus* in its more convex upper surface, alutaceous lustre, much longer pubescence, finer, sparser punctuation of the abdomen, larger size and several other characters. The punctures of the elytral striæ are relatively not quite as coarse as in *longulus*, although of the same general nature, and the intervals are more finely punctured.

8 **B. fortis** Lec.—Proc. Am. Phil. Soc., XVII, 1878, p. 420; *interstitialis* Champ.: Biol. Cent.-Amer., IV, Pt. i, p. 125; *punctulatus* Duv.: Sag. Hist. de Cuba, VII (Sp. ed.), p. 60, 1856 (*nom. præocc.*)—Oblong-oval, rather feebly convex, black; integuments shining; pubescence moderate in length, fine,

subrecumbent, grayish-brown in color, easily removable, not very dense but distinct in perfect specimens. *Head* rather coarsely, moderately densely punctate, the punctures a little smaller on the epistoma, the latter broadly, strongly sinuate at apex; upper lobes of eye rather large, circular, separated by scarcely more than four times their own width, almost completely surrounded by a fine deep groove; antennæ rather robust, gradually and not very strongly incrassate near the apex, third joint much shorter than the next two, fourth much longer than the fifth. *Prothorax* about three-fifths wider than long, slightly narrowed from base to apex; sides evenly and rather feebly arcuate throughout; apex rather strongly, evenly emarginate in circular arc; base transverse, the lateral sinuations broad and distinct; disk densely punctate, the punctures moderate in size, deep, generally not tending to coalesce longitudinally. Scutellum rather small, polished, minutely, not densely punctate. *Elytra* scarcely perceptibly wider than the prothorax and nearly three times as long; sides parallel and very feebly arcuate, more noticeably so posteriorly, together somewhat acutely rounded behind, coarsely striate, the striæ deeply impressed, coarsely deeply and rather approximately punctate, the punctures circular, perforate and separated generally by about their own diameters; intervals from three to four times as wide as the punctures, convex, rather coarsely deeply and somewhat sparsely punctured. *Abdomen* polished, rather coarsely and sparsely punctate, the pubescence short, fine, very sparse and inconspicuous. *Legs* moderate, the tarsi unusually long.

Male.—Anterior tarsi strongly dilated, the basal joint much narrower than the second, equilatero-triangular, second and third transverse, equal in width; intermediate distinctly but much more feebly dilated, the first joint nearly as wide as, and much longer than the second; both pairs densely spongy-pubescent beneath; abdomen toward base narrowly and distinctly impressed, fifth segment very feebly impressed.

Length 6.4–7.5 mm.; width 2.8–3.3 mm.

Florida; Texas (Galveston and El Paso).

There can be no doubt of the synonymy here proposed. The species resembles *dilatatus* but differs in its somewhat narrower form, rather more shining surface, coarser punctuation, sparser and not longitudinally rugulose pronotal punctuation and longer narrower prothorax, with less strongly arcuate sides. The specimens collected by myself at the points in Texas named above do not differ in the minutest detail from the unique Florida type of LeConte.

This is a very widely diffused species, occurring over the entire southern portion of the North American continent.

9 **B. dilatatus** Lec.—Ann. Lyc. Nat. Hist. N. Y., V, p. 146.—Oblong, rather feebly convex, black, rather feebly shining; pubescence moderate in length, subrecumbent, somewhat stout, consisting of pale flavo-cinereous and dark piceous-brown hairs confusedly intermingled, somewhat dense and rather conspicuous, persistent. *Head* rather small, feebly convex, rather coarsely,

densely punctate, the punctures finer anteriorly; epistoma broadly, deeply sinuate; upper lobes of eye rather large, circular, distinctly convex, almost surrounded by a deep groove, distant by scarcely more than four times their own diameters; antennæ nearly as in *fortis*. *Prothorax* rather more than twice as wide as the head, four-fifths wider than long, feebly narrowed from base to apex; sides strongly arcuate, more distinctly so at basal third; apex rather strongly emarginate in circular arc; base transverse, the lateral sinuations broad and distinct; basal angles very narrowly but distinctly rounded; disk very feebly convex, widest at basal third, rather finely, very deeply and extremely densely punctate throughout, the punctures forming imperfect longitudinal rugæ. Scutellum small, polished, minutely not densely punctate. *Elytra* about three-fourths longer than wide, equal in width to the prothorax and rather less than three times as long; sides parallel and very feebly arcuate, together somewhat acutely rounded behind; disk rather finely striate, the striæ very feebly impressed toward the suture, finely punctured, the punctures round, moderately deep, becoming distinctly larger and deeper laterally, generally distant by from one-half more than to twice their own diameters; intervals nearly flat, from five to six times as wide as the striæ, very finely, rather sparsely punctate. *Abdomen* polished, finely, rather sparsely punctate, the pubescence fine, short, sparse and inconspicuous. *Legs* and tarsi rather long.

Male.—Anterior tarsi strongly dilated, the basal joint distinctly narrower than the second, a little wider than long, triangular, second and third transverse, the former slightly the wider; intermediate tarsi very feebly dilated, first and second joints equal in width, both pairs with dense pads of coarse spongy pubescence beneath; abdomen narrowly and feebly impressed in the middle toward base, the fifth segment with a feeble rounded impression.

Length 7.0–7.7 mm.; width 3.1–3.4 mm.

Southern California; Arizona.

A well-marked species, one of the largest of the genus, differing from *fortis*, the only one to which it is allied, in addition to the characters mentioned under that species, in its narrowly rounded basal angles of the prothorax and slightly in the nature of the pubescence, this being generally more uniform and homogeneous in *fortis*. In the female of both of these species the anterior tarsi are decidedly robust, but simply densely setose beneath. In *fortis* the female is decidedly more robust than the male, this being more noticeable than in *dilatatus*. In both, the hind wings are rather well developed, being nearly as long as the elytra.

10 **B. sonoræ** n. sp.—Oblong, robust, moderately convex, dark reddish-brown in color, the integuments dull and finely alutaceous, being very minutely but strongly granulato-reticulate throughout; pubescence short, very robust, dense, bright reddish-yellow in color and conspicuous. *Head* very deeply,

densely, somewhat coarsely punctate; upper lobes of eye moderate, separated by about five times their width; antennæ moderate, gradually and feebly incrassate toward apex, the third joint much shorter than the next two. *Prothorax* nearly four-fifths wider than long, the apex scarcely more than three-fourths as wide as the base, the latter transverse, the sinuations strong; basal angles right and very distinctly, although narrowly, rounded; sides evenly and rather strongly arcuate; disk widest at the base, finely and very densely punctate throughout, the punctures not greatly coalescent. *Elytra* behind the middle a very little wider than the prothorax, about two and one-half times as long as the latter; sides feebly arcuate, broadly, parabolically rounded behind; disk rather finely striate, the striæ somewhat abruptly and distinctly impressed, the punctures moderately coarse, circular, deep, perforate and generally very close, separated by scarcely their own widths; intervals wide, flat, fully seven times as wide as the strial punctures, very finely but not very sparsely punctured. *Abdomen* shining, sparsely, somewhat finely punctate, the pubescence rather long, fine, very sparse but distinct. *Legs* rather long and slender.

Male.—Unknown.

Length 6.3 mm.; width 3.0 mm.

Mexico (Sonora).

The unique specimen is a female but is quite distinct from anything known to me, and apparently not described in the Biologia Centrali-Americana. From the fact that the anterior tarsi of this female are rather robust or subdilated, I am disposed to place it in the section with strongly dilated male tarsi. It may be easily known by its robust form—somewhat resembling *dilatatus*,—its smooth but very dull surface, fine, dense pronotal punctuation, evenly, closely punctured elytral striæ, very wide flat intervals and the coarse short ochreous-yellow and abundant pubescence.

11 **B. castaneus** n. sp.—Elongate-oval, somewhat depressed, moderately shining, dark blackish-brown; legs dark rufo-piceous; pubescence moderate in length and density, rather fine, dark fulvo-piceous and not conspicuous. *Head* densely deeply punctate, moderately convex; epistoma very broadly, rather feebly sinuate; upper lobes of eye moderate or rather large, separated by nearly five times their width; antennæ rather slender toward base, gradually and moderately incrassate toward apex, the third joint very much shorter than the next two, eighth nearly as large as the ninth. *Prothorax* not very strongly transverse, about one-half wider than long, the apex much narrower than the base, broadly rather strongly emarginate in circular arc; base transverse, the sinuations strong; sides almost evenly and strongly arcuate; basal angles obtuse and generally very narrowly rounded; disk very deeply, rather coarsely and extremely densely punctate, the punctures strongly, longitudinally coalescent, forming short rugæ toward the sides, generally not noticeably sparser in the middle. Scutellum moderate, the polished margin distinct.

Elytra subequal in width to the prothorax and about three times as long; sides parallel and just visibly arcuate; apex parabolically rounded; disk with coarse but rather feebly impressed striæ which are coarsely and deeply punctate, the punctures circular, perforate, generally separated by rather less than twice their own diameters; intervals nearly flat, finely and sparsely punctured. *Abdomen* moderately densely and not very finely punctured, the pubescence moderately dense, distinct but not conspicuous. *Legs* robust.

Male.—Anterior tarsi strongly dilated, the second joint much longer than the third; intermediate more feebly but distinctly dilated; abdomen narrowly and very feebly flattened in the middle toward base.

Length 4.7–5.8 mm.; width 1.9–2.5 mm.

Texas (El Paso); Arizona (Tucson); Colorado.

The typical forms of this species are from El Paso; those from Tucson differ, and apparently form two varieties, in one of which the strial punctures are more approximate, and in the other much coarser with more deeply impressed striæ. The two from Colorado are black, and have the striæ finer and more feebly impressed, the strial punctures being very much smaller. I am quite certain that these variations indicate several distinct species, but the material before me is not sufficiently extensive to enable me to define them exactly.

The wings are well developed and as long as the elytra.

12 **B. histricus** n. sp.—Elongate-oval, widest behind the middle of the elytra, very dark brownish-piceous, moderately convex, rather strongly shining; pubescence moderate in length and density, somewhat coarse, dark fulvous, not conspicuous. *Head* feebly convex, rather finely punctured, not very densely so toward the middle; upper lobes of eye very large and conspicuous, separated by scarcely four times their width; antennæ rather robust, gradually but unusually feebly incrassate toward apex, third joint much shorter than the next two. *Prothorax* fully two-thirds wider than long, the apex broadly, distinctly emarginate and noticeably narrower than the base, the latter transverse, the lateral sinuations very wide, feeble but distinct; basal angles very slightly obtuse but not in the least rounded; sides almost evenly but feebly arcuate throughout; disk rather finely, very densely punctate, the punctures decidedly sparser toward the middle and crowded but not very coalescent laterally. Scutellum moderate. *Elytra* fully three times as long as the prothorax and somewhat distinctly wider; sides feebly arcuate; apex somewhat strongly, parabolically rounded; disk with rather coarse but extremely feebly impressed striæ which are somewhat coarsely punctate, the punctures circular, deep and perforate, generally separated by from one-half more than to twice their own diameters; intervals flat, sparsely, rather finely punctured. *Abdomen* polished, finely and sparsely punctate, the pubescence rather long, pale and somewhat conspicuous. *Legs* not very robust.

Male.—Anterior tarsi moderately strongly dilated, the second joint not greatly exceeding the third in length, the latter strongly emarginate; intermediate somewhat feebly but distinctly dilated; abdomen narrowly and very distinctly impressed in the middle toward base.

Length 4.8–5.8 mm.; width 2.0–2.4 mm.

California (Newhall); Lower California.

The two representatives of this species do not indicate any great variability other than that due to sex. The species may be distinguished from *castaneus* by its greater convexity, still larger and very conspicuous eyes, finer, less coalescent punctuation of the pronotum, more feebly arcuate sides of the latter and several other less important characters. The hind wings protrude slightly beyond the elytra in the type.

13 **B. pratensis** Lec.—Col. of Kans., 1859, p. 15.—Oval, very convex, black; legs piceous; lustre rather dull and alutaceous; pubescence somewhat dense, short and very robust, pale fulvo-cinereous and conspicuous. *Head* finely, deeply, very densely and somewhat confusedly punctate, the punctures becoming very minute anteriorly and at the sides; epistoma broadly, moderately sinuate; upper lobe of eyes small; antennæ rather slender, outer joints gradually incrassate, third shorter than the next two together. *Prothorax* but slightly more than one-half wider than long, rather strongly narrowed from base to apex; sides evenly and strongly arcuate; base transverse, moderately bisinuate; basal angles not rounded; apex very feebly emarginate in circular arc; disk very densely, not very coarsely punctate, the punctures tending to coalesce longitudinally toward the sides, distinctly separated in the middle. Scutellum rather small. *Elytra* scarcely more than two and one-half times as long as the prothorax and, behind the middle, a little wider than the latter, rather coarsely striate, the striæ strongly impressed especially toward the sides, rather coarsely and very closely punctate, more finely so toward the suture; intervals finely and rather densely punctured. *Abdomen* polished, somewhat coarsely and not very sparsely punctured; pubescence very short, sparse and inconspicuous. *Legs* rather slender.

Male.—Anterior tarsi strongly, middle more feebly, dilated; abdomen rather narrowly and feebly impressed in the middle toward base.

Leng h 4.8–6.0 mm.; width 2.2–2.8 mm.

Kansas; Colorado; Nebraska; Texas.

The extensive series before me is rather heterogeneous and almost undoubtedly comprises several distinct varietal forms, the description refers to the typical form from Kansas, which is rather smaller than those from Colorado and very much smaller than the Texan representatives. There is a marked divergence, also, in the closeness of the strial punctuation, the punctures generally being sepa-

rated by rather less than their own diameters toward the suture, but in one specimen from Nebraska they are separated by from two to three times this amount. The pronotal punctuation is very fine and dense in the Texan forms, with but little tendency to coalescence laterally. There are apparently no stable characters, however, upon which to base recognizable species and I therefore leave this subject for future investigation.

The wings are extremely rudimentary, consisting of a very small parallel subopaque cellular fillet, devoid of venation, but slightly more than one-half as long as the prothorax, one-fifth as long as the elytra, and rather more than twice as long as wide. The elytra are subconnate.

14 **B. oregonensis** n. sp.—Oblong-oval, rather strongly convex, alutaceous in lustre, grayish-black; legs dark rufous; pubescence moderate in length, rather sparse but coarse, pale yellowish-cinereous in color and very distinct, easily removable. *Head* moderately transverse and convex, rather finely and feebly punctate, the punctures a little coarser and longitudinally subcoalescent toward the middle of the vertex; upper lobe of eyes moderate, surrounded except posteriorly by a very deep impressed groove; antennæ moderate, gradually and feebly incrassate toward tip, third joint short, not twice as long as the second and very much shorter than the next two, joints three to five uniformly and very rapidly decreasing in length. *Prothorax* rather transverse, about three-fourths wider than long, very feebly narrowed from base to apex; sides almost evenly and rather strongly arcuate in the male, straighter or even very broadly sinuate toward base, the latter transverse, the lateral sinuations strong, the basal angles right, not at all rounded and rather prominent; disk finely, very densely and rather feebly punctured, a little more sparsely so toward the middle, tending to coalesce longitudinally toward the sides. Scutellum moderate, ogival. *Elytra*, behind the middle, quite distinctly wider than the prothorax, scarcely three times as long as the latter; sides distinctly arcuate posteriorly; disk very finely striate, the striæ exceedingly feebly impressed and not much more strongly so externally in the female, but rather strongly impressed throughout in the male, very finely and closely punctured throughout; intervals usually slightly convex in the male and flat in the female, very finely and rather sparsely punctate. *Abdomen* polished, finely, not densely punctate, the pubescence short and fine, pale and distinct but not conspicuous. *Legs* rather slender.

Male.—Anterior tarsi strongly dilated, the second joint decidedly longer than the third; intermediate very feebly dilated; both pairs rather coarsely and not very densely squamulose beneath; abdomen rather broadly and feebly but distinctly impressed in the middle toward base, fifth segment strongly impressed.

Length 5.0–5.5 mm.; width 2.1–2.4 mm.

Oregon.

With the typical representatives from Oregon I have associated two females which, however, probably represent distinct but closely allied species. One of these from Benicia, California, is much larger and wider, with rather deeper more even pronotal punctuation, very dense throughout but not coalescent, the other from southern Idaho, having the pronotal punctuation quite sparse toward the middle and rapidly much denser toward the sides; this specimen is also larger and very convex, with the abdomen dull. In the absence of males I think it better to leave these species undescribed, and the above description and measurements apply only to the Oregon specimens.

This species is not closely related to any other, but resembles *substriatus* in some of its characters. The wings are rather well developed, being but slightly shorter than the elytra.

15 **B. niger** n. sp.—Oblong-elongate, parallel, rather depressed, black; legs dark rufo-piceous; integuments somewhat shining; pubescence short, fine, dark piceo-fulvous, rather abundant but very inconspicuous. *Head* strongly transverse, feebly convex, broadly, distinctly sinuate at apex, deeply, moderately coarsely and very densely punctate; upper lobe of eyes rather small; antennæ somewhat slender, gradually and moderately incrassate toward apex, third joint much shorter than the next two, seventh longer than wide, eighth triangular, as wide as long, tenth slightly wider than long. *Prothorax* about two-thirds wider than long, the apex distinctly narrower than the base; sides evenly and rather strongly arcuate throughout; base transverse, the sinuations feeble but distinct, the basal angles rather broadly obtuse but generally not appreciably rounded; apex extremely feebly incurvate, the apical angles distinctly and rather broadly rounded; disk rather coarsely deeply and very densely punctate throughout, the punctures very coalescent longitudinally toward the sides. Scutellum small. *Elytra* about three times as long as the prothorax and equal in width to the latter; sides parallel, scarcely visibly arcuate, parabolically and not very acutely rounded behind; disk very finely striate, the striæ feebly impressed and very finely, rather feebly punctate, the punctures generally separated by about one-half more than their own diameters; intervals flat, very finely, sparsely punctured. *Abdomen* coarsely and not very sparsely punctate, the pubescence moderate in length, very fine, sparse, dark in color and not at all conspicuous. *Legs* somewhat short and robust.

Male.—Anterior tarsi strongly dilated, the second and third joints subequal; intermediate much more feebly but distinctly dilated; abdomen with an elongate-oval feeble impression before the middle, in which the punctuation is not distinctly denser.

Length 4.8–5.6 mm.; width 1.8–2.2 mm.

Arizona (Peach Springs).

The wings are moderately developed, rather distinctly hyaline and iridescent, slender, a little more than three times as long as wide, distinctly veined, about one-half longer than the prothorax and nearly three-fourths as long as the elytra.

This species is not closely allied to any other here described and may be easily recognized by its parallel depressed form, very fine elytral and coarse abdominal punctuation, and structure of the hind wings. From *rufipes*, which it most nearly resembles in size of the wings, it may be at once separated by its more depressed form, shorter prothorax, feebler, finer elytral striæ and darker legs.

16 **B. cribricollis** n. sp.—Oblong, rather strongly convex, moderately shining, black; legs rufous; pubescence rather long, fine, somewhat sparse, dark piceo-fulvous and not conspicuous. *Head* strongly transverse, feebly convex, very deeply, rather coarsely and densely punctate; upper lobe of eye moderate; antennæ rather robust, gradually but very moderately incrassate through the four outer joints, third rather less than twice as long as the second and very much shorter than the next two together. *Prothorax* moderately transverse, scarcely two-thirds wider than long, feebly narrowed from base to apex, the sides evenly and strongly arcuate throughout; base transverse, the sinuations rather feeble; basal angles distinctly obtuse and very narrowly rounded; apex very feebly emarginate in circular arc, the apical angles narrowly although quite distinctly rounded; disk evenly convex, coarsely, very deeply and extremely densely punctate throughout, the punctures but slightly coalescent toward the sides. Scutellum moderate, rather transverse. *Elytra* scarcely three times as long as the prothorax and, behind the middle, very slightly wider, broadly, parabolically rounded behind; sides feebly arcuate; disk finely striate, the striæ rather broadly but moderately impressed, much more strongly so toward the sides and apex, somewhat finely but deeply and very distinctly punctured, the punctures generally separated by a little less than twice their own diameters; intervals very feebly convex, much more strongly so laterally, very finely and rather sparsely punctate. *Abdomen* polished, rather coarsely and moderately sparsely punctate, the pubescence rather short and sparse but pale flavo-cinereous and distinct. *Legs* robust.

Male.—Anterior tarsi moderately dilated, the second and third joints subequal, the latter with the apical emargination rather broad and feeble; intermediate very feebly dilated; both pairs rather coarsely but densely squamulose beneath; abdomen broadly and very feebly impressed in the middle toward base.

Length 5.8 mm.; width 2.5 mm.

Arizona.

This species is quite distinct from any other known to me in its coarse deep and very dense, but at the same time not greatly coales-

cent, pronotal punctuation, by the unusually coarse abdominal punctures and, for the present group, unusually feebly dilated anterior tarsi of the male, the latter character allying it with *longulus* and *validus*. I have not been able to examine the wings as the type is unique.

17 **B. fuliginosus** n. sp.—Oblong-elongate, parallel, strongly convex, rather dull, piceous-black; legs dark rufo-ferruginous; pubescence short, fine, dark subpiceous, inconspicuous. *Head* feebly convex, rather finely punctate, densely so laterally but rather more coarsely and decidedly more sparsely along the middle throughout the length; upper lobe of eyes moderate, rounded; antennæ moderate, gradually and distinctly incrassate through the last four joints, third much shorter than the next two. *Prothorax* rather less than one-half wider than long, slightly narrower at apex than at base, the sides very evenly and moderately arcuate throughout; base transverse, the sinuations rather strong; basal angles right, not at all rounded; apex feebly, evenly emarginate in circular arc; disk evenly convex, very densely, rather finely punctured, a little more sparsely so toward the middle, the punctures toward the sides having but slight tendency to coalesce, although extremely dense. Scutellum moderate, densely punctate, a longitudinal line and the apex broadly polished and impunctate. *Elytra* scarcely wider, and fully two and one-half times longer than the prothorax, evenly rounded at apex; sides feebly arcuate; disk very finely striate, the striæ very feebly impressed but a little more distinctly so laterally, very finely but deeply punctured, the punctures very unevenly but in general remotely spaced, separated by from two to four times their own diameters; intervals nearly flat, finely and rather sparsely punctate. *Abdomen* somewhat dull, finely and not very sparsely punctate, the pubescence very short, rather fine, somewhat abundant, pale flavo-cinereous and distinct. *Legs* moderate in length, rather robust.

Male.—Anterior tarsi very strongly dilated, the second joint not much longer than the third, the latter deeply emarginate above at apex; intermediate distinctly dilated, more elongate, but scarcely more than two-thirds as wide as the anterior; both pairs densely spongiose beneath; abdomen very broadly, feebly impressed in the middle toward base, with the punctures slightly but indefinitely denser.

Length 6.0 mm.; width 2.5 mm.

California (Sacramento).

The singular and unusual median impunctate line of the scutellum may possibly be accidental in the only known specimen.

This species is quite distinct and may be distinguished by its dull lustre, very feebly impressed striæ which are very remotely punctured, by the short pubescence especially of the abdomen, and other

characters. The anterior tarsi of the male are rather more strongly dilated than in any other species.

The wings are well developed, being nearly as long as the elytra.

18 **B. rufipes** n. sp.—Elongate-oval, strongly convex, rather dull, piceous-black; legs rufo-ferruginous; under surface piceous to rufo-ferruginous; pubescence fine, rather long, moderately dense, dark piceous in color and very inconspicuous. *Head* wider than long, feebly convex, strongly and densely punctate; epistoma rather narrowly and deeply sinuate; upper lobe of eye rather small; antennæ rather long and slender, the last three joints forming a somewhat abrupt loose club, third joint twice as long as the second, much longer than the fourth, eighth subtriangular, nearly as long as wide, eleventh somewhat longer than wide and slightly narrower than the tenth. *Prothorax* somewhat elongate, scarcely one-half wider than long, the sides very feebly convergent from base to apex, evenly and rather strongly arcuate; base transverse, the sinuations distinct; basal angles very slightly obtuse, not distinctly rounded; apex very feebly emarginate in circular arc; disk evenly convex, rather strongly, deeply, very densely punctate, the punctures a little sparser near the middle but not separated by more than their own diameters, very dense, sometimes contiguous but not distinctly coalescent toward the sides. Scutellum broadly parabolic. *Elytra*, behind the middle, a little wider than the prothorax, nearly three times as long as the latter; sides rather distinctly arcuate; apex parabolic; disk finely striate, the striæ rather distinctly impressed, more strongly so toward the suture but not noticeably toward the sides, finely and very approximately punctured in the female, more coarsely and distantly so in the male; intervals very feebly convex, very finely and sparsely punctate. *Abdomen* finely and rather sparsely punctate, rather coarsely but sparsely pubescent, the hairs very long, pale flavate and conspicuous. *Legs* rather short, the femora robust.

Male.—Anterior tarsi strongly dilated, the basal joint triangular and but slightly more than one-half as wide as the second, the latter about equal in length and width to the third, the latter broadly emarginate; intermediate rather strongly dilated; both pairs densely spongiose beneath; abdomen rather narrowly and feebly impressed in the middle toward base.

Length ♂ 5.0 mm., ♀ 5.0–6.0 mm.; width ♂ 1.9–2.1 mm., ♀ 2.2–2.6 mm.

California (San Diego); Arizona; Texas?

This species belongs to the San Diego fauna, perhaps extending through to Western Texas; it is represented in the middle coast regions of California by *elongatus*, in the high Sierras by *inquisitus*, and in the desert regions of the Humboldt Basin by *crassicornis*. It is remarkable, in common with *pulverulentus*, for the unusual difference in form and size between the male and female, the former being much the more slender; it is further distinguishable from its allies by its usually bright rufo-ferruginous legs, duller lustre and longer, paler and more conspicuous abdominal pubescence.

The wings are not so rudimentary as in its allies or *pulverulentus*, being rather wide, subhyaline, with two strong discal veins; they are fully one-half longer than the prothorax and two-thirds as long as the elytra.

19 **B. crassicornis** n. sp.—Oblong, the sides nearly parallel, rather robust, moderately convex, somewhat dull in lustre, black; legs dark rufous; pubescence short, rather abundant but dark fulvo-cinereous in color and not at all conspicuous. *Head* strongly transverse, feebly convex, deeply punctate, the punctures very dense, somewhat sparser and coarser toward the middle; upper lobe of eyes small; epistoma distinctly but moderately sinuate; antennæ unusually robust, the three last joints much wider and forming a strong loose club, third joint rather long, nearly as long as the next two combined, eighth distinctly wider than the seventh and wider than long, tenth rather wider than either the ninth or eleventh. *Prothorax* rather elongate, scarcely one-half wider than long, the apex but slightly narrower than the base; sides feebly arcuate, rather more strongly so in the middle and nearly straight toward base, the latter transverse, the sinuations moderate; basal angles not at all rounded; disk deeply, moderately coarsely and very densely punctate throughout, the punctures not decidedly coalescent laterally. Scutellum moderate, almost confluently punctured. *Elytra* subequal in width to the prothorax and two and one-half times as long, the sides very feebly arcuate, rather broadly, parabolically rounded behind; disk finely striate, the striæ rather widely feebly impressed, a little more strongly so externally and near the suture, very finely, approximately punctate; intervals very slightly convex, minutely, sparsely punctate. *Abdomen* shining, finely but not very sparsely punctate, the pubescence short, very fine, dark brownish in color and not at all conspicuous. *Legs* moderately robust.

Male.—Anterior tarsi strongly, the intermediate moderately, dilated, the second joint of the former longer and also somewhat wider than the third which is deeply emarginate; both pairs densely spongiose beneath; abdomen rather broadly, feebly impressed in the middle toward base, with the punctures narrowly denser along the middle of the first segment.

Length 5.6 mm.; width 2.3–2.4 mm.

Nevada (Reno).

Moderately abundant near the Truckee River. I was at first inclined to regard this as identical with *rufipes*, but more careful study convinced me that they cannot be associated together. The present species differs in its much finer, shorter abdominal pubescence, rather longer legs, in the fact that the male and female are nearly similar in form and size, and in the form of the wings which are nearly as in *inquisitus*, very slender and elongate, although decidedly less than one-half as long as the elytra.

The antennæ are distinctly more robust and, especially, with a

much broader club than in any of the allied species and the third joint is more elongate.

20 **B. elongatus** n. sp.—Elongate-oval, strongly convex, black; legs piceous-black; integuments dull; pubescence rather short, sparse, dark fulvo-cinereous and inconspicuous. *Head* transverse, feebly convex, rather finely, deeply, nearly evenly and very densely punctate; epistoma broadly and unusually feebly sinuate; upper lobe of eyes small; antennæ rather robust, very evenly, gradually but moderately incrassate from the seventh joint, third short, scarcely twice as long as the second and much shorter than the next two together, eleventh rather longer than wide, narrowly truncate at apex and scarcely visibly narrower than the tenth. *Prothorax* rather elongate, about two-fifths wider than long, very feebly narrowed from base to apex, the sides almost evenly and rather feebly arcuate; base transverse, the sinuations moderate; basal angles rather more than right, not at all rounded; apex feebly emarginate in circular arc; disk evenly convex, very densely punctate, the punctures fine toward the middle where they are generally separated by scarcely their own diameters, a little coarser, very dense and with a slight tendency to longitudinal coalescence laterally. Scutellum moderate, densely punctate. *Elytra*, just behind the middle, slightly wider than the prothorax, about two and two-thirds times as long as the latter, parabolically and somewhat broadly rounded behind; sides distinctly but broadly arcuate; disk very finely, feebly striate, the sutural and outer striæ very slightly more distinct, very finely feebly and approximately punctate; intervals nearly flat, finely and sparsely punctate. *Abdomen* shining, rather rugulose, finely, sparsely punctate, the pubescence short, fine, sparse, rather dark and not conspicuous. *Legs* rather long and slender.

Male.—Anterior tarsi very strongly dilated, the second joint much longer than the third; intermediate less strongly dilated; abdomen broadly and feebly impressed in the middle toward base; the punctures crowded and dense only in a small oval area in the anterior half of the basal segment.

Length 5.6 mm.; width 2.2 mm.

California (Lake Co.).

The two specimens before me are males, and from their narrow slender form it is probable that the female will prove to be robust as in *rufipes;* they indicate a species rather closely allied to *rufipes*, but differing conspicuously in the nature of the abdominal pubescence, also in the somewhat larger size and longer piceous-black legs. The antennæ are nearly as in *rufipes*, but are more gradually incrassate, the three outer joints not being at all abruptly wider as is the case in that species.

I have not been able to inspect the wings, but they are undoubtedly rudimentary.

21 **B. mœstus** Melsh.—Proc. Ac. Phila., III, p. 65.—Oval, slightly inflated behind, rather strongly convex, black, strongly shining; pubescence fine, short, pale yellowish-cinereous in color, not dense. *Head* transverse, feebly convex, very deeply, moderately coarsely and densely punctate, the punctures abruptly finer along the broadly sinuate epistomal apex; upper lobe of eyes moderate, rounded; antennæ black, robust, gradually incrassate toward apex, third joint scarcely twice as long as the second, much shorter than the next two, eleventh wider than long, fully as wide as the tenth. *Prothorax* nearly two-thirds wider than long, widest at two-fifths the length from the base; sides feebly convergent from base to apex, strongly, almost evenly arcuate, straighter or even feebly subsinuate toward base, the latter transverse, the lateral sinuations very strong, the basal angles slightly acute, not in the least rounded and rather prominent; apex broadly emarginate in circular arc, the angles not at all prominent and very narrowly rounded; disk very deeply and perforately punctate, the punctures finer and sparse toward the middle, coarser and denser but not at all contiguous or confluent toward the sides, usually abruptly very fine and sparse along the acute marginal bead, especially toward the base. Scutellum moderate, very finely punctate. *Elytra* with the sides very distinctly arcuate, especially behind the middle where they are distinctly wider than the prothorax, parabolically rounded at apex and about two and one-half times as long as the prothorax; disk with very fine feebly impressed striæ toward the suture, which become rapidly much coarser and more deeply impressed laterally; striæ finely punctate, more coarsely so laterally; punctures elongate and posteriorly evanescent, generally separated by twice their own widths; intervals very finely, somewhat sparsely punctured. *Abdomen* polished, finely, rather sparsely punctate, very sparsely clothed with short inconspicuous pubescence. *Legs* rather short, the tarsi long.

Male.—Anterior tarsi strongly dilated, the basal joint much wider than long and distinctly narrower than the second and third, the latter short, subequal, transversely crescentiform; middle tarsi very distinctly dilated, compact, the three basal joints equal in width; both pairs densely spongy-pubescent beneath; abdomen not distinctly modified.

Length 4.7–5.4 mm.; width 2.1–2.4 mm.

New Hampshire; Rhode Island; Virginia.

This, the only eastern species of the ordinary type, may be easily identified by its intense black color, shining, rather sparsely punctate integuments and prominent basal angles of the prothorax, as well as several other characters. The wings are not well developed, consisting of a long slender hyaline fillet, nearly one-half longer than the prothorax and three-fifths as long as the elytra.

22 **B. gregalis** n. sp.—Oblong-oval, moderately convex, black; antennæ piceous-black; legs dark rufo-piceous; integuments polished; pubescence fine, rather short and sparse, pale fulvo-cinereous and not conspicuous. *Head*

about two-fifths wider than long, not very coarsely but deeply punctate, the punctures rather elongate, distinctly separated transversely, but tending to coalesce longitudinally; epistoma broadly sinuate; upper lobe of eyes moderate or rather small, rounded; antennæ moderate, gradually incrassate toward apex, third joint about three-fourths longer than the second, much shorter than the next two together, eleventh as long as wide, truncate, rather distinctly wider than the ninth. *Prothorax* about three-fourths wider than long; sides feebly convergent from base to apex, moderately and very evenly arcuate throughout; base transverse, the lateral sinuations moderately distinct, the basal angles very slightly obtuse, not rounded but not prominent; apex broadly, evenly emarginate in circular arc; disk rather densely punctate, the punctures deep, moderate in size, somewhat elongate, not much sparser toward the middle, tending slightly to coalesce longitudinally throughout the disk, but distinctly separated transversely. Scutellum moderate. *Elytra* rather less than three times as long as, and, behind the middle, a little wider than, the prothorax; sides distinctly arcuate posteriorly, together evenly rounded at apex; disk finely striate, the striæ feebly impressed, not appreciably more deeply so toward the sides, finely punctured, the punctures feeble and generally separated by from one-half more than to twice their own diameters; intervals nearly flat, from four to five times as wide as the strial punctures, very finely and sparsely punctured. *Abdomen* polished, very finely and somewhat sparsely punctate, the pubescence rather long, moderately dense and distinct. *Legs* and tarsi moderate.

Male:—Anterior tarsi strongly dilated, the basal joint slightly wider than long, narrower than the second and third, the latter equal in width, transverse, the apex broadly sinuate toward the middle; intermediate rather feebly dilated; both pairs densely spongy-pubescent beneath; abdomen broadly and more or less feebly impressed in the middle toward base.

Length 3.8–4.6 mm.; width 1.6–2.0 mm.

Washington State; California (Placer Co. and Lake Tahoe); Wyoming (Laramie); Colorado (Veta Pass).

The specimens from Lake Tahoe are rather smaller and narrower than the others, with the punctuation of the pronotum tending to become finer and sparser toward the middle, while those from Wyoming have the entire surface of this part almost longitudinally rugulose; the typical forms are from Washington State. The series before me is very extensive, and the extreme forms do not present any tangible specific characters.

This species somewhat resembles *pulverulentus*, but may be distinguished at once by its smaller size, more depressed form and more developed wings. The latter in the present species are relatively a little longer than in *mœstus*, and broader, hyaline, about four-fifths longer than the prothorax and nearly five-sixths as long as the elytra.

23 **B. substriatus** Champ.—Biol. Cent.-Amer. Col., IV, Pt. 2, p. 128; *anthracinus* Sturm, i. litt.

I have applied this name to a series which, in general, very reasonably satisfies the description above cited. The specimens are from Montana, Wyoming, Colorado and New Mexico, being confined to the more elevated regions of the Rocky Mountains. The species is black throughout, rather robust, oblong, moderately convex, distinctly shining and with the sides nearly parallel. The striæ of the elytra are exceedingly feebly impressed, very finely, rather closely punctured and, in some of the specimens, almost confused toward base with the somewhat unusually coarse punctures of the flat intervals. The anterior tarsi of the male are strongly dilated, the intermediate very distinctly, although less strongly so, and the wings are well developed, being fully as long as the elytra. The punctures of the pronotum are rather coarse, decidedly elongate, closely crowded but not greatly coalescent laterally, and usually very slightly sparser toward the middle in the female, and more decidedly so in the male. The latter sex resembles the female in form but is rather smaller. Length 5.0–5.5 mm.; width 2.1–2.6 mm.

24 **B. lepidus** n. sp.—Narrow, elongate-oval, moderately convex, gradually narrowed behind from near the middle of the elytra, black, moderately shining or subalutaceous; pubescence moderate in length, fine, rather sparse, dark piceo-cinereous and not conspicuous. *Head* fully one-half wider than long, finely, rather densely punctate; upper lobe of eyes moderate, rounded; antennæ rather slender, the last three joints somewhat abruptly wider, third one-half longer than the second and a little longer than the fourth, eleventh somewhat pointed and a little narrower than the tenth. *Prothorax* about two-thirds wider than long, the sides very feebly convergent from base to apex, feebly arcuate ant riorly, broadly and extremely feebly sinuate in the basal half; base transverse, the lateral sinuations strong; basal angles right, not in the least rounded; apex broadly emarginate in circular arc; disk finely punctate, the punctures equal in size throughout, separated by about twice their diameters toward the middle and rather denser laterally, but without any marked tendency to coalesce. Scutellum moderate, ogival, rather distinctly wider than long. *Elytra* about two and one-half times as long as the prothorax, subequal in width to the latter, the sides parallel toward base and scarcely visibly arcuate; disk very finely striate, the striæ feebly impressed, not becoming stronger laterally, very finely punctate throughout the width, the punctures generally separated by two or three times their own diameters; intervals nearly flat, very finely, rather sparsely and unusually feebly punctate. *Abdomen* polished, very finely and sparsely punctate, the pubescence short, cinereous, distinct but not conspicuous. *Legs* well developed; tarsi slender.

Male.—Anterior tarsi moderately strongly dilated, second and third joints subequal, the latter strongly angularly emarginate in the middle of its dorsal apex; intermediate slender, scarcely perceptibly dilated; both pairs spongiose beneath; abdomen narrowly and feebly flattened in the middle toward base, the punctures rather abruptly very dense in a large median area of the basal segment, and less conspicuously so on the second segment, fifth with a deep rounded, impressed fovea.

Length 3.9–4.2 mm.; width 1.6–1.8 mm.

Texas.

A small narrow species, allied by the formation of the sides of the prothorax in the neighborhood of the basal angles, to *mœstus*, but abundantly distinct in its narrower form, less convexity, finer pronotal punctures and, especially, by the finer punctures of the elytral striæ, these not becoming more strongly impressed laterally. It is still more widely separated because of the notably more feeble dilatation of the anterior tarsi of the male and its more slender antennæ.

25 **B. æqualis** n. sp.—Elongate-oval, narrow, strongly convex, alutaceous in lustre, black; pubescence fine, rather sparse, moderate in length, dark fulvo-cinereous in color and not very conspicuous. *Head* moderately transverse and convex, somewhat finely and densely punctate, the punctures tending to coalesce longitudinally; upper lobe of eyes moderate, rounded; epistoma broadly, distinctly sinuate; antennæ rather slender, gradually incrassate through the last four joints, third not quite twice as long as the second and much shorter than the next two, eleventh scarcely as wide as the tenth, the sensitive terminal pubescence unusually fine. *Prothorax* about three-fifths wider than long; sides feebly convergent from base to apex, rather feebly and very evenly arcuate throughout; base transverse, the lateral sinuations distinct; basal angles very slightly obtuse, not prominent but not distinctly rounded; apex broadly emarginate in circular arc; disk moderately coarsely, densely punctate, the punctures tending slightly to coalesce longitudinally, rather sparser toward the middle and decidedly finer, but denser toward the sides. Scutellum moderate, ogival. *Elytra* about equal in width to the prothorax and between two and one-half and three times longer, rather acutely and parabolically rounded at apex; sides parallel and just visibly arcuate; disk finely striate, the striæ rather feebly impressed throughout the width but distinct, finely, evenly and approximately punctured, the punctures distant generally by about their own diameters; intervals nearly flat, very much more finely but not very densely punctate. *Abdomen* rather finely and densely punctate, more shining, the pubescence rather distinct. *Legs* well developed.

Male.—Anterior tarsi strongly dilated, the second and third joints subequal in length and width; intermediate feebly but very distinctly dilated, with the second joint rather wider than either the first or third; both pairs with dense spongiose pads beneath; abdomen rather narrowly and strongly impressed in

the middle toward base, the punctures very dense toward the middle of the basal segment, fifth segment with a small strong rounded impression.

Length 4.5 mm.; width 1.9 mm.

California (San Bernardino).

This species resembles *gregalis* but differs in its more convex form, duller lustre, much more approximately punctate elytral striæ, notably denser abdominal punctuation, stronger basal impression of the abdomen in the male and, especially, in the structure of the anterior tarsi of that sex. In *gregalis* the third joint is distinctly shorter than the second, while in *æqualis* the second joint is not only longer than in *gregalis*, but is not conspicuously longer than the third.

In *æqualis*, contrary to the general rule, the pronotal punctures become rather finer laterally.

The type is unique. There are two specimens before me from Utah which indicate a closely allied but distinct species.

26 **B. funebris** n. sp.—Oblong-oval, moderately convex, black; legs dark rufo-piceous; integuments rather strongly shining; pubescence short, coarse, very sparse, easily removable, pale fulvous in color and distinct. *Head* transverse, feebly convex, rather finely and densely punctate; upper lobe of eyes small; antennæ not very robust, the three outer joints somewhat abruptly but not greatly dilated, third joint much shorter than the next two, eleventh much narrower than the tenth. *Prothorax* about one-half wider than long, feebly narrowed from base to apex; sides feebly arcuate, straight or very feebly, broadly sinuate toward base, the latter transverse, with moderate sinuations; basal angles right, not at all rounded; apex feebly emarginate in circular arc; disk evenly convex, rather finely, moderately densely punctate toward the middle where the punctures are generally separated by distinctly more than their own diameters, distinctly larger and very dense near the sides but with slight tendency to longitudinal coalescence. Scutellum rather large, transversely ogival, finely, rather densely punctate. *Elytra* scarcely wider than the prothorax and nearly three times as long, rather broadly, parabolically rounded behind; sides feebly arcuate, rather more distinctly so behind; disk with very fine striæ which are extremely feebly impressed and very finely, rather approximately punctured, rather more strongly impressed and very slightly more coarsely punctate externally; intervals flat toward the suture, more convex laterally, finely, sparsely punctate. *Abdomen* shining, finely, sparsely punctured and with coarse, sparse, pale flavo-cinereous pubescence, moderate in length and quite conspicuous. *Legs* rather long.

Male.—Unknown.

Length 6.0–7.0 mm.; width 2.7–2.9 mm.

Southern California.

The only two examples are unfortunately females, but the species

could only be confounded with *rufipes*, from which it differs in its much more shining surface, more oblong and less convex form, greater size, much more feebly impressed elytral striæ, and especially in its much sparser and less persistent, shorter, coarser and paler elytral pubescence. The abdominal pubescence is nearly as in *rufipes*, but is a little shorter.

27 **B. pulverulentus** Mann.—Bull. Mosc., 1843, II, p. 276.—Elongate-oval, strongly convex, black throughout, polished; pubescence dark fusco-cinereous in color, rather long but sparse and inconspicuous. *Head* much wider than long, feebly convex, somewhat strongly and densely punctate, the punctures sometimes a little sparser along the middle, not confluent; upper lobe of eyes moderate, rounded; antennæ rather robust, gradually and moderately incrassate through the last four joints, third scarcely twice as long as the second but distinctly longer than the third, eleventh fully as long as wide, narrowly truncate at apex, as wide as the tenth. *Prothorax* rather elongate, scarcely more than one-half wider than long; sides very feebly convergent from base to apex, feebly arcuate, straight or extremely feebly sinuate toward base, the latter transverse, the lateral sinuations distinct; basal angles very slightly obtuse, not in the least rounded; apex feebly emarginate in circular arc; disk sometimes slightly flattened or subexplanate toward the basal angles, somewhat coarsely and densely punctate, the punctures rather unevenly distributed but usually separated by nearly twice their diameters toward the middle, denser but not distinctly coalescent toward the sides. Scutellum small, ogival. *Elytra* about two and one-half times as long as the prothorax, scarcely perceptibly wider than the latter, rather acutely parabolic at apex; sides parallel and rather distinctly arcuate; disk with rather fine striæ which are somewhat distinctly and broadly impressed, not much more strongly so externally but usually more distinctly so near the suture, the striæ with fine but deep punctures, generally separated by one-half more than their own diameters; intervals very feebly convex, somewhat coarsely and very sparsely punctate. *Abdomen* finely, sparsely punctate, the pubescence distinct but short and sparse, dark fusco-cinereous and not conspicuous. *Legs* moderate.

Male.—Anterior tarsi very strongly dilated, the third joint distinctly shorter than the second and strongly, angularly emarginate; intermediate rather strongly dilated, the second joint notably wider than the first and a little wider than the third; both pairs densely spongiose beneath; abdomen rather narrowly and distinctly impressed in the middle toward base, the punctures not distinctly denser in the middle of the basal segment, fifth segment with a feeble oval impression; body notably more slender than in the female.

Length ♂ 4.5–4.8 mm., ♀ 4.7–5.5 mm.; width ♂ 1.8–2.0 mm., ♀ 2.1–2.3 mm.

California (Mendocino, San Francisco, and Monterey).

This is the commonest species about San Francisco, and in fact is the only one which exists in that locality to any great extent; it is usually confounded in our cabinets with several other species

here described, and especially *rufipes*, which is more southern in habitat. It may be easily distinguished from those to which it is more closely allied by its polished surface—pruinose when living,—the rather coarser and more distinct punctures of the intervals, and by the form and size of the wings which consist of a slender subopaque cellulo-membranous fillet, without noticeable venation, slightly wider in apical half, about four-fifths as long as the prothorax and less than one-third as long as the elytra. The male is decidedly smaller and, especially, more slender than the female.

Pulverulentus is distinctly smaller than *rufipes* and as these species are both abundant, the differences may be rendered very obvious if the large series possessed by almost every cabinet of note be properly separated.

28 **B. parallelus** n. sp.—Elongate-oval, subparallel, strongly convex, rather strongly shining, black; legs piceo-rufous; pubescence fine, moderate in length, sparse, dark piceo-fulvous and very inconspicuous. *Head* moderately transverse, feebly convex, densely and deeply punctate; upper lobe of eyes small; antennæ rather robust, the last three joints rather abruptly but slightly wider, third joint much shorter than the next two together. *Prothorax* but slightly more than one-half wider than long, very feebly narrowed from base to apex, the sides evenly and rather strongly arcuate; basal sinuations moderate; basal angles right, not in the least rounded; disk evenly convex, very densely but not very confluently punctate toward the sides, much more sparsely so toward the middle especially near the base; punctures moderate in size. Scutellum ogival, rather finely and densely punctate, with the usual impunctate polished margin. *Elytra* nearly three times as long as the prothorax, rather shorter in the male, subequal in width throughout to the latter, narrowly, parabolically rounded at apex; disk with rows of very fine punctures, the striæ extremely feebly impressed, more visibly so toward the suture but scarcely toward the sides, the punctures separated by from two to three times their own diameters; intervals flat, finely and very sparsely punctured. *Abdomen* finely, sparsely punctate, with short sparse inconspicuous pubescence; surface generally more or less longitudinally rugulose. *Legs* moderate.

Male.—Anterior tarsi very strongly dilated, the second joint much longer than the third; intermediate rather strongly dilated but much less so than the anterior; abdomen broadly, moderately impressed in the middle toward base, the fifth segment with a small transversely-oval and rather strongly impressed apical fovea.

Length 5.0–5.5 mm.; width 2.0–2 2 mm.

California (Mountains of Santa Cruz Co.). Mr. Harford.

This species is closely allied to *pulverulentus*, but differs in several points to such a degree that I can see no other correct course to pursue than to separate it. The form is rather narrower

and more parallel, and the elytral striæ more finely punctured and more feebly impressed. The males and females are of similar form and nearly equal in size, and the wings consist of an exceedingly slender elongate parallel fillet, rather membranous in texture, devoid of distinct venation, more than four times as long as wide, about one-fourth longer than the prothorax and nearly one-half as long as the elytra, with a deep sinuation on the lower edge near the apex. This singular form is constant in the only two specimens dissected.

It will be seen, therefore, that the wings are very different from those of *pulverulentus*, but approach those of *inquisitus*, from which *parallelus* differs in its longer prothorax, finer punctures of the elytral striæ and decidedly greater convexity.

29 **B. inquisitus** n. sp.—Oblong-oval, moderately convex, strongly shining, black above and beneath; legs dark piceo-rufous; pubescence fine, short, very sparse, dark piceo-cinereous and inconspicuous. *Head* moderate, fully one-half wider than long, feebly convex, deeply, not very coarsely, densely punctate, the punctures decidedly sparser along the middle; epistoma moderately sinuate; upper lobe of eyes small, rounded; antennæ somewhat robust, the last three joints rather abruptly but slightly wider, third joint twice as long as the second, the latter shorter than the fifth, three to five uniformly and rapidly decreasing in length, eighth a little wider, as long as wide, eleventh very slightly narrower than the tenth. *Prothorax* one-half wider than long, sides very feebly convergent from base to apex, evenly and rather feebly arcuate; base transverse, the sinuations moderately distinct; basal angles right, not at all rounded; apex broadly, feebly emarginate in circular arc; disk somewhat finely, densely punctate, more sparsely so toward the middle where the punctures are generally separated by one-half more than their own diameters, not coalescent laterally. Scutellum moderate, densely, finely punctate, the posterior edge broadly polished and impunctate. *Elytra* subequal in width to the prothorax and about two and one-half times as long; sides very feebly arcuate, parabolically rounded at apex; disk distinctly flattened toward the suture, finely striate, the striæ feebly but rather abruptly impressed, very slightly deeper and more coarsely punctate laterally; strial punctures generally fine and very approximate, usually separated by between once and twice their own diameters; intervals flat, finely and sparsely punctured. *Abdomen* polished, finely, sparsely punctate, the pubescence very sparse, rather short, fine, dark fulvo-cinereous and not conspicuous. *Legs* moderately robust.

Male.—Anterior tarsi very strongly dilated, the second joint decidedly longer than the third; intermediate distinctly but not strongly dilated, the second joint a little wider than the first and third; abdomen narrowly and rather strongly impressed in the middle toward base, the punctuation not distinctly denser in the middle of the first segment.

Length 5.0 mm.; width 2.0 mm.

California (Truckee, Nevada Co.).

The three specimens before me indicate a species allied to *pulverulentus*, but quite distinct in its more depressed parallel form, similarity in size and form of the male and female, and more decidedly in the form of the hind wings. The wings are about one-fourth longer than the prothorax and one-half as long as the elytra, consisting of a long parallel very slender fillet, subhyaline in structure, about four times as long as wide, with the two veins very feebly developed, not extending quite to the middle and equally trisecting the width throughout their extent.

30 **B. auripilis** Horn.—Trans. Am. Phil. Soc., XIV, p. 353.—Oblong-oval, very convex; sides parallel; integuments dull, dark brown in color; pubescence moderate in length, recumbent, rather robust and dense, bright golden-yellow and blackish-piceous confusedly intermingled, the two kinds subequal in size and abundance. *Head* moderate, strongly transverse; sides strongly convergent anteriorly from before the eyes, the apex strongly sinuate; surface feebly convex, very densely punctate, the punctures coarse posteriorly, finer anteriorly; interspaces rather shining, convex, very minutely, evenly reticulate; eyes moderate; antennæ rather short and slender, gradually and not very strongly incrassate toward apex, second joint not one-half as long as the third, the latter rather elongate although distinctly shorter than the next two combined. *Prothorax* feebly narrowed from base to apex, three-fourths wider than long; sides slightly more strongly arcuate before the middle; apex broadly emarginate; base transverse, the lateral sinuations broad and distinct; disk very strongly convex, not very coarsely but deeply evenly and very densely punctate throughout, the punctures nearly in mutual contact laterally, but not coalescent; interspaces convex, alutaceous, very minutely, evenly granulato-reticulate. Scutellum punctate, alutaceous, strongly granulato-reticulate throughout. *Elytra* but slightly more than one-half longer than wide, equal in width to and nearly three times as long as the prothorax; sides parallel and nearly straight; apex rather obtusely rounded; disk not very finely but feebly and indistinctly striate, the striæ very finely feebly and not very approximately punctate, the punctures distant by from three to four times their own diameters toward the suture, not much exceeding in size those of the intervals and not at all distinct; intervals feebly convex, strongly granulato reticulate, rather coarsely and densely punctate. *Abdomen* rather dull, finely, rather densely punctate and somewhat densely covered with rather long, dense, robust, bright yellow hairs which are very conspicuous.

Length 6.2 mm.; width 2.8 mm.

Arizona.

This species is related to *intermixtus* in the dual character of the vestiture of the upper surface, but not otherwise to any extent; it is rather larger and decidedly more convex, with smaller eyes, the

surface, especially of the abdomen, duller, and the punctuation of the elytral striæ and intervals very different. I have only seen the female.

It is interesting to note that the hairs growing from the punctures of the elytral striæ, which are usually extremely minute, here become quite long and distinct; this may possibly be dependent in some way upon the slight difference between these punctures and those of the intervals observable in this species.

31 **B. intermixtus** n. sp.—Oblong-oval, rather depressed, dark reddish-brown throughout, but very feebly shining, somewhat densely clothed with moderately long robust stiff and subrecumbent pubescence, which is pale golden-yellow and dark piceous-brown confusedly intermingled, the pale hairs slightly the longer and broader. *Head* moderate, about one-half wider than long, feebly convex, somewhat coarsely and rather densely punctate, the interspaces completely dull but not definitely sculptured; upper lobe of the eyes large, nearly circular; antennæ rather robust, nearly as long as the head and prothorax, gradually, strongly incrassate toward apex, second joint about one-half as long as the third, three to five uniformly and very rapidly decreasing in length. *Prothorax* about three-fourths wider than long; sides in basal two-thirds parallel, strongly arcuate, thence more strongly convergent and straighter to the rather prominent apical angles; apex broadly emarginate in circular arc; base transverse, the lateral sinuations strong; disk broadly, evenly, moderately convex, somewhat coarsely, deeply, evenly and very densely punctate, the interspaces strongly reticulate and slightly shining toward the middle, absolutely dull laterally. Scutellum punctate, the margin broadly impunctate and polished. *Elytra* about three-fourths longer than wide, three times as long as the prothorax and subequal to it in width; sides parallel, very feebly arcuate posteriorly; disk not very finely striate, the striæ somewhat abruptly but moderately impressed, rather finely and closely punctate, the punctures separated by scarcely more than their own diameters throughout the width, the striæ more strongly impressed externally; intervals flat, not densely, very minutely punctate, slightly shining. *Abdomen* strongly shining, finely, evenly and not very sparsely punctate; pubescence fine, moderate in length, not dense but pale fulvous-yellow and quite distinct. *Legs* moderate.

Male.—Anterior tarsi very feebly dilated, the middle slightly robust; both coarsely, rather sparsely squamulose beneath; abdomen slightly and narrowly flattened in the middle toward base.

Length 5.0–6.0 mm.; width 2.0–2.6 mm.

Arizona (Winslow). Mr. Wickham.

The anterior tarsi of the female are robust or subdilated, not differing appreciably from the male, but are devoid of squamules beneath; in both sexes all the tarsi are clothed with very short

robust recumbent spinulose setæ. The hind wings are well developed, being fully as long as the elytra.

This is a very distinct species in vestiture and was taken in considerable abundance.

32 **B. brevicollis** Lec.—Ann. Lyc. Nat. Hist. N. Y., V, 1851, p. 147.—Oblong-oval, rather robust, moderately convex, blackish-castaneous, rather dull and alutaceous; pubescence moderate in length, fine, recumbent, not dense, dark piceo-fulvous in color and not at all conspicuous. *Head* rather small, about one-half as wide as the prothorax, feebly convex, very densely and deeply punctate throughout, the interspaces much narrower than the punctures and very minutely granulato-reticulate; epistoma large, slightly paler in color, broadly sinuate at apex, the suture well-marked laterally but obsolete in the middle; eyes well-developed, the upper lobe rounded or feebly subtriangular, surrounded by a rather deep and distinct impressed groove; antennæ rather slender, gradually incrassate toward apex, second joint rather longer than wide, third slightly shorter than the next two, fourth distinctly longer than the fifth. *Prothorax* very nearly twice as wide as long; sides rather strongly convergent from base to apex, very evenly and distinctly arcuate; base transverse, the lateral sinuations broad and very distinct, the median lobe slightly more posteriorly prominent than the angles; apex broadly emarginate in circular arc; disk very densely and deeply punctate, the punctures rather small and slightly elongate, the pubescence exceedingly indistinct. Scutellum unusually small. *Elytra* about two-thirds longer than wide and three times as long as the prothorax, subequal in width to the latter, the sides parallel and scarcely perceptibly arcuate in basal two-thirds; disk with very fine feebly impressed striæ, which are very finely and feebly punctate toward the suture, but more coarsely and deeply so externally, the punctures separated by from one-half more than to twice their own diameters; intervals nearly flat toward the suture, six or seven times as wide as the striæ, even, finely, strongly granulato-reticulate, minutely and rather densely punctate. *Abdomen* shining, finely and rather densely punctate, the pubescence fine and not at all conspicuous, shorter toward the middle. *Legs* rather slender, dark rufo-ferruginous.

Male.—Anterior tarsi not in the least dilated; abdomen toward base rather narrowly and extremely feebly impressed.

Length 5.3–6.0 mm.; width 2.6–2.8 mm.

California; Washington State.

The sexual characters in this distinct species are more nearly obsolete than in any other which I have seen. It may be readily known by its dark blackish-rufous color, fine sculpture, inconspicuous pubescence and broad, somewhat depressed form. The sides of the pronotum are narrowly and very obsoletely subexplanate, this character being more obvious in some specimens than others, occa-

sionally disappearing completely; the elytral striæ are also more deeply impressed in some instances.

33 **B. brunneus** n. sp.—Oblong-elongate, rather strongly, subcylindrically convex, pale reddish-brown in color throughout; integuments rather shining, subalutaceous; pubescence rather short and stiff, subrecumbent, uniform, rather abundant, pale yellowish-cinereous and conspicuous. *Head* transverse, rather broadly truncate, the truncation rather wider than the distance between the eyes and broadly sinuate; surface feebly convex, rather coarsely, densely and confusedly punctate, the interspaces very narrow, shining; upper lobes of the eye large and very well developed, separated by scarcely more than four times their own width; antennæ rather long, distinctly clavate, second joint a little longer than wide, fully one-half as long as the third, the latter distinctly shorter than the next two. *Prothorax* rather long, scarcely more than one-half wider than long; sides very feebly convergent from base to apex, very feebly arcuate, becoming nearly parallel in basal two-thirds; apex rather strongly emarginate in circular arc; base transverse; lateral sinuations rather feeble but distinct; disk somewhat coarsely, deeply and very densely punctate, the punctures not coarser and, although extremely dense and nearly in mutual contact laterally, having scarcely any tendency to longitudinal coalescence, a very little sparser toward the middle where they are slightly uneven in distribution, but generally separated by less than their own diameters. Scutellum small, transverse, finely, rather densely punctate. *Elytra* parallel, equal in width to the prothorax and about three times as long, finely striate, the striæ feebly impressed and rather finely but deeply and approximately punctate, the punctures generally separated by their own diameters or less; intervals flat, minutely, strongly reticulate, very finely, not densely punctate. *Abdomen* strongly shining, finely, not very densely punctate; pubescence moderate in length, fine, not dense, pale and distinct. Hind wings long and well developed.

Length 5.7 mm.; width 2.4 mm.

Texas.

This is a very distinct species in its elongate subcylindrical, although but moderately convex form and pale coloration. It differs from *hesperius* in its much shorter pubescence, longer prothorax, much more shining and more sparsely punctate abdomen and very much larger eyes. From *intermixtus*, with which it may also be confused, it differs in its less transverse prothorax, more shining integuments, and finer and feebler elytral striæ, as well as in the uniform pubescence.

Although represented by the female only, I have placed the present species as well as *hesperius* and *auripilis* in the group with feebly dilated anterior male tarsi, because of their analogy to *intermixtus* in general habitus.

34 **B. hesperius** n. sp.—Oblong-oval, moderately convex, smooth, rather shining, reddish-brown in color; pubescence rather long and robust, subrecumbent, pale yellowish-cinereous throughout and distinct, although not very dense. *Head* transversely oval, feebly convex, rather coarsely, deeply, moderately densely punctate; epistoma distinctly sinuate; upper lobe of the eyes moderately large, slightly oblique and oval; antennæ rather short, outer joints not very large, second subquadrate, not quite one-half as long as the third, the latter slender, very slightly shorter than the next two combined. *Prothorax* about two-thirds wider than long, widest slightly behind the middle, the sides being distinctly convergent from base to apex, evenly and rather strongly arcuate throughout; apex evenly, distinctly emarginate in circular arc; base transverse, the lateral sinuations strong; disk rather coarsely, deeply and very densely punctate, the punctures longitudinally subconfluent toward the sides, slightly smaller and rather unevenly distributed, although generally almost in mutual contact, toward the middle. Scutellum finely punctate, reticulate throughout. *Elytra* nearly parallel, but just visibly wider than the prothorax and nearly three times as long; sides very feebly arcuate; disk with series of rather small, circular, rather deep and subperforate punctures which are in general distant by about their own widths, the striæ extremely feebly impressed, rather more distinctly so laterally; intervals nearly flat, extremely minutely but distinctly and rather sparsely punctate, the surface rather shining, minutely creased and somewhat coarsely granulato-reticulate. *Abdomen* rather shining, minutely, distinctly granulato-reticulate, finely and somewhat densely punctate, the pubescence rather long, moderately dense, bright yellowish-cinereous and distinct. Tarsi slender.

Length 4.7 mm.; width 1.9 mm.

Oregon.

The single specimen serving as the type of the above diagnosis is a female, and indicates a species somewhat resembling *intermixtus* in general habitus, but differing in its smaller size, rather more slender form, longer and uniform pubescence, more shining surface, feebler, finer elytral striæ and slightly smaller eyes.

35 **B. vestitus** Lec.—Col. of Kans., 1859, p. 15.—Elongate-elliptical, very convex, black; integuments rather dull; pubescence rather abundant, moderate in length, very robust and squamiform, arcuate and subrecumbent, pale yellowish-cinereous and conspicuous. *Head* rather small and short, much wider than long and three-fifths as wide as the prothorax, densely, deeply but not very coarsely punctate, slightly scabrous; upper lobe of eyes rather small; epistoma short, broadly sinuate at apex, the suture not visible; antennæ slender toward base, strongly dilated toward apex, second joint slightly longer than wide, third much shorter than the next two, tenth strongly transverse, eleventh slightly narrower, nearly circular, the apical two-fifths spongiose. *Prothorax* rather long, scarcely two-thirds wider than long, the sides distinctly convergent from base to apex, vaguely subangulate just before the middle,

nearly straight and feebly divergent thence to the base, and more strongly convergent to the acute and very slightly prominent apical angles; apex broadly, feebly emarginate; base transverse, broadly and very distinctly sinuate laterally; disk transversely, very strongly convex, rather coarsely, very deeply and extremely densely punctate. Scutellum moderate, punctate. *Elytra* about three times as long as, and very slightly wider than, the prothorax; sides parallel and slightly arcuate; apex rather narrowly rounded; disk with rather fine, very feebly impressed striæ which are finely, feebly and approximately punctate; intervals nearly flat, four or five times as wide as the striæ, finely granulose, rugulose and very minutely, rather densely punctate. *Abdomen* shining, finely and not very densely punctate, uniformly clothed throughout with rather short, fine, recumbent, pale but sparse and inconspicuous pubescence. *Legs* and tarsi rather short and robust.

Male.—Anterior tarsi feebly dilated and squamulose beneath, the intermediate not dilated but with a few squamules beneath; abdomen toward base narrowly and scarcely perceptibly flattened.

Length 4.2–4.9 mm.; width 1.8–2.1 mm.

Kansas; Colorado.

One of the most aberrant species of the genus, easily recognizable by its strongly convex elongate-oval form, feeble elytral striæ and coarse squamiform pale and conspicuous vestiture.

36 **B. hospes** n. sp.—Oval, very convex, somewhat dull, grayish-black; pubescence rather long and abundant, rather coarse, pale cinereous and conspicuous, recumbent. *Head* feebly convex, very densely punctate; upper lobe of eyes moderate; antennæ rather robust, outer joints gradually and rather strongly dilated, third short, scarcely two-thirds longer than the second, much shorter than the next two together, seventh distinctly wider than long. *Prothorax* about three-fourths wider than long, the apex a little narrower than the base; sides almost evenly and very feebly arcuate; base transverse, the sinuations broad and distinct; basal angles right, rather prominent, not at all rounded; apex very feebly emarginate in circular arc; disk somewhat coarsely and very densely punctate, the punctures usually a little sparser toward the middle, and more or less longitudinally coalescent toward the sides but never forming long rugæ. Scutellum small, not very densely punctate. *Elytra* about two and one-half times as long as the prothorax and, behind the middle, just visibly wider, somewhat acutely rounded behind; disk with fine striæ which are excessively feebly impressed and extremely finely, feebly punctured, the punctures generally separated by about twice their own diameters; intervals nearly flat, sparsely and very minutely punctate. *Abdomen* strongly shining, very finely, rather sparsely punctate, the pubescence moderate in length, sparse, cinereous but not very conspicuous. *Legs* short.

Male.—Anterior tarsi rather strongly dilated, the second and third joints equal in length, the latter slightly the wider; intermediate more feebly but distinctly dilated; both pairs densely and rather coarsely spongy-pubescent

beneath; abdomen narrowly and more or less distinctly flattened in the middle toward base, the fifth segment not modified.

Length 3.8–4.4 mm.; width 1.5–2.0 mm.

Wyoming (Cheyenne), Mr. Wickham; Colorado (Garland), Mr. Schwarz.

This form is closely allied to *vestitus*, and in a purely natural sequence of the species the two must be associated together. It differs from *vestitus* in its much longer, finer pubescence and more strongly dilated anterior tarsi of the male, although even here the peculiar structure of the tarsus,—the second joint being distinctly narrower than the third,—is common to them both.

The punctuation of the pronotum varies considerably, and in the female from Garland is finer, not so dense toward the sides and without any marked tendency to coalescence. The punctures of the elytral striæ are finer than in any other species known to me, being decidedly smaller and more feeble than in *vestitus*.

37 **B. pimalis** Casey.—Cont. Descr. and Syst. Col. N. A., II, Jan. 1885, p. 185.—Oblong-oval, convex, black; integuments feebly shining; pubescence rather long and fine, subrecumbent, rather dense but dark piceous-brown in color and not at all conspicuous. *Head* moderate, wider than long, two-thirds as wide as the prothorax, deeply and very densely but not coarsely punctate, the basal portion of the occiput abruptly very minutely punctato-scabrous; upper lobe of eyes moderate, slightly oval; antennæ moderate, rather slender, the last three joints wider, parallel, forming a loose club, third joint much shorter than the next two. *Prothorax* about one-half wider than long; sides feebly convergent from base to apex, distinctly and almost evenly arcuate; apex broadly, feebly emarginate; base transverse, broadly and feebly but distinctly sinuate laterally; basal angles slightly rounded; disk rather finely, very deeply and densely punctate throughout. Scutellum small, punctate. *Elytra* about two-thirds longer than wide, fully two and one-half times longer and very slightly wider than the prothorax; sides parallel and distinctly arcuate, straighter toward base; disk with fine, feebly impressed striæ of small, rather feeble but distinct punctures, the punctures generally separated by nearly twice their own diameters; intervals very feebly convex, about five times as wide as the striæ, finely and confusedly granulato-rugulose, minutely and not densely punctate. *Abdomen* shining, finely and sparsely punctate, the pubescence fine, sparse, pale fulvous and not at all conspicuous. *Legs* and tarsi moderate.

Male.—Anterior tarsi very feebly but distinctly dilated, squamulose beneath, the intermediate not dilated but with small rounded patches of squamules; abdomen narrowly and very feebly impressed toward base, the basal segment abruptly very densely punctate in the middle.

Length 4.6–5.1 mm.; width 1.8–2.2 mm.

Arizona—Mr. Morrison.

This species somewhat resembles *rufipes* in its dull, densely and finely punctate integuments and dark pubescence, but differs in its shorter form and smaller size, and, more radically, in the very feeble dilatation of the male tarsi and more rudimentary hind wings, the latter in the present species consisting of a slender cellulo-membranous plate, about three and one-half times as long as wide, and about as long as the prothorax.

The *umbrosus* of Champion (Biol. Cent.-Amer. Col., IV, i, Oct. 1885, p. 127) is possibly the same as *pimalis*, although the length given for *umbrosus* is substantially greater than in any of the seven representatives of *pimalis* which I have before me, and the punctures of the elytral striæ in the latter do not exhibit the slightest trace of transversality.

38 **B. arenarius** n. sp.—Elongate-oval, strongly convex, black, strongly shining; pubescence fine, rather short and sparse, fulvous in color and very inconspicuous. *Head* moderate, wider than long, slightly convex, deeply and somewhat coarsely perforato-punctate, the punctures dense laterally, sparser along the middle, abruptly much finer on the occiput and slightly sparser anteriorly; epistoma broadly, feebly sinuate, the suture completely obsolete laterally; upper lobe of eyes rather well developed, oval; antennæ slender, the last three joints robust, second joint a little longer than wide and two-thirds as long as the third, the latter but one-fourth longer than the fourth, three to five decreasing uniformly in length. *Prothorax* somewhat elongate, not quite one-half wider than long and two-thirds wider than the head; sides feebly convergent from base to apex, evenly and rather strongly arcuate; apex broadly, feebly emarginate in circular arc; base transverse, the lateral sinuations moderate in width and strongly marked; disk very finely and rather sparsely punctate toward the middle where the punctures are separated by two or three times their own diameters, rapidly larger, deeper and much denser in lateral fourth but not coalescent to any great extent; interspaces flat, polished, minutely reticulate. Scutellum small, minutely, rather sparsely punctate. *Elytra* fully two-thirds longer than wide, two and one-half times as long as the prothorax and, near the middle, very slightly wider than the latter; sides parallel and distinctly arcuate; apex somewhat narrowly rounded; disk with very feebly impressed striæ, which become very fine toward the suture and much coarser externally, the striæ with deep, circular, perforate punctures, very fine internally, much coarser externally, generally separated by about twice their own diameters; intervals nearly flat toward the suture, distinctly convex laterally, finely, not densely punctate, coarsely reticulate, minutely feebly creased, polished. *Abdomen* shining, very finely, sparsely punctate; pubescence fine, short, recumbent, sparse and inconspicuous. *Legs* piceous, shining, rather robust.

Male.—Anterior tarsi feebly but distinctly dilated, finely, densely spongy-pubescent beneath; intermediate just visibly dilated, spongy-pubescent like the anterior; abdomen narrowly and feebly impressed, the basal segment not abruptly more densely punctate in the middle.

Length 4.3–5.0 mm.; width 1.8–2.1 mm.

Texas (Galveston).

A rather small species, resembling *mœstus* and *pulverulentus*, differing from both in the much more feebly dilated male tarsi, and from *mœstus*, in addition, in the development of the wings. In *arenarius* the hind wings are extremely rudimentary, consisting of a slender parallel fillet of semi-opaque cellular membrane, which is but slightly more than one-half as long as the pronotum.

39 **B. debilis** n. sp.—Narrow, moderately convex, very slightly cuneate in the male, black, rather strongly shining; pubescence fine, moderate in length, recumbent, rather sparse but cinereous and distinct. *Head* moderate, transverse, feebly convex, rather finely, evenly and sparsely punctate throughout, the punctures a little elongate and separated by nearly twice their own widths; upper lobe of eyes rather large and nearly circular; antennæ slender, rather short, club feeble, second joint longer than wide, equal to the sixth and shorter than the fifth, third subequal to the fourth, the fifth a little shorter. *Prothorax* two-thirds wider than long, widest before the middle where the sides are feebly and roundly subangulate, thence very feebly convergent and nearly straight to the base and more strongly convergent and slightly arcuate to the apex, which is broadly, distinctly emarginate in circular arc; base transverse, the lateral sinuations moderately distinct; disk evenly, rather feebly convex, finely and rather sparsely punctate, the punctures separated by nearly three times their own widths except toward the sides, where they are distant by about twice their diameters; interspaces minutely and feebly reticulate. Scutellum small, feebly punctate. *Elytra* nearly twice as long as wide and almost three times as long as the prothorax, scarcely as wide as the latter, gradually narrowed behind from before the middle, the apex rather acute, finely striate, the striæ very feebly impressed, the punctures very distant in the median striæ, where they are separated by from four to six times their own diameters, but closer in the striæ toward the suture; intervals nearly flat, minutely and sparsely punctate, finely, rather strongly reticulate and feebly undulated. *Abdomen* polished, very finely, sparsely punctate, minutely, finely and very sparsely pubescent. *Legs* moderate, rufo-piceous.

Male.—Anterior tarsi feebly but distinctly dilated, finely, densely spongy-pubescent beneath; intermediate but slightly less dilated than the anterior, similarly clothed; abdomen almost absolutely without trace of impression or flattening toward base.

Length 3.6 mm.; width 1.3 mm.

Texas (Dallas).

This very small species is decidedly aberrant not only in facies

but in its unusually short third and long fourth antennal joints, these being virtually equal, and in the absence of any decided sexual modification of the basal portions of the abdomen, although the impression of the fifth segment is well developed. The description is taken as usual from the male, the female being parallel.

40 **B. humilis** n. sp.—Oblong-elongate, slender, parallel, moderately convex, black, feebly alutaceous; pubescence extremely short and excessively sparse, stiff, cinereous and completely inconspicuous. *Head* rather large, transverse, feebly convex, somewhat sparsely and unevenly punctate, the punctures moderate in size and decidedly denser anteriorly; epistoma rather deeply sinuate in the middle; upper lobe of eyes large and well developed, nearly circular; antennæ moderate, gradually, strongly incrassate, second joint as long as wide, subequal to the fifth, fully two-thirds as long as the third, three to five decreasing rather rapidly in length. *Prothorax* about two-thirds wider than the head and nearly two-thirds wider than long; sides very feebly convergent from base to apex, very feebly subangulate before the middle, the sides thence nearly straight to base and apex, the latter broadly, feebly emarginate in circular arc; base transverse, lateral sinuations distinct; disk transversely, evenly and very moderately convex, finely and rather sparsely punctate toward the middle where the punctures are separated by about twice their own diameters, thence gradually coarser and denser laterally but not coalescent; interspaces finely granulato-reticulate. Scutellum well developed. *Elytra* long, fully four-fifths longer than wide, scarcely visibly wider and two and one-half times longer than the prothorax; sides parallel and just visibly arcuate; disk with narrow but rather deeply and abruptly impressed striæ, which are very finely and deeply punctate, more coarsely so laterally, the punctures generally separated by two or three times their own diameters; intervals nearly flat, minutely, sparsely punctate, feebly undulated. Abdomen very finely and sparsely punctate, longitudinally rugulose toward base, polished, the pubescence exceedingly short, recumbent, cinereous and scarcely at all noticeable. *Legs* moderate, piceous.

Male.—Anterior tarsi feebly but distinctly dilated, spongy-pubescent beneath; intermediate just visibly dilated, narrowly and not very densely spongy-pubescent beneath; abdomen narrowly and very feebly impressed in the middle toward base, the first segment not more densely punctate in the middle.

Length 4.0 mm.; width 1.7–1.8 mm.

Florida (Key West). Mr. W. Jülich.

One of the smallest species of the genus, comparatively isolated in its narrow form and extremely short inconspicuous pubescence. I have seen three specimens.

41 **B. pubescens** Lec.—Ann. Lyc. Nat. Hist. N. Y., V, p. 147; *lecontei* Muls.: Ann. Soc. Agr. Lyon, 1859, p. 192.—Oblong-oval, convex, black;

integuments shining; pubescence rather dense, robust but not at all squamiform, moderate in length, recumbent, pale cinereous-white and very conspicuous. *Head* moderate, wider than long; sides convergent in front, the apex broadly sinuate, the angles broadly rounded; sides before the eyes broadly rounded, not prominent; surface feebly convex, densely, rather coarsely and deeply punctate, the punctures rather elongate, becoming abruptly much smaller and sparser on the epistoma, the interspaces narrower than the punctures, finely, feebly granulose, wider and more polished on the epistoma; upper lobe of the eyes rather well developed, slightly longer than wide; antennæ somewhat slender, a little shorter than the head and prothorax, outer joints gradually more robust, second small, subglobular, third long, slender, fully as long as the next two, tenth but slightly shorter than the ninth, two-fifths wider than long, the eleventh rather longer than wide, narrowed and spongiose in apical half, very obtusely rounded at apex and but just visibly narrower than the tenth. *Prothorax* two-thirds wider than the head and nearly two-thirds wider than long, widest at basal third; sides very feebly convergent from base to apex, evenly and strongly arcuate; base transverse, the lateral sinuations broad and extremely feeble; apex broadly, very feebly sinuate, the angles slightly obtuse, not at all rounded and not prominent; disk transversely convex, very densely, evenly punctate, the punctures moderate in size, slightly elongate, the interspaces very narrow, flat, finely reticulato-granulose. Scutellum densely punctate. *Elytra* about three-fourths longer than wide, two and one-half times as long as the prothorax and, just behind the middle, very slightly wider, having very even, feebly impressed rows of round, deeply impressed punctures, separated by less than their own diameters and rather coarse, the intervals nearly flat, about three times as wide as the striæ, finely, rather densely punctate and minutely reticulate. *Abdomen* rather finely and sparsely punctate, finely and sparsely pubescent. *Legs* piceous-black.

Male —Anterior tarsi not noticeably dilated; abdomen broadly, feebly impressed in the middle through the basal half.

Length 5.0–6.0 mm.; width 2.3 mm.

California (San Bernardino and San Diego).

The description is taken from the male, the female being a little more elongate, with the elytra slightly longer. It is a very well-marked species, forming an easy transition from the ordinary types of the genus to *sulcatus* and *hydropicus*, possessing the elongate third antennal joint of the latter, with the normal structure of the head. The punctures of the elytra have nearly the same coarse perforate appearance as in *sulcatus*, but are scarcely more than one-half as large, the striæ being much more feebly impressed and the intervals much wider.

42 **B. sulcatus** Lec.—Ann. Lyc. Nat. Hist. N. Y., V, p. 147.—Moderately robust, convex, oblong-oval; integuments dull black, the pubescence in the

form of robust, arcuate, subrecumbent, scale-like hairs, rather dense, pale yellowish-cinereous and very conspicuous. *Head* slightly wider than long, subhexagonal, the sides before the eyes prominent and angulate; epistoma very broadly truncate, the truncation sinuate in the middle, the anterior angles rather narrowly rounded; surface very feebly convex, rather coarsely, deeply punctate, the punctures polygonally crowded, the acute interspaces granulose; upper lobe of the eyes small, slightly elongate-oval; antennæ robust, rather distinctly shorter than the head and prothorax, gradually, feebly incrassate, second joint very short, the third clavate, longer than the next two together and more than three times as long as the second, tenth transverse, shorter than the ninth and rather wider than the eleventh, the latter ovoidal, as long as wide. *Prothorax* about two-thirds wider than the head and two-thirds wider than long; sides feebly convergent from base to apex and rather strongly arcuate, the disk being widest slightly behind the middle; base broadly, feebly bisinuate; apex truncate between the slightly advanced acute angles; disk transversely, evenly and strongly convex, abruptly and very narrowly explanate along the lateral edges, punctured like the head, the interspaces a little less granulose. Scutellum granulose and dull, rather sparsely, coarsely punctate and squamulose. *Elytra* four-fifths longer than wide, three times as long as, and, just behind the middle, about one-fifth wider than the prothorax, each with nine deeply excavated abrupt closely and deeply punctate grooves, the intervals flat, but very slightly wider than the grooves, granulose, asperately punctate and rather densely clothed with the very robust squamiform hairs, each strial puncture bearing a very minute slender hair from its anterior wall. *Abdomen* shining, rather sparsely, coarsely punctate and finely, sparsely pubescent. Hind wings rather well developed, a little shorter than the elytra.

Male.—Anterior tarsi not perceptibly dilated; abdomen broadly, just visibly impressed in the middle toward base.

Length 5.0–5.8 mm.; width 2.0–2.3 mm.

California; Texas.

A conspicuous species, distinguishable at once by its deeply grooved elytra, pale robust and squamiform pubescence, narrowly subreflexo-explanate sides of the prothorax and polygonal head, with prominent angulate sides. Together with the next it constitutes a group, comparatively isolated not only by these characters, but by the very short second and greatly developed third joint of the antennæ.

43 **B. hydropicus** n. sp.—Very robust, oblong-oval, distinctly wider behind, convex, brownish-black, dull, the pubescence in the form of very short arcuate semierect robust scale-like hairs, which are moderately dense, dark piceous-brown in color and not at all conspicuous. *Head* and antennæ nearly as in *sulcatus*, the former very slightly more transverse, dull, rather coarsely, very deeply punctate, the punctures polygonally crowded. *Prothorax*

about two-thirds wider than the head and five-sixths wider than long; sides feebly convergent from base to apex, strongly and almost evenly arcuate; base broadly, feebly arcuate, feebly sinuate laterally; basal angles acute and a little less posteriorly prominent than the middle; apex truncate between the slightly advanced acute angles; disk widest slightly behind the middle, transversely convex, very abruptly and conspicuously, although somewhat narrowly explanate along the sides, punctured like the head. Scutellum dull, granulose, sparsely punctate. *Elytra* scarcely three-fourths longer than wide, rather inflated behind, three times as long as, and distinctly wider than, the prothorax, having deep abrupt deeply punctate grooves, the punctures of the grooves separated by nearly their own diameters; intervals flat, scabrous, asperately punctate, and distinctly wider than the grooves, the erect scales numerous, unevenly arranged. *Abdomen* finely granulose and but feebly shining, rather coarsely and densely punctate, somewhat densely covered with robust recumbent yellowish-cinereous hairs which are conspicuous.

Male.—Anterior tarsi scarcely perceptibly dilated; abdominal impression broad and nearly flat.

Length 5.1–6.0 mm.; width 2.3–2.7 mm.

Arizona.

Although allied to *sulcatus* this species is very easily separated by its much more robust form, more transverse prothorax, wider elytral intervals, shorter darker[1] more erect and much less conspicuous vestiture of the upper surface and more robust denser and more distinct pubescence of the abdomen, the latter being duller and more densely punctate. The explanate lateral portion of the pronotum is much wider in the present species and almost perfectly flat.

44 **B. discolor** Horn.—Trans. Am. Phil. Soc., XIV, p. 354.

I have not seen the unique type of this species, but from the description it would appear as if it were not correctly placed in Blapstinus Its coloration is absolutely foreign to this genus, although quite common in the apterous genera allied to Conibius; its glabrous surface is also a very exceptional character especially among the Californian species of Blapstinus. It is probable that *discolor* is apterous, and that it will prove to be a member either of Conibius or of an allied genus.

MECYSMUS Horn.

The species of this genus are not very numerous and somewhat resemble the more elongate and depressed forms of Blapstinus such

[1] An immersion for three hours in pure ethylic ether does not affect the color of the vestiture, showing that this is not due to any fatty exudation.

as *longulus*, but on closer observation it is readily seen that the antennæ are rather more slender, the base of the prothorax straight, the humeri exposed and the hypomera not impressed near the lateral edges.

The anterior tarsi of the male are moderately dilated and vary considerably in the vestiture of the under surface, thus affording excellent subordinate structural characters for the identification of the species. The wings are well developed, and the flight is probably stronger than in Blapstinus on account of the greater lightness of the body.

The species may be divided into two distinct groups as indicated in the following table:—

Anterior tibiæ normal; punctuation of the elytral intervals confused; form strongly depressed ..... **I**

Anterior and middle tarsi densely spongy-pubescent beneath in the male; form broader; prothorax strongly transverse, the apex more deeply emarginate; punctures of the elytral striæ finer ..... **laticollis**

Anterior tarsi dilated and spongy-pubescent beneath; intermediate simply spinose beneath ..... **angustus**

Anterior tarsi scarcely perceptibly dilated, devoid of fine pubescence beneath; intermediate not dilated, coarsely spinose ..... **tenuis**

Anterior tibiæ distinctly compressed and dilated from base to apex; each elytral interval with a single even series of setigerous punctures; body more convex ..... **II**

Pubescence extremely short and inconspicuous; pronotal punctuation very sparse throughout; punctures of the intervals very much finer than those of the striæ ..... **parvulus**

Pubescence longer, denser and much more conspicuous; pronotal punctuation dense toward the sides; punctures of the intervals coarser, not so noticeably smaller than those of the striæ; size larger ..... **advena**

M. laticollis n. sp.—Oblong-elongate, parallel, depressed, black throughout; legs dark rufous; antennæ testaceous; integuments strongly shining; pubescence rather long and fine, sparse, pale cinereous and distinct. *Head* coarsely, moderately densely punctate, the median line almost impunctate; epistoma extremely feebly, broadly sinuate; upper lobes of eyes rather large; antennæ slender, distinctly incrassate toward tip, third joint slender but shorter than the next two, tenth nearly as long as wide, eleventh very slightly longer than wide and as wide as the tenth. *Prothorax* three-fourths wider than the head and fully two-thirds wider than long; base straight and truncate, equal in width to the apex, the latter strongly emarginate throughout the width in circular arc; basal angles distinctly obtuse but not at all rounded; sides strongly, evenly arcuate; disk widest in the middle, coarsely, very sparsely punctate toward the middle, more densely so but with the punctures

still well separated toward the sides. Scutellum well developed, of the usual structure. *Elytra* parallel, just visibly wider than the prothorax and rather more than three times as long, at base but very slightly wider than the base of the pronotum, the humeri rounded; apex broadly, obtusely rounded; sides very feebly arcuate; disk finely striate, the striæ feebly impressed, rather finely punctate, the punctures generally separated by between once and twice their own diameters; intervals flat, rather coarsely, sparsely and irregularly punctured. *Abdomen* coarsely, rather sparsely punctured.

Male.—Anterior tarsi rather strongly dilated, very densely clothed beneath with long dense spongy-pubescence; intermediate very feebly dilated and narrowly but densely pubescent beneath; abdomen broadly, very feebly impressed in the middle toward base.

Length 6.0–6.8 mm.; width 2.2–2.7 mm.

Texas (El Paso). Mr. Dunn.

The largest and most robust species which I have examined, quite distinct from *angustus* in the broad prothorax, strongly emarginate at apex, by the finer strial punctures and coarser punctures of the intervals, as well as in the more strongly developed tarsal characters of the male.

M. angustus Lec.—*Blapstinus ang.*: Ann. Lyc. N. Y., V, 1851, p. 147.—Slender, depressed, subparallel, piceous-black throughout, shining; legs rufo-piceous; pubescence moderate in length, fine, sparse but pale cinereous and distinct. *Head* a little wider than long, feebly convex, broadly trapezoidal before the eyes, coarsely and not very densely punctate; epistoma broadly sinuate; upper lobes of eyes moderate, ovate; antennæ slender, fully as long as the head and prothorax, very feebly incrassate toward tip, third joint slender, nearly as long as the next two, tenth nearly as long as wide, the eleventh a little longer than wide and but just perceptibly narrower than the tenth. *Prothorax* less than one-half wider than the head and about one-third wider than long; base and apex equal in width, the former truncate and just visibly arcuate, the apex more strongly and very broadly sinuate; basal angles obtuse, not in the least rounded; sides strongly arcuate; disk widest at the middle, coarsely and deeply punctate, the punctures rather sparse toward the middle, denser laterally but not contiguous. Scutellum triangular, densely punctate, with a wide polished impunctate margin. *Elytra* parallel, nearly one-fourth wider than the prothorax and three times as long; sides feebly arcuate; apex rather obtusely rounded; humeri rounded, not covered by the prothorax, the base of the latter distinctly narrower than that of the elytra; disk coarsely striate, the striæ rather feebly impressed and coarsely punctate, the punctures round, deeply perforate, well separated; intervals three to four times as wide as the strial punctures, flat or very feebly convex, finely, very sparsely and irregularly punctured. *Abdomen* coarsely, sparsely punctate. *Legs* rather long, the fourth joint of the posterior tarsi fully as long as the first three together.

Male.—Anterior tarsi rather feebly but distinctly dilated and somewhat densely clothed beneath with coarse spongy-pubescence; intermediate robust but not appreciably dilated, simply coarsely spinose beneath without trace of pubescence; abdomen feebly and rather narrowly impressed in the middle toward base.

Length 5.5–5.8 mm.; width 1.9–2.1 mm.

Southern California; Arizona (Yuma).

The female does not differ greatly from the male. I have before me a male example which is entirely rufo-ferruginous in color and rather more robust, in which the anterior tarsi are scarcely perceptibly dilated and clothed beneath with long coarse spines without trace of squamules; the abdomen being broadly and feebly impressed in the middle toward base, shows that there can be no mistake regarding the sex of this specimen, which represents therefore a closely allied species which should not be named at present, for without additional specimens I am unable to state whether or not the peculiar pale color is due to immaturity.

M. tenuis n. sp.—Slender, parallel, depressed, piceous-black; head and prothorax very slightly paler, rufo-piceous; integuments shining; pubescence nearly as in *angustus*. *Head* feebly transverse, slightly convex, rather finely and sparsely punctate; epistoma broadly and very feebly sinuate; upper lobes of eyes moderate, rather convex; antennæ slender, feebly incrassate toward tip, fully as long as the head and prothorax, third joint slender but very distinctly shorter than the next two combined, tenth as wide as long. *Prothorax* scarcely more than one-third wider than the head, one-third wider than long; base distinctly narrower than the apex, the former transversely truncate, the latter nearly so, being but just perceptibly incurvate; basal angles obtuse, not rounded; sides moderately strongly arcuate; disk widest slightly before the middle, rather finely and very sparsely punctate, the punctures toward the sides separated by fully twice their own widths. Scutellum well developed, nearly as in *angustus*. *Elytra* parallel, very slightly wider than the prothorax and about three times as long, at base wider than the base of the pronotum, evenly rounded at apex; humeri rounded; sides slightly and evenly arcuate; disk coarsely but feebly striate, the striæ coarsely, deeply and not very approximately punctured; intervals nearly flat, from three to four times as wide as the strial punctures, very finely, sparsely and irregularly punctate. *Abdomen* coarsely, not very sparsely punctate.

Male.—Anterior tarsi very feebly dilated, spinose beneath, without trace of pubescence; intermediate not dilated; abdomen broadly, very distinctly impressed in the middle toward base.

Length 4.8 mm.; width 1.6–1.8 mm.

Southern California.

This species is allied to *angustus*, but differs in its smaller size,

still more slender depressed form, in the shape of the prothorax, in coloration and still more decidedly in the male sexual characters.

M. parvulus n. sp.—Oblong-elongate, parallel, moderately depressed, highly polished, black; legs and antennæ dark rufous; pubescence very short, robust and setiform, extremely sparse, arranged in single lines on the intervals, silvery-cinereous but not conspicuous. *Head* transverse, feebly convex, finely and sparsely punctate; epistoma narrowly and distinctly sinuate; upper lobes of eye small; antennæ slender, very feebly incrassate, rather short, distinctly shorter than the head and prothorax, third joint slightly longer than the fourth, tenth distinctly wider than long, the eleventh much longer than wide, as wide as the tenth. *Prothorax* about one-half wider than the head and one-half wider than long; base and apex equal in width, the former transversely truncate, the latter broadly, distinctly emarginate in circular arc; basal angles slightly obtuse, not at all rounded; sides rather strongly arcuate; disk widest at about the middle, very sparsely and rather finely punctured, a little less sparsely so toward the sides. Scutellum densely punctate, with a very wide impunctate border. *Elytra* equal in width to the prothorax and nearly three times as long; sides very feebly arcuate; base but very slightly wider than that of the pronotum, the humeri very narrowly exposed; disk with moderately coarse and impressed striæ which are finely and rather distantly punctured; intervals nearly flat, each with a single very regular line of fine, widely distant, setigerous punctures. *Abdomen* finely, very sparsely punctured.

Male.—Anterior tarsi moderately but very distinctly dilated, the subbasal joints very short and transverse, densely spongy-pubescent beneath, the third much wider than the second; intermediate very feebly dilated, narrowly squamulose beneath; abdomen not appreciably modified, evenly convex toward base.

Length 3.7–3.9 mm.; width 1.4–1.5 mm.

New Mexico (Fort Wingate). Dr. Shufeldt.

This very peculiar little species may be readily distinguished from the next, which belongs to the same aberrant group, by its smaller size, finer and sparser punctuation and more indistinct pubescence.

M. advena n. sp.—Oblong, moderately depressed, strongly shining, black throughout; legs dark piceo-rufous; antennæ testaceous; pubescence moderate in length, pale, rather dense and distinct on the pronotum, arranged in very even series on the elytra. *Head* rather strongly transverse, rather coarsely and densely punctate; epistoma broadly and feebly sinuate; upper lobes of eyes moderate, nearly as broad as long; antennæ slender, feebly incrassate toward apex, a little shorter than the head and prothorax, third joint much shorter than the next two combined, tenth a little wider than long, eleventh slightly longer than wide. *Prothorax* rather transverse, two-thirds

wider than the head and about two-thirds wider than long; base and apex equal, the former transversely truncate, the latter feebly incurvate in circular arc; basal angles slightly obtuse, not rounded; sides evenly and rather feebly arcuate; disk widest in the middle, somewhat coarsely, deeply punctate, the punctures rather sparse toward the middle, dense but distinctly separated toward the sides. Scutellum triangular, densely punctate, the border rather narrow, impunctate. *Elytra* about equal in width to the prothorax and three times as long in the female, somewhat shorter in the male, rather strongly rounded at apex; sides parallel, very feebly arcuate; base scarcely perceptibly wider than the base of the prothorax; disk with rows of rather coarse, deeply perforate punctures, the striæ excessively feebly impressed, the punctures generally separated by nearly twice their own diameters; intervals from three to four times as wide as the strial punctures, flat, each with a single even row of rather coarse punctures which are not more distant than those of the striæ. *Abdomen* rather finely, sparsely punctured. *Legs* moderate; fourth joint of the posterior tarsi about equal in length to the first three.

Male.—Anterior tarsi moderately dilated, densely spongy-pubescent beneath, the third joint distinctly wider than the second; intermediate very feebly dilated, similarly clothed; abdomen narrowly and scarcely perceptibly flattened in the middle toward base.

Length 4.1–4.8 mm.; width 1.4–1.8 mm.

Texas (El Paso). Mr. Dunn.

Apparently abundant, and, although allied to *parvulus*, easily distinguishable from that species, in addition to the characters heretofore noted, by the punctuation of the sutural interval which in *advena* is generally confused; in *parvulus* there is a very regular single row of punctures similar to those of the other intervals.

CONIBIUS Lec.

This genus is quite composite, and as here considered, embraces five distinct typical forms, represented by *seriatus*, *opacus*, *sulcatus*, *gagates* and *granulatus*, but as far as structural characters of value are concerned, the groups may be limited to three. These groups agree among themselves in all the characters before given in the table of genera, but might possibly be considered of subgeneric value; at any rate, the difference in general habitus is quite remarkable. As far as variety of type is concerned, Conibius may be considered the Asida of the Blapstini.

The sexual characters are generally very slight, the tarsi being absolutely undilated in the male, but in a few species the anterior tibiæ are modified in that sex as described below. As a curious coincidence, it should be mentioned that similar tibial modifications

are described by Champion as affecting some of the Central American species of Blapstinus, such as *tibialis* and *grandis;* I have not observed this character in any of our species however.

The several groups and their component species may be readily distinguished by the following table:—

Basal angles of the prothorax obtuse, not distinctly prominent posteriorly; elytral punctures never asperate.
Anterior angles of the prothorax obtuse, not prominent ..... **I**
Elytra not deeply sulcate.
Surface shining; elytra but slightly wider than the prothorax; elytral striæ very feebly impressed, the intervals flat; third antennal joint shorter than the next two combined.
Humeral angles dentiform and feebly everted.
Form slender, parallel ..... **parallelus**
Form more robust and convex.
Bicolored; pronotum very minutely and sparsely punctate toward the middle ..... **seriatus**
Unicolorous, much larger; pronotum more coarsely and much more densely punctured toward the middle. **guadalupensis**
Humeral angles broadly rounded ..... **uniformis**
Surface dull; elytra very much wider than the prothorax, elliptical; striæ distinctly impressed; intervals feebly convex; third antennal joint fully as long as the next two combined ..... **opacus**
Elytra deeply sulcate.
Elytra at base narrower than the base of the prothorax; intervals equal in elevation ..... **sulcatus**
Elytral base equal in width to that of the prothorax; alternate intervals much wider and very much more elevated ..... **alternatus**
Anterior angles of the prothorax acute and anteriorly prominent; elytral punctures very minute ..... **II**
Surface smooth although very dull and alutaceous; elytra with but faint traces of punctured striæ ..... **gagates**
Basal angles of the prothorax acute and distinctly produced posteriorly; punctures of the elytral intervals strongly asperate ..... **III**
Slender; elytral intervals rather strongly convex; head about three-fourths as wide as the prothorax ..... **granulatus**
Robust and more depressed; intervals very feebly convex; head scarcely two-thirds as wide as the prothorax ..... **crassipes**

C. parallelus Lec.—Ann. Lyc. N. Y., V, p. 146.—Rather slender, parallel, convex, black; antennæ and legs dark rufo-testaceous; head and pronotum often slightly piceous; lustre and vestiture nearly as in *seriatus. Head* transverse, finely, rather deeply and densely punctate; epistoma very feebly sinuate in the middle of the very wide apex; upper lobe of eye quite

small and rather broadly oval; antennæ very robust and compact, feebly incrassate toward apex, shorter than the head and prothorax combined, third joint not twice as long as wide and a little shorter than the next two, eleventh not distinctly narrower than the tenth. *Prothorax* about one-third wider than the head and one-third wider than long; apex transversely truncate, a little wider than the base, the latter rather distinctly arcuate, the lateral sinuations obsolete; basal angles obtuse but not at all rounded; sides rather feebly arcuate, straight toward base; disk widest before the middle, finely, not very densely punctate toward the middle, the punctures becoming larger, deeper and very dense toward the sides. *Elytra* equal in width to the prothorax and more than twice as long, parallel; sides feebly arcuate; apex rather obtusely rounded; humeri dentiform; disk with excessively feebly impressed striæ of very minute punctures which, except toward base, are scarcely larger than those of the intervals, the latter sparse. *Abdomen* finely, feebly and sparsely punctured.

Male.—Without distinct sexual characters.

Length 3.2–4.0 mm.; width 1.1–1.3 mm.

California (San Diego).

This appears to be quite a local species, and I have not seen it from any other locality than that indicated above. It is easily known by its slender parallel form.

In both *parallelus* and *seriatus* the sexual differences are almost completely obsolete, the males, represented by certain slightly less robust specimens, seem however to have the abdomen extremely feebly flattened in the middle toward base. The anterior tibiæ and tarsi are not modified in the male; they are short and robust, the latter very compact.

C. seriatus Lec.—Ann. Lyc. N. Y., V, p. 146.—Oblong, parallel, rather strongly convex, subalutaceous, dark rufo-testaceous; elytra black; pubescence wanting, replaced by excessively minute, sparse and rather robust, subhyaline setæ arising from the punctures. *Head* transverse, minutely and somewhat densely punctate; upper lobes of eyes very small, broadly oval; antennæ robust, incrassate toward apex, a little shorter than the head and prothorax, third joint very short, clavate, about one-half longer than wide, tenth strongly transverse, eleventh a little wider than long and distinctly narrower than the tenth, joints throughout very compactly joined. *Prothorax* about one-third wider than the head and one-half wider than long; apex subtruncate, very slightly wider than the base which is slightly arcuate in the middle, the lateral sinuations just perceptible; basal angles very obtuse and extremely narrowly rounded; sides feebly arcuate, nearly straight toward base; disk widest slightly before the middle, finely punctate, the punctures rather sparse toward the middle, dense but not quite contiguous laterally, not muricate. *Elytra* equal in width to the prothorax and about two and one-half times as long, obtusely rounded behind; sides feebly arcuate; disk with

very fine and feebly impressed striæ of fine, moderately approximate punctures, the intervals sparsely and still more minutely punctured. *Abdomen* sparsely, very minutely and feebly punctate.

Male.—Without distinct sexual modification.

Length 3.8–4.0 mm.; width 1.4–1.6 mm.

California (Humboldt and San Bernardino Cos.).

Easily distinguishable from any other species by its coloration and rather robust form; from *guadalupensis*, which it approaches, it is to be known at once by its coloration, decidedly smaller size and different antennal structure. It is the only species which I have seen which extends its range from the Arizona faunal regions, along the Californian sea-coast to the northern limits of the state.

C. guadalupensis n. sp.—Oblong, parallel, rather robust, strongly convex, piceous-black throughout, the legs and antennæ dark rufo-testaceous, rather shining; vestiture as in *seriatus*. *Head* transverse, nearly flat above, deeply and very densely but rather finely punctate, the punctures finer toward the apex; epistoma distinctly sinuate; upper lobe of eye very small; antennæ moderately robust, much shorter than the head and prothorax, rather strongly incrassate toward tip, third joint fully twice as long as wide and but slightly shorter than the next two together, eleventh scarcely visibly narrower than the tenth, the latter one-half wider than long. *Prothorax* two-fifths wider than the head and two-fifths wider than long; base feebly arcuate except near the sides, fully as wide as the apex which is transversely truncate; basal sinuations almost obsolete, the angles obtuse but not distinctly rounded and not in the least produced; sides feebly arcuate, straight toward base; disk widest rather before the middle, rather finely, deeply and very densely punctate throughout, the punctures equal in size although just perceptibly sparser toward the middle, not at all muricate. *Elytra* behind the middle scarcely perceptibly wider than the prothorax and but little more than twice as long; sides rather distinctly arcuate; apex obtusely rounded; disk with feebly impressed rows of very small, feeble and rather closely placed punctures, which become more distinct toward base; intervals minutely and rather sparsely punctate. *Abdomen* polished, very finely and sparsely punctured.

Male.—Without distinct sexual modification.

Length 4.7–5.4 mm.; width 1.8–2.2 mm.

Guadalupe Island.

The ample series of eleven specimens which I have before me, enables me to state with confidence that *guadalupensis* is quite distinct from *seriatus*, with which it has been confounded by Dr. Horn (Trans. Am. Ent. Soc., V, 1876, p. 199). The size is constantly very much greater, and it differs otherwise in its more elongate and more densely and coarsely punctate pronotum, and more

slender antennæ with the third joint longer, as well as by its uniform coloration.

C. uniformis n. sp.—Form oblong-oval, rather robust, convex, black; legs and antennæ piceo-rufous, rather strongly shining; vestiture as in *seriatus*. *Head* strongly transverse, rather coarsely and confluently punctured behind, the punctures becoming very fine and dense anteriorly; epistoma rather strongly sinuate in the middle; upper lobe of eye small, broadly oval; antennæ very robust and compact, nearly as in *seriatus*, but with the third joint a little longer. *Prothorax* moderately transverse, scarcely one-third wider than long; base truncate equal in width to the apex, the latter extremely feebly emarginate; basal angles very slightly obtuse, not at all rounded and slightly produced posteriorly; sides feebly arcuate anteriorly, straight toward base; disk widest before the middle, finely and somewhat sparsely punctate, the punctures becoming much coarser, deeper and very dense toward the sides. *Elytra* distinctly wider than the prothorax and scarcely more than twice as long; sides rather strongly arcuate; humeri obtusely rounded; apex evenly, not very broadly rounded; disk with rather feebly impressed striæ of small but distinct and very closely placed punctures, becoming larger toward base; intervals flat, sparsely and very finely punctured. *Abdomen* polished, finely and sparsely but deeply and distinctly punctate.

Male.—Abdomen narrowly and distinctly impressed in the middle toward base.

Length 3.7–4.5 mm.; width 1.5–1.8 mm.

Arizona.

Although somewhat allied to *seriatus*, this species may be distinguished by its oval elytra, wider than the prothorax, by the much larger and stronger strial punctures, and by the less transverse prothorax with differently formed basal angles.

C. opacus Lec.—*Notibius opac.*: New Spec. Col., 1866, p. 118.—Ovate, strongly convex, black; legs and antennæ piceous; lustre extremely dull because of a fine, strong, granular reticulation; vestiture as in *seriatus*. *Head* transverse, flat, rather finely, very densely punctate, the punctures longitudinally coalescent posteriorly, finer and muricate anteriorly; epistoma very deeply sinuate in the middle; upper lobe of eye small, but larger than usual and broadly oval; antennæ rather long and robust, as long as the head and prothorax, last three joints forming a strong club, third long, fully as long as the next two, tenth nearly twice as wide as long, the eleventh much narrower. *Prothorax* scarcely one-third wider than the head and one-fourth wider than long, the apex broadly emarginate, fully as wide as the base which is just perceptibly and evenly arcuate throughout, the sinuations obsolete; basal angles not rounded, not prolonged posteriorly but rendered very slightly prominent from a very feeble gradual sinuation of the sides before them; sides anteriorly evenly, rather feebly arcuate; disk widest before the middle very

feebly but somewhat broadly reflexed laterally, rather finely, extremely densely punctate throughout, the punctures forming long longitudinal rugæ, less marked and finer toward the middle. *Elytra* oval and subinflated, widest in the middle, at base feebly emarginate and coarctate throughout with the prothorax, two-fifths wider than the latter and more than twice as long, rather acutely rounded at apex; disk very finely but evenly and distinctly striate, the striæ extremely finely punctate, the punctures rather approximate and not larger toward base; intervals nearly flat toward base, strongly evenly convex posteriorly, very minutely and somewhat densely punctate. *Abdomen* shining, very finely, somewhat sparsely punctate. *Legs* long and rather slender.

Male.—Sexual characters not determined.

Length 4.6 mm.; width 2.0 mm.

Lower California (Cape San Lucas). Cab. LeConte.

A very distinct species which could not possibly be confounded with any other, its rather inflated elytra, dull, densely punctate integuments and long antennæ at once distinguishing it; the epipleuræ are relatively very wide, resembling somewhat those of *gagates*. The bases of the prothorax and elytra are exactly equal in width, the humeri not exposed.

The unique type is probably a male, but exhibits no decided sexual modification.

It is highly probable that the Arizona specimens, hitherto referred to this species, have been incorrectly identified.

C. sulcatus Lec.—*Notibius sulc.*: Ann. Lyc. N. Y., V, p. 145.—Oblong-oval, strongly convex, moderately shining, black; legs and antennæ rufous; vestiture as in *seriatus*, but with the setæ still more infinitesimal. *Head* moderately transverse, the sides near the eyes parallel and straight; epistoma broadly, deeply sinuate; surface nearly flat, finely, very densely punctate; upper lobe of eye extremely small and narrow; antennæ robust, rather compact, moderately incrassate toward apex and much shorter than the head and prothorax together, third joint fully as long as the next two, eleventh narrower than the tenth. *Prothorax* about two-thirds wider than the head and nearly one-half wider than long; base rather distinctly wider than the apex, transverse, the lateral sinuations distinct; basal angles nearly right and narrowly rounded; sides very feebly arcuate; apex extremely feebly incurvate; disk widest at about the middle, very feebly explanate near the sides, finely and very densely punctate throughout, the punctures neither muricate nor greatly coalescent. *Elytra* at base distinctly narrower than the base of the prothorax, at the middle a little wider than the disk of the latter, rather more than twice as long; sides evenly and very distinctly arcuate; disk with very coarse, deeply and roundly impressed striæ, which are coarsely, moderately approximately and very feebly punctate; intervals very convex, equal throughout the width, subequal in width to the striæ, minutely and sparsely punctate. *Abdomen* sparsely and minutely punctured. *Legs* rather long.

Male.—Anterior tibiæ slender, the anterior surface polished, very finely, sparsely punctate, strongly and obtusely toothed within at one-third the length from the base, the portion thence to the base one-half as wide as the remaining portion.

Length 4.8–5.3 mm.; width 2.0–2.4 mm.

California (San Diego).

The male is more slender than the female. The base of the elytra being distinctly narrower than the base of the prothorax, together with the deeply sulcate elytra and equally convex intervals, will render the identification of this species at all times a very easy matter.

C. alternatus n. sp.—Oblong-oval, very convex, parallel, moderately shining, black; legs dark rufous; vestiture as in *sulcatus*, very brittle and easily removable. *Head* nearly as in *sulcatus*, but more coarsely and confluently punctate. *Prothorax* four-fifths wider than the head and two-thirds wider than long; base much wider than the apex, broadly arcuate in the middle, feebly sinuate laterally, the basal angles right, very narrowly rounded and scarcely extending as far posteriorly as the median portion; apex very feebly emarginate; sides evenly and rather strongly arcuate; disk widest in the middle, very feebly explanate posteriorly but not perceptibly so anteriorly, somewhat finely and extremely densely punctate, the punctures tending to coalesce in short irregular rugæ toward the sides, finer and not so coalescent toward the middle. *Elytra* at base as wide as the base of the prothorax, behind the middle very slightly wider than the disk of the latter and two and one-half times as long; sides feebly but distinctly arcuate; disk with deep, widely impressed sulcations which are somewhat finely and closely but extremely feebly punctured; intervals very convex, alternately narrow, moderate in elevation and as wide as the sulci, and wide and very strongly elevated, very finely and somewhat densely punctured throughout. *Abdomen* very finely punctate, the punctures sparse laterally, denser toward the middle.

Male.—Unknown.

Length 6.3 mm.; width 2.8 mm.

California.

The unique type is probably a female, as the anterior tibiæ are not modified. It is closely allied to *sulcatus*, but may be readily distinguished by the alternately wider, very strongly elevated and more densely punctate intervals, by the decidedly coarser punctures of the head and pronotum, more strongly rounded sides of the latter and relatively narrower apex, by its much smaller head, by the fact that the bases of the elytra and prothorax are equal in width and by its much larger size.

C. gagates Horn.—*Notibius gagat.*: Trans. Am. Phil. Soc., XIV, p. 357.—Robust, oblong, convex, strongly alutaceous, smooth, black; epistoma, legs and antennæ, especially toward tip, paler, dark rufous; vestiture as in *seriatus*. *Head* large, transverse, strongly rounded laterally near the eyes, finely, rather sparsely punctate; epistoma moderately sinuate in the middle; upper lobe of eyes rather small, broadly oval; antennæ robust, moderately incrassate, compact, scarcely as long as the pronotum, third joint short not twice as long as wide and much shorter than the next two, tenth nearly twice as wide as long, the eleventh distinctly narrower. *Prothorax* less than one-half wider than the head and two-fifths wider than long; apex much wider than the base, truncate, slightly oblique and straight at the sides, the apical angles being distinctly prominent and produced anteriorly, slightly acute and not at all rounded; base very feebly arcuate throughout, the sinuations rudimentary; basal angles very obtuse and narrowly rounded; sides evenly and moderately arcuate throughout; disk broadly, feebly explanate at the sides, finely, densely punctate, the punctures slightly finer and sparser toward the middle, not in mutual contact laterally. *Elytra* a little wider than the prothorax and about twice as long; sides feebly, evenly arcuate; humeri broadly rounded; disk rather sparsely and extremely finely punctate, with excessively fine and feebly defined rows of nearly similar punctures, which are generally just perceptibly impressed as seen under certain angles of illumination. *Abdomen* polished, very finely, sparsely punctate. Epipleuræ broad. Hyponera broadly explanate. *Legs* moderate in length, very robust throughout.

Male.—Anterior tibiæ probably not modified.

Length 5.8 mm.; width 2.9 mm.

Arizona.

This species is quite aberrant, not only in the structure of the prothorax, but in elytral punctuation; the latter is, however, only an extreme form of that existing in *seriatus*. It is not as strongly convex as most of the others.

C. granulatus Lec.—*Notibius gran.*: Ann. Lyc. N. Y. V, p. 145.—Rather slender, parallel, moderately convex, somewhat dull, the elytra more shining, piceous-black, the elytra black; legs and antennæ rufous; vestiture as in *seriatus*. *Head* feebly transverse, very slightly convex, the edges slightly reflexed above the antennæ; sides very feebly emarginate at the epistomal suture; epistoma moderately sinuate in the middle; surface dull, rather finely, very densely punctate, the punctures confused posteriorly, more isolated, smaller and granuliform anteriorly; upper lobe of eyes small, broadly oval; antennæ not very robust, the last three joints abruptly wider, slightly shorter than the head and prothorax, third joint long, fully equal to the next two together. *Prothorax* about one-third wider than the head and one-third wider than long; apex very feebly incurvate, the angles distinctly rounded: base equal to the apex, very broadly, feebly arcuate, the basal angles very acute and prolonged posteriorly much beyond the median portions; sides rather strongly arcuate anteriorly, straight and convergent thence to the base;

disk widest at anterior third, finely and very densely punctate throughout, the punctures shallow and slightly scabrous but not coalescent. *Elytra* a little wider than the prothorax and more than twice as long; sides feebly arcuate; humeri rounded; base transverse; disk finely striate, the striæ broadly and strongly impressed, very finely, moderately closely punctate; intervals broadly convex, each with a single series of fine, closely placed, asperate punctures, arranged unevenly in the series and generally occupying only the median portions of the interval. *Abdomen* coarsely and densely punctate, more finely so toward apex. *Legs* moderate.

Male.—Anterior tibiæ very slender, strongly, inwardly bent at the apex and obtusely swollen internally just before attaining the middle; abdomen feebly flattened in the middle toward base, the fifth segment with a strong, transverse, parallel-sided impression.

Length 4.3–4.8 mm.; width 1.6–1.8 mm.

California (southern); Arizona.

This species, together with *crassipes*, constitutes a peculiar group, distinguished by the acute and prominent basal angles of the prothorax, coarse abdominal punctuation, and scabrous and asperate dorsal punctures.

C. crassipes n. sp.—Robust, moderately convex, oblong, subparallel, black, rather strongly shining; legs and antennæ rufous; vestiture as in *granulatus* but with the stiff, piceous, spiniform setæ very much longer. *Head* transverse; sides broadly rounded, feebly sinuate anteriorly at the epistomal suture; epistoma broadly bilobed at apex; upper lobe of eye very small, broadly oval; antennæ as in *granulatus*, the eleventh joint much narrower than the tenth. *Prothorax* fully two-thirds wider than the head, nearly one-half wider than long, the apex very feebly emarginate in circular arc, very slightly narrower than the base, the angles obtuse and very narrowly rounded; base transverse and straight except toward the sides where it is gradually sinuate, the basal angles being right, not at all rounded and posteriorly prominent, extending but slightly behind the median portions; sides strongly, evenly arcuate anteriorly, thence convergent and nearly straight to the base; disk widest at apical third, very finely, rather densely punctate toward the middle, with the punctures distinctly separated, becoming coarser, very densely crowded, shallow and scabrous but not coalescent, laterally. *Elytra* equal in width to the prothorax and but slightly more than twice as long, ovate, the sides distinctly arcuate; humeri rounded; apex acutely rounded, with each apical angle slightly and obtusely produced, forming a short caudal appendage; disk finely striate, the striæ feebly impressed, rather finely but deeply, distinctly and very closely punctured; intervals feebly convex, with the median portions rather finely, closely, unevenly and asperately punctate, the punctures smaller than those of the striæ. *Abdomen* coarsely, densely punctured toward base, more finely toward apex. *Legs* rather long, the tarsi robust.

Male.—Anterior tibiæ very robust, the inner apical angle produced, broadly and obtusely toothed internally just before attaining the middle; abdomen

narrowly and very feebly impressed in the middle toward base, the fifth segment with a very deep transverse parallel-sided impression at the apex.

Length 4.7–6.0 mm.; width 1.9–2.7 mm.

California (southern).

Resembles *granulatus*, but differs in its much more robust and rather more depressed form, larger size, sparser pronotal punctures toward the middle, less acute and abrupt basal angles, much feebler but more coarsely punctate elytral striæ, longer dorsal setæ, much more robust and more strongly dentate anterior tibiæ of the male and more robust tarsi.

The prolongation of the apical angles of the elytra is also noticeable, but to a less extent, in *granulatus*, and in both is more characteristic of the female.

Crassipes and *granulatus* form the nearest approach to Conibiosoma, and thence to Notibius.

CONIBIOSOMA n. gen.

Body elongate, parallel, setose. Head broadly sinuate at the sides anteriorly; epistoma broadly, angularly sinuate; mentum small as wide as long, the sides very feebly reflexed, the surface flat, densely punctate, the apex inflexed; labial palpi inserted at the sides of the very short corneous ligula, their base concealed by the mentum; maxillæ very wide at base, the palpi normal. Prothorax fimbriate at the sides with very short, robust, posteriorly recumbent, spiniform setæ. Scutellum very short and wide, triangular, not entering at all upon the disk of the elytra. Abdomen with the fifth segment strongly inflexed in repose at least in the male. *Legs* moderate; anterior tibiæ not dilated.

This genus is closely allied to Notibius. The single species resembles Conibius in outward form, and constitutes a transition from Notibius, apparently having a greater affinity with the latter, although, if it were not for the fimbriate sides of the prothorax, it could be quite as easily assigned to the former.

C. elongata Horn.—*Conibius elong.*: Trans. Am. Phil. Soc., XIV, p. 351. —Elongate, parallel, moderately convex, shining, bright rufo-testaceous, the elytra black; vestiture consisting of short, stiff, spiniform setæ which are distinctly visible under low power. *Head* transverse, the sides near the eyes straight and parallel, the upper lobe of the latter small but broadly oval, much larger than the lower lobe; surface finely, rather sparsely punctate, the punctures shallow, variolate and subscabrous; antennæ very robust, compact, much shorter than the head and prothorax together, the three last joints moderately dilated, joints obconical, third much shorter than the next two,

eleventh but slightly narrower than the tenth. *Prothorax* two-fifths wider than the head and two-fifths wider than long; apex extremely feebly incurvate in circular arc, the angles narrowly but distinctly rounded; base a very little wider than the apex, broadly truncate and straight, except near the sides, where it becomes gradually sinuate, the basal angles acute, not at all rounded and distinctly produced posteriorly; sides rather feebly arcuate anteriorly, thence very slightly convergent and nearly straight to the apex of the basal angles; disk widest at apical third, very finely, sparsely punctate toward the middle, the punctures dense, coarser and slightly scabrous but not coalescent laterally. *Elytra* equal in width to the prothorax and but slightly more than twice as long; sides nearly straight; apex somewhat acute, each apical angle slightly prominent behind; disk with even rows of fine, moderately approximate punctures, the striæ extremely feebly impressed; intervals each with a single even row of punctures, which are of the same size and mutual distance as those of the striæ, but a little more asperate, each bearing a stiff seta, the setæ arising from the strial punctures being excessively minute. *Abdomen* finely reticulate, finely, somewhat sparsely, subasperately punctate, the pubescence rather fine and short but distinct. *Legs* rather short and slender.

Male.—Fifth ventral segment with a very large, transversely oval impression at the bottom of which there is a feeble transverse ridge.

Length 3.6 mm.; width 1.2–1.4 mm.

Southern California.

The two specimens before me are both males, so that I cannot determine whether or not the remarkable internal flexure of the fifth segment in repose is sexual in nature; it is probable, however, that this is the case. It is also very probable that the impression of the fifth segment, given above as a male sexual character, may be common to both sexes, this being the usual condition in Notibius.

NOTIBIUS Lec.

The sexual modification of the male becomes extremely feeble in this genus, and the species are otherwise so homogeneous as to suggest a more persistent and less plastic type than that of Conibius.

The fringe of setæ at the sides of the pronotum is more strongly developed than in Conibiosoma, and is so compact that under low power it appears to be simply a thickened marginal bead, or other analogous structure; at the sides of the elytra it is replaced by a fringe of more slender and much longer, erect and widely distant setæ. This is by far the most important structural character distinguishing Notibius from Conibius, and its presence in *Conibius elongatus*, proves that the latter should be associated with Notibius rather than the genus in which it was originally placed, but as the

anterior tibiæ are slender I have considered it preferable to separate it generically.

The anterior tibiæ are broadly triangular, which seems to indicate a burrowing habit, and in this connection it is at least interesting to note that Ulus, which is also fossorial, possesses the lateral fimbriæ which are so important here. Whether this is a mere coincidence, or whether the lateral setæ are dependent for their evolution in any way upon the burrowing habit, I cannot state absolutely at present, although this is rendered still more probable from the fact that Cœlus and Cœlomorpha, which are fossorial, also have the lateral fimbriæ well developed. The great minuteness of the eyes in Notibius, as well as the complete absence of wings, should be noticed in comparing it with Ulus, and apparently shows that while the latter genus passes a considerable portion of the time above ground, the former is more essentially subterranean.

In Notibius we first notice a decided change in the character of the punctuation, especially of the pronotum, where the presence of the transversely crescentic and asperate type gives a certain peculiarity of appearance. There is considerable variation however in this respect, the punctures, for example in *substriatus*, becoming coarse, deep, rounded and scarcely at all asperate toward the middle of the disk; these differences can perhaps best be made known by the following tabular statement:—

Third antennal joint feebly obconical, about twice as long as wide and but slightly shorter than the next two combined.

Elytral striæ not at all impressed, the series of very small, widely distant punctures exceedingly indistinct; pronotal punctures rather transverse but dense and strongly asperate; lateral margins of the pronotum generally distinctly and somewhat broadly explanate; color piceous-black, the anterior portions often slightly paler ..... **puberulus**

Elytral striæ very feebly impressed, finely but distinctly and approximately punctured; pronotal punctures but feebly asperate toward the middle, the disk not explanate at the sides; color black throughout.

Pronotal punctures coarse, deep, rounded and conspicuous. **substriatus**

Pronotal punctures very fine, feeble, sparse and transversely crescentiform ..... **laticeps**

Third antennal joint very short, but slightly longer than wide, strongly constricted toward base and very much shorter than the next two combined; body bicolored; pronotum strongly punctate, the punctures but slightly wider than long ..... **puncticollis**

The fifth ventral segment is always very broadly impressed, the impression deeper at the lateral extremities, appearing under certain angles of reflection as if distantly bi-impressed; this character appears to be independent of sex.

N. puberulus Lec.—Ann. Lyc. N. Y., V, p. 145.—Oblong-oval, convex, black; head slightly rufous; integuments smooth but rather dull; pubescence moderate in length, fine, sparse, recumbent and dark in color, not very conspicuous. *Head* transverse, feebly convex, deeply and broadly bilobed at apex, somewhat finely, moderately densely and asperately punctate, the punctures not contiguous and almost granuliform; upper lobe of eye very minute, much longer than wide; antennæ robust, much shorter than the head and prothorax, the last three joints wider, third a little shorter than the next two, eleventh almost circular, much narrower than the tenth. *Prothorax* one-half wider than the head and nearly one-half wider than long; apex much narrower than the base, strongly emarginate in circular arc, the angles narrowly rounded; base transverse, gradually, feebly sinuate very near the sides, the basal angles being slightly acute, not at all rounded and projecting posteriorly beyond the median portion; sides strongly arcuate, straighter in basal two-thirds; disk about equal in width throughout basal two-thirds, rather finely punctured, the punctures transversely arcuate, moderate in size, rather sparser toward the middle, denser laterally, asperate throughout. *Elytra* ovate, very little wider than the prothorax and slightly more than twice as long, but little longer than wide; sides distinctly arcuate; humeri obtusely rounded; disk finely, somewhat densely and evenly punctate throughout, with vague traces of series of widely distant punctures of the same kind. *Abdomen* rather strongly, asperately punctate toward base.

Male.—Not determined.

Length 4.8–5.5 mm.; width 2.5–2.7 mm.

California (Vallecitas) Cab. LeConte; (San Bernardino) Mr. Dunn.

The specimens before me exhibit no sexual impression toward the base of the abdomen, but have the fifth segment strongly bi-impressed as usual. The under surface and legs are rufous, the latter pale.

N. substriatus n. sp.—Oblong, somewhat robust, black, rather strongly shining; legs and antennæ rufous; pubescence nearly as in *puberulus*. *Head* transverse, bilobed at apex, somewhat coarsely, densely punctate, the punctures very strongly granuliform; upper lobe of eyes very minute; antennæ nearly as in *puberulus*. *Prothorax* about one-half wider than the head and one-half wider than long; apex much narrower than the base, feebly, evenly emarginate in circular arc, the angles narrowly rounded; base transverse, extremely feebly sinuate near the basal angles which are right, not rounded and extremely feebly, posteriorly prominent; sides evenly and rather strongly arcuate throughout; disk very distinctly wider in the middle than at base,

rather coarsely, deeply and strongly punctate, the punctures rather dense and asperate laterally, decidedly sparse, rounded and not asperate toward the middle. *Elytra* as wide as the prothorax and not more than twice as long; sides parallel and extremely feebly arcuate in basal three-fifths, thence very broadly rounded behind; disk with fine, very feebly impressed striæ which are finely but deeply, distinctly and very closely punctured; intervals very sparsely punctate, the punctures similar to those of the striæ except that they are slightly asperate. *Abdomen* rather strongly, asperately punctate toward base.

Male.—Abdomen broadly and distinctly impressed in the middle toward base.

Length 5.0 mm.; width 2.4 mm.

California (Majave Desert).

Allied somewhat to *puberulus*, but distinguishable by its feebly impressed, closely punctured elytral striæ, those of *puberulus* being completely unimpressed and very distantly punctured, also by its coarser, deeper, sparser, less asperate and not transversely crescentic pronotal punctures, and much less posteriorly prominent basal angles of the prothorax.

N. laticeps n. sp.—Very robust, rather feebly convex, oblong, shining, very feebly alutaceous, black; head slightly rufescent; pubescence short, fine, sparse and recumbent, dark piceous in color. *Head* strongly transverse, angulate behind the eyes, the sides convergent anteriorly from the basal angles; epistoma very broadly bilobed; surface feebly convex, finely, sparsely punctate, the punctures strongly granuliform; upper lobe of eyes very minute; antennæ nearly as in *puberulus*, the third joint rather more than twice as long as wide, the eleventh small. *Prothorax* two-thirds wider than the head and rather more than one-half wider than long; apex narrower than the base, narrowly truncate between the advanced and very broadly rounded apical angles; base transverse, feebly sinuate laterally, the basal angles being right not at all rounded and slightly posteriorly prominent; sides almost parallel throughout basal three-fourths, rather feebly arcuate, then rounded into the extremely broad apical angles; disk sparsely punctate, the punctures very fine, rather feeble and transversely crescentiform, not strongly asperate, a little more noticeably so but not distinctly denser laterally. *Elytra* very slightly wider than the prothorax and a little more than twice as long; sides feebly arcuate; apex ogival; humeri very broadly rounded; disk with distant, excessively feebly impressed rows of fine, closely-placed punctures, the punctures of the intervals similar in size but a little more asperate, sparsely and unevenly distributed. *Abdomen* finely, rather sparsely punctate, the punctures becoming more asperate toward base; pubescence rather long, fine and abundant. *Legs* bright rufous, rather long, the femora robust.

Male.—Abdomen extremely feebly and broadly impressed in the middle toward base.

Length 5.8–6.4 mm.; width 2.8–3.0 mm.

California (southern).

This is the largest species of the genus, and is quite distinct in its extremely fine, sparse and transverse pronotal punctures, more prominent basal angles of the head and several other characters; the sides of the prothorax occasionally become more strongly arcuate.

N. puncticollis Lec.—Ann. Lyc. N. Y., V, p. 145.—Oblong, rather strongly convex, dark rufo-ferruginous, the elytra black; moderately shining; pubescence fine, recumbent, moderate in length, dark and sparse. *Head* transverse, rather finely, somewhat densely and asperately punctate; sides near the base parallel and almost straight; epistoma very broadly bilobed; upper lobe of eyes very small, elongate; antennæ much shorter than the head and prothorax, rather robust, compact, the outer joints but feebly dilated, third joint pyriform, but very slightly longer than wide and conspicuously shorter than the next two which are equal, eleventh small. *Prothorax* distinctly less than one-half wider than the head, about one-half wider than long; apex narrower than the base, broadly truncate between the slightly advanced and broadly rounded apical angles, which are moderate in width; base very broadly, feebly arcuate in the middle, broadly and strongly sinuate laterally, the basal angles acute, not rounded and distinctly prominent posteriorly; sides subparallel, feebly arcuate; disk rather coarsely, strongly punctate, the punctures rather dense throughout but closer and more asperate laterally, almost rounded and scarcely asperate toward the middle. *Elytra* very little wider than the prothorax and distinctly more than twice as long; sides feebly, evenly arcuate; disk with fine, obsoletely impressed rows of very fine, rather distant punctures, the punctures of the intervals similar but slightly more asperate, rather sparse but not much more distant than those of the series, so that the latter are observable with difficulty. *Abdomen* finely, sparsely, asperately punctate.

Male.—Without distinct sexual characters.

Length 4.7–5.0 mm.; width 2.1–2.4 mm.

California (Sacramento Valley and El Dorado Co.).

The size and form of the third antennal joint and coloration of the body will be amply sufficient to distinguish this species, which is more northern in habitat than the others.

CYBOTUS n. gen.

Mentum moderate, nearly flat, deeply and roughly sculptured, but slightly wider than long, strongly trapezoidal anteriorly, the apex narrowly and feebly sinuate; ligula very short, sinuate in the middle, the connate paraglossæ furnished with very robust bright yellow bristles, the labial palpi attached at the sides under the apical portions of the mentum; fourth joint of the maxillary palpi robust, oval, the apex broadly truncate and having a conspicuous extensible white membrane; epistoma deeply sinuate. Prosternum widely separat-

ing the coxæ, the process porrect, extending far behind them, the apex acutely angulate, loosely received in repose in an excavation of the mesosternum. Posterior coxæ narrowly separated, the process truncate. Base of the pronotum transverse and perfectly straight. Elytra connate, coarctate with the prothorax throughout the width. Tarsi very coarsely spinose beneath, the anterior not dilated in the male.

The form of the body is abbreviated, oval and strongly convex, and the genus seems to be rather isolated, having no decided bond of affinity with any other. It is remarkable in the structure of the terminal joint of the maxillary palpi, the apical cavity of which is filled with a tumid or apparently extensible white membranous mass. The single species is absolutely apterous.

C. estriatus Lec.—*Blapstinus est.*: Proc. Am. Phil. Soc., XVII, 1878, p. 420.—Broadly oval, very convex, dull and alutaceous, black, not pubescent but each of the fine punctures having an excessively minute erect seta, only distinctly visible under high power. *Head* transversely trapezoidal, rather convex, finely, somewhat unevenly but generally sparsely punctate; upper lobe of eye rather small and elongate; antennæ somewhat slender but short, not much longer than the prothorax, the outer joints very slightly wider, joints three to five uniformly and rapidly decreasing in length. *Prothorax* rather strongly transverse, about four-fifths wider than long, rather strongly narrowed from base to apex, the sides evenly and very feebly arcuate; apex very feebly emarginate in circular arc; base transverse; disk minutely and not densely punctate, subopaque, with a narrow polished and impunctate basal margin. Scutellum small. *Elytra* much wider than the prothorax and from two and one-half to three times as long; sides strongly arcuate, continuous in curvature with those of the prothorax, apex rather acute; disk very finely, not densely punctate, with very ill-defined, widely distant rows of similar punctures. *Abdomen* shining, finely but deeply, distinctly and rather densely punctate. Anterior tibiæ rather robust, compressed and in the form of an elongate triangle. Posterior tarsi with the fourth joint much shorter than the first three combined.

Length 3.5–4.7 mm.; width 2.0–2.8 mm.

Florida.

The rows of punctures on the elytra are quite distinct in some specimens, with a tendency to noticeable impression, but in others they are very indistinct. When the prothorax is slightly thrown back the pronotum almost completely covers the scutellum.

APHANOTUS Lec.

The two species of this genus differ by characters which in many parts of the family might readily be considered generic, but in this instance I do not think that they possess more than a specific value, because of the general resemblance throughout the remainder of the body, which is so marked that without close examination they might possibly be confounded. The differences may be expressed as follows:—

Eyes completely divided; last joint of maxillary palpi rounded at apex and scarcely perceptibly oblique; antennæ gradually strongly dilated toward apex, the outer joints compactly joined, the eleventh transversely truncate throughout the width and much wider than long ..... **brevicornis**

Eyes not completely divided; last joint of maxillary palpi truncate at apex, the truncation strongly oblique; antennæ rather less strongly dilated toward apex, the outer joints widely separated and perfoliate, eleventh slightly wider than long, oval, the apex strongly rounded throughout the width and with a large sensitive area..... **parallelus**

In general habitus, the two species can be distinguished by the more elongate elytra of *parallelus*.

A. parallelus n. sp.—Elongate, parallel, moderately convex, rufo-castaneous throughout, strongly shining, glabrous although each puncture has an excessively minute erect seta. *Head* about two-thirds as wide as the prothorax, slightly transverse, vertex rather convex, finely, densely punctate; epistoma subtruncate; eyes large, the dorsal portion oblique and gradually acuminate; antennæ with the third joint slightly longer than wide and distinctly longer than the second or fourth, the latter equal. *Prothorax* scarcely one-third wider than long; sides nearly parallel, evenly and rather feebly arcuate; apex just visibly narrower than the base, broadly, feebly emarginato-truncate, the apical angles being very slightly prominent but narrowly rounded; base transverse and very feebly bisinuate; disk rather coarsely punctate, the punctures shallow and variolate, finer and sparser toward the middle, very dense laterally. Scutellum moderate, slightly transverse. *Elytra* subequal in width to the prothorax and about three and one-half times as long; sides nearly straight; apex rather abruptly rounded; humeri acutely rectangular and very slightly prominent; disk with eight discal costæ which are abruptly elevated but very fine, the crest of each lying between two series of excessively minute punctures; intervals very feebly concave, each with a single series of fine, feeble, not very closely-set punctures. *Abdomen* finely, sparsely punctate, the punctures larger laterally. Length 5.0–6.0 mm.

Arizona (Benson). Mr. Dunn.

The description is taken from the male, the female not differing

very noticeably in the structure of the head, but having the prothorax fully one-half wider than long and the elytra nearly four times as long as the latter. It will be noticed in Eulabis, Aphanotus, Eleates, Eledona, and perhaps some other genera having the elytra finely costate, that the ridges are margined at each side with a row of minute punctures. This may possibly indicate a bond of mutual consanguinity.

PHALERIA Latr.

The eyes in some of our species of Phaleria are extremely large and separated beneath only by a very narrow interval. At first this might certainly be thought to indicate generic difference, but a series can be formed showing a gradual widening of the interval, until in *punctipes* the eyes are relatively not much larger than in the European *hemisphærica* or our own *globosa*. A similar series can be formed showing a gradual lengthening of the metasternum from *globosa* to *longula* and others. We have here, therefore, two more variable elements in this unusually plastic genus.

P. gracilipes n. sp.—Very narrow, moderately convex, strongly shining, pale flavo-testaceous throughout, not at all maculate; margins not fimbriate. *Head* moderate, very minutely, feebly and sparsely punctate, the eyes very large, feebly emarginate by the sides of the head, separated beneath by a very narrow interval and with the inner sides acutely rounded; antennæ short and robust, joints six to ten wider than long, the eleventh as long as wide, obtusely rounded. *Prothorax* fully four-fifths wider than long, the apex about two-thirds as wide as the base, feebly, evenly emarginate in circular arc, the angles right and very narrowly rounded, not at all prominent; base transverse, the angles slightly obtuse but not distinctly rounded; sides evenly, feebly arcuate; disk impunctate, without trace of beaded basal margin but with two short feeble striate impressions which are widely distant and near the base. *Elytra* at base not distinctly wider than the prothorax, about three times as long as the latter, obtusely rounded at apex, distinctly striate, the striæ very finely, indistinctly punctate, rather feebly impressed toward base, very deeply so toward apex, the intervals then becoming very strongly convex, extremely minutely, rather sparsely punctate throughout. *Abdomen* polished, very minutely and sparsely punctate. *Legs* rather slender, the posterior tibiæ but slightly larger from base to apex and not very densely spinose. Length 4.5 mm.; width 1.9 mm.

Texas. Mr. W. Jülich.

The smallest and by far the most slender of the species with elongate metasternum, allied only to *debilis*, but very much more

shining and not granulose, with much less robust femora and decidedly less clavate and spinose posterior tibiæ. In *debilis* the pronotum is finely but distinctly punctate and the elytral striæ are more feebly impressed at base, the elytra being exactly equal in width to the prothorax.

In *gracilipes* the wings are very well developed, being much longer than the elytra.

PLATYDEMA Cast.

There are two species of this genus which are commonly confounded under the name *excavata* Say. One of these forms was recently described by me, from an abnormally small specimen, under the name *parvula*, and as Say's description will apply equally to both, the type being no longer in existence, I have thought it desirable to give differential diagnoses of the two species under names which have been already published; they may easily be separated by the following characters which are taken from the males:—

Form narrowly oval; eyes moderate; frontal excavation very large and deep, the horns separated by a distance which is equal to one-half the entire width; elytral intervals very minutely and sparsely punctate; femora sparsely and finely punctate throughout..... **excavata**

Form broadly oval; eyes much larger; frontal excavation small, moderate in depth, the horns separated by scarcely more than one-third the entire width; elytral intervals more convex, more strongly and densely punctate, the striæ rather more deeply impressed; femora finely, rather more densely punctate, especially toward apex..... **parvula**

In addition to the characters given it should be stated that the frontal horns themselves are quite different in form; in *excavata* they are much longer and are perfectly straight, while in *parvula* they are shorter, stouter, more gradually acuminate from base to apex, and are arcuate and curved upward throughout their length.

The type of *opacula* appears to be a small and rather abnormal specimen of *ruficornis* Sturm; the head is more coarsely punctate than usual, but otherwise I can find no good character to distinguish it.

ELEATES Casey.

The genera of Bolitophagini may be distinguished as follows:—

Eyes emarginate in front.
Prothorax broadly pedunculate at base, the sides strongly, unevenly serrate; elytra each with four coarse widely interrupted ridges, the fourth less evident, the intervals unevenly punctato-tuberculose ...**Bolitotherus**
Prothorax not pedunculate at base, the sides not serrulate; elytra each with nine fine equal and entire costæ, the intervals uniseriately punctate. **Eledona**
Eyes completely divided.
Head deeply inserted; pronotum lobed in the middle at apex, broadly pedunculate at base, the sides finely but strongly serrulate; elytra each with four interrupted ridges, the intervals each with two rows of coarse punctures separated by a finer interrupted ridge.....**Bolitophagus**
Head not deeply inserted, the eyes distant from the prothorax, the pronotum not, or but very feebly lobed, the base not pedunculate; sides not serrulate; elytra each with nine fine continuous and equal costæ, the intervals evenly and uniseriately punctate.....**Eleates**

It will be observed that Eleates is related to Bolitophagus in nearly the same way that Eledona is to Bolitotherus; in both of those first mentioned the sides of the prothorax are sometimes extremely feebly and indefinitely undulated, but never properly serrate. The species of Eleates may be defined as follows:—

Eyes coarsely faceted; sides of the pronotum broadly explanate.
Form robust, not more than twice as long as wide; apical angles of the prothorax distinctly rounded.....**depressus** Rand.
Form rather slender, always notably more than twice as long as wide; prothorax a little more than twice as wide as long, the apex deeply emarginate, the middle feeble arcuate; apical angles subacute and more narrowly rounded; disk very densely and rather more coarsely punctate, feebly impressed along the middle; elytra similar to those of *depressus* but distinctly longer, the punctures of the intervals a little coarser; under surface densely punctured. Length 5.6; width 2.2–2.3 mm. Oregon.....**explanatus** n. sp.
Eyes finely faceted; form more convex; sides of the pronotum very narrowly reflexed.....**occidentalis** Cas.

I have before me a series of six specimens from Marin Co., California, which are exactly similar to the typical *explanatus* but uniformly smaller,—length 4.4–4.8 mm.; width 1.8–2.0 mm.

Explanatus is related to *depressus* in much the same way that *Coxelus pacificus* is to *guttulatus*, *Lypsimena californica* to *fus-*

cata, *Acanthocinus princeps* to *spectabilis*, *Pentaphyllus californicus* to *pallidus*, and numerous other examples, where, in each case, the representatives on the two sides of the continent are quite certainly specifically distinct, but allied sufficiently to indicate probable divergence from a common ancestor in comparatively recent geological time.

HELOPS Fab.

The species which have been associated under this name form, in our fauna alone, a most difficult study. I will not attempt at present to assign the following species to any of the numerous genera which have been created at the expense of Helops, but will simply indicate their relationship with described species.

H. ovipennis n. sp.—Rather broadly oval, distinctly depressed above, perpendicular at the sides of the elytra, black, with a feeble greenish-aneous tinge, polished. *Head* rather wider than long, extremely coarsely, deeply, not very densely but unevenly punctate; eyes rather more prominent than the sides before them; epistoma subtruncate at apex: antennæ wanting in the type. *Prothorax* twice as wide as the head and fully three-fourths wider than long; apex but slightly narrower than the base, broadly, distinctly emarginate between the slightly advanced but obtuse and distinctly rounded angles; base transversely, very evenly truncate; basal angles right, not rounded and distinctly prominent; sides parallel, moderately arcuate, nearly evenly so to within one-fifth the length of the base where they become strongly convergent, very strongly sinuate just before the basal angles; disk transversely, rather feebly convex, with a feeble and uneven median impressed line which is coarsely, unevenly punctate, but on each side of which the disk is smooth for a short distance, distinctly explanate near the sides, extremely coarsely, deeply, very unevenly punctate, the punctures impressed and coalescent. *Elytra* oval, a little more than three times as long as the prothorax and, in the middle, fully two-fifths wider; sides strongly, evenly arcuate; humeri completely obsolete, very broadly arcuate; apex somewhat acutely rounded; disk with deep and widely impressed sulci which are coarsely and approximately punctate, the punctures rounded; intervals very strongly convex, very finely, extremely sparsely and unevenly punctate, more or less widely interrupted, more frequently and thoroughly so near the apex, especially the alternate intervals; epipleuræ very wide, extremely dilated toward base where they are fully one-half as wide as the entire metasternum including the episterna. *Abdomen* longer than the entire remainder of the body including the head, transversely convex, polished, almost completely impunctate, each segment with a large feeble oviform impression near the side; metasternum extremely short, between coxa and groove less than one-half as long as the first ventral segment. *Legs* rather short and slender, finely, extremely

sparsely punctate, the posterior tibiæ arcuate throughout the length, nearly glabrous but abruptly and very densely, finely pubescent near the apex, especially internally; tarsi wanting in the type. Length 15.5 mm.; width 6.7 mm.

California (Mojave Desert).

A single mutilated specimen of this unusually isolated species was found dead by Mr. Dunn in a decaying stump. It cannot be compared with any other of our species and is remarkable because of its oval elytra, with very wide epipleuræ and totally obsolete humeri, and its extremely coarsely and deeply sculptured but polished upper surface. It is one of our largest species.

Although the punctures of the elytral series are coarse, they are not as wide as the impressed sulci and only about one-fourth as wide as the intervals.

H. guadalupensis n. sp.—Elongate, subparallel, convex, shining, piceous-black; under surface and legs dark rufo-piceous; antennæ fuscous. *Head* a little wider than long, very coarsely, deeply punctate, the punctures forming long interlacing rugæ, but finer, round and distinctly separated on the epistoma, the latter truncate; eyes transverse, very strongly convex, more prominent than the sides before them; antennæ slender throughout, two-thirds as long as the elytra in the male, one-half as long as the latter in the female, tenth joint more than twice as long as wide in the male, one-third longer than wide in the female. *Prothorax* about one-fourth wider than long; apex equal in width to the base, broadly, evenly arcuate throughout, the angles right and narrowly rounded; base truncate; basal angles very broadly obtuse and rounded; sides parallel, very evenly and rather feebly arcuate throughout; disk evenly, feebly, transversely convex, coarsely, very deeply and extremely densely punctate throughout, the punctures forming short interlacing furrows and very narrow intervening rugæ, not appreciably sparser toward the middle in the male, but slightly so in the female. *Elytra* three times as long as the prothorax and more than one-third wider, parallel, the sides but just visibly arcuate; humeri distinct but narrowly rounded; disk with fine but deep and abrupt striæ which are finely catenulate, the punctures totally disappearing toward apex; intervals very feebly convex, extremely minutely and sparsely punctate, each with a single series of small feeble and distant tubercles, only visible toward the sides and apex. *Abdomen* finely but distinctly and somewhat sparsely punctate; metasternum between coxa and groove subequal in length to the first ventral segment in both sexes. *Legs* rather long and slender, the hind tibiæ straight, pubescent throughout; anterior tarsi very feebly dilated in the male. Length 11.0 mm.; width 4.2 mm.

Island of Guadalupe.

This species is to be placed near *bachei* Lec., but in considering it a variety of that form, Dr. Horn (Trans. Am. Ent. Soc., V, p. 201) has overlooked an important structural character relating to the

prothorax. In *bachei* the sides of the prothorax, in a vertical direction, are narrowly rounded, without trace of marginal bead, while in *guadalupensis* they are acute and have a fine acute marginal bead throughout the length. Among other differential characters of *bachei* may be mentioned the elytra not distinctly wider than the prothorax and without grooved striæ, having simply rows of fine punctures which extend to the apex, the metasternum much shorter, and the penis acutely produced at apex and not grooved; in *guadalupensis* it is broader and narrowly truncate, with a broad dorsal groove; in these species the penis is sparsely clothed with short robust spines which are reflexed in position, like the teeth of certain reptiles. Both of the species here compared are distinguished from others by the small widely spaced tubercles of the elytral intervals, which are more pronounced in *bachei;* this character may indicate a community of origin, but at the present time they are certainly abundantly distinct. There are certain characters also which ally the present species to *cisteloides*, the male intromittent organ being truncate in that species and differing very strikingly from the finely acuminate apex as seen in *bachei*.

H. callosa n. sp.—Elongate-oval, very convex, feebly shining, castaneous to piceous throughout, sometimes paler beneath. *Head* fully as long as wide, rather coarsely, extremely densely punctate and dull, the punctures closely crowded throughout; apex transversely truncate; eyes a little more prominent than the sides before them, very strongly convex, transverse and surrounded by the usual very deep groove; antennæ one-half as long as the body, rather robust but not in the least incrassate, joints eight to ten just visibly decreasing in length, the latter one-half longer than wide, eleventh longer. *Prothorax* one-fifth wider than long, the apex just perceptibly wider than the base, broadly, feebly arcuate, the angles slightly obtuse and narrowly rounded; base transversely truncate; basal angles obtuse but not in the least rounded, distinct but not prominent; sides feebly arcuate anteriorly, slightly convergent and more nearly straight thence to the base; disk usually widest a little before the middle, coarsely, very deeply and extremely densely punctate throughout; sides rather obtuse but with a fine beaded margin which is invariably present near the base and sometimes traceable throughout the length. *Elytra* elongate-oval, about three times as long as the prothorax and, in the middle, scarcely one-fourth wider; humeri slightly obtuse, not distinctly rounded but not in the least prominent; apex rather narrowly rounded; disk with distinctly impressed striæ, which are coarsely, deeply punctate, the punctures approximate, perforate and greatly elongate; intervals moderately convex but very strongly so toward apex, extremely finely, sparsely and irregularly punctate. *Abdomen* rather coarsely, moderately densely punctate; metasternum between coxa and groove equal in length to the first ventral

segment. *Legs* long, moderately slender; posterior tibiæ slender, straight, pubescent throughout; femora coarsely, deeply and densely punctate. Length 5.6–9.0 mm.; width 2.0–3.3 mm.

New Mexico (Fort Wingate). Dr. Shufeldt.

The description is taken from the male; the female does not differ greatly but is larger, the antennæ slightly longer than the head and prothorax, joints eight to ten decreasing rapidly in length, the latter but slightly longer than wide, the elytra a little more inflated and from one-third to one-half wider than the prothorax.

This species is allied to *attenuata* Lec., but differs in its shorter, more transverse prothorax, with less strongly arcuate apex, and in the much more impressed and coarsely punctate elytral striæ. It varies greatly in size, but the prothorax is equally transverse throughout the seven specimens which I have before me. The epipleuræ are narrow throughout as usual.

CERAMBYCIDÆ.

ERGATES Serv.

Subgen. TRICHOCNEMIS Lec.

The high regions of New Mexico and southern Colorado constitute a peculiar faunistic region or province, containing a large proportion of strictly endemic species; in support of this statement scores of examples might easily be cited. The genera to which these species are referrable are generally widely distributed, but in several instances which may or may not be indicative of a more general tendency, the genus—as in Thyce—reappears only in the true Pacific coast fauna, without inhabiting the intervening districts as far as known.

For a long time past we have had specimens in our cabinets, belonging to the present genus, from New Mexico, and others from northern California to British Columbia, but none whatever from the intermediate regions; this fact alone should have led us to examine these specimens somewhat critically. It may be stated as the result of such an examination that the well-known rule above mentioned is thoroughly supported in this case, for it is perfectly evident that the New Mexican form is specifically distinct from the California representatives called *spiculatus* by LeConte, and subse-

quently described under the names *Macrotoma californica* and *spiculigera* by White.

The differences may be expressed as follows the characters referring to the males only :—

Genæ produced in a very acute dentiform process at apex; third antennal joint subequal in length to the prothorax; metasternum with a fine carina almost throughout its length; densely pubescent pads of the posterior tarsi not divided by a glabrous line except near the base of the first joint; fifth ventral segment with the sides strongly convergent from base to apex, the latter about one-half as wide as the base, very feebly incurvate, the angles obtuse but not at all rounded ...**spiculatus** Lec.

Genæ rectangular, not rounded but without acute process; third antennal joint distinctly longer than the prothorax; metasternum without median carina except in posterior third; spongy-pubescent pads of the posterior tarsi divided throughout by a fine glabrous line; fifth ventral segment having the sides feebly convergent, the apex fully three-fourths as wide as the base, broadly, strongly sinuate, the angles extremely obtuse and indistinct .....**neomexicanus** n. sp.

In general habitus the two species are easily distinguishable, the prothorax and elytra of *spiculatus* each being much longer and more convex than in *neomexicanus*, but the differences in the sexual modifications at the apex of the abdomen—shown on the accompanying plate—are of course conclusive.

The American representatives of Ergates differ from the European, to a considerable extent, in the length of the antennæ and anterior legs in both male and female, and also in the denticulation of the sides of the prothorax, one of the median teeth being much stronger than the others in the European species. It seems proper therefore that the name Trichoenemis Lec. should be preserved, if not with full generic value, at least as a subgenus.

TRAGOSOMA Serv.

I have before me representatives of three species assignable to this genus, which differ widely among themselves; they may be distinguished as follows :—

Head and prothorax very finely and extremely densely punctate, densely and conspicuously pilose.....**harrisi**

Head and prothorax almost glabrous, very coarsely and sparsely punctate.

Antennæ glabrous.....**spiculum**

Antennæ finely pubescent.....**pilosicornis**

Although the last two species differ conspicuously from *harrisi*, I have been unable to detect the slightest generic divergence. The metasternal side-pieces being triangular, more strongly so and also a little shorter in *spiculum* than in *pilosicornis*.

T. spiculum n. sp.—Form rather slender, parallel, moderately convex, shining throughout, dark castaneous; upper surface almost glabrous, the hairs growing from the sparse pronotal punctures very short and inconspicuous; sterna rather densely pubescent, the hairs not very long; abdomen sparsely but distinctly pubescent. *Head* nearly as long as wide, coarsely, unevenly punctured; eyes large, nearly as in *harrisi* but more narrowly separated above and beneath; antennæ five-sixths as long as the body, robust, strongly compressed, glabrous, finely, extremely densely punctato-scabrous and rather dull, first, second and the extreme basal part of the third joints only, polished and coarsely punctate; basal joints in length proportioned nearly as in *harrisi*, eleventh joint very long and slender, compressed, fully two-thirds as long as the tenth and abruptly narrower in apical third. *Prothorax* scarcely one-third wider than the head, a little less than twice as wide as long; base and apex feebly lobed in the middle; disk very convex, almost perpendicular at the sides, the marginal line not very prominent; median groove entire, broadly, feebly impressed, the surface throughout very coarsely and unevenly punctate, sparsely so toward the middle, very coalescently on the flanks; sides feebly, almost evenly arcuate, the spiniform process situated behind the middle, abruptly projecting and spiculiform. Scutellum glabrous, coarsely punctate. *Elytra* parallel, a little more than twice as long as wide, nearly seven times as long as the prothorax and, in the middle, about two-thirds wider, truncate at apex, the sutural spines broad, short and everted; disk with punctures and raised lines almost as in *harrisi*, the punctures being coarser and not so dense. *Legs* and tarsi slender. Length 23.0 mm.; width 8.0 mm.

New Mexico (Las Vegas). Mr. H. Meeske.

Differs greatly from both *harrisi* and *pilosicornis* in the evenly arcuate sides of the prothorax, with the processes very abruptly projecting therefrom as slender spikelets. The description is taken from the only known specimen which is a male, the apex of the fifth ventral segment being broadly sinuate in circular arc, the lateral angles obtusely rounded, the edge fimbriate with extremely short fine hairs, and having a convex bevel.

T. pilosicornis n. sp.—Rather slender and depressed, moderately shining, pale castaneous-brown throughout, the upper surface almost glabrous, the hairs on the pronotum short and sparse. *Head* scarcely as long as wide, coarsely but rather densely punctate; eyes large, rather narrowly separated above and beneath, deeply, angularly emarginate near the upper extremity;

antennæ very slender, not compressed, nearly three-fourths as long as the body, joints proportioned in length nearly as in the female of *harrisi*, rather finely and densely punctate throughout, distinctly, moderately densely pubescent, the pubescence becoming extremely short but denser toward apex. *Prothorax* a little more than twice as wide as long measured from the base of the spines; apex subtruncate, slightly narrower than the base, the apical angles right, not rounded, slightly everted and laterally prominent; base transverse, very broadly, feebly lobed in the middle; sides obtusely angulate, the spines slender, erect, rather long, feebly turned backward toward apex; disk strongly impressed along the basal margin, without distinctly impressed median line, very coarsely, deeply punctate, the punctures very widely and sparsely scattered toward the middle, extremely coarse, dense and unevenly coalescent laterally, the surface gradually declivous toward the sides, the lateral margins acute, the hypomera extremely finely densely punctate. Scutellum with short sparse pubescence. *Elytra* parallel, about two and one-third times as long as wide, six times as long as the prothorax and about one-third wider; apex truncate and bisinuate, the sutural spines long, slender and straight; disk with very feeble elevated lines which are obsolete in basal and apical third, very coarsely, deeply but not very densely punctate toward base, the punctures gradually becoming smaller and denser from base to apex. Sterna with very short, moderately dense pubescence. *Legs* extremely slender throughout, moderate in length. Length 24.6 mm.; width 8.3 mm.

California (Mt. Diablo).

Although represented by a single female, I have no doubt of the specific distinctness of the present species; from the female of *harrisi* it of course differs completely, and from the male of *spiculum* it differs radically in the nature of the elytral sculpture, in the form of the sutural spines and in the extremely fine dense punctuation of the hypomera, these being completely impunctate, smooth and polished, with the exception of a few scattered punctures near the upper margin anteriorly, in *spiculum*. The marked pubescence of the antennæ, together with the characters above enumerated and many others, in addition, which are perfectly asexual in *harrisi*, seem to show that the species is not closely related to *spiculum*.

The type was received from Mr. Dunn with the indicated locality attached, but it is quite remarkable that such a conspicuous species should have remained undiscovered in a region so densely populated, and the locality may therefore possibly be erroneous.

APPENDIX.

Notes.

I.

Since the assignment of Lycoptis (*ante* p. 311) to the Colydiidæ, I have been far from satisfied with this disposition of it, and have therefore made some additional comparative studies, the result of which indicates the decidedly greater propriety of associating it with the Trogositidæ. Here, however, if we regard tarsal structure as of primary importance, it must constitute a distinct tribe, but if tarsal structure be found to be of subordinate value as it is in the Passandrinæ for example, the genus should be placed near Grynocharis in the subfamily Peltinæ, where its very remarkable antennæ will at once isolate it. In any event it is a transitional type between the Trogositidæ and the Cucujidæ.

The tarsi are slender and undilated and appear to be perfectly tetramerous—as previously described,—with the first joint smaller than the second or third.

The anterior coxæ are very small, transverse and pointed outwardly, but are far more feebly developed than in Grynocharis, being much narrower than the distance separating the apex from the lateral margin of the pronotum; in *Grynocharis quadrilineata* the latter distance is scarcely more than two-thirds as great as the coxal width.

II.

The comparative scarcity of fossilized remains of the Coleoptera, makes the problem of determining the mutual affinities of the forms at present existing on the earth, a rather more difficult one than in the case of vertebrates, where the ancestry can often thus be quite conclusively traced, and among the Coleoptera there is no portion of the complex clavicorn series, so difficult to classify in a natural manner, as those groups clustering about the genera Colydium, Rhysodes, Lyctus, Monotoma, Silvanus, Passandra, Cucujus, Telephanus and Hemipeplus. These are, judging from their very

numerous affinities in widely different directions, in all probability the direct and comparatively unmodified descendants of extremely ancient types, from which have diverged at different epochs a large proportion of the modern representatives of the order.

To discuss all or even a considerable part of the relations indicated by the genera mentioned, would be quite impossible at the present time. Perhaps the strongest is in the direction of the Tenebrionidæ, for this is evidenced very plainly in many ways:—in Rhysodes by the antennæ with porous sensitive areas toward the distal extremities of the last five joints, also visible in Brontes, Hectarthrum and Passandra, and by its large mentum; in Lyctus by the large mentum; in the Colydiinæ by the antennæ of Rhagodera and Anchomma; in the Passandrinæ by the antennæ of Narthecius, with its small terminal joint, and in the arcuate impression of the last ventral segment homologous with that of Zopherus; in the heteromerous male tarsi of the Cucujinæ; and finally and even more decidedly, in the completely heteromerous tarsi of Hemipeplus.

The rhynchophorous relationship is indicated by the larva of Lyctus and the prosternal structure of many colydiides, also by the solid antennal club of the Monotominæ and many of the Colydiinæ. Rather more obscure adephagous and cerambycide affinities have been noted by authors in Rhysodes, and Lyctus is said to possess some serricorn affinity through the Cisinæ.

That Lyctus is however really a clavicorn belonging near the Cucujinæ, does not seem to admit of any reasonable doubt for:

1 The tetramerous tarsi of Narthecius and the Colydiinæ have been derived from the pentamerous by the atrophy of the first joint, clearly shown in an intermediate stage in Lyctus, and also, it should be added, in a still more advanced stage in Prostomis. The tarsus of Lyctus is in fact very similar to that of Læmophlœus. It should also be remarked in this connection, that the antennæ of Lyctus are precisely identical in structure with those of Berginus.

2 The rhynchophorous relationship of some of the colydiides—notably Nematidium—has been observed by LeConte (Trans. Am. Ent. Soc., 1875, p. 168). Now in Lyctus this relationship is also evident but at an earlier stage of development, the larva of Lyctus being described as very similar to that of the Scolytidæ. Although this does not prove that Lyctus and Nematidium are related, since their resemblances to Rhynchophora may have been derived along lines of development convergent upon Rhynchophora but from

widely different directions, still I believe this fact should be mentioned as being at least of possible significance.

3 The mentum in Lyctus, and especially in Trogoxylon, is very large, filling the entire width of the gular opening and concealing a large portion of the maxillæ. In Rhysodes the enormous mentum is perhaps the most marked peculiarity of the genus, this organ being developed to a degree probably unknown in any other coleopteron. It seems probable that Lyctus may be related in this way to Rhysodes, and thence to the Cucujinæ.

4 All the important characters of Lyctus, other than those referred to, find their very satisfactory counterparts among various representatives of the Cucujidæ in the broad sense in which the family is here considered, and it is not at all easy to perceive any very striking serricorn characteristics. In fact no systematist who has placed Lyctus in the serricorn series has ever dwelt with great emphasis upon any particular character as proof of the relationship. DuVal, who seems to have been most candid in this respect, cites the form of the anterior coxæ as a reason for refusing it a place in the Cucujidæ, and the divergence of the larva from that of Cryptophagus as a reason for disregarding its general clavicorn affinities. The first of these reasons is of but little moment, as the anterior coxæ have many parallels among normal cucujides,[1] and the second is not decisive, for as shown by Lacordaire, the form of the larva allies it to the Scolytidæ rather than to the Bostrichinæ,—assuming of course that the larva has been correctly identified,—and as the Colydiidæ are also known to have rhynchophorous affinities, this argument is rather more effective for a clavicorn than for a serricorn relationship.

Regarding the Cucujidæ therefore as a family of Clavicornia, in which the anterior coxæ are small, rounded, deeply inserted and never decidedly prominent, and the tarsi generally slender, I would include within its limits the following subfamilies:—

Genæ with large porrect processes; tarsi isomerous in both sexes, but either pentamerous, subtetramerous or tetramerous; antennæ moniliform or clavate ..... PASSANDRINÆ

Genæ without porrect processes.

Tarsi tetramerous; antennæ frequently with a solid club.

Elytra entire ..... COLYDIINÆ

[1] I fail completely to see how the anterior coxæ of Lyctus can be considered "conical and prominent" as stated by DuVal. This is simply a question of observation and can be easily verified.

Elytra slightly abbreviated, exposing the pygidium; posterior tarsi 3-jointed in the males.....MONOTOMINÆ

Tarsi pentamerous in both sexes.

Antennæ moniliform; mentum extremely large, concealing all the organs of the mouth .....RHYSODINÆ

Antennæ with a 2-jointed club; mentum very large, concealing the maxillæ at the sides.....LYCTINÆ

Antennæ with a 3-jointed club; mentum always moderate .....SILVANINÆ

Antennæ filiform, the first joint usually long; labial palpi with the third joint very strongly developed; tarsi with the first joint small. BRONTINÆ

Tarsi pentamerous in the female, heteromerous in the male, the first joint small; antennæ very variable, submoniliform, filiform or clavate; labial palpi with the last joint variable.....CUCUJINÆ

Tarsi heteromerous in both sexes, broadly dilated, the penultimate joints bilobed, first long; antennæ combining the elements of the Brontinæ and Rhysodinæ, thick, monilo-filiform, the elytra slightly abbreviated as in the Monotominæ.....HEMIPEPLINÆ

These subfamilies, while exhibiting the most diverse and bewildering affinities and cross affinities in various external directions, are nevertheless so intimately bound together by certain general peculiarities of organization, that we are compelled either to regard them as constituents of one very composite family, or to consider each as a distinct family. There seems to me but little doubt that the former is the better course to take.

The Passandrinæ include three tribes, Passandrini, Prostomini and Narthecciini, depending upon the nature of the jugular pieces and the antennal structure.

The Colydiinæ comprise the genera at present composing the family Colydiidæ, the Murmidiini forming a tribe allied to Cerylonini and not a subfamily.

The Monotominæ include two tribes, Monotomini and Myrmechixenini, Hypocoprus bearing a relation to Monotoma which is almost precisely equivalent to that borne by Smicrips to Rhizophagus. Through the Monotominæ the Cucujidæ are connected with the Nitidulidæ by way of the Rhizophagini. In the Monotomini the number of tarsal joints is four throughout, with the third joint rather smaller than the others, especially in the anterior, but in the males the posterior tarsi are 3-jointed through the elimination of the first joint; this is an additional point of similarity between Monotominæ and Cucujinæ.

The Brontinæ may be divided as follows:—

Tarsi cylindrical.

Basal joint almost obsolete, not distinct.....**Brontes**

Basal joint small but very distinct, slightly swollen obliquely beneath. **Dendrophagus**

Tarsi strongly dilated; basal joint small but strongly, obliquely produced beneath the basal parts of the second joint.

Third tarsal joint obliquely produced beneath in a truncate or rounded lobe; basal joint of the antenna elongate; fourth joint of the maxillary palpi large and securiform.

Antennæ slightly thickened toward apex.....**Psammæcus**

Antennæ normally filiform throughout.....**Telephanus**

Third tarsal joint very deeply bilobed; first antennal joint short, oval; fourth palpal joint slender, conoidal.....**Cryptamorpha**

There can be no doubt whatever that these genera should be associated together. The tarsus of Brontes is truly very different from that of Telephanus, but that of Dendrophagus is a tolerably good intermediate, especially in the structure of the basal joint. The antennæ are of precisely the same type throughout, and the tarsi are isomerous in both sexes.[1] The genus Platamus of Erichson is the only one described which is not included in the table; it is allied to Brontes but differs in its less elongate basal joint of the antennæ.

The Cryptophagidæ which are allied to the Cucujidæ, but distinguished by the transversely oval and sometimes distinctly more prominent anterior coxæ, should be composed of the subfamilies Cryptophaginæ, Mycetophaginæ, Cisinæ and Sphindinæ.

The principal reasons advanced by the earlier systematists,—to whose views Lacordaire deferred somewhat against his will,—for considering the Cisidæ a family of the Serricornia, were in great measure superficial and based upon a general resemblance to the Anobiini, as expressed by the generally cylindrical form of body and somewhat retractile head. On examining the anatomical structure of the under surface I perceive no radical difference whatever between Cis and many of the cryptophagides, and have no doubt at all that the genus is really clavicorn. It cannot be denied, however, that the morphological resemblances to the anobiides above

[1] The three specimens of *Cryptamorpha desjardensi* (= *hubbardi* Cas.), before me, two of which I believe to be male and female from certain differences in the antennæ, have the hind tarsi normally pentamerous throughout. The statement made by Wollaston—apparently with some misgiving—that the tarsi of the male are heteromerous is open to the gravest doubt.

alluded to, undoubtedly indicate an obscure and innate line of consanguinity; this is indeed quite conclusively proven by the fact that in Rhipidandrus, which seems to be more closely allied to Cis than to any other genus, the antennæ are strongly pectinate toward apex, the pectinate portion forming an angle with the basal portion. This character however, when weighed against its general organization, does not make it a serricorn, any more than the purely clavate antennæ of Hydnocera prove the latter to be a clavicorn.

It does not seem possible in this connection to avoid attaching some weight to the resemblance, pointed out by Lacordaire, between the larva of Cis and Cryptophagus,[1] and, it may be added, the superficial resemblance of certain cisides to Diplocœlus is very remarkable, even more so in fact than the real resemblance of any species of the former which I have examined to any anobiide or bostrichide.

The retractibility of the head in Cis is generally very slight and is scarcely greater in degree than in some species of Atomaria. In the latter I do not find the anterior coxæ rounded, but transversely oval, exactly as in Cryptophagus. Sphindus is quite certainly not entitled to rank as a distinct family whatever be the position assigned it; the enlarged basal joint of the antennæ is analogous to that of Atomaria. In the latter genus the anteriorly prominent clypeus between the antennæ is indicative of a characteristic which becomes very prominent in certain cisides.

In the Cryptophagidæ as here considered, the parts which seem to offer the greatest diversity of form are the clypeus and tarsi; most of the other characters appear to be very persistent in structure. The tarsi of Telmatophilus and Loberus are analogous in taxonomical import to those of Telephanus and Psammæchus of the Cucujidæ.

It should be noted in conclusion that the scope here proposed for the families Cucujidæ and Cryptophagidæ, brings together in the

[1] In placing the Cisidæ near the Ptinidæ DuVal (Gen. Col. III, p. 236), seems to imply by the language used that the resemblance of the larva of Cis to that of Cryptophagus is a matter of very slight importance, as so little is known of larval affinities, but two pages before in maintaining that the Lyctinæ do not belong near the Cucujidæ, he assumes the divergence of larval form as a very powerful factor in his argument—an inconsistency which, it may be added, greatly reduces the weight of M. DuVal's conclusions as far as comparative studies of the larvæ are concerned.

former the greater part of the subcortical clavicorns, and in the latter a large proportion of those having fungivorous habits. From purely biological considerations therefore this arrangement would seem more natural than the wide dispersal of these perplexing groups of genera now considered necessary.

III.

The present opportunity is taken to give the general characters of an interesting addition to the Cucujidæ.

PLANISMUS n. gen. (Silvaninæ).

Body subparallel, rather depressed, extremely sparsely, inconspicuously pubescent. Head porrect. Eyes at the base near the prothorax, very large, convex and prominent. Epistoma slightly prolonged, transversely truncate at apex; suture entirely obliterated. Labrum short, transverse. Mandibles very robust but short, flattened, deeply notched at apex, bicarinate at the sides, the interval with a line of short robust setæ, the under surface longitudinally excavated in arc, the feeble excavation bounded internally by a very fine raised line. Mentum rather large, transverse, with a triangular carina. Labial palpi moderate, the third joint longer and a little thicker than the first two combined, longer than wide, oval, narrowly truncate at apex. Maxillary palpi cylindrical, the fourth joint as long as the first three, slender, much narrower than the second or third, cylindrical and very feebly arcuate. Antennæ robust, 11-jointed, with an abrupt loose and parallel 3-jointed club. Pronotum with a short longitudinal carina on each side in basal third or fourth and at lateral fourth. Scutellum short, transversely oval. Elytra with feebly impressed rows of distinct impressed punctures, the scutellar series long. Prosternum distinctly but not widely separating the coxæ, the process prolonged slightly and expanded behind them, the apex truncate and resting loosely on the anterior margin of the mesosternum. Anterior coxæ small, rounded, deeply inserted, the cavities narrowly closed behind; intermediate larger, rounded, moderately separated; posterior transverse, rather approximate. Legs rather short and robust; tibial spurs minute; tarsi 5-jointed throughout, the basal joint much longer than the second, the fourth very small, fifth slender, as long as the three preceding combined; first three very robust and, on all the tarsi, having each a finely spongiose pad beneath; ungues moderate, slightly dilated internally near the base. Abdomen consisting of five nearly equal free segments, the sutures fine and straight.

This genus belongs near Nausibius, but differs in the more robust and spongiose tarsi, in its much less broadly closed anterior coxal cavities, and very greatly in general appearance. In some respects it seems to be intermediate between the Silvaninæ and Cucujinæ,

but in antennal and tarsal structure it is as strongly silvanide as any other.

P. floridanus n. sp.—General form elongate-oval; integuments polished, dark rufo-testaceous. *Head* rather finely but deeply and somewhat densely punctate; antennæ about one-half longer than the head. *Prothorax* about one-half wider than the head and two-fifths wider than long; apex a little narrower than the base, truncate, the apical angles slightly obtuse but not rounded and just visibly prominent anteriorly; base very feebly arcuate, the angles distinctly rounded but with the extremity of the basal bead forming a minute prominent lateral point; sides very feebly convergent from base to apex, evenly, very feebly arcuate, without trace of inequality, the marginal bead finely, feebly reflexed; disk evenly, very feebly convex, rather sparsely, somewhat coarsely but feebly punctate, the regions near the basal carinæ very feebly impressed. *Elytra* twice as long as the head and prothorax combined, in the middle nearly one-fourth wider than the latter, the two bases equal; sides parallel, broadly, feebly, evenly but distinctly arcuate; apex evenly rounded; disk feebly but almost evenly convex, the punctures of the series deep and distinct, the intervals each with a single series of widely spaced very minute and scarcely visible punctures bearing fine recumbent hairs. *Abdomen* polished, finely, not densely punctate. Length 3.4 mm.

Florida (Biscayne Bay). Mr. Schwarz.

The elytral suture is finely beaded, the bead becoming very evident toward apex, where also the surface near the suture becomes distinctly impressed.

IV.

The cabinet formed by the late Dr. G. M. Levette, of Indianapolis, which has just come into the possession of the writer by purchase, contains a large amount of valuable material, especially from the Carolinas, Georgia, Florida and Colorado, much of which was probably collected by Morrison. A large proportion of this material is either undetermined or erroneously identified, but its value may be inferred from the fact that in the field covered by the present paper, I observe specimens of *Emmenastus fallax*, *Epitragus fusiformis*, *Asida angustula* and *quadricollis*, *Coniontis pallidicornis*, *genitiva*, *parallela*, *parviceps*, and *setosa*, *Eleodes arcuatus* and *E. prominens;* also *Helops impolita* and *tumescens*, and several remarkable new forms which will be made known at a future opportunity.

In this material there is a series of four specimens of *Eleodes cognatus*, which plainly indicates that the latter is a species different

from *extricatus*, and that the fine punctures of the type are normal; these representatives show, however, that they are generally disposed in series which are alternately narrowly and slightly more widely spaced, the intervals being alternately flat and slightly convex, the sculpture in general greatly resembling that of *fusiformis;* the original type is not a perfectly characteristic example.

A few additional remarks concerning the species described in this and the preceding paper, based in great measure upon the material above mentioned, should be added as follows:—

The aggregation of fine punctures in widely distant longitudinal series, is a character common to all of our species of Edrotes except *nitidus*, in which I can find no trace of it; the aggregation of the punctures is generally evidenced by a certain indefinitely vittate appearance, amounting to well defined series in *ventricosus*. This, together with the fact that in the unique type of *globosus* I find the setæ are broken off in a remarkably even manner and that the pubescence in the normal state is really long and erect, necessitates a new arrangement of the species as follows:—

Elytral punctures extremely fine and sparse.
  Each elytron with three narrow lines in which the punctures are more densely aggregated ..... **ventricosus**
  Elytra without trace of series; form more depressed ..... **nitidus**
Elytral punctures coarse and deep, denser; each elytron with three broad ill-defined series, in which the interspaces between the larger punctures become distinctly, though finely, and rather sparsely punctate.
  Elytra oval, slightly longer than wide; width of the prothorax scarcely more than one-half the elytral length; joints of the antennæ slightly more elongate ..... **rotundus**
  Elytra very globose, fully as wide as long, the width of the prothorax distinctly more than one-half the elytral length; elytral punctures rather less coarse and quite constantly sparser ..... **globosus**

Triorophus lecontei differs from *nodiceps* in its more elongate form, less developed frontal umbo, much less transverse prothorax—the form of this part being nearly as in *lævis*—and in its coarser elytral punctures. It is however more closely related to *nodiceps* than to *lævis*.

Emmenastus acutus seems to vary greatly in the distinctness of the rows of punctures, some specimens before me having the series near the suture quite well developed. Under these circumstances it is proper to assign the Truckee specimen, referred to under *E. ater*, to *E. acutus*. *E. coarcticollis* has the head smaller, the prothorax

much shorter and more transverse, and the elytra polished throughout and not dull toward apex as is the case in *acutus*.

Asida angustula, of which I have now seen nine specimens, differs from *muricatula* in its constantly much narrower and more parallel form and shorter and sparser pubescence; the legs are, however, similarly clothed with short inclined setæ, and are devoid of long flying hairs.

Blapstinus californicus Mots. must be regarded as a manuscript name, the original description being completely inadequate for its recognition; it was probably taken in or near the western part of Texas.

V.

The small white object previously described (Col. Not. I, p. 196), has been further reported upon by Mr. Beaumont, who states that it is found in large numbers in all the nests of the termites, irrespective of species, and that it runs with such velocity as to be very difficult to capture, turning and jumping slightly off its feet with great facility, apparently by means of the fleshy abdominal appendage, of which it makes constant use.

These facts, in conjunction with its general organization, prove it to be a member of the order Thysanura, belonging to an undescribed genus, and constituting a family quite different from either the Lepismidæ, Campodidæ or Poduridæ. For the genus I would propose the name GASTROTHEUS, and the species may be called *G. termitarius*.

The mandibles are short and very robust, the outer contour strongly, evenly arcuate, the apex abruptly produced and very finely acuminate. I cannot perceive any distinct internal denticulation.

EXPLANATION OF PLATE IV.

Fig. 1. Wing of Blapstinus dilatatus.
Fig. 2. Wing of B. rufipes.
Fig. 3. Wing of B. niger.
Fig. 4. Wing of B. inquisitus.
Fig. 5. Wing of B. parallelus.
Fig. 6. Wing of B. pratensis.
Fig. 7. Wing of B. pimalis.
Fig. 8. Wing of B. pulverulentus.
Fig. 9. Wing of B. arenarius.

Note.—The figures of the wings are drawn to the same scale throughout.

Fig. 10. Posterior femur of Argoporis costipennis ♂.
Fig. 11. Posterior femur of A. alutacea ♂.
Fig. 12. Posterior femur of A. nitida ♂.
Fig. 13. Posterior femur of A. bicolor ♂.
Fig. 14. Prothorax of Tragosoma pilosicornis ♀.
Fig. 14*a*. Elytral spine of same.
Fig. 15. Prothorax of Tragosoma spiculum ♂.

Note.—The spines at the sides are much too short and obtuse as drawn in the figure.

Fig. 15*a*. Elytral spine of same.
Fig. 16. Apex of the abdomen of Ergates neomexicanus ♂.
Fig. 17. Apex of the abdomen of Ergates spiculatus ♂.

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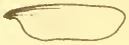

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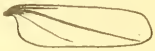

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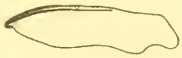

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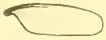

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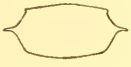

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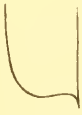

14*a*

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15*a*

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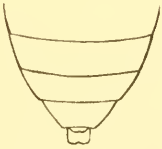

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