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Review of Califom. Species of

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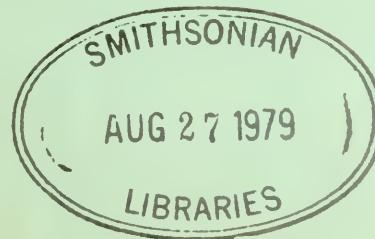
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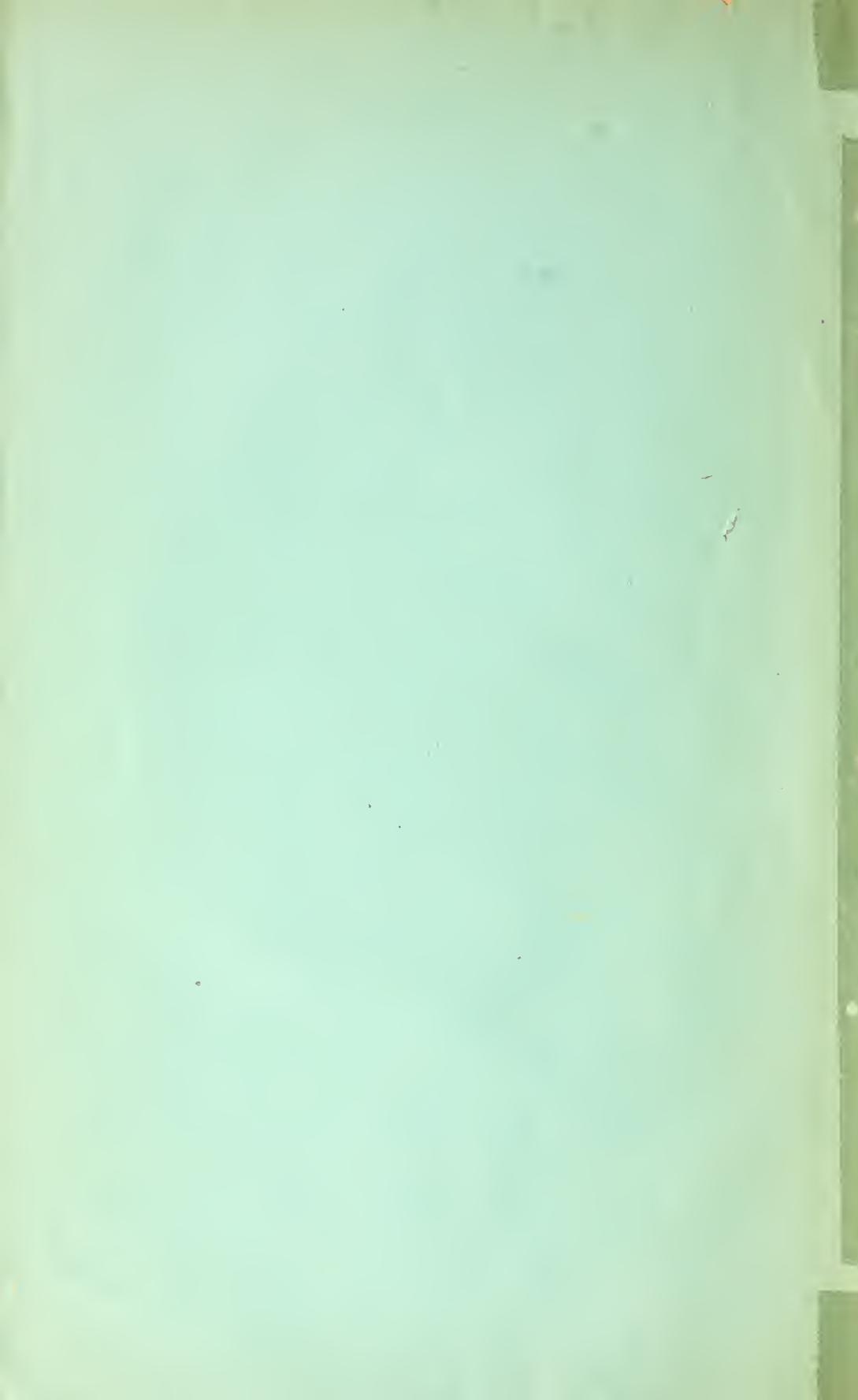
REVISION OF THE CALIFORNIAN SPECIES
OF
LITHOCHARIS AND ALLIED GENERA

By THOS. L. CASEY.

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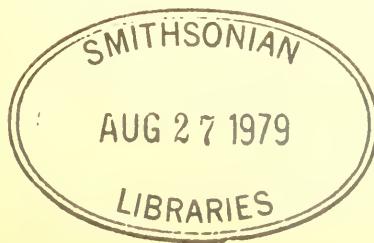
Revision of the Californian Species of *LITHOCHARIS*
and Allied Genera.

BY THOS. L. CASEY.

Revol Jan. 4th, 1886.

The species assignable to Lithocharis and allied genera are extremely abundant in California and are also very numerous individually, so that a review of the forms occurring here, although not so desirable as a general revision of the North American species, is, at the same time, amply sufficient to form a systematic basis upon which to found such an extended work, and probably loses little of what importance it may possess from the omission of species occurring east of the Rocky Mountains, as these are comparatively few in number and not as yet sufficiently collected.

Belonging to the region here considered, there are described below twenty-five species, most of which are rather local in habitat, although a few have an extended range. In regard to their favorite haunts, little is to be said; they frequent the margins of ponds and water-courses, and are found amongst decaying vegetable matter, roots of grasses, etc., in stony localities, although more abundant in the deep ravines so characteristic of the Coast Mountains. I have occasionally found particular spots of very limited extent in



these ravines, where they exist in enormous profusion, not only individually, but in species indiscriminately mingled; such for instance was a small area of precipitous rocks covered with mould, moss and thin grass, in the deep ravine at Gilroy Springs, Santa Clara County, where a small trickling stream from one of the sulphurous soda-springs enters the creek below. Here I obtained hundreds of specimens of seven distinct species; associated with them were an equal multitude of *Steni* represented by several species. This concentration of insect life, which is one of the peculiarities of faunal distribution in the Pacific regions, is to be accounted for in a measure by the nature of the climate, the long hot summers drying and baking the surface of the ground, and driving all species, except the comparatively few especially constituted to withstand such conditions, to the moist and secluded localities above mentioned.

The study and proper classification of these varied forms is a matter of considerable, although by no means of insuperable difficulty, there being one important characteristic, which is of very great aid to the investigator; this is the facility with which they may be resolved into perfectly definite, and so far as the material collected will allow of judgment—abruptly limited generic subdivisions. The principal difficulty, therefore, consists in the proper differentiation of the species composing these groups, and which are often very closely allied; but even here the difficulty is partially superficial, as when these closely allied forms are separated and carefully studied, they are found to possess very little variability, and the individuals of the several species appear to be unusually uniform throughout extended series.

The genera here considered possess certain characters in common, among which may be mentioned the rather slender maxillary palpi with the third joint very moderately swollen and the fourth minute, subulate and oblique, but distinctly visible; the antennæ also are singularly uniform in structure throughout, being slender—or very slightly ro-

bust in Metaxyodonta—and scarcely perceptibly incrassate. The fifth abdominal segment is almost invariably equal in length to the third and fourth together. The labrum differs throughout, and is, in conjunction with the relative length of the first joint of the posterior tarsi, made the principal basis of generic subdivision. It is singular, however, and a strong proof of the validity of the genera, that these two fundamental characters are accompanied by other very radical differences in many of the most important parts of the body, as well as in completely radical differences in the nature of the male sexual modifications; these are described in the table of genera given below.

The genera *Stilicus*, *Scopaeus*, *Orus*, etc., should precede those here given in a systematic arrangement of the Pæderi, and are distinguished from them by their very strongly dilated third maxillary palpal joint.

San Francisco, Jan. 1st, 1886.

NOTE 1.—In estimating the order of the abdominal segments in the following pages, the numbers refer to visible segments only.

NOTE 2.—Separate diagnoses of the various species are not given at present, as this paper is simply intended as the forerunner of a more general one upon our Pæderini.

GENERIC DEFINITIONS.

Head slightly narrower than the prothorax, sides parallel; eyes moderate in size; labrum 4-dentate, the teeth being rather prominent, acute and nearly equi-distant. Prothorax quadrate; sides parallel or very slightly narrowed from apex to base. Elytra much longer than the prothorax. First joint of the posterior tarsi as long as the next two together, or nearly so. Male sexual characters very simple; fifth segment not modified, sixth narrow, with a small simple sinuation at the apex..... Genus *Caloderma*.

Pronotum longitudinally rugulose..... Species 1 — 3.

Pronotum finely and generally very densely punctato..... Species 4 — 8.

Head rather large, slightly wider than the prothorax; eyes very small; labrum with a very small deep median emargination, slightly wider than deep, immediately adjoining which there are on each side two approximate and exceedingly minute acute teeth. Prothorax with the sides convergent pos-

teriorly. Elytra equal in length to the pronotum. First joint of the posterior tarsi fully as long as the next two together. Male sexual characters very simple; fifth segment not modified, sixth narrow with a very small triangular emargination at the apex (bilobed). Genus *Oligopterus*.
Species 9.

Head large, distinctly longer and slightly wider than the prothorax, subtriangular, very minutely punctate; eyes extremely small, round, on the sides before the middle; labrum with two short, or long and slender acute teeth, the edge adjoining them exteriorly being minutely and abruptly sinuate, and between them narrowly and rather deeply emarginate. Prothorax quadrate or slightly wider than long; sides moderately convergent posteriorly. Elytra as long as or very slightly longer than the pronotum. First joint of the posterior tarsi much shorter than the next two together. Male sexual characters rather simple; fifth segment very slightly modified, sixth deeply and evenly sinuate. Genus *Lithocharis*, Group A.
Species 10 — 13.

Head variable, as wide as or slightly wider than the prothorax, sides parallel, punctuation variable; eyes moderate in size; labrum with two small acute triangular teeth, the edge adjoining them exteriorly being minutely sinuate, and between them rather deeply emarginate. Prothorax finely and sparsely punctate with a rather broad median impunctate area; sides parallel or very feebly convergent posteriorly. Elytra much longer than the pronotum. First joint of the posterior tarsi generally but slightly longer than the second. Male sexual modification of the fifth segment very complex, the sixth being rather deeply and roundly emarginate.

Genus *Lithocharis*, Group B.

Prothorax not longer than wide.

Posterior angles of the head moderately broadly or rather narrowly rounded.

Head finely and densely punctate. Species 14

Head much more sparsely punctate.

Sides of pronotum distinctly convergent posteriorly. Species 15

Sides of pronotum parallel or extremely feebly convergent posteriorly. Species 16 — 19

Posterior angles of the head very broadly rounded. Species 20

Prothorax distinctly longer than wide. Species 21 — 23

Head rather small, sub-triangular, very minutely pubescent; eyes very large, coarsely granulate; labrum rather large, truncate at apex, rounded and narrowly explanate at the sides, broadly and very feebly sinuate in the middle, and having a single short, very small, acute median tooth which is slightly dorsal. Prothorax scarcely as long as wide; sides nearly parallel. Elytra very slightly longer than wide, distinctly longer than the prothorax. First joint of the posterior tarsi, much shorter than the next two together. Male sexual modification of the fifth segment simple, of the sixth complex.

Genus *Metaxydonta*.

Species 24 — 25

CALODERMA n. gen.

The species of this genus present a singularly homogeneous appearance, they being distinguished by their very narrow elongate form, small heads with parallel sides, quadrate prothorax and long narrow parallel elytra; the abdominal sculpture is also a distinguishing feature, the transverse wavy lines of minute sub-asperate punctures being peculiar to them, although having a tendency to reappear in the genus *Metaxyodonta*.

1. *C. rugosum* n. sp.—Slender, moderately convex; sides parallel; color throughout piceous; pubescence extremely sparse and scarcely noticeable upon the head and prothorax, very fine, extremely dense and sericeous on the elytra and abdomen, pale ochreous in color and very conspicuous; under surface and legs piceous-brown, the latter slightly paler, tarsi pale brown; antenna fuscous throughout. *Head* short and robust, scarcely longer than wide; sides parallel, very feebly arenate; base transversely truncate, basal angles distinctly rounded; surface feebly and evenly convex, finely and extremely densely punctate throughout, slightly more sparsely so between the antennae; punctures round, shallow and sub-annular; eyes at much more than their own length from the basal angles, moderately prominent; antennæ slender, nearly as long as the head and prothorax together, scarcely perceptibly incrassate; basal joint as long as the next two together, second very slightly shorter and more robust than the third, tenth slightly longer than wide; maxillary palpi piceous-black; labrum with four equal acute triangular teeth, sides broadly and roundly lobed. *Prothorax* about as long as and slightly wider than the head; sides parallel and feebly arenate; base strongly arenate; apex broadly and much less strongly so; apical angles distinctly rounded, basal very broadly so; apex with a very small feeble sinuation in the middle; disk very slightly longer than wide, transversely, moderately and evenly convex, very minutely, rather strongly and evenly rugulose; rugulae sinuous and interrupted; having a very narrow and imperfect median line toward base. *Elytra* at base very slightly wider than the pronotum; sides parallel and feebly arenate posteriorly; together broadly, triangularly and feebly emarginate behind; disk transversely and moderately convex, one-third longer than wide, one-half longer than the prothorax, feebly impressed along the suture, which is margined with a slightly elevated line, extremely minutely, evenly and densely punctate; punctures asperate and more sparse near the apices. *Abdomen* scarcely perceptibly paler toward tip, transversely striate with fine wavy lines of extremely minute asperities. *Legs* moderate; anterior tarsi feebly dilated, first joint of the posterior as long as the next two together. Length 3.7-4.2 mm.

Described from the male, in which the sixth segment is narrow and evenly sinuate at the tip, the sinus being evenly rounded and about four times as wide as deep. The species is one of the most distinct of this portion of the genus, and is widely extended in distribution throughout the middle coast region; it is distinguishable at once by its very dense sculpture, dark color and very dense pubescence of the posterior portions of the body.

2—*C. continens* n. sp.—Moderately robust, rather depressed; head and abdomen black, the latter paler and brownish-ferruginous at apex; prothorax and elytra dark castaneous-brown, the latter slightly the paler; under surface paler, castaneous; legs brownish-flavate; antennæ rufo-fuscous throughout; maxillary palpi piceous-black; head and pronotum almost glabrous, having a few erect black setæ; elytra and abdomen finely and moderately densely pubescent. *Head* moderate, slightly longer than wide; sides parallel and feebly arcuate; base truncate, basal angles distinctly rounded; eyes small, moderately prominent, in great part visible from above, one and one-half times their own length from the base; occiput moderately convex, front flat anteriorly; punctures fine, round, shallow, sub-annular and extremely dense; antennæ nearly as long as the head and prothorax together, slender, not incrassate; basal joint as long as the next two together, second much shorter and more oval than the third, tenth longer than wide. *Prothorax* large, nearly as long as and very slightly wider than the head; sides just visibly convergent from apex to base and very feebly arcuate; base broadly arcuate, sub-truncate in the middle; apex broadly arcuate, as strongly so as the base, narrowly and very feebly emarginate in the middle; apical angles narrowly but distinctly rounded, basal more broadly so; disk transversely and moderately convex, quadrate, very finely, evenly and strongly rugulose, the very fine median line being entirely obsolete in the apical half. *Elytra* at base just visibly wider than the pronotum; sides parallel, very feebly arcuate posteriorly; together broadly and just visibly incurvate at the apex; disk transversely and feebly convex, very feebly impressed along the suture which is very slightly and narrowly elevated, one-fourth longer than wide, slightly less than one-half longer than the pronotum, very minutely densely and evenly punctate; punctures sub-asperate and slightly sparser near the apices. *Abdomen* transversely striate with very fine wavy lines of minute closely-placed asperities. *Legs* moderate; anterior tarsi very feebly swollen; first four joints of the posterior decreasing uniformly and very rapidly in length, first slightly shorter than the next two together, fourth very slightly longer than wide; claws very small. Length 3.4 mm.

Contra Costa Co., 2; Napa Co., 1; San Diego, 2.

This species, although closely allied to the preceding, is distinguishable from it by its smaller size, more robust form, larger prothorax, coloration of the body, paler abdominal apex, less conspicuous pubescence and shorter first joint of the posterior tarsi. It is described from the male, the sixth segment being sinuate at apex; the sinus is rather more acutely rounded than in *rugosum*, and is about four times as wide as deep. The structure of the labrum is similar to that of *rugosum*.

3—*C. angulatum* n. sp.—Form slender, moderately convex; color throughout black, legs piceous-black, antennae and palpi same, tarsi piceo-testaceous; pubescence of the elytra and abdomen moderately dense, very fine, recumbent, fulvous in color, sparser and coarser anteriorly except at the sides of the head behind the eyes. *Head* moderate, slightly longer than wide; sides parallel and feebly arcuate; base truncate, angles distinctly rounded; surface moderately convex, depressed anteriorly, very finely and densely punctate; antennæ very slender, nearly as long as the head and prothorax together; basal joint scarcely as long as the next two combined, second and third equal in length, the former scarcely perceptibly more oval, tenth as wide as long. *Prothorax* quadrate; sides just perceptibly convergent posteriorly and nearly straight; base broadly, rather strongly and nearly evenly arcuate, much more strongly so than the apex, which is broadly and rather feebly arcuate and feebly sinuate in the middle; apical angles slightly obtuse and scarcely perceptibly rounded, basal very broadly rounded; disk scarcely wider than the head, moderately convex, very finely, rather strongly and irregularly rugulose; median line rather obsolete. *Elytra* at base very slightly wider than the head; sides parallel and feebly arcuate; together broadly, triangularly and distinctly emarginate behind; disk transversely and very moderately convex, very feebly impressed along the suture toward base, not impressed toward the apex, scarcely one-third longer than wide, about one-third longer than the prothorax, extremely minutely, densely and evenly punctate; punctures asperate and not sparser near the apex. *Abdomen* having the sixth and the apex of the fifth segments very slightly paler, piceo-testaceous; surface transversely and finely striate in wavy and very broken rows of minute and closely-placed asperities. *Legs* moderate; first joint of the posterior tarsi slightly shorter than the next two together. Length 3.5 mm.

San Mateo Co., 3 (Mr. Finch).

Described from the male; the sixth segment is sinuate at apex, the sinus being very broadly rounded and about six times as wide as deep.

This species may be distinguished by its black color, dark legs and coarse pubescence of the head, but especially by the shape of the prothorax, in which the anterior angles are not distinctly rounded.

4—*C. mobile* n. sp.—Rather slender, black throughout, apices of the elytra just visibly paler, fuscous; legs dark brown, castaneous, tarsi testaceous; antennae piceous, fuscous toward tip; pubescence of the elytra and abdomen very fine, short and extremely dense, sericeous, fulvous, that of the head and pronotum excessively fine, rather sparse, dark piceo-cinereous and scarcely visible. *Head* moderate; sides parallel and feebly arcuate; base truncate, angles rather broadly rounded; surface moderately convex, rather coarsely and densely punctate, more finely so behind, with a narrow median impunctate line; punctures round, feeble; between the antennæ there are two rather large setigerous punctures; labrum with four small, robust, triangular teeth; antennæ distinctly shorter than the head and prothorax together, very feebly incrassate, rather slender; basal joint as long as the next two together, second scarcely two-thirds as long as the third and equal in length to the fourth, tenth slightly longer than wide. *Prothorax* nearly quadrate; sides parallel and distinctly arcuate; base and apex evenly, rather strongly, and nearly equally arcuate, the latter with a small feeble median sinuation; apical angles rather broadly rounded, basal very broadly so; disk transversely and rather feebly convex, very slightly wider than the head, evenly finely and extremely densely punctate; punctures very feebly impressed, almost contiguous; median line almost obsolete. *Elytra* at base just perceptibly wider than the pronotum; sides very feebly divergent and feebly arcuate together broadly, evenly and rather strongly sinuate at apex; disk transversely and moderately convex, one-fourth longer than wide, nearly one-half longer than the pronotum, feebly impressed on either side of the slightly elevated suture, rather finely and very densely punctate; punctures slightly asperate and much finer near the apex. *Abdomen* nearly as wide as the elytra; sides of the fifth segment feebly convergent toward tip; surface transversely strigate in close wavy lines of minute asperities; each segment having one or two transverse rows of four to six very small setigerous punctures upon both the dorsal and ventral disks. *Legs* slender; first joint of the posterior tarsi slightly shorter than the next two together, as long as the last two, one-half longer than the second. Length 4.0 mm.

Monterey Co., 2. ♀

Described from the female in which the sixth segment is very evenly rounded behind. There are many erect bristling setæ on the abdomen toward tip; the transverse series of discal punctures upon the abdomen are characteristic of this

entire genus, but are more conspicuous in those species having very dense sericeous abdominal pubescence. This species is very distinct being distinguished by its size and very dense punctuation, also by the rather more transversely oval pronotum with broadly rounded anterior angles.

5—*C. contractum* n. sp.—Slender, black; elytra slightly paler, piecous, slightly rufous at the apices; legs pale brownish-testaceous, tarsi paler, brownish-flavate; antennae dark rufo-testaceous throughout; maxillary palpi piecous-brown; entire under surface same; pubescence of the elytra moderately dense, very short and fine, that of the abdomen much longer, coarser and denser, that of the head and pronotum excessively fine, rather sparse and not conspicuous. *Head* moderate; sides extremely feebly convergent posteriorly and very slightly arenate; base truncate, angles narrowly rounded; surface slightly longer than wide, moderately convex, rather coarsely and somewhat sparsely punctate, with a narrow median impunctate line; two setigerous punctures at the apical margin of the epistoma large and prominent; antennae slender, nearly as long as the head and prothorax together; basal joint scarcely as long as the next two together, second two-thirds as long as the third and slightly longer than the fourth, tenth about as long as wide, eleventh ovoidal, acuminate, slightly shorter than the preceding two combined. *Prothorax* quadrate, distinctly wider than the head; sides parallel and distinctly arenate; base rather broadly and strongly arenate, slightly more strongly so than the apex; apical angles rather narrowly rounded, basal very broadly so; disk transversely and moderately convex; median line obsolete, or very nearly so; very finely, feebly and densely punctate; punctures very feebly impressed and separated by their own widths. *Elytra* at base very slightly wider than the pronotum; sides nearly parallel, feebly arenate, distinctly more strongly so near the apices; together broadly, angularly and very feebly emarginate at the apex; disk convex and declivous at the sides, depressed in the middle, feebly impressed on either side of the feebly elevated suture, scarcely one-fourth longer than wide, one-third longer than the prothorax, rather coarsely and densely punctate; punctures much finer and more asperate near the apex. *Abdomen* slightly narrower than the elytra; sides parallel; sides of the fifth segment strongly convergent posteriorly; surface rather convex, transversely striate in very disconnected wavy lines of moderately coarse asperities. *Legs* slender; first joint of the posterior tarsi nearly as long as the next two together. Length 3.2–3.6 mm.

Santa Clara Co., 9; Monterey Co., 4; Humboldt Co., 1.

In the specimen from Humboldt the elytral punctuation is decidedly coarser and denser. The type is a male, the sixth segment being slender and sinuate at apex; the sinus is rather narrowly rounded and about four times as wide as

deep. This species is easily distinguished from *mobile* by its smaller size, sparser pubescence and much sparser punctuation.

6—**C. luculentum** n. sp.—Form rather robust, depressed; color black, clytral apices abruptly paler, rufous; apices of the abdominal segments beneath pale; legs pale reddish-ochreous; antennae uniformly dark rufo-fuscous; palpi piceous; head and pronotum almost glabrous; pubescence of the elytra and abdomen very sparse, fine, dark piceo-fuscous and not at all conspicuous; integuments very highly polished. Head short and robust, very slightly wider than long; sides parallel and very feebly arcuate; base truncate, angles narrowly rounded; surface moderately convex, rather coarsely and densely punctate at the sides and base, very sparsely so in the middle where there is a rather wide median impunctate area; interantennal area impunctate, two setigerous punctures widely separated and very feeble; antennæ slender, nearly as long as the head and prothorax together, second joint scarcely two-thirds as long as the third and distinctly shorter than the fourth, tenth as wide as long. Prothorax quadrate, very slightly wider than the head; sides very feebly convergent from apex to base; the latter broadly, evenly and rather moderately arcuate; apex with a distinct median sinuation; apical angles somewhat narrowly rounded, basal broadly so; disk moderately convex, very finely, rather deeply, evenly and densely punctate; punctures separated by their own widths. Elytra at base very slightly wider than the pronotum; sides just visibly divergent posteriorly and feebly arcuate, distinctly more strongly so behind; together broadly and feebly sinuate at apex; disk one-fourth longer than wide and one-third longer than the pronotum, feebly impressed along the slightly elevated suture except at the apex where the elevation and impressions disappear, rather coarsely, sub-asperately and very densely punctate. Abdomen broad, very slightly narrower than the elytra; border narrow; sides parallel and nearly straight; transversely striate in wavy lines. Legs slender; first joint of the posterior tarsi as long as the next two together, second as long as the third and fourth, slightly shorter than the fifth. Length 3.7 mm.

Lake Co., 3. (Mr. Fuehs.)

Described from the male; the sixth segment is sinuate at apex, the sinus being acutely rounded and but slightly more than three times as wide as deep. This species, although somewhat resembling *contractum*, may be at once distinguished by its broader form, much paler clytral apices, highly polished integuments and very sparse pubescence of the elytra and abdomen. The sinus of the sixth segment, although rather acutely rounded as in *contractum*, is relatively distinctly deeper.

7—*C. reductum* n. sp.—Slender, black; elytra piecons, paler and distinctly rufous at the apices; femora rather pale castaneous-brown, tibiae and tarsi paler, brownish-flavate; under surface dark castaneous, tip of the abdomen slightly paler; antennae dark rufo-testaceous; pubescence of the elytra very short, fine and rather sparse, that of the abdomen much longer, coarser and twice as dense; head and pronotum almost glabrous. *Head* robust, scarcely longer than wide; sides parallel and nearly straight; base truncate, angles rather broadly rounded; surface rather finely and sparsely punctate, especially toward the middle, where there is a rather broad impunctate line; antennae distinctly shorter than the head and prothorax together, somewhat robust; basal joint as long as the next two together, second very slightly shorter than the third, joints two and four equal in length, fifth slightly shorter. *Prothorax* quadrate, just visibly wider than the head; sides feebly convergent toward base and very feebly arenate; base and apex broadly, equally and not strongly arenate; apical angles rather narrowly rounded, basal very broadly so; disk transversely and rather feebly convex, finely, densely and evenly punctate; punctures rounded, feebly impressed and distant by about their own widths; median line almost entire, very narrow. *Elytra* at base very slightly wider than the pronotum; sides nearly parallel and feebly arenate, more strongly so behind; together broadly, evenly and very feebly sinuate at apex; disk one-fourth longer than wide and one-third longer than the prothorax, narrowly impressed along the feebly elevated suture, except toward tip, where the impression is obsolete, finely, rather densely and sub-asperately punctate; punctures scarcely perceptibly smaller toward the apex. *Abdomen* distinctly narrower at base than at the fourth segment, slightly narrower than the elytra; sides feebly arenate; sides of the fifth segment distinctly convergent toward tip; surface transversely and finely striate in very disconnected wavy lines. *Legs* slender; first joint of the posterior tarsi about as long as the next two together, second as long as the fifth. Length 3.0 mm.

Monterey Co., 5.

This species is distinguished from *contractum* by its smaller size, shorter and broader head, which is also more sparsely punctate, and by the form of the prothorax, in which the sides are feebly but distinctly convergent from apex to base. The type is a male, the sixth segment being rather broad and sinuate at apex; the sinus is broadly rounded and about four times as wide as deep. In *contractum* the sinus is much more acutely rounded, although about equally deep, the sides being more gradually recurved exteriorly.

8—**C. tantillum** n. sp.—Very slender; head black; abdomen piceous-black; pronotum and elytra castaneous, the latter slightly paler at tip; legs rather pale brownish, tarsi paler, brownish-flavate; antennæ uniformly dark rufous throughout; pubescence of elytra and abdomen very fine, moderately sparse and not conspicuous. *Head* moderate, slightly longer than wide, sides parallel and almost straight; base truncate, angles narrowly rounded; surface moderately convex, rather coarsely and sparsely punctate, with a rather wide median impunctate area; antennæ slender, short, much shorter than the head and prothorax together; basal joint as long as the next two together, second slightly shorter and more robust than the third, as long as the fourth. Outer joints very slightly wider, tenth as wide as long. *Prothorax* quadrate, scarcely perceptibly wider than the head; sides just visibly convergent from apex to base and nearly straight; base and apex broadly, equally and rather strongly arenate; apical angles rather broadly rounded, basal very broadly so; disk transversely and moderately convex, very minutely, feebly, evenly and rather sparsely punctate, with a narrow but entire and rather well-marked median impunctate line; punctures very feebly impressed and separated by about three times their own widths; surface feebly glutaceous. *Elytra* at base very slightly wider than the pronotum; sides parallel and very feebly arenate; together broadly, sub-angularly and moderately sinuate at apex; disk nearly one-third longer than wide, and nearly one-half longer than the pronotum, narrowly impressed along the slightly elevated suture, rather finely, densely and sub-asperately punctate; punctures smaller near the apex. *Abdomen* very slightly narrowed toward base, nearly as wide as the elytra; surface moderately convex, very minutely, sub-asperately, feebly and rather sparsely punctate. *Legs* slender; first joint of the posterior tarsi as long as the next two together, about as long as the fifth; second distinctly shorter than the third and fourth combined. Length 2.8 mm.

Santa Clara, Co., 4.

Described from the male in which the sixth segment is sinuate at tip, the sinus being moderately broadly rounded and between three and four times as wide as deep.

This species is at once distinguishable from all the others above described by the abdominal punctuation which is not arranged in very well-defined wavy lines, by the more sparse and minute pronotal punctuation, and by the rather strong dilatation of the joints of the anterior tarsi in the males. It is also the smallest species of the genus.

OLIGOPTERUS n. gen.

The very small species constituting the sole representative of this genus, is very singular and totally distinct in

appearance from those of the preceding group. The head, instead of being small is rather large and very coarsely punctate, the prothorax being slightly elongate and rather strongly narrowed from apex to base; the elytra are equal in length to the pronotum in the male and slightly shorter in the female, with the sides strongly divergent posteriorly, having the surface depressed and very coarsely punctate.

9 - *O. cuneicollis* n. sp.—Rather slender; head and abdomen piceous-black; elytra dark blackish-castaneous; pronotum dark rufo-fuscos; legs brownish-piceous, tibiae slightly paler, tarsi still paler; antennae and under surface anteriorly dark rufo-fuscos, the former much paler toward the base and apex; abdomen black, with the extreme apices of the segments paler; head and pronotum nearly glabrous, elytra and abdomen finely and rather densely pubescent; integuments polished. Head very slightly longer than wide; sides parallel and slightly arcuate; base truncate, feebly sinuate in the middle, angles rather broadly rounded; eyes very small, at three times their length from the base; surface rather depressed, coarsely and rather sparsely punctate, with a very narrow median impunctate line; epistoma rather strongly produced, sides convergent to the apex and feebly sinuate; apex truncate; antennal tuberculations small and rather prominent; between them there are two small, oblique, impressed foveæ, each having a small setigerous puncture posteriorly; antennæ rather short, scarcely as long as the head and prothorax together; basal joint slightly longer than the next two together, second more robust but scarcely shorter than the third. Prothorax scarcely narrower than the head; sides distinctly convergent from apex to base and slightly arcuate; base broadly and feebly arenate; apex with the sides very strongly convergent to the neck, which is one-third as wide as the disk and broadly and feebly emarginate; anterior angles obtuse and rather broadly rounded, basal equally so; disk transversely and rather strongly convex, slightly longer than wide, rather finely and moderately densely punctate, with a narrow, entire, impunctate median line. Elytra at base slightly narrower than the pronotum; sides rather strongly divergent posteriorly and feebly arenate; together broadly and feebly sinuate at the apex; disk depressed, very slightly longer than wide, as long as the pronotum, very coarsely, sub-asperately and rather densely punctate. Abdomen at base very slightly narrower than the elytra; sides very feebly divergent posteriorly and distinctly arcuate; surface minutely, feebly, densely, sub-asperately and irregularly punctate. Legs very slender; first joint of the posterior tarsi fully as long as the next two together. Length 2.4-2.6 mm.

San Francisco, 5.

The elytra are, except near the apex, narrowly impressed along the slightly elevated suture. The type is a male, the

sexual characters being merely a slight emargination at the apex of the sixth segment, slightly wider than deep and not at all rounded, triangular. This species cannot be confounded with any other here described; it is the smallest of this group of genera which has been thus far discovered.

LITHOCHARIS Latr. L.

Group A.

We have here another group, of four species, remarkably distinct from either of the preceding. The size is larger than in any of the other genera, and the large, sub-triangular, very finely and densely punctate heads with their very minute eyes, give them a very peculiar appearance which renders them immediately recognizable. The elytra are short, sometimes equal in length to the prothorax and never very much longer. The sides of the prothorax are usually very distinctly convergent from apex to base, and are sometimes feebly sinuate in the middle.

16—*L. sinuatocollis* n. sp.—Form rather slender; elytra and abdomen dark fuscous, the latter paler at tip; head and pronotum slightly paler, dark rufotestaceous; antennae dark fuscous, paler at the apex; legs rather pale ferruginous throughout; pubescence rather sparse. Head rather large, much longer than wide, broadly sinuate at base, angles rather broadly rounded; sides long, very feebly convergent anteriorly and distinctly arcuate; epistoma very broad, moderately produced, apex truncate; surface broadly and moderately convex, rather finely and densely punctate, very feebly pubescent; punctures feebly impressed, distantly twice their own widths; median imbricate area rather narrow; eyes very small at nearly four times their own length from the base; antennae slender, much shorter than the head and prothorax together; basal joint as long as the next two together, second and third subequal in length, the former slightly more robust and much more oval, distinctly longer than the fourth, tenth slightly wider than long. Prothorax quadrate, very slightly narrower than the head; sides rather strongly convergent posteriorly throughout and feebly sinuate in the middle; base broadly truncate in the middle, arcuate at the sides; apex broadly arcuate, feebly and roundly emarginate in the middle; disk moderately convex, finely, rather feebly and sparsely punctate; median line equal throughout the length, moderate in width. Elytra at base very slightly narrower than

the pronotum; sides moderately strongly divergent and feebly arcuate toward the apex; together broadly and feebly sinuate behind; disk about as long as wide; as long as the pronotum, depressed, feebly impressed throughout near the suture which is feebly elevated, rather coarsely, moderately densely and subrugulose punctate. *Abdomen* at base very nearly as wide as the elytra; sides just visibly divergent posteriorly and straight; surface very minutely, densely, irregularly, feebly and subasperrately punctate. *L*egs long and slender; tarsi rather short, first joint of the posterior much shorter than the next two together, scarcely as long as the fifth, one-thirtieth longer than the second; first four joints uniformly decreasing in length. Length 4.6 mm.

Humboldt Co. (Hoopa Val.), 2 ♂.

The anterior tarsi are feebly dilated toward base. This species may be readily recognized amongst the large species with short elytra, by its much paler color, slightly coarser and sparser cephalic punctuation, and by the distinctly sinuate sides of the prothorax.

11—*L. convergens* n. sp.—Form moderately robust black throughout; body dark piceous-brown, tarsi paler, testaceous; antennal funicular paler toward the apex; pubescence very fine, rather long, very sparse anteriorly, more dense on the elytra, still denser in more series on the abdomen. *Head* large, broadly sinuate at base, angles rather broadly rounded; sides long, feebly convergent anteriorly, distinctly and evenly arcuate; eyes very small; epipharyn very slightly produced, broad, squarely truncate at apex; surface of head densely punctate, very feebly alutaceous; punctures rather feebly impressed, distant by scarcely more than their own width above; mouth linear; antennae one thirteenth longer than the head, rather slender, second joint distinctly shorter than the third, very slightly longer than the fourth, teeth slightly wider than long. *Prothorax* widest at the apex where it is slightly narrower than the head and distinctly wider than long; sides moderately strongly convergent posteriorly, very feebly and evenly arcuate; base broadly and rather feebly arcuate; apex rather more strongly arcuate, broadly sinuate in the middle two-fifths; anterior angles rather broadly rounded, basitarsis broadly so; disk finely, very evenly and sparsely punctate with an entire and rather wide median impunctate area, and especially toward base, very fine and feebly impressed median stria. *Elytra* at base distinctly sinuate in the pronotum; sides relatively divergent and nearly straight; together broadly, feebly and subangularly sinuate at the apex; disk about as wide as long, slightly longer than the pronotum, depressed, feebly impressed along the slightly elevated suture, except at the apex, moderately convex, densely and evenly punctate; punctures fully subrugulose. *Abdomen* at base distinctly narrower than the elytra; sides slightly divergent posteriorly; surface very finely, densely, irregularly and subasperrately punctate. *L*egs rather short and slender.

der; first four joints of the posterior tarsi decreasing uniformly and rather rapidly in length, fourth longer than wide and one-half as long as the first. Length 4.5 mm.

San Mateo Co., 1 ♀ (Mr. Fuchs).

The anterior tarsi are very distinctly dilated toward base. This species can be at once recognized by its black color, slightly transverse prothorax, and the sides of the latter, which are slightly arcuate and not at all sinuate.

12—*L. lepida* n. sp.—Rather robust, dark piceous throughout, head and pronotum scarcely perceptibly paler; abdomen very slightly paler at the immediate apex; legs pale, ferruginous-yellow; antennæ dark fuscos, pale testaceous at tip, basal joint dark rufous; pubescence rather long and dense on the elytra and abdomen, denser and more sericeous on the latter, elsewhere very sparse; integuments very feebly alutaceous, shining. *Head* large, sub-triangular; base broadly and feebly sinuate, angles rather broadly rounded; sides very feebly convergent anteriorly, long, distinctly arcuate; epistomal apex broad, squarely truncate; antennal tuberculations very small and rather feeble; surface finely, densely and evenly punctate; median line rather narrow; antennæ slender, much shorter than the head and prothorax together, second joint distinctly shorter than the third and slightly longer than the fourth, tenth as long as wide. *Prothorax* as long as wide, distinctly narrower than the head; sides feebly convergent from apex to base, straight in the middle; base broadly truncate in the middle; basal angles broadly rounded, apical very slightly less so; sides thence very strongly convergent and straight to the nuchal emargination, which is more than one-third as wide as the disk and very broadly rounded; disk transversely and very feebly convex above, strongly and rather abruptly so at the sides, finely and feebly punctate, sparsely so near the middle, more coarsely and closely at the sides; median line rather broad, equal throughout; very near the base there is a very feeble median stria. *Elytra* at base just perceptibly narrower than the pronotum; sides feebly divergent posteriorly and nearly straight; together broadly and extremely feebly sinuate behind; disk distinctly longer than wide and slightly longer than the pronotum, rather depressed, narrowly impressed along the slightly elevated suture, rather finely, evenly, densely and sub-rugulose punctate. *Abdomen* at base very slightly narrower than the elytra; sides very feebly divergent posteriorly, nearly straight; surface very minutely and densely, feebly and sub-asperately punctate. *Legs* moderate; first joint of the posterior tarsi one-half longer than the second, slightly longer than the fifth. Length 5.0 mm.

Santa Clara Co., 3.

The description is taken from the male, in which the fifth segment is transversely truncato at apex, the edge being

very broadly and feebly undulated and with a transverse row of stiff recumbent setae slightly within the margin; sixth broadly and deeply sinuate, the sinus being twice as wide as deep and very broadly rounded anteriorly; seventh narrowly divided. The species is easily distinguishable from the preceding two by its much longer elytra in both the male and female.

13—*L. puberula* n. sp.—Moderately slender, piceous-black throughout, abdominal apex not noticeably paler; legs dark reddish-brown; antennae fuscous, apex paler; head and pronotum sparsely, rather coarsely and somewhat distinctly pubescent; pubescence of the elytra and abdomen rather long, coarse and somewhat dense, rather conspicuous, pale fulvous throughout; integuments very feebly alutaceous, shining. *Head* moderate; base broadly and very feebly sinuate, angles rather narrowly rounded; sides parallel and distinctly arenate, slightly more strongly so behind; epistomal apex moderate in width, broadly and very feebly arenate; surface very finely, densely and extremely feebly punctate; median line narrow, interrupted at the base and with an elongate very feebly elevated ridge anteriorly; antenna very slightly shorter than the head and prothorax together; slender, second joint two-thirds as long as the third and distinctly longer than the fourth, tenth very slightly wider than long. *Prothorax* quadrate, just visibly narrower than the head; sides feebly convergent posteriorly throughout and very feebly arenate; base broadly truncate in the middle; apical angles rather broadly rounded, basal very broadly so; disk transversely and rather strongly convex very finely, feebly and sparsely punctate, more densely so at the sides; median line broad and well marked, having a short impressed median stria near the base. *Elytra* at base sub-equal in width to the pronotum; sides rather feebly divergent posteriorly and very feebly arenate; together broadly and moderately sinuate behind; disk very slightly longer than the pronotum, slightly longer than wide, moderately depressed, narrowly impressed along the slightly elevated suture, moderately coarsely, closely and sub-granulosely punctate, the punctures being extremely minute and at the summits of fine elevated granules. *Abdomen* at base nearly as wide as the elytra; sides very feebly divergent posteriorly and nearly straight, very minutely, feebly, irregularly and sub-asperately punctate, the bases of the basal segments being impunctate. *Legs* rather robust; first joint of the posterior tarsi very slightly longer than the second, nearly twice as long as the fourth; anterior tarsi narrowly dilated. Length 4.8 mm.

Lake Co., 1 ♂ (Mr. Fuchs).

Sexual characters nearly as in *lepidu*, the sinuation of the sixth segment being very broadly rounded and three times

as wide as deep. This species is distinguished from *sinuaticollis* and *convergens* by its longer elytra and shape of the pronotum, from *lepidula* by its sexual characters, denser pubescence, color, and especially by its much narrower, more densely punctate, and more parallel head.

Group B.

The species here assigned to this group of the genus are in general quite homogeneous in appearance, the elytra being always much longer than the prothorax, and the pronotum always very sparsely and feebly punctate in the middle, with a broad median impunctate area. They, however, vary in the degree of density of the cephalic punctuation, in the prominence of the basal angles, and slightly in the form of the pronotum, this generally being nearly quadrate with the sides parallel, but sometimes having the sides distinctly convergent from apex to base, and being in some cases slightly wider than long and in others longer than wide, within, however, very narrow limits. The head is usually moderate in size, sub-quadratae, and never very much wider than the prothorax.

14—*L. malaca* n. sp.—Rather robust, depressed; pieous-black, abdomen paler at tip; pronotum slightly paler, dark rufo-fuscous; legs pale yellowish-testaceous throughout; antennæ fuscous, pale testaceous at tip; pubescence sparse anteriorly, rather coarse, dense and conspicuous on the elytra and abdomen; integuments strongly shining, very feebly sub-ulutaceous. Head rather large, slightly longer than wide; sides moderately long and distinctly arenate; base broadly truncate, angles rather broadly rounded; eyes moderate, at twice their length from the base; epistoma moderately produced, very broad, sides strongly convergent to the apex, which is squarely truncate; antennal tuberculations very small, rather prominent; surface very even, moderately convex, very finely, evenly and densely punctate, with a narrow, even, impunctate line in the middle; antennæ slightly shorter than the head and prothorax together; basal joint nearly as long as the next three together, second very slightly shorter than the third and longer than the fourth, tenth as long as wide. Prothorax very slightly wider than long and just visibly narrower than the head; sides very feebly convergent throughout and very slightly arenate; base and apex broadly, moderately and almost equally arcuate, the former sub-truncate in the middle; anterior angles

rather broadly rounded, basal slightly more broadly so; apical emargination feeble, one-third as wide as the disk; the latter transversely and very moderately convex, very finely, feebly and sparsely punctate in the middle, more strongly and densely so near the sides, with a wide median impunctate area, having a very small feeble impression near the base. *Egara* at base distinctly wider than the pronotum; sides parallel and very slightly arcuate; together broadly and rather feebly sinuate behind; disk transversely and moderately convex, narrowly impressed along the distinctly elevated suture, very finely, rather densely and sub-granularly punctate, scarcely one-fourth longer than wide, two-fifths longer than the pronotum. *Abdomen* at base very slightly narrower than the elytra; sides parallel and feebly arcuate; surface very minutely, densely, irregularly and sub-asperately punctate. *Legs* robust; first joint of the posterior tarsi one-third longer than the second. Length 4.3 mm.

Santa Clara Co., 1 ♂.

The fifth ventral segment is broadly emarginate in its middle, three-fourths at apex, the emargination being broadly rounded and six times as wide as deep; in the middle there is a short and very broad porrected process at the bottom of the notch, which is broadly and feebly sinuate at its apex, each side of the emargination having elsewhere a porrected fringe of short, robust, very closely-placed spinules, about eleven in number; sixth segment deeply emarginate at apex, the notch being parabolic in outline and slightly wider than deep, exterior angles slightly rounded; seventh narrowly divided.

This species is distinguished from all the others in this division of the genus by its rather large and very minutely punctate head. The anterior tarsi are rather strongly dilated and clothed beneath with very short, pale, densely-placed papillæ.

15—*L. latiuscula* n. sp.—Rather robust and depressed; head and labrum black, the latter very slightly paler at the apex; pronotum dark rufous; elytra much paler, rufous throughout; labrum, palpi and legs concolorous, pale reddish-flavate throughout; antennæ fuscous; base dark rufous, apex testaceous; pubescence very sparse anteriorly, long, very fine and rather sparse on the elytra and abdomen; integuments polished, very finely subalutaceous. Head moderate, slightly wider than long exclusive of the labrum which is large and prominent; teeth very small, acute; base broadly truncate angles rather broadly rounded; sides parallel and nearly straight; surface

rather coarsely, very feebly and rather sparsely punctate; median impunctate area rather broad, sub-fusiform; epistoma moderately produced, broad, feebly and abruptly arcuate in the middle at the apex; antennal tuberculations small and rather conspicuous; antennae nearly as long as the head and prothorax together; basal joint as long as the next two combined, second more than twice as long as wide, very slightly shorter than the third, distinctly longer than the fourth, tenth as long as wide. *Prothorax* slightly wider than long, very slightly narrower than the head; sides distinctly convergent posteriorly throughout and nearly straight; basal angles very obtuse and very slightly rounded, sides of the base thence strongly convergent and broadly arcuate to the median portion which is almost squarely truncate; apex broadly and very feebly arcuate; mital emargination very feeble, nearly one-half as wide as the disk; apical angles rather narrowly rounded; disk rather coarsely, excessively feebly and very sparsely punctate; median impunctate area broad, equal throughout, surface not impressed. *Elytra* at base slightly wider than the pronotum; sides almost parallel and very slightly arcuate; together broadly, sub-angularly and very feebly sinuate behind; disk broadly and feebly convex, narrowly and rather strongly impressed along the slightly elevated suture, scarcely one-fourth longer than wide, one-third longer than the pronotum, rather finely, evenly, strongly, rather densely and sub-asperately punctate. *Abdomen* rather short and broad, slightly narrower than the elytra; sides parallel and slightly arcuate; surface very finely, densely and sub-asperately punctate. *Legs* rather short and robust; anterior tarsi slightly dilated; first joint of the posterior one-half longer than the second, nearly twice as long as the fourth and slightly shorter than the fifth. Length 4.1 mm.

Lake Co., 1 (Mr. Fuchs); Southern Cal., 1 (Mr. G. W. Dunn).

The two specimens, of which the first is the type, are both females, and agree tolerably well together, although the one from the possible neighborhood of Los Angeles, has the head slightly narrower and more strongly arcuate behind with the basal angles more broadly rounded, the prothorax very slightly longer, and the elytra very slightly shorter and more finely punctate. There is a strong probability of its being at least a well-marked variety, although lack of material prevents any judgment as to the amount of specific variation; in other portions of this group, however, where the material is ample, the specific variation is seen to be very slight.

16—**L. sublest**a n. sp.—Very moderately robust; head and abdomen black, the latter scarcely paler at tip; pronotum very dark fuscous; elytra dark yellowish-rufous; labrum and antennae fuscous, the latter pale testaceous toward tip; palpi slightly paler, brownish; legs pale brownish-flavate throughout; pubescence very sparse anteriorly, moderately dense and fine on the elytra, very dense, fine and sericeous on the abdomen; shining. *Head* moderate, as long as wide; base broadly arcuate, angles broadly rounded; sides parallel and nearly straight; eyes at nearly twice their length from the base, somewhat prominent; epistoma moderately produced, truncate at tip; labrum moderate in size; occiput moderately convex, finely and somewhat densely punctate, more sparsely so in the middle; median impunctate area narrow; antennae nearly as long as the head and prothorax together, basal joint scarcely as long as the next two combined, second nearly as long as the third, slightly longer than the fourth, tenth as long as wide. *Prothorax* very slightly wider than long, equal in width to the head; sides parallel and feebly arcuate; base broadly, evenly and moderately arcuate throughout; apex very feebly arcuate; nuchal emargination excessively feeble, rather wide; apical angles rather broadly rounded, basal more broadly so; disk transversely, evenly and feebly convex, finely margined along the base, extremely feebly, finely and sparsely punctate above, three times as densely so near the sides; median impunctate area rather broad. *Elytra* at base distinctly wider than the prothorax; sides parallel and feebly arcuate; together broadly and very feebly sinuate behind; disk depressed above, strongly convex at the sides, narrowly and distinctly impressed along the slightly elevated suture, one-fifth longer than wide and nearly one-half longer than the pronotum, very minutely, rather feebly, densely, evenly and sub-asperately punctate. *Abdomen* very slightly narrower than the elytra; sides parallel and very feebly arcuate; surface minutely, exceedingly densely and evenly punctato-asperate. *Legs* rather long and slender; anterior tarsi rather strongly dilated, posterior long and slender, first joint about one-fourth longer than the second, slightly shorter than the fifth and as long as the third and fourth together. Length 4.2 mm.

Napa Co., 1 ♂.

The fifth segment is broadly impressed in the middle throughout its length; the apex is very broadly emarginate, the sides of the notch being rather feebly convergent anteriorly and each having a fringe of about eight robust spinules; in the middle of the emargination there is a very short broad process, broadly arcuate posteriorly; sixth segment parabolically emarginate, notch one-half wider than deep; seventh narrowly divided.

17—**L. consanguinea** n. sp.—Moderately robust and depressed; head, pronotum and abdomen black, the latter very slightly paler at the apex; elytra dark

pieo-castaneous; femora pieo-castaneous, tibiae and tarsi paler, brownish-rufous; antennae pieous at base, becoming fuscous in the middle and pale testaceous at tip; palpi fuscous; integuments polished, very feebly sub-alutaceous; pubescence anteriorly very sparse, that of the elytra coarse, not very dense, that of the abdomen more than twice as dense, sericeous, fulvous and conspicuous. *Head* moderate, as long as wide; base broadly and very feebly arcuate, angles rather broadly rounded; sides parallel and extremely feebly arcuate; epistoma rather strongly produced, broad, truncate at tip; antennal tuberculations small, rather prominent; surface rather finely and moderately densely punctate; median line narrow, continuous throughout; antennae slightly shorter than the head and prothorax together; second joint distinctly shorter than the third, very slightly longer than the fourth. *Prothorax* large, just visibly wider than the head, slightly wider than long; sides parallel, extremely feebly arcuate; base broadly, evenly and rather strongly arcuate; apex broadly and very feebly so; mædial emargination one-third as wide as the disk, very feeble; apical angles rather narrowly rounded, basal broadly so; disk transversely, nearly evenly and rather feebly convex, finely, very feebly and rather sparsely punctate in the middle, slightly more densely so at the sides; median impunctate area broad, equal, narrowly, very feebly and longitudinally impressed near the base. *Elytra* at base distinctly wider than the pronotum; sides very slightly divergent posteriorly and slightly arcuate, together broadly and rather strongly sinuate behind; disk feebly convex, narrowly impressed along the slightly elevated suture, more strongly so at one-third the length from the apex, finely, deeply, sub-asperately, evenly and rather densely punctate; slightly longer than wide, and less than one-third longer than the pronotum. *Abdomen* rather short and broad, as wide as the elytra; sides parallel and distinctly arcuate; surface minutely very densely and sub-asperately punctate. *Legs* slender; first joint of the posterior tarsi one-third longer than the second, nearly as long as the third and fourth together. Length 4.2 mm.

San Francisco, 1 ♀.

This species may be distinguished from the preceding by its shorter and more coarsely and sparsely punctured elytra, its much longer and more evenly punctate pronotum, and especially by its different coloration.

18. *L. contigua* n. sp. — Form rather slender, rather strongly convex; head, pronotum and abdomen black, the latter very slightly paler at tip; elytra pieous-black, immediate apex slightly paler; femora castaneous, tibiae and tarsi fuscous; labrum, palpi and antennae pieous, the latter paler and fuscous toward tip; pubescence of the anterior portions sparse, of the elytra moderately dense, long, rather coarse, of the abdomen dense, somewhat sericeous, fulvous; integuments polished, not at all alutaceous. *Head* rather small, distinctly longer than wide; base truncate, angles rather broadly

rounded; sides parallel, nearly straight; epistoma rather strongly produced, broadly and very feebly arcuate at the apex; antennal tuberculations minute and slightly prominent; labrum rather large, teeth minute, very acute; antenna slightly shorter than the head and prothorax together, second joint two-thirds as long as the third and scarcely longer than the fourth; occiput rather convex, somewhat finely, evenly and sparsely punctate; punctures round and rather deep; median impenetrable area rather broad, equal throughout, well-marked. *Prothorax* quadrate, just visibly narrower than the head; sides parallel and nearly straight; base broadly, rather strongly and evenly arcuate; apex broadly and very feebly so; nuchal suture very feeble, two-fifths as wide as the disk; apical and basal angles rather broadly and nearly equally rounded; disk transversely, evenly and rather strongly convex, finely margined along the base, very finely, feebly and somewhat sparsely punctate in the middle, twice as densely so at the sides; median impenetrable area equal throughout, moderately wide, with a very fine feeble median stria near the base. *Elytra* at base distinctly wider than the prothorax; sides parallel and feebly arcuate; together broadly, sub-angularly and distinctly sinuate behind disk one-fourth longer than wide, nearly one-half longer than the pronotum, feebly impressed along the slightly elevated suture, rather finely, densely, strongly and rugulose punctate, the punctures being in transverse wavy series near the apex. *Abdomen* slightly narrower than the elytra; sides parallel and nearly straight; surface very minutely, densely and sub-asperrately punctate. *Legs* rather long and slender; first joint of the posterior tarsi one-half longer than the second, shorter than the next two together, fully as long as the fifth; anterior tarsi very slightly dilated. Length 4.3 mm.

San Mateo Co., 1 ♂ (Mr. Fuchs).

The fifth segment is very broadly emarginate nearly throughout its width at apex, the sides of the notch being straight, very strongly convergent, and each having a fringe of seven stout, equal and closely-placed spinules; median prorected process very short and broad, very strongly sinuate at the apex; sixth segment parabolically emarginate at apex, notch nearly twice as wide as deep; seventh broadly divided, incisure in the form of a very elongate acute triangle.

This species is remarkable for the unusually elongate basal joint of the posterior tarsi, which, however, comes well within the generic definition. It bears a considerable resemblance to *consanguinea*, but differs in the narrower form, and especially in the form of the pronotum, which is as long as wide in the present species and slightly, though

very distinctly, wider than long in the former. It is true that the sexes in these cases are different, but on examining a full series of a closely-allied species—*retrusa*—described below, it is readily seen that the sexual differences in the general form of the body, even of the head, are almost absolutely inappreciable; it is in fact a forcible instance of what Dr. LeConte (Trans. Am. Ent. Soc. VI, p. 213) calls the polarity and, it might be added, concentration of sexual characters. Here we have the sexual modifications at the abdominal vertex extremely well marked, elsewhere, however, if we except a slightly longer second antennal joint in the males, they are not at all apparent.

19—*L. luctuosa* n. sp.—Form slender; head, pronotum and abdomen throughout black; elytra rufo-piceous, not paler at tip; legs dark brownish-flavate; antennae piceous, pale at the tip; pubescence almost absent anteriorly, moderately sparse and fine on the elytra, somewhat dense on the abdomen; integuments polished. Head moderate, distinctly longer than wide; base truncate in the middle, angles rather narrowly rounded, sides parallel and very feebly arenate; vertex moderately produced, truncate at apex, feebly arenate in the middle; punctures feeble, small and rather sparse; median line rather broad, equal throughout; antennae distinctly shorter than the head and prothorax together; basal joint distinctly longer than the next two combined, second slightly shorter than the third, sub-equal to the fourth. Prothorax fully as long as wide, equal in width to the head; sides excessively feebly convergent posteriorly throughout and very feebly arenate; base broadly sub-truncate in the middle; apex broadly, rather feebly and equally strongly arenate; marginal sinuation feeble, two-fifths as wide as the disk; anterior angles rather narrowly rounded, basal broadly so; disk transversely, evenly and moderately convex, very feebly, finely and rather sparsely punctate in the middle, more closely so at the sides; median impenetrated area moderate in width, even throughout, not impressed. Elytra at base slightly wider than the pronotum; sides parallel and feebly arenate; together broadly, roundly and rather feebly sinuate behind; disk less than one-third longer than the pronotum, one-fourth longer than wide, feebly and narrowly impressed along the slightly elevated suture, finely, feebly, evenly, sub-asperately and rather sparsely punctate. Abdomen slender, scarcely narrower than the clytra; sides straight and parallel; surface minutely, very densely, sub-asperately and evenly punctate. Legs rather slender; first joint of the posterior tarsi one-third longer than the second, much shorter than the fifth; anterior tarsi slightly dilated. Length 4.2 mm.

San Francisco, 1 ♀.

This species, though closely allied to the preceding, differs from it in such an assemblage of minor characters as to leave very little doubt of its distinctness; among these are its more slender form, still more slender prothorax, and more particularly the elytral punctuation which is decidedly more sparse, feebler and less rugulose; the abdomen also is not pale at tip, and the elytra are paler in color in *luctuosa*.

20—*L. retrusa* n. sp.—Moderately robust; head, pronotum and abdomen throughout black; elytra dark rufo-piceous, scarcely perceptibly and gradually paler toward the apices; legs rather pale brownish; antennæ, labrum and palpi piceous-black, the former slightly paler toward tip; pubescence sparse anteriorly, rather dense and very fine on the elytra, twice as dense, very short and fine on the abdomen, not very conspicuous; integuments polished. *Head* moderate; base broadly and distinctly arcuate, angles very broadly rounded; sides behind the eyes rather short, parallel and nearly straight; surface slightly longer than wide, finely, extremely feebly and rather densely punctate; median line rather broad; epistoma very short, rather narrow, truncale at apex; labrum moderate, teeth small, approximate, rather long and very acute; antennæ nearly as long as the head and prothorax together, second joint distinctly shorter than the third, slightly longer than the fourth. *Prothorax* rather large, quadrate, just visibly wider than the head; sides parallel and nearly straight; base broadly, very evenly and rather strongly arcuate throughout; apex feebly arcuate; nuchal emargination two-fifths as wide as the disk, broadly and distinctly rounded; apical angles rather narrowly rounded, basal scarcely more broadly so, very obtuse; disk very finely marginated along the base, broadly, nearly evenly and moderately convex, very minutely, feebly and sparsely punctate in the middle, twice as densely, but still rather sparsely so at the sides; median line rather broad, equal throughout. *Elytra* at base distinctly wider than the pronotum; sides nearly parallel, feebly arcuate posteriorly; together broadly, roundly and distinctly sinuate behind; disk one-fifth longer than wide, one-third longer than the pronotum, rather broadly and strongly impressed along the slightly elevated suture, more distinctly impressed near the scutellum, very finely, rather feebly and very densely punctate; punctures sub-asperate and distinctly finer and denser toward the apex. *Abdomen* very slightly narrower than the elytra; sides parallel and very nearly straight; surface very minutely, evenly, excessively densely feebly and sub-asperately punctate. *Legs* rather slender; first joint of the posterior tarsi one-fourth longer than the second, much shorter than the fifth; anterior tarsi very slightly dilated; posterior tibie obliquely and feebly excavated exteriorly at the apex, the excavation being smooth and glabrous, and bounded internally by a dense row of closely-placed and very fine erect spinules. Length 4.1-4.3 mm.

Mendocino Co. (Anderson Val.), 5.

This very distinct species may be recognized immediately by its rather narrow head, broadly rounded behind, and having the basal angles almost obsolete. The type is a male; the fifth segment is broadly emarginate almost throughout its width at apex, the sides of the notch being very strongly convergent and distinctly incurvate, each bearing a porrected fringe of nine robust, black, short and rather closely-placed spinules; the porrected process at the bottom of the emargination is very short and rather narrow, scarcely wider than the fimbriate sides; it is broadly and feebly sinuate at apex; sixth segment parabolically emarginate at tip, the notch being slightly wider than deep, exterior angles narrowly rounded; seventh narrowly and acutely incised or divided along its lower surface as in the preceding species.

The structure of the posterior tibiae is peculiar to the genus as far as I have observed.

21—*L. gregalis* n. sp.—Moderately slender, black, abdomen scarcely paler at tip; elytra slightly piceous; legs dark castaneous, tibiae toward tip and tarsi paler; antennæ piceous-black at base, fuscous in the middle, testaceous at tip; pubescence sparse anteriorly, rather long, dense and coarse on the elytra, very fine, dense and short on the abdomen, not conspicuous; integuments polished. *Head* rather large, as wide as long; base broadly and feebly arenate, angles broadly rounded; sides parallel and distinctly arenate; epistoma broad, moderately produced, truncate; antennal tuberculations small, rather prominent; labrum moderate, teeth slightly deflexed, small, equilatero-triangular, antennæ distinctly shorter than the head and prothorax together, second joint slightly shorter and distinctly more robust than the third, distinctly longer than the fourth; surface rather strongly convex, finely, very feebly and densely punctate; median line rather wide. *Prothorax* moderate, slightly longer than wide, very slightly narrower than the head; sides parallel, nearly straight in the middle; base broadly and feebly arenate, broadly sub-truncate in the middle; apex strongly and evenly arenate at the sides; nuchal emargination narrow, not one-third as wide as the disk, rather strongly incurvate; apical angles very broadly rounded, basal slightly more broadly so; disk transversely and moderately convex, very finely margined along the base, rather coarsely, very sparsely and excessively feebly punctate in the middle, much more finely, distinctly and densely so at the sides; median impunctate area rather broad. *Elytra* at base very slightly wider than the pronotum, scarcely wider than the head; sides very slightly divergent posteriorly and very feebly arenate; together broadly, roundly and very feebly sinuate behind; disk one-fourth longer than wide, one-third

longer than the pronotum, very feebly convex, very broadly and feebly impressed along the very slightly elevated suture, finely, rather strongly and densely, sub-asperately and evenly punctate. *Abdomen* at base nearly as wide as the elytra; sides parallel and very feebly arcuate; surface very finely, sub-asperately and densely punctate. *Legs* slender; anterior tarsi very slightly dilated; first joint of the posterior nearly one-half longer than the second, sub-equal in length to the fifth. Length 3.5 mm.

Santa Clara Co., 11.

The type is a male, the sexual characters being of the same general order as in the preceding group of species, although distinctly modified; the fifth segment is broadly and rather feebly emarginate nearly throughout its width at apex, the sides of the notch being very strongly convergent and feebly incurvate, each having a porrected fringe of about thirteen robust, closely-placed spinules; the median porrected process is very narrow, about one-half as wide as the fimbriate sides, and exceedingly short, with the sides acute and not broadly rounded as in the preceding species; it is broadly, roundly and rather strongly emarginate throughout its width at apex, and has its surface smooth, glabrous and conically impressed; sixth segment broadly and parabolically emarginate at apex, the notch being twice as wide as deep, and having the edge at the bottom narrowly membranous; seventh segment broadly divided.

22—*L. mimula* n. sp.—Form rather slender, intense black throughout except the abdomen at tip which is slightly paler; legs rather dark brownish-flavate; antennae black at base, becoming dark fuscous toward tip; pubescence very sparse anteriorly, long, coarse and rather sparse on the elytra, very fine and moderately dense on the abdomen; integuments polished. *Head* moderate; base truncate, angles rather narrowly rounded; sides parallel and nearly straight; surface scarcely as wide as long, moderately convex, very finely, moderately feebly and rather densely punctate; median line rather broad; epistoma moderate in width, slightly produced, broadly and feebly arcuate at the apex; antennal tuberculations small, rather prominent; labrum moderate in size, teeth broader than long, scarcely deflexed, distinct; antennae slightly shorter than the head and prothorax together, basal joint rather robust. *Pronothorax* scarcely perceptibly narrower than the head, slightly longer than wide; sides parallel, straight or very feebly sub-sinuate in the middle; base broadly and feebly arcuate, broadly sub-truncate in the middle; apex strongly

arcuate at the sides; nuchal emargination one-third as wide as the disk, strongly and evenly incurvate; anterior angles rather broadly rounded, basal slightly more broadly so; disk very evenly, moderately and transversely convex, punctured as in *gregalis*. *Elytra* at base distinctly wider than the prothorax and slightly wider than the head; sides nearly parallel, feebly arcuate; together broadly, roundly and moderately sinuate behind; disk scarcely perceptibly impressed along the very slightly elevated suture, one-fourth longer than wide, nearly one-half longer than the pronotum, finely, feebly, sub-asperately, evenly and not densely punctate. *Abdomen* rather narrow, at base distinctly narrower than the elytra; sides parallel and feebly arcuate; surface finely, feebly, sub-asperately and densely punctate. *Legs* slender; first joint of the posterior tarsi one-third longer than the second, distinctly shorter than the fifth. Length 3.3 mm.

Santa Cruz Co., 5; Santa Clara Co., 3; San Mateo Co., 3.

Described from the male; the fifth segment is broadly and feebly emarginate at apex, the sides of the emargination being extremely strongly convergent and feebly incurvate, each having a fringe of nine closely-placed spinules; the median process is very short, fully as wide as the fimbriate sides, its lateral extremities being in the form of strong acute porrected teeth, and having the apex broadly roundly and strongly emarginate throughout its width, its surface being scarcely perceptibly impressed; the remaining segments modified nearly as in *gregalis*. The species resembles the preceding to such an extent that great care is requisite in its identification; it is, however, distinguishable by its narrower head with straighter sides and much more narrowly rounded basal angles, by its longer elytra, which are also decidedly more sparsely and feebly punctate, and by its sexual characters. The pronotum and elytra are sometimes paler perhaps from immaturity.

23—*L. languida* n. sp.—Form rather slender, depressed; head black; abdomen piceous, slightly paler at tip; pronotum dark rufo-fuscous; sides and apex of the elytra broadly pale brownish-flavate, central and basal portions shaded darker, castaneous; legs pale flavate throughout; antennae piceous-black at base, becoming gradually rather pale testaceous toward the apex; pubescence of the elytra and abdomen not very dense, fine and inconspicuous. *Head* nearly as wide as long; base truncate in the middle, angles moderately broadly rounded; sides parallel and nearly straight; surface moderately convex, rather

coarsely, very feebly and somewhat sparsely punctate; median line broad; epistoma moderately produced, broadly and feebly areuate at apex; antennal tuberculations feeble, not prominent; antenna nearly as long as the head and prothorax together, second joint slightly shorter than the third and much longer than the fourth, not very robust, third three times as long as wide. *Prothorax* just perceptibly narrower than the head, very slightly longer than wide; sides parallel, nearly straight in the middle; base and apex broadly, nearly evenly and rather strongly areuate, the latter very slightly the more strongly so; nuchal emargination much more than one-third as wide as the disk, broadly and very feebly incurvate; anterior and posterior angles broadly and nearly equally rounded; disk broadly and rather feebly convex, rather coarsely, sparsely and excessively feebly punctate in the middle, the punctures becoming finer, more distinct and denser toward the sides; median impunctate area rather broad. *Elytra* at base distinctly wider than the prothorax, slightly wider than the head; sides parallel, feebly and nearly evenly areuate; together broadly, roundly and moderately sinuate behind; disk one-fourth longer than wide and one-third longer than the pronotum, rather coarsely, densely, evenly and sub-asperately punctate. *Abdomen* at base distinctly narrower than the elytra; sides parallel and nearly straight; surface very minutely, feebly, densely and sub-asperately punctate; border rather narrow and deep, slightly paler in color. *Legs* slender; first joint of the posterior tarsi one-half longer than the second, sub-equal in length to the fifth. Length 4.0 mm.

Sonoma Co., 1 ♂.

Resembles the preceding two species in its elongate prothorax, but possessing a still different modification of the male sexual characters. The fifth segment is broadly emarginate nearly throughout its width at apex, the sides of the emargination being feebly convergent and nearly straight, each having a porrected fringe of seven rather widely-spaced spinules; the median process is very short and broad, being twice as wide as either of the fimbriate sides adjoining; it is broadly, feebly and evenly areuate throughout its width at apex, and without any appearance of lateral teeth; sixth segment strongly and parabolically emarginate at apex, the notch being nearly one-half wider than deep.

METAXYODONTA n. gen.

In this genus, represented by two closely-allied species, the form and general appearance again differ most

decidedly from anything hitherto described; the head is small, triangular, with very large, coarsely granulated eyes, robust antennae and with an entirely different structure of the labrum. The species are rather robust, and the integuments throughout are strongly alutaceous, this appearance being produced upon some portions of the body by an excessively minute and dense punctuation, and upon others by a correspondingly minute and dense granulation. The head in both of the forms here described is blackish, the remainder of the body, legs, labrum and antennae being flavate or clouded slightly with brownish; they are very rare although the species may perhaps be relatively more numerous.

21—*M. alutacea* n. sp.—Rather robust; head fuscous-black; pronotum and abdomen concolorous, pale castaneous; elytra still paler, brownish-testaceous; legs uniformly flavate; antennae uniformly pale reddish-flavate throughout; palpi flavate; pubescence fine, moderately dense, coarser and more conspicuous on the elytra; integuments alutaceous. Head moderate, as wide as long; sides parallel, short and distinctly areuate; base truncate, angles broadly rounded; eyes very large, at scarcely their own lengths from the basal angles, not prominent, rather coarsely granulate; epistoma rather strongly produced, sides strongly convergent toward the apex, truncate anteriorly; antennal tuberculations rather strong, small; surface moderately convex, extremely minutely and densely punctate, with a very narrow median impunctate line, having two widely distant, annular, setigerous punctures between the eyes and one behind each antennal tuberculation, also several small ones near and behind the eyes; antennae rather robust, slightly longer than the head and prothorax together, basal joint about three times as long as wide, second two-thirds as long as the third, nearly as long as the fourth, joints four to ten decreasing in length, the latter scarcely as wide as long, eleventh ovoidal, obtusely acuminate, much shorter than the two preceding together. Prothorax very slightly wider than long, sub-equal in width to the head; sides very feebly convergent from apex to base, the latter narrowly truncate in the middle; apex broadly and rather feebly areuate, narrowly and feebly sinuate in the middle; apical and basal angles equally and very broadly rounded; disk transversely and very feebly convex, extremely minutely and densely punctate; punctures slightly more sparse near the middle, where there is a very narrow and obscure median impunctate line. Elytra at base very slightly wider than the pronotum; sides nearly parallel, very slightly areuate; together broadly and feebly sinuate at apex; outer angles rounded; disk quadrate, one-fourth longer than the pronotum, feebly convex, feebly impressed on the suture toward base, the suture not elevated, very minutely, evenly and densely granulose; the granulations

separated by more than their own widths and setigerous. *Abdomen* rather robust, nearly as wide as the elytra; border moderate; surface very minutely, feebly, densely and sub-asperately punctate, the asperities being arranged in very close, interrupted, transverse wavy lines. *Legs* moderate; anterior tarsi distinctly dilated, fourth joint slightly emarginate, first four joints of the posterior tarsi decreasing uniformly and very gradually in length, the first less than one-half longer than the second and much shorter than the fifth, fourth longer than wide. Length 3.8 mm.

Santa Clara Co., 1 ♂.

The fifth ventral segment is thickened in the middle third at apex, the edge being obliquely beveled and having a dense comb-like row of very minute, parallel, longitudinal black ridges or strigæ; sixth segment broadly and very strongly emarginate at apex, the emargination acutely rounded anteriorly and having at each side, slightly distant from the edge of the notch and at about the middle of its length, a small brush of very long densely-placed hairs; seventh segment very narrowly divided, truncate at tip, large and prominent.

25—*M. quadricollis* n. sp.—Form rather robust; head piebous-black; pronotum and elytra pale rufo-testaceous, the latter slightly the paler; abdomen pale brownish-fuscosus; legs, antennæ, labrum and palpi concolorous, very pale flavate; pubescence sparse anteriorly, coarser, much denser and not very conspicuous on the elytra and abdomen, distinctly denser on the latter; integuments alutaceous. *Head* moderate, as wide as long; sides short, parallel; base truncate, angles rather broadly rounded and slightly prominent; surface moderately and evenly convex, extremely minutely and densely punctate, with a very narrow median line which is totally obliterated anteriorly; antennæ rather robust, as long as the head and prothorax together, second joint three-fourths as long as the third. *Prothorax* nearly quadrate; sides parallel and feebly arcuate; base broadly and rather feebly arcuate; apex broadly arcuate, very feebly and roundly emarginate in the middle third, with the edge at each side just without the emargination slightly sinuate; apical angles very narrowly rounded, basal broadly so; disk distinctly longer than the head, exclusive of the labrum, and very slightly wider, broadly and rather feebly convex, excessively minutely and densely punctate; punctures noticeably sparser toward the middle, where there is a very narrow imperfect impunctate line, and, near the base, a short median stria. *Elytra* very slightly wider than the pronotum; sides parallel and slightly arcuate; together broadly and extremely feebly sinuate at apex; disk slightly longer than wide, scarcely one-fourth longer than the pronotum, very mi-

nutely and densely granulate. *Abdomen* slightly narrower than the elytra; sides nearly parallel; surface minutely, densely and sub-asperately punctate, without any arrangement in wavy rows. *Legs* moderate; anterior tarsi moderately dilated; first four joints of the posterior decreasing uniformly and very gradually in length, the first one-half longer than the second and shorter than the fifth. Length 3.8 mm.

Lake Co., 1 ♂ (Mr. Fuchs).

This species is rather closely allied to the preceding, the sexual characters being almost identical, the surface of the fifth segment being slightly more strongly swollen in the middle near the apex and the notch of the sixth being very slightly more broadly rounded in *quadrivallis*; in the form and size of the pronotum, relative length of the elytra, and in the punctuation of the abdomen, the two species are, however, so distinct that it can scarcely be possible to confound them.

The eastern *Lithocaris corticina* Grav. is somewhat allied to this genus, but is scarcely congeneric. The labrum in *corticina* is very large, broadly explanate and rounded at the sides; in the middle of its apical margin it has a small abrupt emargination, at the bottom of which there is an obtuse tooth which is the prolongation of a small anterior dorsal carina. In the general form of the head it is strikingly different from the members of Metaxyodontata.

L. confluentus Say must form the type of a genus quite distinct from any other here described, because of the very different structure of the posterior tarsi which are short and rather robust, and in which the basal joint is slightly shorter than the second and less than one-half as long as the fifth. For this genus I would propose the name *Trachysectus*.

I am indebted to Dr. J. Hamilton of Allegheny and Mr. F. M. Webster of Lafayette, Indiana, for specimens of these species.

APPENDIX.

I.

HESPEROBIVUM n. gen. (Paderini).

It is not without great diffidence that I here propose a new name for the American species which have been hitherto placed in *Cryptobium*; especially is this the case since the South American and Mexican species have been passed over almost in silence regarding their generic distinctness by Dr. Sharp, and the North American forms, first by Dr. LeConte and afterwards, independently, by Dr. Horn. Being moved, however, by the conviction that scientific nomenclature has arrived at such a stage that to longer abstain from recognizing and differentiating distinct generic subdivisions, can only be conducive to a superficial knowledge of nature and be detrimental to a scientific arrangement of the species as a whole, I have concluded to make the division and give the differential descriptions in the form of parallel columns, by which means the chief distinctive features can be more readily compared.

In the following statement the type of *Hesperobium* is the Californian *H. tumidum* LeC., the characters of *Cryptobium* Mann, being taken from the very thorough treatise by Mr. C. Rey upon the Paderini (Hist. Nat. Col. Fr., 1878).

CRYPTOBIVUM.

Labrum short, sinuate and bidenticulate in the middle of its anterior margin.

HESPEROBIVUM.

Labrum very short and broad, feebly and triangularly emarginate throughout its width at apex, not denticulate but having in the middle, at the apex of the triangular notch a small rounded emargination; sides strongly convergent toward the base; apical angles narrowly rounded.

Third joint of the maxillary palpi gradually and rather strongly dilated toward the apex which is truncate; fourth small, slender and subulate.

Labial palpi short with the two basal joints sub-cylindrical, the second a little longer than the first; the third small, slender, acuminatae.

Paraglossae acuminatae.

Antennae having the second and third joints sub-equal.

There are also differences in the structure of the abdomen, and in the relative sizes of the segments.

Except in the characters given above, the two genera are somewhat similar. In applying these to the entire group of North American species, it is easily seen that the antennal structure is not entirely constant, there being a few species in which the second and third joints are nearly equal in length. The components of a very limited group of small species containing *pusillum*, *lepidum*, etc., have the fourth joint of the maxillary palpi small, acicular and not conical, and those should probably be referred to a closely-allied genus or to a sub-genus; all the others have the fourth joint conical and pointed, although varying greatly in thickness at the base², all being, however, variations of one common type, which is the *conical and acutely pointed*. Dr. Sharp

¹ LeConte - Proc. Amer. Phil. Soc. XVII, 1878 p. 392.

² The two species, *convergens* and *parallelum*, described by me (Cont. II, pp. 129-131), and very erroneously united by Dr. Horn Ent. Amer. I, p. 109) under the head of an entirely distinct species *floridanum* - serve as a good illustration of this variability of the fourth joint, this being conical and very narrow, small and almost acicular in *convergens*, and scarcely longer than wide, being strongly conical, flattened and almost as broad at base as the apex of the third in *parallelum*. Having here incidentally made a correction

(Biol. Cent.-Amer., I, Pt 2, p. 506), probably because of this variability, considers the palpal structure as of minor importance when compared with others, and does not even employ it in subdividing the genus, although this has been done with more or less success by Dr. Le Conte (Proc. Am. Phil. Soc. XVII, 1878, p. 390), but without considering the structure of the maxillary palpi, we still have, I think, enough characters remaining to confirm the validity of *Hesperobium*.

Dr. Sharp, in the work above mentioned, divides the Central American species into groups depending upon the presence or absence of a lateral raised line upon the lower part of the flank of each elytron; when the Piederini have been sufficiently studied as a group, it may be found desirable to give this character a generic import, in which case the name *Hesperobium* should be retained for the species having this lateral line, as it is present in the type which is assumed above as representing the genus. It is also present in *californicum*, and in an undescribed species, represented in my cabinet by a unique male, found near San Francisco; it is probably characteristic of the Californian species as a group¹.

In describing several species of this genus (Cont. II, pp. 127-133), attention was called to two very large and prominent annular punctures, or more properly areolæ, situated behind the eyes. I think that these punctures are of greater importance from a systematic standpoint than was at first supposed, as they constitute one of the distinguishing features of *Hesperobium* and the American species of *Lathrobium*.

In *synonymy*, I take the present opportunity to say in addition, that it is very difficult to reconcile Dr. Horn's assertion regarding the mutual identity of my *H. capito* and *H. palipes*, Graw., with the statement made by Erichson in the description of the latter, viz.: "Thorax latitudine sesqui fere longior." The prothorax in *capito* is "scarcely one-fifth longer than wide." (Cont. II, p. 128.)

¹This line is also well developed in the Californian species which have been referred to *Lathrobium* and which are probably generically distinct.

bium, being absent in the latter genus. In *Hesperobium californicum* they are very large, slightly oval, strongly annular and crater-like, occupying the entire summits of slight elevations, and having their planes not exactly parallel to the general surface but tilted very slightly forward, so that the slope of the elevation is more prominent behind. Between them the surface is narrowly elevated or tumid in a longitudinal direction, and from the middle of each arises a very long erect seta from an annular median tubercle, which corresponds to the cone of the crater. These most singular structures are probably an additional distinctive feature of *Hesperobium*.

The genus *Homaeotarsus* founded by Hochuth upon an Armenian species, does not concern us at the present time, as, although the maxillary palpi are apparently of like structure, it is, in almost all other respects, entirely similar to *Cryptobium* (Lac. Gen. Col. II, p. 90).

II.

In the first volume of this Bulletin, page 315, I stated that the mandibles in *Orus* were quadridentate within. This is true only of the right mandible. Since the publication of the paper referred to, I have examined the left mandible and find it tridentate, the three teeth being small, approximate and situated almost exactly in the middle of the inner margin; the two basal ones are erect, slightly longer than wide, acute and equal, the third being longer and more slender, acute and rather strongly inclined toward the apex, the latter being evenly and strongly arcuate, very acute and slender. This combination of four teeth in the right and three in the left mandible is of frequent occurrence in the portion of the Pæderini near and related to *Lithocharis*, where the mandibular characters appear to lose the importance which they possess in some other portions of the group. The abnormal arrangement of the teeth in *Orus* therefore, although it cannot of itself be maintained as a generic character, still serves to

show that which may easily be inferred from its general appearance, viz: that it is much more nearly related to *Lithobius* and its allies than it is to *Scopaeus*. It should, in fact, in a systematic arrangement of our Pæderini, immediately precede *Caloderma* which it resembles in its 4-dentate labrum, and from which it is distinguished, as before remarked, by its strongly inflated third maxillary palpal joint, and also by its elongate prothorax and short basal joint of the posterior tarsi.

III.

A considerable number of new genera having been described since the publication of the Classification of the Coleoptera of North America by LeConte and Horn, I would propose the following as a substitute for the one given in that work, page 99, for those Pæderi which have the fourth tarsal joint simple.

It will be noticed that, in the following table, the geniculation of the antennæ is considered of secondary importance when compared with other characters. Although this geniculation varies greatly in amount, I have yet failed to observe a single species of North American Pæderini in which it is not more or less manifest; the character is therefore merely one of degree and is only of importance when present in its extremes. There is, however, a marked difference in the nature of the geniculation. In *Hesperobium*, and probably also *Ababaetus*, the deep emargination at the apex of the scape which receives the second joint when flexed, is at the anterior portion of the apex, so that the funicle is bent to the front, while in the second section this emargination is at the back of the apex, so that when flexed the funicle projects posteriorly. It is also to be noted that the geniculation of the antennæ prevailing in the Pæderini is not like that to be seen in some other groups of Coleoptera, where the second joint is placed almost immovably at an angle with the scape, and which could appropriately be termed *rigidly geniculate*. In this group the funicle is

capable of being flexed or straightened at pleasure, and, in contradistinction to the former, such an antenna might be called *flexibly geniculate*.

Basal joint of the antennae greatly elongated, sub-equal in length to the next three or four together; antennæ strongly and anteriorly geniculate.

Neck broad..... *Hesperobium*.

Neck narrow..... *Ababactus*.

Basal joint of the antennae not greatly elongated; antennæ posteriorly and more or less strongly geniculate.

First four joints of the posterior tarsi sub-equal first not longer than the second.

Neck rather broad.

Prothorax sub-quadratae or slightly elongate; labrum bilobed

Lathrobium.

Prothorax narrowed from apex to base; labrum truncate, not dentate, having along the lower edge of its anterior margin four widely-spaced, very short, broadly rounded callosities, and, in the middle a very small, rounded emargination..... *Trachysectus*.

Neck very slender.

Prothorax gradually narrowed anteriorly; labrum quadridentatae.

Scopaeus.

Hind tarsi with the first four joints decreasing more or less gradually in length.

Prothorax narrowed in front.

Labrum quadridentatae..... *Echiaster*.

Labrum bidentatae..... *Stilicus*.

Prothorax sub-quadratae, anterior and posterior angles more or less narrowly rounded.

Labrum having four rather large sub-equal teeth; elytra much longer than the pronotum.

First joint of the posterior tarsi very slightly longer than the second.

Orus.

First joint of the posterior tarsi sub-equal in length to the next two together

Calodeima.

Labrum with two pairs of minute approximate teeth; elytra no longer than the pronotum

Oligopterus.

Labrum bidentatae; elytra variable in length

Lithocharis.

Labrum unidentatae; elytra longer than the pronotum. *Metaxyodontata*.

Labrum rounded; acutely emarginate at tip; elytra as long as the pronotum..... *Dacnochilus*.

Labrum entire; elytra shorter than the pronotum... *Liparocephalus*.

IV.
THYCE Lec.

The following species was recently announced by me under the generic name Polyphylla (Bull. Cal. Acad. Sci., I, p. 285). The genus Thyce, although resembling Polyphylla very greatly, differs radically in antennal structure, the club being trifoliate and the joints of the funicle of nearly equal length; while in Polyphylla the greatly developed third joint is a very prominent distinctive feature, in addition to the more complex club.

In *T. marginata* the anterior tibiae have two teeth exclusive of the exterior apical spur which is very pronounced; these teeth are very unequal, the one nearer the base being very short and obtuse. The males have a large and rather feeble impression in the middle of the abdomen near the base. I have not seen the female.

T. marginata n. sp.—Form moderately robust; sides distinctly arcuate; prothorax pubescent; elytra rufo-fuscous; the former having three posteriorly divergent lines of whitish squamiform pubescence, the exterior ones widest and interrupted in the middle, the median very fine and almost obsolete toward base; each clytron having along the exterior edge a very wide line of plumbeous hairs and very slender squamose pubescence, not very densely placed, which is recurved at the apex continuing thence along the suture as a narrow, whitish and much better defined line to the base; between these there is another very fine line terminating at one-fifth the length from the apex; pubescence elsewhere fine and very sparse; legs and antennae fuscous; each ventral segment having at irregular spot of whitish squamiform pubescence at each side next the clytra. *Head* excluding the eyes slightly longer than wide, sub-punctate; clypeus moderately reflexed, broadly and feebly sinuate anteriorly; angles right and not at all rounded; pubescence long, rather sparse, mixed with squamose hairs near the base and sides; antennae well developed, funicle two-thirds as long as the club and nearly as long as the head; club viewed upon the broad side slightly wider at apex than at base, three and one-half times as long as wide. *Prothorax* widest at the middle of its median length where it is four-fifths wider than long; sides then strongly convergent and feebly arcuate to the apical angles, feebly convergent and straight to the basal angles which are obtuse and slightly rounded; base broadly angulate, feebly sinuate toward each basal angle; disk strongly convex, rather finely moderately densely and irregularly punctate; punctures round, very shallow, variably.

Elytra at base slightly wider than the prothorax; sides parallel and feebly arcuate; together slightly less than one-half

longer than wide, two and one-half times as long as the prothorax, very finely, sparsely, feebly and irregularly punctate; punctures asperate. Pygidium wider than long, feebly convex, finely and rather sparsely punctate, moderately sparsely and evenly covered with short slender squamose pubescence. Posterior tarsi short, two-thirds as long as the tibiae; claws moderate, having a small erect acute tooth interiorly near the base. Length 19.0 mm.; width 8.5 mm.

California (San Diego Co.), also probably Lower California.

Five or six specimens were taken by Mr. G. W. Dunn, and I have received the present specimen through the kindness of Mr. W. G. W. Harford.

This species differs from *squamicollis*, Lec. in almost every character given by Dr. LeConte in the original description of the latter (Journ. Phil. Acad. III, Nov. 1856, p. 225). It may, however, perhaps be best to call special attention to the more salient differences. These are the size, *squamicollis* being one-third longer, and the form and vestiture of the head and prothorax, the latter in *marginalis*, having no sign of a median channel, with the surface not impressed toward the anterior angles, and having the punctuation extremely sparse near the sides of the pronotal disk. The scutellum in *marginalis* has no glabrous line, and the pygidium is rather sparsely squamose. If *squamicollis* possessed three prominent lines of scales upon the pronotum, with the surface elsewhere almost entirely free from them, or if it had three distinct lines of slightly denser pubescence upon each elytron, it is to be presumed that such striking characters would have been mentioned by Dr. LeConte; this purely negative evidence alone, therefore, is almost conclusive proof of the specific distinctness of *marginalis* and of its validity.

V.

ERRATA.

Several errors occurring in the paper published by me in the preceding volume of this Bulletin require correction, as follows:

Page 299—3th line from bottom, for "Colodera" read "Calodera."

Page 311—1st line of descr., for "L. longipennis" read "V. longipennis."

Page 327—10th and 15th lines from top, for "Horniarum" read "Hornianum."

QL Casey, Thomas Lincoln,
596 1857-1925.
S75C32 Revision of the
Ent. Californian species of
 Lithocharis and allied
 genera.

OL
596
S75C32 Casey, Thomas Lincoln, 1857-
Ent. 1925
 Revision of the Californian
 species of Lithocharis and
 allied genera

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