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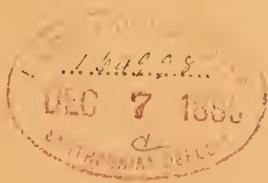
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DESCRIPTIVE NOTICES
OF
NORTH AMERICAN COLEOPTERA

I.
With Plate VII.

BY
THOS. L. CASEY.

Extract from Bulletin 6, California Academy of Sciences.



*with complements of the
author*

DESCRIPTIVE NOTICES

OF

NORTH AMERICAN COLEOPTERA.

I.

(With Plate VII.)

BY THOS. L. CASEY.

Read Oct. 18th, 1886.

Under the above title it is intended to publish short studies, either of species or small groups of genera, which may from time to time be investigated in a detached and desultory manner. Care will be taken, however, to indicate the relationships wherever possible and whenever these are at all obscure, so that it is hoped no confusion will be introduced into our already overburdened nomenclature. Large and complicated genera, or those in which the species are very closely allied and difficult of recognition, will not be touched upon except under very peculiar conditions, as these should form the subject-matter of separate essays.

In this connection it may be stated that it is my intention to include, if possible, within the faunal region considered, the entire North American continent terminating on the south in the isthmus of Panama and including the islands of the West Indian archipelago, as this appears to constitute a more natural region than that which is limited on the south by the Mexican boundary of the United States.

The present paper contains descriptions of new genera and species, mostly from the Pacific Coast, but with a few from

other portions of the continent; they are, in addition, principally members of the clavicorn families Pselaphidæ and Staphylinidæ.

In the latter family there seems to be considerable confusion in regard to the estimation of the number of abdominal segments, and having recently seen some remarks by M. H. Jekel (Col. Jk. Eleuth. Bibl., p. 22-23), which set forth the subject very clearly and fully, I take pleasure in transcribing them as follows:—

“Une autre cause d’embarras très sérieux pour les étudiants est l’instabilité—ou plutôt la non-concordance des auteurs dans l’énumération des segments abdominaux. Erichson avait parfaitement reconnu l’existence des deux pièces du dos situées entre le metanotum et les segments normaux de l’abdomen—visibles et découverts seulement chez un petit nombre de groupes où les élytres n’atteignent pas l’extrémité des épimères metathoraciques—et il avait prévenu ses lecteurs que, pour éviter des erreurs, il ne compterait les segments du dos qu’à partir de—et avec—celui qui se présente comme premier en dessous, et dont la texture est semblable en dessous comme en dessous aux suivants et fait corps avec eux, et offrant la même consistance. En cela il fut suivi—comme il avait été précédé—par un grand nombre d’auteurs recommandables. Plus tard les uns n’ont voulu compter qu’une seule de ces deux pièces dorsales ‘*interthoraco-abdominales*,’ regardant l’une d’elles comme un faux-segment à cause de son étroitesse et de sa consistance membranuse; d’autres la comptent aussi, de sorte que nous sommes en présence de trois systèmes, de sorte que le segment anal est pour les uns le 6^e (la plupart des auteurs jusques et y compris Erichson, Fairmaire etc), pour d’autres le 7^e (Kratz, G. Thomson etc), pour d’autres enfin le 8^e (Pandelle etc).

“Tout en constatant l’existence des deux pièces dorsales en question,—dont la consistance est si différente de celle des autres segments, et qui ne se détachent pas du thorax lors de la rupture de l’abdomen—elles ne devraient pas être comptées comme abdominales dans les travaux descriptifs des espèces, d’autant plus que les auteurs qui les comptent n’en parlent jamais dans leurs descriptions,—et pour cause—ces minces filets semicoriacés, semimembranux n’offrant aucune modification de forme ou de sculpture appréciables, lorsque, par exception, ils sont découverts par la brièveté des élytres. Enfin, même dans ce cas, leurs analogues ne se présentent pas en dessous et cachés qu’ils sont par les épimères, le metasternum etc. Dans cette illogique situation on se trouve avoir un ou deux segments de plus—selon la fantaisie des auteurs—en dessous qu’en dessous de l’abdomen, 6 ventraux et 7 ou 8 dorsaux *ad libitum*.

“N’eût-il pas été préférable, pour la compréhension de tous, de s’en tenir au sage conseil et à l’exemple d’Erichson, dont la judicieuse logique n’amène aucune perturbation dans les errements antérieurs, basés sur la parité

des segments extérieurement appréciables et conformes en dessus comme en dessous? Que l'on nous prouve, comme question d'anatomie générale et transcendante et technique des Staphylinides, qu'il y a 8 pièces, 10 même (Pand. Ann. Soc. Ent. Fr. 1869, 265) en dessus de l'abdomen, cela est fort bien, mais ceci une fois établi n'énumérons pas dans des descriptions qui doivent être claires et compréhensibles pour tous, et n'assimilons pas aux véritables segments abdominaux ces annexes metathoraciques *qui s'arrêtent au niveau des épimères du metasternum, et qui font corps avec lui*

“Je prévient donc que j'en reviens à l'ancienne méthode, et que, quelque soit l'allongement ou la brièveté de l'élytre, le compte des segments abdominaux se fera dans mes descriptions, à partir du premier ventral et de son correspondant dorsal, ce qui est la logique et la précision, que l'on ait affaire à un Aléocharien ou à un Omalien.”

These remarks fitly convey my own views and are similar, in substance, to what I should have stated as a result of study and observation. In all my future writings the ventral segments will be counted from, and including the first as seen from below, which is the real first segment of the abdomen.

For an illustration of this structure the reader is referred to the plate at the end of the present paper, where the basal portion of the abdomen of *Hesperobium* is figured in detail. It is there seen that the first segment has at the base a raised flat margin, rapidly diminishing in length to the median carina, where it almost disappears. It is possibly this raised margin which has been mistaken by several authors for a small basal segment, partially hidden by the posterior margin of the metasternum and the coxæ.

The true significance of the basal elevation is not apparent, unless, perhaps, that it serves to form a closer joint when the abdomen is drawn up, and still allow of a certain amount of flexibility. That it is not the ventral portion of the small membranous or coriaceous posterior segments of the metanotum is abundantly proven by the fact, as shown above by M. Jekel, that these coriaceous parts do not project beyond the metasternum and do not in reality form part of the abdomen; also because the other segments are also provided with an entirely analogous raised basal

margin, and finally very conclusively by the fact that these margins also exist on the dorsal surface of the segments, being practically continuous from the ventral to the dorsal plate. The coriaceous segments merely serve to connect the abdomen proper to the metanotum, and apparently do not even extend through to the under surface of the metasternum, or at least one specimen—from which the drawing is taken—has the first ventral so far exerted from the posterior margin of the metasternum as to leave a very large extent of membrane exposed to view, and no signs whatever of a segmental division are visible.

Another inaccuracy mentioned by M. Jekel, is in regard to the measurement of length in the Staphylinidæ, where the abdomen is often extended. This is not, however, of so great importance, as it is much easier to state, if the specimen be unique, whether or not the abdomen is extended, than to make minute measurements of other portions of the body. If the specimens be numerous, the lengths of extreme examples should be quite sufficient for all practical purposes.

As a source of ambiguity often observable in the writings of coleopterists, may be mentioned the variety of ideas attached to the word *epipleure*, in describing the elytra. Pascoe has alluded to this subject (Ann. Mag. Nat. Hist. Jan. 1869, p. 2), and suggested a definite meaning for the word; the notation here proposed is similar to that of Mr. Pascoe, with a single exception.

The inflexed sides of the elytra—for which I would propose the word *hypomera*—are generally composed of two parts, the first being a more or less elevated lower margin of greater or less width, and the second the remainder of the inflexed side, usually limited above by a more or less distinctly defined edge, generally reflexed. Above this the disk of the elytra is declivous, the declivity merging gradually into the dorsal and central portions of the disk, which are nearly always less convex. When the sloping sides of

the disk are very abrupt and more or less distinctly limited by a line, as in many species of *Læmophlœus*, they are designated as the *pleuræ*, the word *epipleuræ* being applied to the second portion of the inflexed sides above mentioned, and the word *hypopleuræ* to the first, or raised lower margin. This last has been called the *epipleural fold* by Pascoe; but in addition to the undesirability of two words to express our meaning where one can just as well be employed, we must consider the fact, admitted by the distinguished author quoted, that the hypopleuræ are not in reality folds at all. In a few of my previous descriptions I have used the word hypopleuræ to designate the entire inflexed sides or hypomera, but in future the names here given will be adhered to.

While dealing with kindred topics, it seems desirable to indicate the perversity of the brain in interpreting the images formed upon the retina of the eye in delineating and describing form. A good way to illustrate this is to observe the letter S in print, where the two salient curves in the ordinary position of the letter appear to be of nearly equal size; if now the letter be inverted, it will be seen at a glance that the lower portion in its former position is much the larger. In a similar way vertical lines appear relatively longer than transverse lines, and this has led to many errors in describing the shape of the prothorax; when the width and length of the latter are equal, it invariably appears at the first glance to be longer than wide, and is generally so described, thus introducing an element of confusion and doubt for those attempting to identify species from descriptions. This defect can be gradually overcome in various ways, but perhaps best by trying to delineate the form of the insect; for those who have never attempted it, this will generally be found a very difficult feat, and one requiring several attempts before a satisfactory outline can be produced.

The short diagnoses usually given are purposely omitted,

their place being sufficiently supplied by the first few lines of the descriptions, which deal with the general form, color and other similar characters, in conjunction with the general remarks usually appended in large type. In general monographic memoirs they are quite unnecessary, and merely consume space which might better be occupied by descriptive matter, because in such monographs or revisions, the key-tables, which should always be given, amply serve the purpose for which the diagnoses are intended.

It will be observed that the descriptions refer in all cases to the single specimen assumed as the type. The diversity of opinion as to the proper definition of a genus or the structural differences warranting the generic isolation of special groups, holds with almost equal force in regard to the ideas attached to the species which compose them. Forms which some coleopterists would regard as specific, are held by others to be simply racial, and by others again as merely accidental variations not even worthy of a name. This divergence of opinion must necessarily exist until our knowledge becomes more extensive, and until an approximately complete series of specimens of all species can be obtained from every region of the globe. I have preferred, therefore, in the existing state of knowledge, to describe one definite type and give such general remarks as may indicate the variation exhibited by the material at hand; additional series may alter our conception of the species to a considerable degree, but having a single typical description, we possess something tangible upon which to base the subdivisions into races or definite varieties, as may be determined by such representatives. In other words, it would produce more confusion than benefit to attempt to give a general description based upon material which must inevitably be incomplete.

It will also be noticed that the English language is alone employed in descriptions and diagnostic tables. My reasons for this course are, first, because I believe that the

time necessarily employed in learning to write the Latin language with fluency, in such manner as to be entirely certain that our ideas are being properly expressed—and it is useless to attempt it without such knowledge—might be better occupied in a study of the technicalities of the science, especially in view of the fact that there is probably no man of even moderate education possessing a good knowledge of Latin, who cannot at least understand descriptions drawn up in the three languages—French, German or English. Again, supposing a student to be ignorant of the indispensable triad of modern languages, it is easily seen that the amount of information concerning a species which he can obtain from the short three or four lines written in Latin and forming the diagnosis, is simply tantalizing. Either the entire description with all appended remarks should be written in Latin, as in the Staphylinidæ of Erichson or the Tomicini of Eichhoff, or else the student must perforce have a knowledge of these languages in order to read the description of the species, otherwise the most important part, as far as identification is concerned, or that relating to the details, is entirely lost to him. Without wishing to be considered unduly iconoclastic, it must be candidly confessed that the necessity for the latinization of the few lines usually beginning a description is not readily appreciable.

When used with a moderate amount of care, the French and English languages are very perspicuous and eminently adapted to concise scientific expression. The spirit of these languages demands simplicity and conciseness, and they are, in addition, peculiarly fitted for technical descriptions because of their power of absorbing words derived directly from the Latin and Greek. In regard to ambiguity, there are few who can maintain that they possess this undesirable quality to a greater degree than the Latin, and we may go so far as to say that they are far less ambiguous than a large proportion of the ordinary entomological Latin of the present day. The majority of our working coleopterists are com-

pelled to engage in active pursuits, either professional or commercial, which demand a knowledge of the three languages mentioned, and, if after acquiring them, these can also serve them in the scientific recreations of their leisure moments, thus rendering unnecessary the acquisition of a special language for such purposes, it appears to the writer that we have gained one very important point, since just so much time and labor may be saved for useful scientific work. Physicists, mathematicians, astronomers, and zoölogists in fields other than entomological, have long since abandoned the Latin as a medium of publication. The leading mathematical and astronomical journals employ the modern languages exclusively, and, although they appeal to a much more extensive class of readers than do the entomological journals, it has not been found that anything has been lost by the change, but on the contrary, as they at present reach a larger number of readers, such a course has tended to more widely diffuse scientific knowledge, and to create a more universal desire for its advancement.

This subject is, however, a somewhat delicate one, and merits further consideration and argument.

The binocular microscope, with objectives of from two-thirds to two inches focal length, is inevitably destined to supplant the hand-lens in the future study of entomology, its advantages being perfect steadiness of the object, sufficient magnifying power to bring all the organs prominently into view, and the healthful and unconstrained use of both eyes, giving a stereoscopic effect; at the same time both hands remain free for writing or drawing. To one accustomed to this mode of studying insects under ten mm. in length, an adherence to the usual method of research by means of the hand-lens, where the eye is unnaturally strained, and the images consequently apt to be distorted and to convey a wrong impression, seems entirely unaccountable. A long list of errors in describing sculpture and formation of various parts of the body, owing to insuf-

ficient magnifying power and other unsatisfactory conditions, could easily be given, and in this connection it must be borne in mind that it requires much more amplification and acuteness of sight and perception to discover a character or the structural nature of an object than it does to see the same after it has once been described. I allude to the use of the microscope rather for original research than for cursory observation and comparison, as these objects can be much more conveniently attained with a good hand-lens.

As greater attention is being given to exactness and perspicuity in describing the characteristics of species, a general catalogue of terms to be employed for the almost infinite variety of sculpture, punctuation, lustre, pubescence, form and color, should be compiled, each modification being illustrated by reference to a particular species wherein it is preëminent; the colors should be indicated on a lithographic plate. Such a catalogue as this would conduce greatly to uniformity in description, and therefore to ease of identification of species; it should be undertaken by a special congress of entomologists, or by some one of the large European societies, and would be of great value in systematizing the science.

In conclusion, the author begs the indulgence of coleopterists for errors, past, present and future. Having entered upon the detailed study of our smaller Coleoptera, he finds himself forced to rely in great measure upon the library, which, although undoubtedly a most trustworthy and unbiased guide, is still more or less unsatisfactory because of the insufficient and often erroneous descriptions of our earlier authors. Under such circumstances errors are unavoidable, and he trusts they may be overlooked to some extent, upon the assurance that his utmost endeavors have and will be employed in seeking the truth regardless of all other considerations.

SAN FRANCISCO, October 11, 1886.

The following is a list of the genera and species here described or brought to notice:—

	HYDROPHILIDÆ.	Ababactus pallidiceps.
Limnocharis picea Horn.		Lena testacea n. gen.
polita.		Ramona capitulum n. gen.
angustula.		Leptogenius brevicornis n. gen.
alutacea.		Scopæus rotundiceps.
congener.		truncaticeps.
coniciventris.		Scopæodera nitida Lec. n. gen.
	SILPHIDÆ.	Leptorus texanus n. gen.
Silpha ænescens.		bicolor.
	PSELAPHIDÆ.	versicolor.
Batrissus mendocino.		longiceps.
zephyrinus.		Orus parallelus.
speculum.		Apocellus niger.
monticola.		Phleopteris filicornis.
occidua.		Amphichrom flavicorne.
Bryaxis texana.		alutaceum.
infinita.		pilosellum.
Nisa n. gen.		veterator.
Reichenbachia tumorosa.		crassicorne.
tumidicornis		Pelecmaium binotatum n. gen.
informis.		modestum.
gracilicornis.		Lathrimæum humerale.
nevadensis.		Orobannus rufipes.
fundata.		densus.
franciscana.		TRICHOPTERYGIDÆ.
Nisaxis n. gen.		Actidium rotundicolle.
Sonoma n. gen.		Ptilium sulcatum.
Oropus striatus Lec. n. gen.		Smierus americanus.
convexus.		BYRRHIDÆ.
interruptus.		Ditaphrus scymnoides n. gen.
abbreviatus.		TENEBRIONIDÆ.
Actium n. gen.		Eleates occidentalis n. gen.
	STAPHYLINIDÆ.	CURCULIONIDÆ.
Lomechusa montana.		Barinus squamolineatus n. gen.
Tachyusa crebrepunctata.		SCOLYTIDÆ.
Autalia elegans.		Renocis heterodoxus n. gen.
Eumitocerus tarsalis n. gen.		
Heterothops exilis.		

LIMNOCHARIS Horn.

The species of this genus are probably numerous in North America, although but two have been described; I now add several other peculiar forms. The genus is apparently valid, since in all the numerous specimens which I have examined, there are clearly eight ventral segments, the eighth being small and more or less retractile, so that, while in the type of *angustula* it is nearly as long as the seventh and very conspicuous, it may sometimes be almost entirely withdrawn; it is never entirely invisible, however. The labrum also differs greatly from that of *Limnebius* as described by Lacordaire, for in *Limnocharis* it is not broadly rounded, but is deeply sinuate in the middle. The antennæ have, as stated of *Limnebius* by Du Val, nine joints, the first two subanchedylosed so as to form a long slender scape.

The mentum instead of being strongly rounded, approaches in *Limnocharis* more nearly the trapezoidal form, and in the very singular *L. coniciventris* described below, it is almost perfectly trapezoidal, being transversely truncate at apex.

The eighth segment of the abdomen does not bear a tuft of hair, but has one or two terminal setæ, perhaps according to the sex.

The species of the genus at present known from the United States are as follows:—

Sides of the elytra distinctly acute.

Surface more or less polished.

Prothorax very strongly transverse, at apex nearly twice as wide as long..... **picea.**

Prothorax less strongly transverse, at apex less than one-half wider than long.

Apical angles of elytra narrowly but distinctly rounded..... **polita.**

Apical angles not rounded..... **angustula.**

Entire surface more or less alutaceous.

Elytra at base slightly narrower than the prothorax; surface strongly alutaceous..... **alutacea.**

Elytra at base equal in width to the prothorax; surface feebly alutaceous; scutellum larger..... **congener.**

Sides of elytra strongly convergent, almost perfectly straight.. **coniciventris.**

L. picea Horn.—Trans. Am. Ent. Soc., 1872, p. 144—A specimen before me from Gilroy, Santa Clara Co., appears to satisfy the description given by Dr. Horn for this species; it is, however, rather smaller and the prothorax appears to be slightly less strongly transverse than shown in the figure and described in the text; it is two-thirds wider than long at apex and nearly two and one-half times as wide as long at base.

L. polita n. sp.—Narrowly oval, strongly convex; black; legs and palpi dark piceo-testaceous; upper surface polished, with rather long, recumbent, very fine and sparse pubescence; under surface black, rather densely pubescent. *Head* one-half wider than long, feebly convex, very feebly reticulate, excessively minutely and rather sparsely punctate; epistomal suture transverse, well marked; last joint of maxillary palpi darker in color. *Prothorax* at apex just visibly wider than the head, at apex broadly and very feebly emarginate, two-fifths wider than long; base two and one-third times wider than the median length, transversely truncate, broadly and very feebly sinuate on each side of the scutellum, and very feebly and anteriorly oblique at the sides; sides feebly and evenly arcuate; disk evenly convex, very feebly reticulate, very minutely, sparsely punctate, with a transverse row of dense punctation at the apex on each side. *Scutellum* distinctly wider than long, sides feebly arcuate. *Elytra* at base equal in width to the prothorax; sides strongly convergent and rather strongly and evenly arcuate to the apex, which conjointly is not truncate, but rather acutely rounded; each elytron at apex rather acute and very distinctly rounded; disk strongly convex, scarcely two and one-half times as long as the prothorax, finely and very distinctly reticulate, more finely and densely so than the pronotum, not visibly punctate. *Legs* rather slender. Eighth segment with two apical setæ. Length 1.4 mm.

California; (San Francisco). Several specimens.

May be distinguished by its blackness, polished integuments and elytral structure.

L. angustula n. sp.—Narrowly oval, strongly convex, piceous-black; legs and palpi dark piceous-brown; pubescence very fine, not dense; integuments shining. *Head* one-half wider than long, feebly convex, not visibly reticulate, very minutely and sparsely punctate; epistomal suture very feebly arcuate toward the eyes; last joint of maxillary palpi scarcely at all darker in color. *Prothorax* at apex not wider than the head, broadly, very feebly sinuate, two-fifths wider than long; base transversely truncate, almost perfectly straight, two and one-fourth times as wide as the median length; sides feebly and evenly arcuate; disk not visibly reticulate, excessively minutely, sparsely punctate, with a feeble row of larger and denser punctiform subasperate erosions on each side behind the apical margin, and, near the basal margin, two small impressed punctures distant by slightly more than the width of the

scutellum. Scutellum very slightly wider than long. *Elytra* at base as wide as the prothorax; sides strongly convergent to the apex, evenly and rather feebly arcuate; apex feebly subtruncate, together rounded, each angle nearly right and scarcely at all rounded; disk slightly less than one-half longer than wide, two and one-third times as long as the prothorax, strongly convex, finely, feebly reticulate, not visibly punctate. Eighth ventral segment large, having two apical setæ; sixth broad y emarginate. Length 1.3 mm.

Texas; (Austin 1).

This species, as may be inferred from the description, is very closely allied to *polita*, but is well distinguished by the form of the elytral apices; in addition the reticulations of the elytra are finer and stronger in *polita*, and the punctation of the pronotum is less evident in *angustula*. It may be considered unwarrantable to trust to the conformation of the elytral apices for specific characters in the Hydrophilidæ, but in the present instance there is much more probability of both the typical representations being of the same sex, than that they are not, for the eighth segment in each is large and very distinct and is provided in each with two equal apical setæ. *Angustula* is a narrower and slightly more convex species than *polita*, and has the prothorax slightly less strongly transverse.

All the species of the present genus have the two basal punctures and the two apical rows of asperities; the pronotum is, in addition, always very finely margined along the apex and sides, but not along the base, the latter being abruptly convex and narrowly declivous to the plane of the elytra.

L. alutacea n. sp.—Suboblong, moderately robust, not strongly convex, black, piceous by diaphaneity; legs dark piceo-testaceous; palpi and antennæ slightly paler; pubescence extremely fine, recumbent, not dense above; integuments alutaceous, elytra scarcely more strongly so than the pronotum. *Head* scarcely one-half wider than long, feebly convex, finely reticulate, very minutely, sparsely punctate; epistomal suture transverse and very feebly in the middle, oblique and almost completely obliterated at the sides; epistoma with a small discal puncture near each apical angle. *Prothorax* at apex slightly wider than the head, broadly, moderately and trapezoidally emarginate, two-fifths wider than long; at base transversely truncate, broadly and

very feebly sinuate at each side, two and one-third times as wide as long; sides evenly and feebly arcuate; basal angles from above narrowly rounded; disk very broadly convex, finely reticulate and subgranulose; punctures excessively minute, rather sparse and scarcely visible. Scutellum very small, twice as wide as long, parabolically rounded behind throughout. *Elytra* at base slightly, but distinctly narrower than the prothorax; sides not strongly convergent, evenly and moderately arcuate to the apex, which, conjointly is obtusely and evenly rounded, not at all truncate; inner angles narrowly but distinctly rounded; disk two-fifths longer than wide, two and one-half times as long as the pronotum, moderately convex, reticulate and subgranulose like the pronotum, excessively minutely and scarcely visibly punctate. Eighth segment having a long, robust apical style, with one or two short robust spinules on either side. Length 1.6 mm.

California; (Mendocino Co. 1).

Easily distinguished by its wider prothorax and distinctly alutaceous surface sculpture. The maxillary palpi are distinctly more slender than in the following species:

L. congener n. sp.—Narrowly oval, rather convex, black; legs piceous; pubescence fine, sparse; integuments shining, very feebly subalutaceous. *Head* feebly convex, finely, evenly and distinctly punctate; epistomal suture transverse, distinct, slightly arcuate and very fine near the eyes. *Prothorax* at apex just visibly wider than the head; proportions nearly as in *alutacea*; sides evenly and more feebly arcuate; apex more feebly and arcuately emarginate; disk broadly convex, finely, densely reticulate; finely, evenly and distinctly punctate. Scutellum triangular, apex not rounded, three-fourths wider than long. *Elytra* at base fully as wide as the prothorax; sides convergent, evenly and not strongly arcuate to the apex, which, conjointly is obtusely and evenly rounded, not at all truncate; inner angles very narrowly rounded; disk nearly two and one-half times as long as the prothorax, moderately convex, more finely and densely reticulate than the pronotum, not perceptibly punctate. Eighth segment with a long anal style and two short spinules on each side. Length 1.6 mm.

California; (Mendocino and Humboldt Cos.). Several specimens.

This species is closely allied to *alutacea*, but differs in its more evenly oval and narrower form, its relatively narrower prothorax, much more shining surface, stronger and more evident pronotal punctuation, shorter, more robust maxillary palpi, and particularly in the form of the scutellum. The two discal punctures of the epistoma are slightly stronger,

and the transverse epistomal suture is less obsolete than in *alutacea*. The sides of the prothorax are very distinctly less strongly arcuate in *congener*.

L. coniciventris n. sp. — Oval, attenuated behind, piceo-testaceous, paler beneath; legs pale brownish-flavate; pubescence extremely fine and sparse; integuments polished. *Head* not one-half wider than long, feebly convex, scarcely perceptibly reticulate, excessively minutely, feebly and not distinctly punctate; epistomal suture almost completely obsolete. *Prothorax* at apex about equal in width to the head, broadly, feebly, arcuately sinuate, fully one-half wider than long; at base broadly truncate, very feebly sinuate on each side of the scutellum, nearly two and one-half times as wide as long; sides evenly and distinctly arcuate; disk broadly convex, polished, scarcely perceptibly reticulate, excessively minutely, feebly punctate; punctures somewhat irregularly disposed, very sparse. Scutellum very small, more than twice as wide as long, triangular. *Elytra* at base scarcely as wide as the prothorax; sides strongly convergent, nearly straight to the apex, which conjointly is abruptly and transversely truncate, one-half as wide as the elytral base; outer angles rounded, inner very narrowly so; disk rather strongly, conically convex, smooth; coarsely, very finely reticulate, not perceptibly punctate; one-third longer than wide, two and one-half times as long as the prothorax. Seventh segment broad, broadly rounded behind; eighth having two equal apical setae. Posterior femora very strongly compressed. Length 1.0 mm.

Texas; (Austin 1).

The labrum is more continuous in curvature with the epistoma, and is consequently more prominent from above than in the other species; it appears from above to be transversely subtruncate or very broadly rounded, but when viewed in prolongation of the axis of the insect it is seen to have the lower edge rather abruptly deflexed, and broadly, rather feebly sinuate.

The general outline of this species is very different from that prevailing in the genus, but it appears to possess all the generic characters of *Limnocharis*. It is decidedly the smallest species described.

SILPHA Linn.

S. ænescens n. sp. — Form rather depressed, elongate, oval, black; upper surface with a bright æneous lustre; legs and antennæ black throughout; shining; pubescence in the form of an excessively minute and almost invis-

ible short setæ from each puncture. *Head* rather small, constricted behind the eyes; front feebly convex, finely and rather densely punctate, more closely so near the eyes, and much more sparsely and finely so near the apex and on the labrum; the latter very deeply and rather narrowly sinuate at apex; eyes moderate, slightly prominent, much shorter than wide, vertically oval; antennæ slender, as long as the pronotum, first joint as long as the next two together, second much longer than the third, last four joints forming a rather narrow, elongate, perfoliate club, the last three joints of which are rendered opaque by an excessively fine and dense pubescence, eleventh slightly longer than wide, flattened, evenly and broadly rounded at tip. *Prothorax* widest at the base, where it is generally slightly more than one-half wider than long; sides strongly convergent thence to the apex, broadly, evenly and distinctly arcuate; apex broadly and feebly incurvate, one-half as wide as the base; the latter broadly truncate in the middle and thence slightly oblique and very feebly sinuate to the basal angles; the latter slightly obtuse, narrowly rounded; disk broadly and rather feebly convex, more strongly so in the middle anteriorly, narrowly and obsoletely impressed along the middle, and more broadly and obliquely near each basal angle; sides narrowly and gradually subexplanate, narrowly margined with an elevated border; surface finely and very densely punctate; punctures round, deep, sometimes with a few smaller ones intermingled. Scutellum very densely punctate; pubescence longer and more dense. *Elytra* at base about as wide as the prothorax; sides parallel and nearly straight, rather abruptly and broadly rounded behind, slightly truncate in the males; disk one-third longer than wide, more than twice as long as the prothorax, transversely and moderately convex, narrowly and abruptly reflexed at the sides; each with three longitudinal, feebly-elevated costæ, with numerous intermediate and subtransverse elevations; depressed areas rather coarsely and not very densely punctate, interspaces finely and strongly granulose. *Legs* moderate in length, slender; first joint of the posterior tarsi fully as long as the fifth, and as long as the next three together. Length 11.0-13.0 mm.

California; (San Francisco).

The sexual characters are as follows:—

Male—Last ventral segment transversely truncate at apex, edge almost perfectly straight; anterior tarsi very feebly dilated, middle not at all dilated, very slender.

Female—Last ventral segment narrowly and strongly rounded behind, immediate apex narrowly truncate or subsinuate; tarsi all narrow and slender.

This species resembles *ramosa* Say, but differs in its

æneous lustre, much coarser elytral sculpture, and in the sexual characters; both the anterior and middle tarsi of the male in *ramosa* are strongly dilated. All the many specimens which I have seen are æneous above, and this appears to be a very persistent character. The form is mentioned by Mannerheim (Bull. Mosc. 1843, No. 2, p. 252) as *Silpha cervaria*, Var. b. It is also mentioned by Dr. Horn (Tr. Am. Ent. Soc. VIII, p. 241) as one of the variations of *S. ramosa* Say.

S. cervaria Mann.—This is apparently a valid species, being represented in my cabinet by two specimens of unmistakably more broadly oval outline than *ramosa*; the dorsal surface also exhibits very decided differences in sculpture.

BATRISUS Aubé.

Although this large and important genus is in a state of comparative confusion, it is believed that the description of the following forms is warrantable, since no species have yet been described from California, and the possibility of increasing our synonymy is, therefore, very slight. It is true that *B. albionicus* Aubé has been ascribed to California, but as the locality is not mentioned by Aubé in either of his descriptions, this would appear to be more or less doubtful; at any rate it is easily distinguishable from any of the species here described.

The following species all belong to the group having trisulcate and bituberculate pronotum, although in one or two forms the median channel becomes almost or quite obsolete; they also agree throughout in having a terminal process at the apex of the posterior tibiæ, and in the similarity of the sexual characters. The latter are well marked, and are as follows:—

Male.—Abdomen more or less deeply impressed near the apex; terminal process of posterior tibiæ short and nearly straight; intermediate trochanters

dentate or prominent externally at apex; tenth antennal joint finely tuberculate, eleventh with a short, erect arcuate process at base, both projecting internally.

Female.—Abdomen, trochanters and antennæ normal; terminal process of posterior tibiæ long, slender and contorted. Body smaller, more slender.

The funicle of the antennæ is remarkably constant in structure throughout the series, but the last four joints differ in shape and relative size.

In this group the head is not materially modified in the male, so that it differs greatly from a large and important group of eastern species. From a direct comparison with *B. formicarius* Aubé, the type of *Batrissus*, it is probable that these species should be separated as a subgenus; this has apparently been already done by Reitter under the name *Batrissodes*.

The type of the European *Batrissus* is found, as its name implies, with ants; the Californian species are never found in such localities, but are to be met with only in wet moss or under stones near water-courses; although widely diffused, they are scarcely ever abundant, and are generally extremely rare.

B. mendocino n. sp.—Moderately robust, convex, dark brownish-rufous; legs same; abdomen and antennæ darker, castaneous, the latter pale toward apex; integuments polished; pubescence coarse, rather long, suberect, rather sparse. *Head* moderate, scarcely as wide as long; eyes rather small, very convex, prominent, at more than their own length from the base; sides behind them strongly convergent and arcuate to the neck, which is slightly less than one-half as wide as the width at the eyes, very feebly sinuate; surface impunctate, slightly convex; on a line through the posterior limits of the eyes there are two distinct, deeply impressed foveæ, apparently nude, connected by a deeply impressed, strongly and evenly arcuate channel; antennal tuberculations broad and prominent; antennæ rather slender, distinctly longer than the head and prothorax together, club slender; basal joint rather robust, scarcely longer than wide, apex deeply notched posteriorly for the reception of the second joint when flexed; joints two to five equal, slightly longer than wide, sixth and seventh equal, slightly smaller, longer than wide, eighth as wide as the seventh, rounded, as wide as long, eighth to eleventh gradually wider, ninth and tenth equal in length, the latter much more strongly transverse, eleventh elongate, conoidal, pointed. *Prothorax* widest at two-fifths the length from the apex, where it is as wide as the head, slightly wider than

long; sides strongly rounded, thence convergent and deeply sinuate to the base which is broadly arcuate, nearly three-fourths as wide as the disk and one-third wider than the apex; the latter transversely truncate; basal angles slightly obtuse, not rounded; disk very feebly and sparsely punctate, broadly, strongly convex, having in the middle near the base a very deep, nude fovea, continued anteriorly to within two-fifths the length of the apex by a narrow, not deeply impressed channel; on each side and slightly in advance of the fovea, a rather large, obtusely pointed tubercle; also near each basal angle a large, deep, irregular, nude fovea, continued anteriorly by a very broadly and feebly impressed arcuate channel, and connected with the median fovea by a narrow, extremely feeble, transverse line. *Elytra* at base equal in width to the base of the pronotum, at apex two and one-third times as wide; sides evenly, rather strongly arcuate; together transversely truncate behind, nearly as long as wide; disk evenly, moderately convex, very minutely, sparsely, feebly punctate; sutural striæ approximate, distinct; discal very broadly impressed, becoming extinct at one-third the length from the base. *Abdomen* as wide as and slightly longer than the elytra, convex, very minutely, sparsely punctate. *Legs* long, slender; femora rather abruptly swollen before the tip. Length 2.1 mm.

California; (Anderson Val., Mendocino Co. 1.)

The male, has near the apex of the abdomen beneath, a large, very deeply-impressed fovea, wider than long, with the anterior edge broadly and roundly sinuate in the middle. There are two small, deeply-impressed foveæ near the basal margin of the pronotum on each side, the outer being at the basal angles as seen from above.

B. zephyrinus n. sp.—Moderately robust, very convex, rufous; elytra brighter; abdomen slightly darker; legs and antennæ darker, rufous; the latter pale at apex; integuments highly polished; pubescence coarse, sparse. *Head* about as wide as long; eyes rather small, prominent; sides behind them strongly convergent and very feebly arcuate to the neck; the latter broadly sinuate, much less than one-half as wide as the width at the eyes; on a line through the middle of the eyes two small, nude, very deeply, longitudinally impressed foveæ, connected by a strongly arcuate groove, the sides of which are parallel in the basal half of its length; antennal tuberculations prominent, coarsely punctate; antennæ long, slender, much longer than the head and prothorax together; basal joint moderately robust, subcylindrical, longer than wide, eleventh joint robust, conoidal, very obliquely pointed. *Prothorax* widest at two-fifths the length from the apex where it is fully as long as wide, as wide as the head; sides strongly arcuate, thence convergent and distinctly sinuate to the base; the latter broadly areolate, three-fourths as wide as the disk, one-fourth wider than the apex; the latter transversely truncate; disk strongly convex, finely, sparsely, feebly punctate; near the

base a very deep, rounded, nude median fovea, continued anteriorly by a narrow, feebly impressed groove to within one-third the length of the apex; slightly in advance of the fovea, nearly midway between it and each side, a rather acute tubercle; between the latter and the edge a moderate, irregular, deeply impressed fovea, connected with the median by a feebly impressed, anteriorly arcuate line, and each continued anteriorly by an outwardly arcuate, distinct, impressed channel; also at the base near each basal angle, two small, deeply impressed foveæ. *Elytra* very minutely, sparsely punctate, convex; discal stria in the form of a broad impression, becoming extinct at one-third the length from the base; humeri longitudinally slightly prominent; each elytron with three foveæ at base. Abdomen very finely, sparsely punctate; basal segment with two short, approximate, parallel carinæ at base. *Legs* long, slender. Length 2.2 mm.

Nevada; (Reno, Washoe Co., 1).

This species is closely allied to *mendocino* and agrees with it in the form of the elytra, abdomen and legs, and nearly so in the antennæ; it, however, differs in the form of the head and prothorax, the lateral channels of the latter being more broadly arcuate in the present species. The basal segment of the abdomen in *mendocino* has two very short rudimentary carinæ not one-half as long as in *zephyrinus*, and the sexual characters differ; in the present species the abdomen has on the under surface, near the apex, a large deeply impressed fovea, as wide as long, which is emarginate anteriorly, the notch being in the form of a very broad cusp.

B. speculum n. sp. — Rather slender, convex, very dark rufo-piceous; legs and antennæ paler, dark rufous, the latter paler at apex; abdomen piceous-black; integuments highly polished; pubescence rather coarse, suberect, sparse. *Head* slightly longer than wide; eyes small; sides strongly convergent, distinctly arcuate to the neck; the latter much less than one-half as wide as the width at the eyes; surface feebly convex, impunctate; antennal tuberculations not punctate; antennæ long, slender, longer than the head and prothorax together; eighth joint slightly longer than wide, ninth and tenth equal in length, rounded, the former nearly as long as wide, the latter very slightly wider than long, eleventh wider than the tenth, not as long as the three preceding together, conoidal at base, very obliquely pointed. *Prothorax* widest at slightly more than one-third the length from the apex, where it is as wide as the head, very slightly longer than wide; sides feebly sinuate posteriorly to the base, which is three-fourths as wide

as the disk and one-fourth wider than the apex; disk strongly convex, scarcely punctate; basal fovea large, deeply impressed, rounded; median channel very feeble, evanescent near the fovea, extending scarcely beyond the middle of the disk; lateral foveæ moderate in size, not very deeply impressed, extended anteriorly in the usual arcuate groove, and connected with the median by a fine line; immediately behind the middle of the latter, acutely, feebly elevated or subtuberculate; between the median fovea and base a fine elevated carina; on each side, at the base, two small, deeply impressed foveæ. *Elytra* and abdomen nearly as in the preceding species; the former finely and sparsely punctate, the first visible dorsal segment of the latter with two small, short basal carinæ. *Legs* slender. Length 1.9 mm.

California; (Alameda Co. 1).

This species agrees in general structure of the head and prothorax with the preceding species, but may be distinguished from both by its much darker color and structure of the antennal club; from *mendocino* it differs in its much more elongate prothorax and longer basal carinæ of the first abdominal segment; from *zephyrinus* in its shorter basal abdominal carinæ and smaller size, and from both in the much more feeble median channel of the pronotum. The basal carina of the pronotum is common to all these species.

The above description is taken, unfortunately, from the female, but the species is so distinct that there can be very little doubt of its future identification, its small size, slender form, dark color, narrow ninth and tenth antennal joints and especially the very feeble median channel being its distinctive characters.

B. monticola n. sp.—Rather robust, convex, intense black throughout; legs very dark rufo-piceous; antennæ fuscous, very slightly paler, rufous at apex; integuments polished; pubescence coarse, pale, suberect, not very dense. *Head* moderate, scarcely as wide as long; eyes moderate in size, very convex, rather finely granulate, just behind the middle; sides behind them very strongly convergent and feebly arcuate to the neck; surface feebly convex, impunctate; occipital foveæ longitudinally elongate, deeply impressed, on a line through the posterior portion of the eyes, connected by a very strongly arcuate impressed groove; antennal tuberculations large, very coarsely and feebly punctate; antennæ robust, scarcely longer than the head and prothorax together, club rather robust; ninth joint slightly wider than

long, tenth scarcely as long as the ninth, strongly transverse, obliquely truncate throughout its width at apex, eleventh as long as the three preceding together, very slightly wider than the tenth, ovoidal at base, much more convex exteriorly than within, obliquely attenuate and obtusely pointed. *Prothorax* widest at two-fifths its length from the apex, where it is fully as long as wide, as wide as the head; sides very strongly rounded, thence convergent and rather strongly incurvate to the base which is transversely, very feebly arcuate, but slightly more than two-thirds as wide as the disk, one-third wider than the apex; disk strongly convex, very finely, feebly and sparsely punctate; median fovea rather large, rounded, very deep; lateral smaller, continued anteriorly by parallel, arcuate, broadly impressed grooves, connected with the median by anteriorly arcuate and scarcely visible grooves just before the basal tuberculations, which are but slightly elevated, more abrupt anteriorly than posteriorly; lateral basal foveæ rather distant from the basal margin; median carina strong. *Elytra* at base very slightly wider than the base of the pronotum, nearly as long as wide, strongly, evenly convex; very minutely, feebly and sparsely punctate; sutural striæ fine, deeply impressed; discal broadly impressed, short, feeble. Abdomen shorter and very slightly narrower than the elytra, convex, extremely minutely, sparsely punctate; first segment with two short, approximate, parallel carinæ at base. *Legs* long, somewhat robust; posterior tibiæ distinctly bent; tarsi much paler in color. Length 2.2 mm.

California; (El Dorado Co., 1).

The male has at the apex of the venter, a large, very abrupt, deeply impressed fovea, slightly wider than deep, the anterior edge of which is almost entire and transversely truncate.

This species can easily be distinguished from any other here noted by its intense blackness, shorter antennæ, absence of median pronotal groove, and form of the sexual fovea.

The species thus far described have two basal carinæ on the first visible dorsal segment of the abdomen; the following has no basal carinæ, and the elytra are much shorter.

B. occidentus n. sp.—Rather slender, strongly convex; body very uniform in color throughout, dark brownish-rufous; legs slightly paler, rufous; antennæ fuscous, very slightly paler at tip; integuments very highly polished; pubescence coarse, pale, very sparse. *Head* moderate, as wide as long; eyes small, prominent; sides behind them very strongly convergent, strongly arcuate to the neck, which is transversely truncate, two-fifths as wide as the

width at the eyes; surface broadly convex, impunctate; occipital foveæ rather large, very deep, but slightly elongate, joined by the usual strongly arcuate, impressed groove; antennal tuberculations rather prominent, with a few small, widely scattered punctures; antennæ slender, slightly longer than the head and prothorax together, club rather strong, rapidly increasing in width from the ninth joint which is slightly wider than long, tenth strongly transverse, much wider than the ninth, slightly obliquely truncate at the apex, eleventh twice as wide as the ninth, truncate at base, ovoidal, obliquely acuminate, rather acutely pointed, as long as the three preceding together. *Prothorax* nearly as in *monticola*; sides less acutely rounded before the middle, slightly less strongly narrowed toward base; apex slightly broader; basal tubercles more symmetrically pointed and more prominent; median groove narrow, rather deeply impressed, continuing from the basal fovea nearly to the apical margin. *Elytra* at base as wide as the base of the pronotum, at apex more than twice as wide; sides evenly, very strongly arcuate; disk strongly convex, distinctly wider than long, rather coarsely, very sparsely and feebly punctate; sutural striæ deeply impressed, nearly straight; discal very short, very broadly and roundly impressed, gradually evanescent at a little more than one-third the length from the base. *Abdomen* as wide as and much longer than the elytra, convex; first visible segment with three large equidistant, densely-pubescent foveæ along the basal margin; carinæ completely obsolete. *Legs* rather long, very slender; femora rather abruptly, strongly swollen beyond the middle; posterior tibiæ scarcely perceptibly bent. Length 1.9-2.1 mm.

California; (Humboldt Co. 4).

Described from the male, in which the apical fovea is large, slightly wider than long and rather feebly impressed; the anterior edge is truncate and very broadly, feebly sinuate toward the middle. In the female the elytra are slightly shorter.

Easily recognizable by the very long, well marked, median pronotal sulcation, by the short elytra, and absence of basal carinæ.

BRYANIS.

This genus, in the broad sense indicated by LeConte, (Tr. Am. Ent. Soc. VIII. p. 181), contains a rather heterogeneous assemblage of species, although the various groups are clearly indicated. It will be noticed that there are two classes of foveæ upon which the subdivisions are based—

those of the head and pronotum respectively, the former being made to serve in subdividing the genus *Reichenbachia*. It will be well to consider these sets of foveæ in order.

During a recent collecting tour in Texas, I secured a large series of a uniformly flavo-ferruginous species of *Reichenbachia*, belonging to the group in which the male and female antennæ are different in structure. These specimens were all taken in a very limited area, and are without the least doubt of a single species. The males have the fifth and sixth joints of the antennæ elongate and swollen; upon the occipital portion of the head there are two small, widely distant, spongiose foveæ, but the apical fovea is completely wanting. The females also have the same joints of the antennæ elongate and slightly dilated; the head has the occipital foveæ exactly similar in size and position to those of the male, and in addition a third apical fovea, similar to the others and equally pronounced. The male above noted was described by Dr. LeConte as *tumida*; whether the female has been described as a trifoveate species is a question requiring further investigation.

It is seen, therefore, that the presence or absence of the apical fovea may sometimes be a sexual character, at least in a certain class of species of which one is *R. tumida*, and it is consequently of very little moment in a generic classification, although the occipital foveæ appear to hold a very different position, and are evidently of more distinct value.

The pronotal foveæ are very important from a generic point of view, since they indicate great and radical differences, which extend throughout the body, and are evinced by peculiar manifestations of sexual identity. For instance, restricting ourselves for the present simply to the American fauna,—those species having three small, equal, punctiform foveæ, are the only ones which are subject to a very decided sexual modification of the antennal club. Those having three large, subequal, spongiose foveæ are,

amongst those having occipital foveæ, the only ones exhibiting sexual modification of the dorsal surface of the abdomen; while those which have two large spongiose lateral foveæ and a minute nude median puncture are the only ones which possess a sexual modification of the middle joints of the antennæ, although there are many species which have the antennæ similar, as there are several in the preceding section which have the abdomen similar, in the two sexes.

Again, those having three nude pronotal foveæ which are unequal, are distinguished by a complete absence of occipital foveæ, and, considering the sexual modifications apparent in other portions of the group accompanying such decided differences in the foveæ, we might be led to expect a peculiarity here also.

From Galveston, Texas, I have before me two species of this section. One of these is represented by seven males and three females, the other by three males only, the latter having an almost impunctate head and longer elytral striæ; these have the first segment elongate, and the middle portion of the dorsal surface behind its apex exhibits sexual modifications consisting of excavations and minute tuberculations of the greatest complexity. The males of the first species have shorter elytral striæ, a more punctate head, and also exhibit sexual characteristics affecting the dorsal surface of the abdomen, although of an entirely different kind. The first two segments are perfectly normal, the first slightly elongate, but the third is very broadly and feebly impressed, the impression having in the middle a tuft of long erect sparsely-placed setæ. The sexual characters, therefore, affect the same part of the body as in *Bryaxis*, but instead of being limited mainly to the first segment, it is the portion posterior to this which is principally modified. These species are, however, well distinguished from *Bryaxis* by the presence of lateral carinæ on the lower surface of the head.

In at least certain groups of Coleoptera, sexual characters should be considered generic when they are evinced by such radically different modifications, for these imply decided differences in the methods of exercising the functions pertaining to reproduction, the most important act in the lives of these organisms, and are the outward signs of innate differences much greater than those made apparent by mere external form. From a biological standpoint they are the most important characters which can be assumed, and in the present instance have an unquestionable value.

I have, therefore, drawn up the following scheme of genera, the differences being indicated by characters which are non-sexual, and which readily serve for identification irrespective of the more important differences which have been indicated above.

- Head having two occipital foveæ, not carinate laterally beneath.
- Pronotal foveæ joined by an impressed line.....**Rybaxis.**
- Pronotal foveæ three in number, generally not connected.
- Foveæ subequal, large, all spongiöse.....**Bryaxis.**
- Foveæ equal, smaller, punctiform.....**Nisa.**
- Foveæ unequal and dissimilar.
- Lateral large, spongiöse; median small, nude...**Reichenbachia.**
- Head having no occipital foveæ, finely and strongly carinate beneath laterally.
- Pronotum having small, feebly-impressed, lateral foveæ and a very minute, more abrupt median puncture, all nude.....**Nisaxis.**
- Pronotum devoid of foveæ; elytral striæ obsolete¹.....²

RYBAXIS Sauley.—In our fauna this genus contains the three species *sanguinea* Leach, *conjuncta* Lec. and *Brendeli* Horn.

NISA n. gen.—There being no specimen of this genus before me at the present time, I cannot state positively whether the head is laterally carinate or not, it is, how-

¹ LeConte—Tr. Am. Ent. Soc. VIII, p. 183.

² The characters given for *inornata* Brend. indicate a very peculiar species which warrants closer study than has yet been given it. As the occipital foveæ are wanting, it may be attached for the present to *Nisaxis*, but it probably possesses differential characters of generic value.

ever, attached to that group to which it is probably most closely allied. *Nisa* includes but two species, *luniger* Lec. and *cavicornis* Brend.

REICHENBACHIA Leach.—By direct comparison with European representatives there is no apparent difference in the American forms.

NISAXIS n. gen.—Here the species are decidedly more minute than in any of the other genera of this group, and are probably more abundant than hitherto supposed. It is very distinct in its cephalic characters, as well as those of the pronotum and sexual modifications. The discal striae of the elytra are usually shorter than in the other genera, and the basal carinae of the first dorsal segment short and widely distant. At present it can include only *tomentosa* Aubé.³

BRYAXIS Leach.

The more salient characters separating *Bryaxis* from the other genera here noted, besides the sexual modifications already mentioned, are the comparatively large size, more distinct abdominal border, the pronotal foveæ and the very large eyes situated almost at the extreme base of the head.

B. texana n. sp.—Form rather slender, pale rufo-testaceous throughout; legs concolorous; antennæ and abdomen very slightly darker; integuments polished; pubescence very short, suberect, not dense. *Head* rather small; eyes very large, prominent, situated very close to the basal angles, more convex posteriorly; base broadly truncate; surface feebly convex, impunctate, occipital foveæ situated on a line through the anterior portion of the eyes, moderate, rather deeply impressed, mutually more than three times as distant as either from the eye; apical fovea very slightly smaller, more broadly impressed at the sides; apical angles very slightly rounded; antennæ rather slender, distinctly longer than the head and prothorax together, club rather

³The species described by me (Cont. I, p. 33) as *inopia*, has been considered a synonym of this species in the recently published Check List of North American Coleoptera. As *inopia* has two well-developed occipital foveæ, it cannot be placed in the neighborhood of *tomentosa*. If the compilers of the catalogue are determined to regard it as a synonym, some more appropriate species should be selected with which to combine it; it belongs near *rubicunda*, although somewhat resembling *tomentosa*.

prominent; joints three to eight equal in width, nine to eleven increasing uniformly and rather rapidly in width. *Prothorax* widest in the middle, where it is scarcely wider than the head, distinctly wider than long; sides very narrowly rounded, convergent and more broadly rounded anteriorly, moderately convergent and rather deeply sinuate toward base; the latter broadly, feebly arcuate, five-sixths as wide as the disk, one-half wider than the apex; the latter transversely truncate; disk strongly convex, not perceptibly punctate, broadly impressed before the base toward the sides, transversely subgranulose along the base; lateral foveæ rather large, deeply impressed, at one-third the length from the base; median about equal in size, less deeply impressed. *Elytra* at base distinctly wider than the prothorax, at apex twice as wide as the latter; sides evenly and moderately arcuate; disk distinctly wider than long, broadly and not strongly convex, more abruptly declivous along the sides; humeri rather prominent; surface excessively feebly and obsoletely punctate; sutural striæ fine, deeply impressed, nearly parallel; discal very fine and feeble, slightly arcuate, gradually evanescent at slightly less than one-third the length from the apex. Abdomen polished, impunctate; border strong; carinæ of first segment very short, divergent, distant by fully two-fifths the total width. *Legs* rather long and slender; posterior tibiæ feebly clavate, very slightly bent, very feebly and obsoletely grooved exteriorly at apex. Length 1.3 mm.

Texas; (El Paso 1).

The sole representative is a male, exhibiting the usual very marked abdominal characters. The first segment is very long, four-fifths as long as the elytra, and is almost the only portion of the abdomen seen when viewed vertically; its apex is rather abruptly deflexed, transversely impressed in the middle; the edge with a small, rounded, very distinct, median sinuation; remaining segments almost vertical, very short, almost equal; second broadly and extremely feebly sinuate in the middle; surface anteriorly with a transversely arcuate, impressed channel which is partially hidden under the first segment, and which corresponds in outline with the sinuation of the first; remaining segments not sensibly modified. The apical margins of the first and second segments are abruptly thinner.

This species probably belongs to the *Belfragei* type, but the description of that species will not apply to this.

B. infinita n. sp.—Form slightly robust, dark rufo-castaneous; head blackish; elytra rufous, darker at base and apex; antennæ and legs concolorous,

dark fuscous; integuments polished; pubescence rather coarse, very short and rather dense. *Head* moderate, much wider than long; eyes very large, prominent; base broadly truncate; surface feebly convex, scarcely perceptibly punctate; occipital foveæ rather large, feebly impressed, on a line through the anterior margins of the eyes, mutually two and one-half times as distant as either from the eye; apical equal in size, feebly impressed; surface between the antennæ gradually declivous; antennæ somewhat robust, distinctly longer than the head and prothorax together, club rather prominent; basal joint feebly dilated, slightly longer than wide, second slightly smaller, longer than wide, subcylindrical, third slightly shorter, slightly obconical, distinctly longer than wide, tenth as long as wide, much wider than the ninth, eleventh distinctly wider than the tenth, slightly elongate, obliquely acuminate. *Prothorax* widest at two-fifths the length from the apex, where it is scarcely wider than the head, nearly one-third wider than long; sides rather strongly rounded, rather strongly convergent and feebly sinuate to the base; the latter broadly, feebly arcuate, three-fourths as wide as the disk, one-half wider than the apex; the latter transversely truncate; disk strongly convex, scarcely punctate; lateral and medial foveæ equal, moderate, the former more broadly impressed. *Elytra* at base distinctly wider than the prothorax, at apex slightly less than twice as wide as the latter; sides evenly, not very strongly arcuate; disk slightly wider than long, evenly, rather feebly convex, extremely minutely punctate; sutural striæ very distinct and deeply impressed, rather approximate, nearly parallel; discal deeply impressed and distinct, becoming slightly recurved posteriorly, and terminating abruptly at one-fifth the length from the apex. *Abdomen* fully as wide as the elytra; border wide and prominent; surface scarcely punctate, moderately convex; basal carinæ distant by slightly more than one-third the total width, distinct, less than one-third as long as the segment, almost parallel. *Legs* rather long and slender. Length 1.5 mm.

Texas; (Austin 14).

This species is remarkable amongst the American representatives of the genus, in the complete absence of male sexual modifications of the dorsal segments of the abdomen. The male described above is very slightly more robust than the female, and has the antennæ slightly longer and with a more prominent club, the tenth joint especially being shorter and more transverse in the female. The type specimen has the œdeagus protruded. The lateral members are seen to be two thin, elongate laminae, obliquely acuminate at apex and having at the middle of the external edge a small tuft of dilated membranous hair.

REICHENBACHIA Leach.

The species are numerous, as a rule smaller than in the preceding genus, and especially distinguished by the rather finer abdominal border and the dorsal surface similar in both sexes. The species here described may be assigned as follows:—

Head ♂ and ♀ with three foveæ.

Antennæ dissimilar in the two sexes.

tumorosa, *tumidicornis* and *informis*.

Antennæ similar in the sexes *gracilicornis* and *nevadensis*.

Head ♂ and ♀ bifoveate.

Antennæ dissimilar in the sexes *fundata* and *franciscana*.

The special relationships will be indicated under each description.⁴

R. tumorosa n. sp.—Rather robust; color rather dark rufo-castaneous; antennæ concolorous in the middle, paler at base and toward the apex; elytra and legs paler, much more flavae, the former not darker at apex; pubescence fine, short, not at all dense. Head rather small; eyes moderate, prominent, very coarsely granulate, at nearly their own length from the base; front transversely and rather strongly convex, almost completely impunctate, highly polished, having on a line through the middle of the eyes, two small, deeply impressed foveæ, mutually three and one-half times as distant as either from the eye; with a large, deep impression between the antennæ at the bottom of which there is a very minute, spongy-pubescent fovea; apex strongly declivous, angularly and slightly produced in the middle; antennæ rather short, robust, as long as the head and prothorax together; first joint moderate, second smaller, subglobular, third wider, short, strongly transverse, triangular, closely adjacent to the fourth, which is very large, strongly transverse; joints five to eight, transverse, very rapidly and uniformly diminishing in width, sixth shorter than the seventh, eighth normal, eight to eleven evenly, very gradually increasing in width. Prothorax moderate in

⁴The long, erect, stout setæ, growing upon the lower surface of the head are sometimes bulbous at the extremity, the enlargement being apparently formed of a viscid substance which may perhaps be a secretion. If, however, this is the case, the setæ are in all probability hollow tubes. It may be this secretive matter which is so pleasing to ants, with which so many species of Pselaphidæ are associated. The same appearance of the setæ has been before referred to in a short paper on our Euplectini (Cont. II, p. 94), although at that time I had not remarked the viscid nature of the material forming the enlargement.

size, widest at two-fifths its length from the apex, where it is slightly wider than the head and distinctly wider than long; sides strongly, evenly rounded, moderately convergent and feebly sinuate toward base; the latter broadly, very feebly arcuate, one-half wider than the apex, which is transversely truncate, and four-fifths as wide as the pronotal disk; basal angles obtuse and very slightly prominent, not at all rounded; disk strongly, evenly convex, polished, almost impunctate, lateral foveæ rather small, not very deeply impressed; median puncture very small; base finely margined, surface immediately before it feebly impressed, the impression obsolete in the middle. *Elytra* at base distinctly wider than the prothorax, at apex fully twice as wide as the latter; sides evenly, rather strongly arcuate; together broadly truncate behind; disk evenly, rather strongly convex, much wider than long, two-thirds longer than the pronotum, finely, very feebly and obsoletely, evenly and rather sparsely punctate; sutural striæ strong; discal strong, feebly arcuate, abruptly terminating at one-fifth the length from the apex. *Abdomen* impunctate, highly polished, rather convex; first segment longer than the next two together, with two fine, very distinct carinæ, which are distant by two-fifths the entire width, nearly one-half as long as the segment, and nearly parallel; at each side, near the border, and partially under the elytra, there is a large spongiose fovea; between this and the border a fine attenuated carina, two-thirds as long as the segment. *Legs* long and slender. Length 1.4 mm.

California; (Sonoma Co. 4).

The description is taken from the male; the female antennæ are normal, robust and scarcely as long as those of the male. In the latter the terminal segment of the dorsal surface is very broadly emarginate at apex, the emargination being evenly rounded and nearly ten times as wide as deep; the ventral segments are not at all impressed.

This species belongs near *sagax* Lec., but differs greatly in the structure of the male antennæ as recorded in the original description of that species.

R. tumidicornis n. sp.—Form rather slender, piceous; antennæ slightly paler at apex; elytra bright rufous, base and apex clouded with a darker tint, legs dark rufous; pubescence rather coarse, very short, not dense; integuments polished. *Head* moderate in size; eyes rather small, very convex, coarsely granulated and prominent, at fully their own length from the base; sides behind them feebly convergent, distinctly arcuate; base broadly truncate; angles narrowly rounded, not prominent; surface broadly, feebly convex, excessively minutely, sparsely punctate; on a line through the middle of the eyes there are two large, deeply impressed foveæ, mutually three times as distant as either from the eye; also near the apex a slightly smaller fovea, with the

sides more broadly impressed; apex broadly angulate; antennæ as long as the head and prothorax together; basal joint rather small, longer than wide; second slightly smaller, cylindrical, slightly longer than wide; third small, scarcely as long as wide, obconical; fourth as wide as the second, very strongly transverse; fifth strongly inflated, transversely oval, more than twice as wide as long; sixth slightly more strongly dilated; longer, transversely ovoidal, slightly more acute inwardly; seventh widest, shorter than the preceding, apex truncate, very strongly transverse, more acute inwardly, more than three times as wide as long; eighth slightly longer than the seventh, one-half wider than long, obliquely truncate inwardly; ninth very small, slightly wider than long; tenth slightly wider than long, distinctly wider than the ninth; eleventh rather slender, pointed, as long as the three preceding together, distinctly wider than the tenth. *Prothorax* widest very slightly in advance of the middle, where it is slightly wider than long, very slightly wider than the head; sides strongly arcuate, feebly sinuate before the basal angles; disk strongly convex, very minutely punctate; lateral foveæ very large, rather deep; surface near the base slightly impressed and coarsely punctate toward the sides; median puncture elongated longitudinally. *Elytra* at base much wider than the prothorax, at apex more than twice as wide as the latter; sides strongly and evenly arcuate; truncate behind; disk rather strongly and evenly convex, excessively minutely, rather sparsely punctate, one-fourth wider than long, two-thirds longer than the prothorax; sutural striæ strong, nearly straight; discal very fine, rather feeble, terminating at one-fifth the length from the apex. First ventral segment much shorter than the next two together; carinæ very fine, two-fifths as long as the segment, distinctly divergent, distant by one-third the total width; carinæ near the lateral border nearly as long as the entire segment; lateral basal foveæ distinct. *Legs* rather long, very slender; posterior tibiæ very slender, distinctly arcuate and clavate, scarcely at all flattened. Length 1.2 mm.

California; (Santa Cruz and Santa Clara Cos.)

Described from the male in which the terminal dorsal segment is narrowly and very feebly emarginate at apex, the emargination much narrower than in *tumorosa*, evenly rounded, about eight times as wide as deep; ventral segments not impressed. In the female the antennæ are slightly shorter than in the male, normal, club robust.

Very abundant throughout the region indicated. It belongs near *albionica* (Mots.), but differs according to the description given by Dr. LeConte in the structure of the male antennæ, and more especially in that of the posterior tibiæ which are not perceptibly flattened. The antennæ

of *albionica* are described as having the "fifth joint dilated, sixth larger than the following, rounded, 7—9, large, transverse." This description evidently cannot be applied to *tumidicornis*. One of the localities given by the above-mentioned authority is Colorado; this is probably a misprint for California, as there is very little likelihood of *albionica* occurring east of the Sierra Nevada Mts.

In the description of *albionica* given by Mannerheim (Bull. Mosc. 1852, p. 371), the only joints which are described as dilated are the fifth and sixth. In the present species the seventh is distinctly the widest. The posterior tibiæ are not described by Mannerheim as being flattened, but simply dilated, which is more nearly the case in *tumidicornis*. There have probably been several species confounded by the various authors, as these species do not appear to have a very wide distribution, but are more or less local.

Although so abundant about Santa Cruz, I have not yet found this species to the north of San Francisco, although I have collected over very extensive regions, giving special attention to the Staphylinidæ and Pselaphidæ. Its gait is rather more rapid than is usual in this genus.

R. informis n. sp.—Rather slender, dark rufo-castaneous; elytra bright rufous, slightly darker near the apex; antennæ and legs pale rufo-testaceous; integuments polished; pubescence very fine, short and sparse. *Head* moderate; eyes very convex, at scarcely their own length from the base; sides behind them feebly convergent and arcuate; base broadly truncate; angles distinctly rounded; surface feebly, evenly convex, excessively minutely, sparsely punctate; punctures slightly larger and closer toward the sides; having, on a line through the middle of the eyes, two moderate, not very deeply impressed foveæ, mutually three times as distant as either from the eye; near the apex a more broadly impressed fovea, with the pubescent portion equal to that of the occipital foveæ; apex declivous, broadly angulate; antennæ as long as the head and prothorax together, club robust; basal joints moderate, second slightly the smaller; third slender, much longer than wide; fourth small, slightly transverse; fifth slightly dilated, a little longer than wide; sixth as long as wide, as wide as the fifth, obliquely truncate at apex, joints seven to nine, very slightly wider than long, equal in width to the fifth; the eighth slightly smaller; nine to eleven very rapidly increasing in width. *Prothorax* widest very slightly before the middle, where it is very slightly

wider than the head and slightly wider than long; sides rather strongly, evenly rounded, moderately convergent to the base, very feebly sinuate near the basal angles, which are obtuse, not rounded; base broadly, feebly, but distinctly arcuate, one-half wider than the apex; the latter transversely truncate; disk strongly convex, excessively, minutely, sparsely punctate, coarsely so along the basal margin; lateral foveæ rather small, not very deeply impressed, at less than one-third the length from the base; median very small, longitudinally, slightly elongate. *Elytra* at base distinctly wider than the prothorax, at apex more than twice as wide as the latter; sides evenly, not very strongly arcuate; apex truncate, feebly sinuate laterally; disk very slightly wider than long, nearly three-fourths longer than the prothorax, evenly, moderately convex, excessively minutely, obsolete and sparsely punctate; sutural striæ deeply impressed, nearly straight; discal fine, distinct, slightly arcuate, terminating at one-tenth the length from the apex. *Abdomen* rather elongate, convex; first segment not as long as the next two together; basal carinæ distinctly divergent, separated by distinctly less than one-third the total width, one-half as long as the segment. *Legs* rather long and slender; hind tibiæ not strongly clavate. Length 1.4 mm.

California; (Meudocino Co., 2).

Described from the male; the terminal dorsal segment is more than four times as wide as long, very broadly, feebly emarginate at apex.

This species belongs near *propinqua* Lec., but is not very closely related to any other described species.

R. gracilicornis n. sp.—Rather robust, dark rufo-castaneous; elytra dark, obscure rufous; antennæ and legs paler, dark rufo-testaceous; integuments rather dull, head and elytra more polished; pubescence coarse, rather long, moderately dense, suberect, rather conspicuous. *Head* moderate or rather small, much longer than wide; eyes rather large, very convex, at much less than their own length from the base; sides behind them strongly coarctate to the base which is broadly subsinuate; surface feebly, evenly convex, not perceptibly punctate; having on a line through the middle of the eyes two rather large and feebly impressed foveæ mutually more than three times as distant as either from the eye; apical fovea slightly smaller but more widely and deeply impressed; antennal emarginations rather approximate, angular; apex slightly produced, narrow, declivous, with the sides nearly straight and feebly divergent anteriorly; antennæ very slender, slightly longer than the head and pronotum together; first and second joints longer than wide, cylindrical, the second slightly smaller, three to six each cylindrical, slender, more than twice as long as wide, sixth slightly smaller, seven and eight scarcely more robust, the former twice as long as wide, the latter quadrate, ninth slightly more robust, a little longer than wide, tenth slightly wider than long, two-thirds wider than the ninth, slightly trapezoidal, elev-

enth one-half wider than the tenth, obliquely ovoidal, pointed. *Prothorax* widest at two-fifths the length from the apex, where it is much wider than the head and one-third wider than long; sides acutely rounded, slightly convergent and feebly arcuate to the base, before which they are nearly straight; base broadly, feebly arcuate, one-half wider than the apex and three-fourths as wide as the disk; apex broadly, very feebly emarginate; disk strongly convex, very minutely punctate; lateral foveæ large, feebly impressed, at two-fifths the length from the base; median small, well before the base. *Elytra* at base just visibly wider than the prothorax, at apex slightly less than twice as wide as the latter, broadly truncate, feebly trisinuate; sides evenly, not strongly arcuate; disk broadly convex, finely, not densely, very feebly punctate; sutural striæ deep, feebly arcuate; discal fine, distinct, not deeply impressed, terminating at one-tenth the length from the apex. Abdomen rather short, moderately convex; first segment distinctly longer than the next two together; carinæ fine, distinct, nearly one-half as long as the segment, feebly divergent, feebly directed outward at apex, distant by less than one-fourth the total width; carinæ adjoining the margins extremely fine, almost obsolete. *Legs* long and slender; posterior tibiæ feebly clavate, slightly bent inward toward the apex, where there is externally a short groove for the reception of the tarsi when reflexed. Length 1.3 mm.

Texas; (Austin 1).

Described from the male; the terminal dorsal segment has at the apex a small semicircularly rounded emargination, nearly twice as wide as deep, the angles being acute and slightly produced; last ventral segment very feebly impressed in the middle.

This species belongs to the *rubicundus* type of the genus and should be placed near that species, from which it differs in the smaller and deeper apical emargination of the male.

The external groove at the apex of the posterior tibiæ appears to be a generic character.

R. nevadensis n. sp.—Moderately slender, piceous; elytra rufous, slightly darker at apex; legs dark, brownish-piceous; antennæ slightly paler, rufous; integuments polished; pubescence short, coarse, evenly but not densely placed. *Head* moderate; eyes rather large, prominent, at scarcely more than one-half their own length from the base; sides behind them rather strongly convergent and strongly arcuate to the base, which is very broadly truncate; surface rather strongly convex, not perceptibly punctate behind; having on a line just in advance of the middle of the eyes two large, deeply impressed foveæ, which are mutually two and one-half times as distant as either from the eye; between the antennæ transversely impressed,

impression finely punctate, having at the bottom a smaller circular fovea; antennæ short and robust, not as long as the head and prothorax together, club robust, second joint subcylindrical, longer than wide, slightly narrower than the first, three to eight narrower, subequal in width, third, fifth and sixth slightly longer than wide, fourth and seventh subquadrate, eighth smallest, wider than long, eight to eleven increasing evenly and very rapidly in width, ninth and tenth strongly transverse, eleventh slightly longer than wide, obtusely and obliquely acuminate. *Prothorax* widest at one-third the length from the apex, where it is very slightly wider than the head and one-fifth wider than long; sides rather strongly, narrowly rounded, moderately convergent and nearly straight toward base, just before which they are very feebly sinuate; base three-fourths as wide as the disk, one-third wider than the apex; the latter transversely truncate; disk strongly convex, scarcely perceptibly sparsely punctate; lateral foveæ moderate, at two-fifths the length from the base; median small, distinct, not at all elongate. *Elytra* at base distinctly wider than the prothorax, at apex distinctly more than twice as wide as the latter; sides evenly, rather strongly arcuate; disk moderately convex, scarcely perceptibly punctate; sutural striæ deeply impressed, nearly parallel; discal rather strongly arcuate and deeply impressed, terminating at one-fifth the length from the apex; together distinctly wider than long, two-thirds longer than the prothorax. *Abdomen* moderately convex; basal segment as long as the next two together; carinæ distant by two-fifths the entire width, very short, distinctly less than one-third as long as the segment, distinctly divergent, nearly straight. *Legs* slender, posterior tibiæ feebly clavate, strongly arcuate. Length 1.3 mm.

Nevada; (Reno, Washoe Co. 3).

The sexual characters appear to be very slight, but there is apparently very little doubt that it belongs in the *rubicundus* group of species. It may be readily distinguished by the transverse impression between the antennæ and the very short basal carinæ of the first dorsal segment; in the type these are scarcely more than one-sixth or one-eighth as long as the segment, but in another specimen which has shorter antennæ, and therefore probably the female, they are more than one-fourth as long as the segment. The posterior tibiæ are unusually strongly arcuate.

R. fundata n. sp.—Moderately robust, piceous-black; elytra rufous, clouded slightly darker at apex and base; antennæ dark brownish-piceous; legs dark brownish-piceous, femora more rufous; integuments polished; pubescence fine, very short, somewhat dense on the abdomen. *Head* moderate, wider than long; eyes moderate, at less than their own length from the base;

sides strongly rounded to the base, which is transversely truncate; surface broadly, feebly convex, scarcely perceptibly, sparsely and very obsoletely punctate; occipital foveæ on a line through the anterior portions of the eyes, moderate in size, not very deeply impressed, mutually three times as distant as either from the eye; apical fovea entirely wanting; apex abruptly and very strongly declivous, having two small approximate ciliate tubercles; antennæ long and slender, one-half as long as the body, club slender; basal joint large, irregular, second much smaller, slightly more robust than the third, the latter distinctly longer than wide, fourth smaller, subquadrate, fifth to seventh slightly dilated, the sixth slightly the shortest, as wide as long, eighth narrow, joints eight to eleven very gradually, evenly increasing in width, all longer than wide. *Prothorax* widest at two-fifths the length from the apex, where it is as wide as the head, distinctly wider than long; sides evenly, strongly arcuate, moderately convergent and feebly sinuate to the base; the latter broadly, feebly arcuate, four-fifths as wide as the disk, nearly one-half wider than the apex; the latter transversely truncate; disk strongly convex, not visibly punctate except along the base; lateral foveæ rather small, not very deeply impressed, at one-third the length from the base; median rather large, somewhat longitudinally elongated. *Elytra* at base slightly wider than the prothorax at apex twice as wide as the latter; sides evenly and rather strongly arcuate; disk evenly, rather strongly convex, sparsely and very obsoletely punctate; sutural striæ deep, nearly parallel; discal distinct, arcuate terminating at one-fifth the length from the apex. *Abdomen* moderately convex; first segment scarcely as long as the next two together; basal carinæ fine, slightly divergent, distant by slightly more than one-third the total width, very short, about one-fourth as long as the segment. *Legs* slender; posterior tibiæ very feebly clavate, slightly bent; tarsi rather long. Length 1.2 mm.

California; (Sonoma Co. 3).

Described from the male, the terminal dorsal segment being rather broadly emarginate, the emargination evenly rounded and feeble, about eight or nine times as wide as deep. The female is quite similar to the male, but has the antennæ normal in structure and slightly shorter; the vertex also lacks the two ciliate tubercles, and the median puncture of the pronotum appears to be less elongate.

Belongs near *compur* Lec., but is abundantly distinguished from that species by the structure of the antennæ and the darker colors.

R. franciscana n. sp.—Form rather slender, black; antennæ brownish-piceous; elytra dark rufous; legs dark piceous-brown; under surface black;

integuments polished; pubescence fine, short, subrecumbent, rather dense. Head moderate, slightly wider than long; eyes moderate, at less than their own length from the base; sides strongly rounded to the base, which is very broadly truncate or just visibly sinuate; surface feebly convex, finely, evenly and distinctly punctate; occipital foveæ rather small, feebly impressed, on a line through the middle of the eyes, mutually slightly more than twice as distant as either from the eye; apical fovea wanting; vertex broadly, feebly sinuate above, abruptly and very strongly declivous, the face of the declivity bearing a transversely oval sensitive area of very dense, erect, short setæ; antennæ rather short and robust, about as long as the head and prothorax together, club somewhat robust; two basal joints, rather small, the second slightly the smaller, third narrower, slightly longer than wide, perceptibly obovate, fourth very slightly wider, a little transverse, fifth slightly dilated, a little longer than wide, seventh and eighth equal, a little narrower, very slightly narrower than long; joints eight to eleven uniformly, rather rapidly increasing in width, eighth as wide as the seventh, eight to ten wider than long. *Prothorax* widest at two-fifths its length from the apex, where it is scarcely perceptibly wider than the head and distinctly wider than long; sides strongly, evenly rounded, moderately convergent and nearly straight toward base; the latter broadly, feebly arcuate, four-fifths as wide as the disk, one-half wider than the apex; the latter transversely truncate; disk strongly convex, finely, rather densely and evenly punctate, lateral foveæ rather large, moderately impressed, at slightly more than one-third the length from the base; median very small, near the base. *Elytra* at base slightly wider than the prothorax, at apex scarcely twice as wide as the latter; sides evenly and rather strongly arcuate; disk very slightly wider than long, moderately and evenly convex, very minutely, not densely punctate; sutural striæ deep, nearly parallel; discal distinct, arcuate, terminating at slightly less than one-fifth the length from the apex. Abdomen moderately convex; basal segment nearly as long as the next two together; basal carinae very fine, very distinctly divergent, distant by about one-fourth the total width, slightly less than one-third as long as the segment. *Legs* short and robust; intermediate tibiae short, robust, not at all clavate, slightly thicker in the middle, having a large, robust terminal spur; posterior tibiae longer, more slender, slightly clavate. Length 1.3 mm.

California; (San Mateo Co. 1).

The description is taken from the male. The terminal segment is rather broadly and extremely feebly emarginate at apex.

This species belongs near the last, but may easily be distinguished from any hitherto described by its colors, punctuation and male sexual characters. The female probably

has simple antennæ and lacks the sensitive oval patch on the declivity of the vertex.

R. deformata Lec.—Three specimens of this species were taken at Paraiso Springs, Monterey Co. The antenna is figured on the plate; the abnormally large second joint is excavated and coarsely punctured beneath.

SONOMA n. gen. (Euplectini.)

The following genus belongs near *Faronus* and *Sagola*, with apparently much greater resemblance to the latter. The species thus far described belong to the Pacific Coast fauna, and were placed by Dr. LeConte in *Faronus*. The diagnosis may be given as follows, the general characters being those of the Euplectini.

Posterior coxæ contiguous; tarsi with two equal claws. Antennæ rather distant at base, feebly but distinctly clavate; first joint much longer than the second. Head slightly smaller than the prothorax, with three nude foveæ not connected, the two posterior small, the apical large and very deep; genæ not at all prominent, rounded. Prothorax with two small discal foveæ before the middle, a very large, deep, widely dilated basal fovea, and one at each side not connected. Elytra with sutural striæ; discal deep and broad, short, basal. First segment of the abdomen very short, shorter than the second or third, coriaceous above, corneous beneath, without basal carinæ; second segment having an apical transverse line of finely spongy sensitive surface which is interrupted in the middle. Tarsi rather short. Eyes well developed. Body very depressed, linear.

The head is not carinate beneath, but has a deep transverse groove just behind the mentum and maxillæ. The elytra are much longer than the prothorax, depressed. The flanks of the elytra are normal. The middle coxæ are subcontiguous, separated by a very narrow carina.

The genus *Sonoma* is distinguished from *Faronus* by the form of the genæ and the short basal segment of the abdomen; from *Sagola* Sharp it differs in its less approximate and less prominent frontal tuberculations, and especially in the structure of the antennæ, which are in *Sagola* not at all clav-

ate; the three outer joints in Sonoma are distinctly enlarged, forming a loose club.

The transverse areas of sensitive surface near the apex of the second dorsal segment are analogous to similar transversely oval patches previously noticed by me as being very common in the Homalini of the Staphylinidæ, and they probably serve the same purpose in each group. They have been noticed by Dr. Sharp in Sagola. Although both the species of Sonoma before me have these sensitive patches, I am not certain that their presence is constant throughout the genus.

OROPUS n. g. n. (Euplectini.)

Tarsi with two unequal claws, posterior coxæ very closely approximate. Maxillary palpi moderate in length, fourth joint rather elongate and spindle-form, widest near the middle, bristling with minute setæ at apex. Head with two small occipital foveæ, which are spongiose and connected by an arcuate, impressed groove; antennæ similar in the sexes; eyes well developed. Prothorax with two lateral spongiose foveæ at base, connected by a deeply impressed line, also with an impressed median canaliculation; sides near the base with a small, acute, reflexed tooth. Elytra with acute lateral margin; each having four deep punctures at base, prolonged posteriorly as fine distinct striae. Abdomen with a short basal segment, hidden by the elytra above, visible beneath, not extending beyond the coxæ; second segment long, more than twice as long as the third. Tarsi three-jointed; basal joint very small, second very long. Abdomen strongly margined above. Body rather robust and convex.

This genus belongs to the Trichonyx group of the Euplectini, but differs greatly from that genus in the position of the posterior coxæ, which are here very narrowly separated, almost contiguous at base. In Trichonyx they are quite distant, more than three times as distant as in the present genus. Oropus belongs near Trogaster Sharp, and differs from it in the form and position of the pronotal teeth. In addition, the following characters distinctive of Trogaster are not found in Oropus:—Antennæ dissimilar in the sexes; fourth joint of maxillary palpi rather short, widest near the base; head with two small occipital foveæ, which

are not spongiöse, and not connected by the anterior arcuate groove, the latter terminating posteriorly in two very deep foveæ just in advance of the occipital pair. Elytra each with with three foveæ at base, the lateral prolonged posteriorly in two divergent striæ.

The structure of the abdomen differs decidedly in the two genera, although *Trogaster* has the short basal segment, the second ventral is but very little longer than the third. In *Trogaster* the first three visible dorsal segments are nearly equal; in *Oropus* these decrease uniformly and rapidly in length. *Amauronyx* agrees well with the present genus in abdominal structure, but has the posterior coxæ separated as in *Trichonyx*, the elytra with but two basal foveæ, and the pronotum without lateral teeth.

I have drawn my comparisons from specimens of *Amauronyx Muerkeli* Aub.; *Trichonyx sulcicollis* Reichb., and *Trogaster aberrans* Sharp, very kindly given me, together with many other Pselaphides and Scydmaenides, by Capt. Ch. Kerremans of the Belgian army.

Oropus has thus far occurred only on the Pacific Coast; one species has already been described by Dr. Le Conte under the name of *Trichonyx striatus*; I now add three others from more southern latitudes, of which *convexus* is assumed to be the type of the genus.

In the following descriptions the elytral striæ are designated by the numbers one to four, in order from the suture outward.

The four species may be distinguished as follows:—

Elytral striæ two and three subequal, extending distinctly behind the middle.

Pronotal canalication not interrupted before the transverse basal groove.

Canalication dilated anteriorly. **striatus.**

Canalication not dilated anteriorly, coarse, dilated in the middle,

convexus.

Canalication completely interrupted behind the middle. . . **interruptus.**

Elytral striæ two and three unequal, shorter. **abbreviatus.**

These species, with exception of the first, which was described by Dr. Le Conte from Vancouver Island, were all taken in wet moss at the bottom of ravines near the sea-coast, and within a very limited area. I have met with them in no other locality.

O. convexus n. sp.—Form rather robust, convex, dark rufo-castaneous; elytra scarcely perceptibly paler, dark rufous; legs and antennæ slightly paler, rufous; pubescence coarse, rather long, not very dense; integuments polished. *Head* robust, much wider than long; eyes moderate, prominent, at their own length from the base; sides behind them strongly convergent and arcuate to the base, which is about one-half as wide as the width at the eyes; impressed groove strongly arcuate; occiput with a narrow canalication in the middle at base; antennæ robust, short, as long as the head and prothorax together; basal joint robust, longer than wide, distinctly narrowed toward base, second slightly narrower, cylindrical, as long as wide, three to eight slightly narrower than the second, gradually slightly shorter, third slightly wider than long, ninth and tenth abruptly much wider, short, transverse, the tenth slightly the larger, eleventh distinctly wider than the tenth, conoidal, acutely pointed, as long as the four preceding joints together. *Prothorax* widest slightly before the middle, where it is scarcely visibly wider than the head and nearly as wide as long; sides here very strongly rounded, thence rather strongly convergent and distinctly sinuate to the base; the latter broadly arcuate, two-thirds as wide as the disk, one-third wider than the apex; the latter feebly arcuate; sides toward the apex slightly sinuate. basal angles prominent, slightly obtuse, not at all rounded; disk broadly convex; canalication terminating at one-sixth the length from the apex, slightly dilated in the middle in the form of a small puncture, continued toward base beyond the transverse groove nearly one-half the distance between the latter and the base; transverse groove deeply impressed, very feebly posteriorly arcuate, at one-third the length from the base; lateral foveæ deeply impressed, spongiose; disk between transverse groove and base strongly convex; surface finely, sparsely punctate. *Elytra* at base slightly narrower than the prothorax, at apex one-half wider than the latter; sides rather strongly and nearly evenly arcuate; disk broadly and rather strongly convex, as long as wide; humeri longitudinally prominent but not carinate; sutural striæ very deeply impressed, entire, slightly arcuate, two and three equal, fine, strongly impressed, two-thirds as long as the disk, four short, arcuate, terminating slightly before the middle, fine, strongly impressed; surface rather finely, feebly and sparsely punctate. *Abdomen* slightly shorter and narrower than the elytra; border inclined, strong and conspicuous; surface broadly convex, very minutely, sparsely punctate. *Legs* moderate in length, slender; femora slender, very slightly clavate; posterior tibiæ nearly twice as long as the tarsi, very feebly dilated toward tip. Length 1.9-2.0 mm.

California; (Sonoma Co. 2).

The type is a male; the abdominal sexual characters are not very well marked and consist of a very small transverse impression beneath, near the apex. The under surface of the head is moderately convex, with a fine but distinct median carina; it is coarsely, rather deeply and not densely punctate.

The female which I have associated with this male is very slightly more depressed and very slightly more robust; the antennæ are shorter and more robust; the under surface of the head is more finely and feebly punctate; the median pronotal channel is finer and not so distinctly dilated in the middle; the elytral striæ are more feebly impressed; the pubescence of the body is slightly denser and the color is paler, especially that of the elytra, which is rather bright rufous. If the specimen were not a female I should not hesitate to describe it as distinct, but as the sexual characters in this genus are not known the above differences may be due simply to the usual sexual modification. The material before me is so limited that very little can be learned of specific variability, but in tabulating the species above I have made use only of those characters which are regarded as of great importance in other portions of the *Pselaphidæ*.

O. interruptus n. sp.—Moderately robust, convex, uniformly dark rufous; legs and antennæ very slightly paler; pubescence rather coarse, not long, moderately dense; integuments shining, pronotum slightly duller. *Head* much wider than long; eyes moderate, convex, at their own length from the base; sides behind them strongly convergent and arcuate to the neck, which is deeply impressed, broadly sinuate; occipital foveæ on a line through the anterior limits of the eyes; occiput with a narrow median canalization; antennæ rather robust, as long as the head and prothorax together; basal joint slightly robust, a little longer than wide, second very slightly narrower, cylindrical, scarcely as wide as long, three to eight very slightly narrower, decreasing in length, third distinctly wider than long, nine and ten rather abruptly longer and much wider, transverse, tenth distinctly longer and slightly wider than the ninth, eleventh more robust than the tenth, elongate, conoidal, slightly obliquely pointed, scarcely as long as the four preceding together. *Prothorax* widest at a little more than one-third its

length from the apex, where it is distinctly wider than long, very slightly wider than the head; sides strongly rounded, thence convergent to the basal angles, bisected by the lateral teeth, very feebly sinuate between the teeth and the basal angles; base broadly arcuate, two-thirds as wide as the disk, one-third wider than the apex; disk broadly convex; canaliculation abrupt, rather narrow and deep, beginning slightly behind the apex, abruptly terminating at the middle; transverse groove deeply impressed, broadly, feebly arcuate, at distinctly less than one-third the length from the base, prolonged posteriorly in the middle in a deep broad channel nearly half way to the base. *Elytra* at base nearly equal in width to the pronotum, at apex nearly one-half wider than the latter; sides evenly and strongly arcuate; humeral prominences convex, strong, elongate; disk slightly wider than long, rather strongly convex, broadly impressed along the suture; striæ one strongly impressed, fine, two and three approximate, equal, fine, distinct, two-thirds as long as the disk, four fine, deeply impressed, one-third as long as the disk; surface rather coarsely, feebly and sparsely punctate. *Abdomen* broadly convex, impunctate; border strong, rather strongly inclined. *Legs* moderate in length. Length 1.9 mm.

California; (Sonoma Co. 1).

The type is a male. The species is easily distinguished from *convexus* by the shorter and less robust basal joint of the antennæ, more broadly and evenly arcuate impressed frontal groove, short pronotal canaliculation, broader median posterior continuation of the transverse groove, and by the color, which is more uniform and paler rufous.

O. abbreviatus n. sp.—Rather robust, moderately depressed, very dark rufo-testaceous; antennæ and legs concolorous; elytra scarcely perceptibly paler; integuments polished; pubescence coarse, rather long and somewhat dense. *Head* much wider than long, neck one-half as wide as the width at the eyes; surface almost impunctate; frontal impressed channel very strongly arcuate; antennæ as long as the head and prothorax together, moderately robust; basal joint robust, longer than wide, second slightly narrower, a little longer than wide, third very slightly wider than long, ninth and tenth abruptly wider, subequal in length, the latter very slightly the wider, eleventh slightly wider than the tenth, oval, symmetrically pointed, scarcely as long as the preceding four together. *Prothorax* widest very slightly before the middle, where it is as wide as long; sides very strongly arcuate, convergent and very feebly arcuate to the apex, sinuate near the latter, less strongly convergent toward the base, strongly sinuate just before the latter; base broadly arcuate, three-fourths as wide as the disk, one-half wider than the apex; disk broadly convex; median canaliculation rather fine but deeply impressed, beginning near the apex, continuous in width and depth across the

transverse groove nearly one-half the distance between the latter and the base; transverse groove deeply impressed, at slightly more than one-fourth the length from the base, feebly, posteriorly arcuate; lateral foveæ rather large, moderately impressed. *Elytra* at base slightly narrower than the pronotum, at apex one-half wider than the latter; sides evenly and rather strongly arcuate; humeral prominence convex, elongate; disk very finely, sparsely punctate, nearly as long as wide, moderately and nearly evenly convex; striae one deeply impressed, entire, two and three very closely approximate, finely impressed, distinct, the former three-sevenths, the latter four-sevenths as long as the elytra, four fine, deeply impressed, more divergent, one-third as long as the disk. *Abdomen* slightly narrower and much shorter than the elytra; border strong. *Legs* slender. Length 1.8 mm.

California; (Sonoma Co. 1).

This species, which is represented by the male, is easily distinguished from the others by the brevity of the second and third elytral striae. It is further distinguished by the shape of the pronotum and by the form of the frontal impressed groove, which is here very strongly arcuate, more so than in *convexus*.

The antennæ are very similar in structure throughout, but present slight differences mainly affecting the first, ninth, tenth and eleventh joints.

ACTUM n. gen. (Euplectini.)

The Californian species hitherto placed in *Trimium* in reality form a very distinctly characterized genus. In the following comparative statement, I have had before me a male and female of the European *Trimium brevicorne* Reichb. which was taken by Aubé as the generic type. In *Trimium* as thus represented, the eyes are very unequal in the sexes, in the males being moderate in size, in the females much smaller. The pronotum is crossed by a very fine, feebly impressed, basal groove. The flanks of the elytra are perfectly devoid of humeral foveæ. The first visible dorsal segment is elongate, equal in length to the next two together.

The generic character of *Actium* may therefore be briefly given as follows:—

Maxillary palpi rather small, second joint very strongly clavate, third minute, subglobular, fourth elongate, oval, moderately robust, longer than the remainder taken together. Basal groove of pronotum very strong and deeply impressed. Eyes rather large, convex and prominent in both sexes. Elytra having on the flanks, just behind each humeral prominence, a large spongiöse fovea, which is continued to the elytral apex by a broadly and deeply impressed groove, limited inferiorly by a fine acute ridge. First three visible dorsal segments of the abdomen subequal, first slightly the longer.

Actium differs from *Euplectus* in its more abrupt terminal joints of the antennæ, in the presence of spongiöse foveæ on the head, in the very much more robust and convex form of body, and in the structure of the abdomen. In *Euplectus*, as represented by *Bonvouloiri* Reit. and *signatus* Reichb. the first three visible dorsal segments are equal, the fourth very much longer; the second and third ventral segments are equal in length. In *Actium* the fourth visible dorsal is but very slightly longer than the third, and the second ventral is distinctly longer than the third. It will be seen therefore that the genus *Actium* properly occupies a position intermediate between *Trimium* and *Euplectus*.

The sexual characters at the apex of the venter are usually quite complex.

It is highly probable that our eastern representatives of *Trimium* will also necessitate the founding of a separate genus, although this cannot be definitely stated at present.

LOMECHUSA Grav.

L. montana n. sp.—Robust, rather depressed; sides parallel; pale rufotestaceous throughout; antennæ and legs concolorous; pubescence very fine, sparse, abdomen polished, almost glabrous; anterior portions finely alutaceous, elytra more shining than the pronotum; under surface polished. *Head* small, much wider than long; eyes rather large and prominent, at nearly their own length from the base; sides behind them nearly parallel; very feebly arcuate; front with a large deep impression; entire surface very minutely granulose and excessively minutely, not densely punctate; antennæ very slender, not incrassate, two-thirds as long as the body; basal joint very large, twice as long as wide, rather abruptly narrowed at the base, not as long as the next three together; second slightly longer than wide, not one-half as wide as the first, scarcely two-thirds as long as the third; joints three to seven

equal, seven to ten very slightly decreasing in length, eleventh long and slender, attenuate; apices of joints three to ten obliquely truncate. *Prothorax* twice as wide as the head; apex throughout the breadth of the latter broadly, roundly emarginate; apical angles thence very broadly rounded, coarctate with the sides which become nearly straight and slightly divergent to within a short distance of the base, where they become abruptly slightly convergent and nearly straight to the basal angles; the latter obtuse and scarcely rounded; base broadly and strongly arcuate in the middle, sinuate laterally; disk twice as wide as long, depressed in the middle, very broadly and strongly reflexed at the sides, extremely feebly reflexed anteriorly, more strongly and broadly so along the arcuate portion of the base, also more strongly impressed at the sides and toward the apical angles, very minutely subgranulose with evenly distributed, not dense, fine, granulose or strongly asperate punctures: *Elytra* as wide as the prothorax; sides nearly parallel, feebly arcuate; apex broadly truncate, feebly sinuate laterally; inner angles distinctly rounded; humeri rather broadly rounded; disk nearly two-thirds wider than long, one-third longer than the pronotum, feebly convex, more strongly so toward the humeri; base feebly declivous, finely, feebly subgranulose, finely, rather sparsely granulosely punctate; punctures more distinct than those of the pronotum; suture margined with a fine, polished but not distinctly elevated line which extends along the scutellum and base. *Abdomen* as wide as the elytra; sides nearly straight and parallel; broadly, obtusely rounded behind; surface strongly impressed in the basal half, broadly, feebly convex behind; lateral tufts of hair bright fulvous; under surface strongly convex, having very sparsely placed, erect setæ. *Legs* long and slender; tarsi cylindrical; first joint of the posterior longer than the next two together, one-third longer than the fifth. Length 4.3 mm.

California; (Truckee, Nevada Co. 1). Elevation 6,000 feet.

A very interesting addition to the fauna of California; the typical representative was found under a stone deeply imbedded in soft soil near the margin of a small stream; no ants of any description could be seen, and in fact myrmecophilous Coleoptera of all kinds appear to be extremely rare on the Pacific Coast.

TACHYUSA Erichs.

T. crebrepunctata n. sp.—Rather slender, moderately convex, black throughout; antennæ and legs same; tarsi and palpi paler, piceo-testaceous; pubescence short, fine, dense and recumbent, coarser, longer and more sparse on the abdomen; integuments shining, finely, deeply, evenly and very densely punctate, head and abdomen slightly more coarsely and sparsely

so. *Head* and labrum together slightly longer than wide; front and occiput strongly convex and declivous at the sides, flat above; eyes large, at scarcely their own length from the base; sides behind them slightly convergent, strongly arcuate; base broad, truncate; antennæ slender, very feebly incrassate, scarcely as long as the head and prothorax together; second joint slender, elongate, much longer than the third; joints three to ten decreasing in length, the former more than twice as long as wide, the latter very slightly wider than long. *Prothorax* slightly wider than long, widest at one-third its length from the apex, where the sides are rather broadly arcuate, thence rather strongly convergent and nearly coarctately rounded to the apex, and slightly less strongly convergent and feebly sinuate to the base; the latter broadly and strongly arcuate throughout, four-fifths as wide as the disk and slightly wider than the apex; the latter broadly and feebly arcuate throughout; basal angles very obtuse and distinctly rounded; disk broadly and rather strongly convex, depressed in the middle toward base, and immediately before the basal margin transversely and feebly impressed. *Elytra* at base one-fourth wider than the pronotum; sides nearly parallel, feebly arcuate near the base, strongly so near the apex; apical angles acute and slightly produced; together subtruncate behind, feebly emarginate at the suture; disk nearly quadrate, two-fifths longer than the pronotum, feebly and nearly evenly convex; suture very finely margined. *Abdomen* distinctly narrower than the elytra; sides parallel and nearly straight; border wide and prominent; surface feebly convex; three basal segments rather deeply impressed at base but not more densely or coarsely punctate, not carinate in the middle. *Legs* moderate in length, very slender; tibiæ densely herissate with coarse, semi-erect setæ; joints of the posterior tarsi decreasing rather rapidly in length, first nearly one-half longer than the second. Length 2.5 mm.

California; (Monterey Co. 1).

This species is rather closely allied to *T. Harfordi*, but differs in its smaller size, shorter, smaller and more transverse prothorax, and denser and stronger punctuation.

The middle coxæ are distinctly although not widely separated; the mesosternal process is rather short, broadly angulate, the apex of the angle being broadly rounded; the connecting surface is deeply impressed

AUTALIA Leach.

A. elegans n. sp.—Rather slender and depressed; head and abdomen toward tip piceous-black, remainder dark piceo-castaneous; antennæ dark fuscous throughout; legs rather pale brownish-flavate; pubescence fine, sparse, long and distinct; integuments polished. *Head* slightly longer than wide; semicircularly rounded behind from eye to eye; surface strongly and evenly

convex, impunctate; antennæ distinctly longer than the head and prothorax together, distinctly incrassate toward the apex; three basal joints elongate, second very slightly shorter than the first or third, four to ten gradually shorter and wider, the former distinctly longer than wide, the latter slightly wider than long. *Prothorax* very slightly longer than wide; sides in the anterior third strongly convergent and nearly straight to the nuchal emargination which is broadly and feebly incurvate and one-third as wide as the disk; in the posterior two-thirds the sides are parallel, broadly and feebly incurvate at the posterior third, at the anterior third strongly rounded; disk transversely and rather strongly convex at the sides, feebly so in the middle, where there is a narrow, rather feeble canalication extending from near the apex to slightly behind the middle; also at the base four foveæ, the inner pair continued anteriorly and slightly obliquely nearly to the middle by narrow, deeply impressed canalications; the outer pair dilated laterally, and anteriorly, obliquely and briefly prolonged at their inner extremities; surface highly polished, finely and sparsely granulose in the middle toward base; basal margin broadly and feebly arcuate; angles right and very narrowly rounded. *Elytra* at base nearly one-half wider than the pronotum; sides nearly parallel, strongly arcuate toward apex; together subtruncate behind; disk feebly convex, abruptly and strongly so at the sides, impunctate; sutural striæ fine and distinct; each elytron strongly bifoveate at the base. *Abdomen* at base three-fourths as wide as the elytra; sides parallel and feebly arcuate; border narrow, deep and strongly inclined; surface feebly convex; first three segments transversely and very strongly impressed at base; impressed areas coarsely, strongly and densely granulose, traversed longitudinally by five carinæ, remainder of the surface scarcely punctate on the basal segments, finely, asperately and very sparsely so on the apical. *Legs* slender; first four joints of the posterior tarsi slightly elongate, nearly equal. Length 2.0 mm.

California; (Lake Co. 1). Mr. Fuchs.

The prosternum is well developed in front of the coxæ, slightly swollen, connected with the supracoxal surface by an even convexity without trace of raised line; between the coxæ it is produced back as an acute angle, strongly carinate in the middle and projecting under the apex of the mesosternum, the posterior edges of the supracoxal surface being narrowly and strongly reflexed; the portion behind the coxæ is membranous.

The mesosternum is ample, broadly arcuate and very narrowly reflexed anteriorly, finely carinate throughout along the middle, the surface on either side of the middle being broadly impressed for the reception of the anterior coxæ in

repose; posteriorly, between the widely separated middle coxæ, it is scarcely at all produced, but is very broadly arcuate, reflexed and far above and free from the long truncate metasternal process; the entire mesosternum is coarsely, strongly and densely granulose, forming a striking contrast to the highly polished pro- and metasterna.

The anterior and middle tarsi have each four distinct joints, but the long, very slender fourth joints are provided at base with a very small and ill-defined segment, which renders the accurate determination of the structure a matter of great difficulty⁵.

EUMITOCERUS n. gen. (Tachyporini.)

Head moderately deflexed; eyes adjacent to the prothorax; antennæ long, very slender, capillary, verticillate; two basal joints much more robust, first slightly less than twice as long as the second; labrum very small, much wider than long, arcuate anteriorly, strongly inflexed and hidden under the projecting clypeus; maxillary palpi long, filiform and slender; second joint long and very slender, third obconical, scarcely more than two-thirds as long as the second, fourth slender, finely acuminate, slightly swollen toward base, longer than the third, much more finely and densely pubescent. Pronotal hypomera extremely strongly inflexed, almost parallel with the dorsal surface; wide behind, very narrow anteriorly. Elytra passing a little beyond the metasternum. Anterior coxæ narrow, conical, convex anteriorly; posterior moderately prominent, conical posteriorly, emarginate externally; posterior femora and trochanters attached at the apices, their point of insertion not at all concealed. Ventral segments margined; sixth exposed dorsally. Tarsi five-jointed. Integuments asperate.

It can be readily seen that *Eumitocerus* bears a great resemblance to *Habrocerus*, but differs from that genus in the

⁵.—I cannot but agree with Wollaston in his statement (Cat. Can. Col., p. 535, foot-note), concerning the difficulties of the tarsal system as applied to the Aleocharini. In many of the minute species it is impossible to determine the number of tarsal joints in such manner as to leave no doubt in the mind of the investigator, because of the hairy vestiture and the apparent division of the terminal joint in many cases, which, as I have before remarked, may be indicative of a real division at an early period in the history of the species. The more the subject is investigated, the more apparent is it that the division of the Aleocharini in accordance with the number of tarsal joints, is neither scientific in indicating true affinities, nor practical in its application.

relatively much shorter third joint of the maxillary palpi, and more especially in the structure of the posterior coxæ. In appearance it differs considerably, by reason of its asperate sculpture, in this respect being apparently related to *Tricophya*. In the latter genus the elytra do not extend beyond the metasternum, and the third and fourth joints of the maxillary palpi are subequal in length.

There is at my disposal, unfortunately, but one specimen. I cannot therefore give a representation of the maxilla; the labial palpi appear to be very minute and are not distinctly visible in the type. From the cursory glance which I obtained before the antennæ were broken, I am confident that these are filiform and verticillate throughout.

E. tarsalis n. sp.—Form rather slender, dark castaneous; abdomen black, paler at the apex; legs pale piceo-testaceous; antennæ flavate, basal joints piceo-testaceous; pubescence fine, denser on the elytra, recumbent, brownish, not conspicuous; integuments very feebly alutaceous, shining. Head moderate, slightly wider than long, feebly and evenly convex; eyes small, convex, finely granulate, rather prominent; front feebly, densely and subsparately punctate; palpi testaceous; infraorbital ridge not visible. *Prothorax* widest at two-thirds its length from the apex, where the sides are obtusely subangulate and where it is nearly one-half wider than long; sides thence moderately convergent and feebly arcuate to the apex, slightly less strongly convergent and nearly straight to the base; the latter squarely truncate; basal angles obtuse and very slightly rounded; apex broadly and feebly emarginate, distinctly narrower than the base; disk evenly and moderately convex, obliquely and feebly impressed near each basal angle, very finely, rather densely and evenly punctate; punctures strongly asperate. *Scutellum* rather large, as wide as long, asperate. *Elytra* at base as wide as the base of the pronotum; sides feebly divergent, nearly straight toward the base, feebly arcuate posteriorly; together as long as wide, broadly sinuate at apex, nearly one-half longer than the pronotum; disk feebly, transversely convex, finely, rather densely and evenly punctato-asperate; punctures slightly coarser than those of the pronotum. *Abdomen* at base very slightly narrower than the elytra; sides rather strongly convergent toward apex and nearly straight; border moderate, feeble on the fifth segment; surface transversely and moderately convex, even, minutely, very feebly and rather densely punctato-asperate at base, the punctures becoming more minute and sparse toward the vertex; under surface more coarsely and strongly punctato-asperate toward the base, sculpture subimbricate. *Legs* moderate, anterior short, rather robust, remainder slender; posterior tarsi long, much shorter than the tibiae,

very slender, first joint longer than the next three together, as long as the last three. Length 1.8 mm.

California; (San Mateo 1). Mr. C. Fuchs.

The type of this interesting species is probably a male. The tarsi are very remarkable; the anterior are irregular, attached obliquely to the tibiæ, and have the basal joint large, broadly dilated and slightly darker in color; the next three joints are very small, emarginate at tip, pale flavo-testaceous in color, and moderately dilated, successively less strongly so; the fifth slender. The intermediate tarsi are irregular and are very distinctly dilated toward base; both the anterior and middle tarsi are densely clothed beneath with very slender papillæ, and are verticillate at the sides; the papillæ beneath are sometimes terminated by very minute enlargements which are apparently composed of a viscid substance, and analogous to the erect setæ observed upon the under surface of the head in the Euplectini of the Pselaphidæ. The claws are very small. There are no sexual characters of importance observable at the abdominal vertex.

HETEROTHOPS Steph.

H. exilis n. sp.—Form very slender, rather convex; pale reddish-testaceous throughout; head slightly darker, more castaneous; antennæ and legs slightly paler, pale flavate; integuments polished; head and pronotum glabrous; elytra and abdomen finely and rather densely pubescent, the elytra the more sparsely so. *Head* rather strongly deflexed, oblong, abruptly and feebly constricted at the neck; sides thence to the eyes feebly convergent, feebly arcuate, twice as long as the eyes which are small, not at all prominent and almost at the apical angles; surface transversely and rather strongly convex, impunctate, finely and excessively feebly strigose; antennæ inserted at a very short distance from the eyes, shorter than the head and prothorax together; feebly incrassate; first joint as long as the next two together, third small, much shorter than the second, slightly longer than wide, tenth distinctly wider than long, eleventh slightly longer than the two preceding together. *Prothorax* scarcely longer, and, at the apex very slightly wider than the head, widest at the base where it is but very slightly wider than long; sides convergent from base to apex, broadly, evenly and distinctly arcuate; apex broadly and very feebly arcuate, three-fourths as wide as the base; the latter evenly and very

distinctly arcuate throughout; angles broadly rounded; disk transversely and rather strongly convex, impunctate, excessively minutely and obsoletely strigose with a few setigerous punctures along the sides and base and four discal punctures, one near each apical angle, and another just before and on either side of the centre of the disk. *Elytra* at base very slightly narrower than the prothorax; sides very feebly divergent, very feebly arcuate; together broadly and distinctly sinuate behind; disk very feebly convex, slightly wider than long, very slightly shorter than the pronotum, evenly, not very coarsely, deeply, moderately densely and asperately punctate; intervals extremely feebly reticulate. Scutellum rather large, triangular, asperate. *Abdomen* long, slender, at base nearly as wide as the elytra; apparently not capable of much contraction; sides gradually convergent and nearly straight to the apex; border rather wide, deep, nearly vertical; surface rather convex, finely and very densely punctate. *Legs* rather short and slender; first four joints of the posterior tarsi decreasing rapidly in length, first subequal to the fifth. Length 2.4 mm.

California; (Monterey Co. 1).

The single representative is probably a female; the anterior tarsi are slightly dilated; the seventh segment has four long, setigerous, anal styles, but both the dorsal and ventral plates of the sixth segment are broadly and evenly arcuate at apex.

It is related to *pusio* Lec., but differs in the arrangement and number of the occipital punctures; these are one at the middle of the upper margin of the eye and one below the posterior margin of the eye between the latter and the infraocular ridge; at the base on the sides there are a few very minute punctures, and a transverse row of large setigerous punctures immediately before the nuchal constriction extending across the head.

The type specimen was found under pine bark early in February near the town of Monterey.

ABABACTUS Sharp.

A. pallidiceps n. sp.—Slender, rather depressed, piceous; head rufotestaceous; legs pale flavate; antennæ opaque, pale flavo-testaceous; head sometimes clouded in the middle of the disk; pubescence sparse throughout, fine; integuments polished. *Head* distinctly longer than wide; post-ocular portion slightly less than twice as wide as long, semicircularly rounded be-

hind; eyes large, at twice their length from the base, finely granulate; surface moderately convex, rather sparsely, unevenly and not deeply punctate; punctures varying in size; antennal tuberculations abrupt, small and strong, with the anterior edges acute and prominent; surface between them gradually and anteriorly declivous, transversely truncate at apex; labrum short and broad, acutely incised in the middle, finely, acutely and prominently bidenticulate, edge just without each tooth finely sinuate; fourth joint of the maxillary palpi small, much narrower than the apex of the third, conical, acute; antennæ long and slender, as long as the head and prothorax together, not incrassate; second joint distinctly shorter than the third, all the joints longer than wide. *Prothorax* nearly three-fourths as wide as the head; sides parallel, distinctly and almost evenly arcuate; base and apex almost equal in width, truncate; basal and apical angles equally and rather broadly rounded; disk cylindrically convex, one-half longer than wide, coarsely, feebly and irregularly punctate; punctures sparse near the sides, more dense in an irregular line bordering the median impunctate area, which is very slightly more strongly convex throughout its length. *Elytra* at base one-third wider than the prothorax, slightly wider than the head; sides nearly parallel, extremely feebly areolate; together broadly and very feebly emarginate behind; humeri very narrowly rounded; disk two-fifths longer than wide, nearly one-third longer than the prothorax, depressed, very feebly impressed toward base along the narrowly elevated suture, rather coarsely, feebly and evenly punctate; punctures impressed, distant by more than their own diameters, not appreciably more feeble toward apex. *Abdomen* slightly narrower than the elytra; sides parallel and straight; surface finely, more deeply, evenly and not densely punctate. Length 4.8-5.2 mm.

California; (Santa Rosa, Sonoma Co. 2; Anderson Val., Mendocino Co. 1)

In the male the second ventral segment has in the centre of its disk a small deep fovea bearing a small brush of erect hairs, the third segment having two similar foveæ, rather approximate, arranged transversely, distinctly before the middle, each bearing one or two erect robust setæ; sixth segment with a very narrow deep incisure, with the sides nearly parallel, very acutely rounded at apex and five times as deep as its mid-width, bordered throughout its length with a narrow, deeply concave gutter which is prolonged anteriorly, continuing thence as a single groove to the base of the segment, becoming gradually attenuated.

The prothorax is very slightly narrowed toward apex, the basal angles thus being more prominent than the apical.

The color may vary somewhat from immaturity, both the head and prothorax being sometimes paler. The single specimen upon which this statement is based differs, however, in its slightly denser elytral punctuation; it is probably a female, the sixth segment being entire, narrowly rounded at apex; the second segment is entire, but the third has the two foveæ as described in the male.

The present species belongs near *A. politus* Sharp, which it resembles greatly in sexual characters; from *nictus* Horn, it differs in color and in its much more elongate prothorax and elytra.

The genus *Ababactus* differs from *Hesperobium* not only in the structure of the labrum,—which allies it more closely with *Cryptobium*,—and tarsi, as remarked by Dr. Sharp, but also in the complete absence of the large basal carina of the first ventral segment, which is such a prominent feature of *Hesperobium*. The two post-ocular annular punctures are well developed in *Ababactus*, and are completely absent in *Cryptobium fracticorne* Payk.

LENA n. gen. (*Pæderini*.)

Body robust, depressed; head rather large; antennæ short and robust; labrum rather short, broadly rounded, with a simple median sinuation about twice as wide as deep with no trace of denticulation or carina; third joint of labial palpi very minute and slender; third joint of maxillary palpi much longer than the second, slender, fusiform, obtusely pointed at tip; fourth excessively minute, slender, subulate; eyes moderate, coarsely granulate. Prothorax subquadrate, narrowed toward base, shorter than the elytra. Intermediate and posterior tarsi rather slender, cylindrical; first joint of the latter as long as the next two together, distinctly longer than the fifth; fourth short, very slightly dilated, oblique at apex; anterior tarsi robust and spongy-pubescent beneath, very feebly dilated. Integuments rugulose, coarsely punctate, shining. Neck rather slender; gular sutures well separated.

This genus belongs near *Medon*, but is easily distinguished from it by a peculiar and complicated modification of the pronotal hypomera, the surface being deeply grooved opposite the base of the coxæ and the acute dividing line

being bisinuate anteriorly. It does not appear to be very closely allied to any of the Central American genera, and may be easily recognized by its short robust form, rather large truncate head, simple sinuate labrum, slender fusiform third maxillary palpal joint, short antennæ and non-carinate prosternum. I have compared it directly with *Medon brunneus* Erichs.

We have but one species.

L. testacea n. sp.—Robust; sides parallel; pale rufo-testaceous, elytra, legs, palpi and antennæ toward apex slightly paler and more flavate; pubescence of elytra and abdomen fine, rather long, not dense. *Head* about as long as wide; sides parallel, almost straight; base transversely truncate, feebly sinuate in the middle third; angles right, very narrowly rounded; eyes at twice their length from the base, slightly prominent; front finely subgranulose, coarsely, very feebly and not densely punctate, with a rather broad median impunctate line; antennæ equal in length to the head, distinctly incrassate toward tip; basal joint distinctly longer than the next two together, second distinctly longer and more robust than the third, the latter slightly longer than wide, joints four to ten subequal in length, increasing distinctly in width, the former as long as wide, the latter much wider than long. *Prothorax* widest at the anterior angles, slightly shorter and narrower than the head, very slightly wider than long; sides rather feebly convergent from apex to base, very feebly arcuate; base broadly subtruncate; angles rather broadly rounded; anterior angles rather more narrowly rounded; sides of apex very strongly convergent to the neck, nearly straight; nuchal truncation rather feebly sinuate, two-fifths as wide as the disk; the latter feebly and evenly convex, finely subgranulose, rather coarsely, evenly and feebly punctate; punctures denser and finer than those of the head, with scarcely a trace of a median impunctate line. *Elytra* at base very slightly wider than the prothorax, as wide as the head; sides very feebly divergent, nearly straight; together broadly and extremely feebly emarginate behind; disk as long as wide, one-third longer than the prothorax, very feebly convex, scarcely impressed along the suture, which is bordered with a thickened but scarcely elevated margin; surface not granulose, polished, rather finely, evenly and not densely punctate, punctures impressed, deeper but not as large as those of the pronotum. *Abdomen* very slightly narrower than the elytra; sides parallel and distinctly arcuate; border rather narrow, deep and strongly inclined; surface broadly convex, very finely and feebly reticulate, polished, excessively minutely and rather sparsely punctate, each puncture being entirely filled by a hair. *Legs* rather short and very slender. Length 2.2 mm.

Texas; (Austin 2).

There is unfortunately no male of this genus yet discovered; the sixth segment of the female is short and broad, very broadly and feebly rounded nearly throughout its width at apex, subtruncate. The species may perhaps prove to be apterous.

RAMONA n. gen. (Pæderini.)

This genus belongs to the Lithocharis and Medon division of the Pæderini, and is allied somewhat to Caloderma and to several genera recently described from Central America. It may be distinguished by the following characters:—

Head smaller than the prothorax; the latter quadrate, shorter than the elytra. Labrum entire, short, broadly rounded throughout, without inequality except some very minute and feeble undulations, three or four in number near the middle, having dorsally a small median carina; neck rather slender, one-third as wide as the prothorax. Anterior tarsi broadly dilated; posterior slender, cylindrical, first four joints decreasing very rapidly in length, first nearly as long as the next two together, fourth cylindrical, very slightly longer than wide. Head and pronotum without trace of median impunctate line, stria or elevation; integuments extremely finely and densely punctate, alutaceous. Eyes moderate in size, coarsely granulated.

The third joint of the maxillary palpi is rather more strongly dilated than is usual in this group, the fourth being normal. The elytra differ from those of many allied genera in having no sign whatever of the usual narrow elevated margin adjoining the suture. The genus is distinguished from Medon and Caloderma by many characters, the most important of which is the strong dilatation of the anterior tarsi.

The sexual modification of the male is very slight, consisting of a simple broad sinuation at the apex of the sixth segment, the fifth being entire.

But one species is known at present.

R. capitulum n. sp.—Rather slender and depressed, black throughout, apical edges of the ventral segments paler; intermediate and posterior legs

piceous, anterior legs and tarsi throughout paler, piceous-brown; palpi piceous; antennæ piceous, paler toward tip; pubescence extremely short, fine and excessively dense on the elytra and abdomen, much less dense anteriorly. *Head* small, as wide as long; sides behind the eyes very slightly divergent posteriorly, feebly arcuate; base truncate; angles not prominent, rather broadly rounded; front evenly and feebly convex, excessively minutely and densely punctate; antennæ rather long, slender, as long as the head and prothorax together, not incrassate; basal joint scarcely as long as the next two together, second three-fourths as long as the third, scarcely as long as, but slightly more robust than the fourth, joints four to six equal, twice as long as wide, six to ten decreasing in length, the latter scarcely as wide as long. *Prothorax* widest in the middle, where it is distinctly wider than the head; sides parallel, feebly arcuate; base and apex broadly arcuate, the latter very feebly so; basal angles broadly rounded; apical more narrowly so; disk as wide as long, feebly and evenly convex, excessively minutely, evenly and densely punctato-granulose. *Elytra* at base just visibly wider than the prothorax; sides nearly parallel, feebly arcuate; together broadly and very feebly emarginate behind; disk slightly longer than wide, nearly one-fourth longer than the prothorax, feebly convex, not appreciably impressed along the suture, excessively densely and very finely granulose, each granule bearing a minute hair. *Abdomen* not narrowed toward base; sides parallel and straight border narrow, erect; surface feebly, cylindrically convex, excessively minutely, feebly and densely punctate; punctures slightly asperate and not arranged in any order. *Legs* rather short and robust; first joint of the posterior tarsi fully as long as the fifth. Length 3.7 mm.

Nevada; (Reno 1).

The unique specimen is a male, the sinuation of the sixth segment being about four times as wide as deep and acutely rounded.

The pronotum has besides the regular system of excessively minute granulate punctures, a widely and irregularly scattered system of larger, though still very small, rounded, shallow punctures, each of which bears a small, erect seta. The elytra are opaque, the head and prothorax somewhat shining.

LEPTOGENIUS n. gen. (Pæderini.)

Body slender, roughly sculptured. Head large, borne on a narrow neck. Prothorax small. Elytra longer and wider than the pronotum. Abdomen as wide as the elytra, gradually decreasing in width toward apex; four basal segments equal in length; fifth nearly one-half longer than the fourth; sixth

very short. Antennæ short; basal joint very robust. Maxillary palpi large; basal joint small, slender, second longer, robust, subulate, third very large, flattened, subsecuriform, much longer than the first two together, fourth very minute, in the form of a very short robust spine, erect, protruding from the apex of the third. Labial palpi extremely small, slender; third joint apparently long and slender, second scarcely shorter and distinctly more robust, basal joint not visible. Mandibles long and slender. Gular sutures contiguous throughout. Labrum short, very broad, strongly arcuate, with a minute median emargination slightly wider than deep, on each side of which there are two exceedingly minute, approximate and robust teeth, upper surface having a fine median, longitudinal carina. Legs slender; anterior tarsi not at all dilated; first four joints of the posterior decreasing uniformly and rapidly; in length, first slightly longer than the fifth. Prosternum having a fine, strongly elevated, median carina, slightly less elevated at the anterior margin; under surface of the neck carinate.

The exact relationship of this genus is not apparent; it is different in appearance from any of the other *Pæderoid* genera with which I am familiar, and in fact appears to be a transitional form having uncertain affinities. The labial palpi are very minute and in their position in the two representatives before me are so deeply placed that it is impossible to give their exact structure.

The principal points of departure from the normal *Pæderi* are in the peculiar short antennæ and spiniform—not subulate, oblique and retractile—terminal joint of the maxillary palpi, also in the large third and small robust second joint of that organ. The coxæ are normally *Pæderoid*.

L. brevicornis n. sp.—Slender, pale ochreous-testaceous throughout; elytra slightly darker, castaneous except near the base; pubescence extremely short, sparse, very evenly distributed throughout; integuments thick, opaque, very coarsely scabrous, not at all shining. *Head* slightly longer than wide; sides parallel, nearly straight; base truncate, narrowly and distinctly sinuate in the middle; angles moderately broadly rounded; surface transversely and moderately convex, coarsely and very densely granulose; eyes moderate, slightly convex, on the sides at a little less than twice their length from the base, very coarsely granulate; antennæ a little shorter than the head, distinctly clavate, funicle slender at base, posteriorly and strongly geniculate; basal joint robust, one-half longer than wide, second slightly less robust, subglobular, three to six very small, very slightly wider than long, equal, scarcely more than one-half as wide as the second, seventh slightly wider,

seven to nine increasing rather rapidly in width, ninth and tenth strongly transverse, equal, a little longer than the third, together scarcely as long as the eleventh, which is ovoidal and pointed. *Prothorax* widest at one-third its length from the apex, where it is very slightly narrower than long; sides thence very strongly convergent and broadly sinuate to the apex which is slightly produced, truncate at tip and less than one-third as wide as the disk; sides in the posterior two-thirds rather rapidly convergent to the base and very feebly arcuate; apical angles obtuse, rather narrowly rounded and somewhat prominent; basal rather broadly rounded; disk feebly convex, feebly and broadly ridged along the middle especially in the basal half where it is broadly and feebly biimpressed. *Elytra* at base distinctly wider than the pronotum; sides very feebly divergent, feebly arcuate; together broadly, angularly and feebly emarginate behind; disk quadrate, subdepressed, very slightly longer than the pronotum, coarsely and very closely granulate; on each elytron there is a very feeble impression extending from the scutellum slightly obliquely and near the suture nearly to the apex. Scutellum very indistinct, small, rounded. *Abdomen* at base as wide as the elytra, and, at the apex of the first segment, slightly wider; sides gradually convergent and slightly arcuate to the apex; border strongly inclined and very distinct; surface moderately convex, coarsely and densely ruguloso-granulate. Under surface of the head coarsely and closely punctate; punctures round, variolate and almost in contact; under surface of the abdomen shining, rather finely punctate; punctures asperate and arranged in wavy, interrupted, transverse rows. Length 1.7-2.0 mm.

Texas; (Galveston 2).

The sculpture of the pronotum consists of a very minute reticulation of coarse strongly elevated lines.

The sexual characters are very feeble; the type is a male and has the apex of the sixth segment broadly truncate or excessively feebly sinuate throughout; in the female the sixth segment is longer and extremely feebly angulate throughout its width at apex. The male is much smaller than the female.

The two representatives of this very interesting species were found in detritus and rubbish on the inner side of the sand dunes lining the ocean beach. It is the smallest Pæderide described from the United States.

SCOPEUS.

The genus *Scopæus* of Erichson was distinguished from the other Pæderoid genera by a remarkable character relat-

ing to the ligula, which organ is here, in opposition to the general rule, tricuspid at the apex. Many representatives having the tricuspid ligula are found in America, and as they are all small and generally possess some of the characteristics of *Scopæus*, such as the narrow neck, they have been assigned to that genus without due consideration. Upon examination these various forms are found to differ considerably in structure, so much so in fact that the desirability and propriety of generically separating them can no longer be doubted; several of the more markedly distinct groups have already been noticed. Diagnoses of the genera which inhabit the United States, may be stated as follows:—

- Posterior angle of prosternum prominent, the lower edge of the intercoxal lamina being reëntrant or inwardly arcuate at and near its vertex and not longitudinally continuous in curvature with the prosternum. Anterior angles of prothorax very broadly rounded or obsolete.
- Posterior under side-pieces of pronotum well developed. Surface punctate or alutaceous **Scopæus.**
- Posterior under side-pieces rudimentary. Surface polished and nearly impunctate throughout..... **Scopæodera.**
- Posterior angle of prosternum not prominent, the lower edge of the intercoxal lamina being outwardly arcuate at and near the angle and longitudinally continuous in curvature with the prosternum. Anterior angles of the prothorax more or less prominent. Posterior under side-pieces of the pronotum rather well developed.
- Neck very slender; integuments excessively minutely punctate, alutaceous,..... **Leptorus.**
- Neck broader; integuments coarsely punctate, polished..... **Orus.**

The generic characters of *Scopæus* have been taken from a typical representative of *S. lævigatus* Gyll., for which I am indebted to M. A. Sallé.

SCOPÆUS Erichs.

Several American species are assignable to this genus, among others *opacus* Lec. The following species of the Pacific Coast may also be placed here at present.

S. rotundiceps n. sp.—Rather slender, black; legs castaneous, paler toward tip; antennæ and palpi rufo-fuscous, the former paler and flavate at the apex; pubescence fine, short, very dense, more sparse on the pronotum, most conspic-

nous on the head; integuments shining. *Head* distinctly longer than wide, semicircularly rounded behind from points slightly behind the eyes; sides parallel and nearly straight; surface rather strongly convex, very minutely and densely punctate; punctures much feebler and sparser along the middle; antennæ slightly shorter than the head and prothorax together; first joint but very slightly longer than the second and third together, the latter subequal in length, the second joint somewhat more robust, joints three to ten decreasing rather rapidly in length, the former distinctly longer than wide, the latter slightly wider than long. *Prothorax* distinctly narrower than the head, two-fifths longer than wide, widest in the middle; sides in the anterior third rather strongly convergent and very feebly sinuate to the nuchal emargination which is narrow and deeply sinuate; sides in the posterior two-thirds rather feebly convergent and broadly arcuate throughout; anterior angles extremely obtuse and broadly rounded, almost obsolete; posterior broadly rounded; base extremely feebly arcuate; disk transversely and moderately convex, very minutely and not very densely punctate; punctures subasperate, evenly distributed; a narrow line along the middle impunctate; at the base there is a very fine median carina. *Elytra* at base nearly one-third wider than the prothorax; sides nearly parallel, feebly arcuate posteriorly; together broadly, angularly and extremely feebly emarginate behind; disk feebly convex, slightly longer than wide, distinctly longer than the pronotum, feebly impressed on the suture toward base, rather coarsely and densely punctate toward the suture and base, excessively minutely and slightly more sparsely so exteriorly and apically; suture finely margined with a narrow elevated border which is depressed and much narrower at the scutellum. *Abdomen* at base slightly narrower than the elytra; sides very feebly divergent and nearly straight to the apex of the fourth segment; fifth as long as the two preceding together; surface broadly and feebly convex, extremely minutely and densely punctate. *Legs* finely punctate, rather short and robust; first joint of the posterior tarsi one-third longer than the second, slightly shorter than the fifth. Length 3.3 mm.

California; (Mt. Diablo, Contra Costa Co. 2).

The specimens are both females:⁶ the sixth segment is broadly angulate behind, the apex scarcely at all rounded, the sides of the angle being broadly and very feebly arcuate. The species is easily distinguished by its narrow head semicircularly rounded behind.

⁶.—In a male since obtained at Reno, Nevada, the fifth segment is deeply and roundly emarginate at apex, the lateral angles being slightly produced; the surface has a deep oval impression, becoming extinct near the base; the sixth segment is deeply sinuate at apex, the sinus fully twice as wide as deep, with the edges slightly reflexed; the surface impressed.

S. truncaticeps n. sp.—Slender; sides nearly parallel; black, posterior margins of the four basal abdominal segments paler; legs castaneous, paler toward tip; palpi and antennæ reddish-brown throughout; pubescence very fine, short, rather dense, pale fulvous in color, more conspicuous on the pronotum toward the apex; integuments shining. *Head* robust, rather depressed, very slightly longer than wide; sides parallel, feebly arcuate behind the eyes; base truncate and very feebly arcuate; angles rather broadly rounded; surface rather feebly convex, broadly impressed between the antennæ, very finely and densely punctate, the punctures deep and much sparser in the middle anteriorly, slightly sparser posteriorly; antennæ slightly shorter than the head and prothorax together; basal joint distinctly longer than the next two combined, second slightly more robust and a little shorter than the third, the latter much longer than the fourth, joints four to ten decreasing gradually in length, the latter slightly longer than wide. *Prothorax* distinctly narrower than the head, widest slightly in advance of the middle, but slightly more than one-third longer than wide; sides in the anterior third strongly convergent and distinctly sinuate to the nuchal emargination which is broadly and feebly sinuate, in the posterior two-thirds moderately convergent and distinctly arcuate to the base which is narrowly truncate in the middle; angles rather broadly rounded; apical angles very obtuse and very broadly rounded; disk very broadly and feebly convex, minutely and not very densely punctate, with a narrow impunctate median line, having also a very short median basal carina extending thence as a very fine, nearly obsolete stria nearly to the middle. *Elytra* at base one-fifth wider than the prothorax; sides nearly parallel and straight; together almost transversely truncate behind; disk rather feebly convex, impressed on the suture toward the scutellum, finely, evenly and not very densely punctate; punctures slightly finer exteriorly and apically; suture finely margined, margin very gradually finer toward base. *Abdomen* at base slightly narrower than the elytra; sides very feebly divergent and nearly straight; surface rather feebly convex, very minutely and densely punctate; basal segments transversely impressed at base, with the impressed areas much more coarsely and densely punctate; fifth segment much shorter than the two preceding together. *Legs* rather short and slender; first joint of the posterior tarsi scarcely one-fourth longer than the second, much shorter than the fifth. Length 4.0 mm.

California; (Anderson Val., Mendocino Co. 1).

Described from the female in which the sixth segment is broadly angulate, with the apex of the angulation scarcely at all rounded; sides forming the angle broadly and feebly incurvate.

This fine species is readily distinguished from the preceding by its form, size and sexual characters.

All the species of this genus which I have examined have the bases of the first three or four dorsal segments of the abdomen transversely impressed and densely and coarsely punctate. In the Orus group the impressions are simply finely reticulated or alutaceous and are entirely devoid of punctures.

S. brunnipes Lec.—(Tr. Am. Ent. Soc. VIII, p. 179).—This form is described as having “pale brown legs.” I have thus far seen no such species in California, the legs of all the Californian species here described being very dark.

SCOPÆODERA n. gen.

The species composing this genus have a distinctly Stilioid outline and do not resemble Scopæus in outward form. In addition to the characters given before, we may mention the much longer legs and longer and more slender tarsi. Besides *nitidus* Lec. this genus will perhaps comprise several allied species described from South America by Dr. Sharp, and also those Central American species placed by this author in Scopæus under group 4, together with the Colombian *S. pulchellus* Erichs.

LEPTORUS n. gen.

The species assignable to this genus have a peculiar appearance and differ considerably from Scopæus. They are elongate, very slender, parallel, with oblong prothorax having the anterior angles more or less prominent, and the sides parallel or slightly convergent behind and nearly straight.

The genus is widely extended in its distribution throughout the eastern portion of the United States, extending through Mexico to Central America where it is represented by *flum*, *concolor*, *Salvini*, *obscurus*, *piceolus*, *brevipennis*, and *umbra*, recently described by Dr. Sharp in the *Biologia Centrali-Americana*. It will also include *exiguus* Er. and

picipes Cas. On the west coast it is replaced by *Orus*, having a much wider neck and a distinctly different system of punctuation; this appears to extend down the western slope of the continent, also to Central America, where it is represented by a species recently described by Dr. Sharp from Guatemala.

Leptorus is probably a large genus, and the several forms, which are often closely allied, should be described with great care and constant attention to details if they are to be even approximately identified by future reviewers.

In addition to the characters pointed out in the preceding table, it should be stated that the eyes are situated just before the middle, on the sides of the head; they are strongly, longitudinally oval, very coarsely granulated, and have on their upper edge in the middle a large, rather shallow, spongiose fovea bearing a single very long seta.

In *Orus* the eyes are larger, less coarsely granulated, more broadly oval, and have near the upper border, and in a transverse line with the posterior margin, a small, deep, setigerous puncture which is entirely nude. The puncture in this case, though very near the eye, is entirely disengaged from it, while in *Leptorus* the fovea, which is of an entirely different structure, intrudes slightly upon the continuity of the edge.

L. texanus n. sp.—Slender; sides parallel; moderately depressed; pale rufo-testaceous, elytra clouded with piceous toward base; abdomen piceous, very slightly paler toward tip; antennæ testaceous throughout; legs pale flavate; pubescence excessively fine and short, dense except on the pronotum where it is sparse; integuments alutaceous, except the pronotum which is polished. *Head* slightly longer than wide; sides parallel, very feebly arcuate behind the eyes; base transversely truncate; angles narrowly rounded; surface transversely and rather strongly convex, excessively minutely and densely punctate; punctures impressed, deep, slightly sparser along the middle; eyes rather prominent, at twice their length from the base; antennæ slightly shorter than the head and prothorax together, basal joint slightly longer than the next two combined, second slightly longer and more robust than the third, joints four to ten decreasing distinctly in length, the former

slightly longer than wide, the latter a little wider than long. *Prothorax* very slightly narrower than the head, one-third longer than wide, widest at one-fourth the length from the apex; sides thence extremely feebly convergent and nearly straight to the base, and very rapidly so and very feebly sinuate to the apex which is very narrow; anterior angles obtuse, slightly rounded; posterior rather broadly rounded; base broadly and very feebly arcuate; disk transversely and feebly convex, excessively minutely punctate; punctures about one-half as wide and more than twice as distant as those of the head, slightly more sparse in the middle, where there is a narrow impunctate line, and toward base a very fine, feeble and obsolete median stria. *Elytra* slightly wider than the prothorax; sides nearly parallel, feebly arcuate posteriorly; together broadly, angularly and very feebly emarginate behind; disk one-fourth longer than wide, slightly longer than the pronotum, very feebly impressed on the suture toward the base, extremely finely and rather feebly punctate; punctures evenly distributed, scarcely as sparse as those of the pronotum, distinctly asperate; suture finely margined with an elevated line which is much finer near the scutellum. *Abdomen* at base slightly narrower than the elytra and slightly narrower than at the apex of the fourth segment, rather strongly convex, excessively finely, densely and subasperately punctate; first four segments equal in length, the fifth one-half longer. *Legs* rather short and robust; joints of the posterior tarsi decreasing very gradually and uniformly in length, first slightly longer than the second and shorter than the fifth. Length 2.5 mm.

Texas; (El Paso 2).

The type is a male, the sixth ventral segment being narrowly and deeply emarginate; emargination very small, distinctly deeper than wide, sides nearly parallel and straight, bottom broadly rounded. In the female the sixth segment is broadly and feebly angulate, the apex being broadly rounded.

L. bicolor n. sp.—Slender; sides parallel; moderately convex; pale rufo-testaceous, four basal segments of abdomen piceous-black, last two slightly paler; elytra clouded with piceous at base near the scutellum; antennæ throughout and legs pale rufo-testaceous, the latter slightly more flavate; pubescence extremely short and fine, rather dense on the elytra and abdomen. *Head* slightly longer than wide; sides behind the eyes parallel and very feebly arcuate; base truncate; angles narrowly rounded; eyes moderate, slightly prominent, on the sides just before the middle; front transversely and evenly convex, minutely reticulate, extremely minutely and rather densely punctate; punctures more dense toward the eyes, less dense along the middle; antennæ one-half longer than the head, second joint slightly longer and more robust than the third, joints two to five longer than wide, six to ten shorter,

equal in length, the latter slightly transverse. *Prothorax* widest at one-fourth its length from the apex, where it is scarcely as wide as the head, one-fourth longer than wide; anterior angles very narrowly rounded, decidedly prominent; sides thence strongly convergent and feebly sinuate to the neck, which is not excessively narrow, and distinctly convergent and very feebly arcuate to the base which is transversely truncate in the middle, two-thirds as wide as the disk; angles somewhat narrowly rounded; disk transversely and feebly convex, very minutely reticulate or subrugulose; excessively, minutely punctate; punctures finer and more sparse than those of the head, with a very narrow indistinct median impunctate line, and, toward base a very feeble median carina which is finely striate along its crest. *Elytra* at base very slightly wider than the pronotum; sides nearly parallel, feebly arcuate; together very feebly and broadly emarginate behind; disk distinctly longer than wide, one-fifth longer than the prothorax; feebly convex, broadly and feebly impressed along the suture, extremely minutely, evenly and rather densely punctate. *Abdomen* very slightly narrower toward base, feebly convex, very minutely and densely punctate. Anterior femora nearly twice as robust as the intermediate, abruptly and deeply sinuate on the inner edge near the apex; tarsi very feebly dilated, finely and densely pubescent beneath. Length 2.3 mm.

Texas; (Austin 5).

The anterior tibiae of the male exhibit very striking characters; they are distinctly dilated and have along the flattened interior face six parallel, oblique rows of short, inclined setae, the rows becoming shorter toward the apex. The four posterior femora are distinctly compressed and arcuately bent. The male has the sixth segment broadly sinuate at apex, the sinus being four or five times as wide as deep and rather narrowly rounded, the sides being very gradually recurved; from beneath the sinuation, and apparently attached to the seventh segment, there protrudes a robust ligala, slightly longer than wide, strongly convex on its lower face, abruptly constricted at base, squarely truncate at apex, with the angles not rounded; the upper face is broadly concave, serving as a rest and guide for the male generative organ; the latter in the present species is very complex, being cylindrical, with two unequal lateral processes, angulate on the right and broadly rounded on the left.

The peculiarity of the anterior tibiæ is apparently generic, or at least affects a large number of species.

L. versicolor n. sp.—Very slender; sides parallel; colors and pubescence as in *bicolor*, except that the abdomen is dark fuscous and slightly paler at apex. *Head* rather large; distinctly longer than wide; sides behind the eyes feebly but distinctly divergent and feebly arcuate to the base which is broadly and distinctly sinuate; angles rather prominent and narrowly rounded; front broadly and feebly convex, not reticulate, shining, very minutely, evenly and rather densely punctate; punctures separated by two or three times their own diameter; antennæ one-half longer than the head, second joint much longer and more robust than the third, fifth very slightly longer than wide, tenth very slightly wider than long. *Prothorax* widest at one-fourth its length from the apex, distinctly narrower than the head; anterior angles narrowly rounded, prominent; sides thence strongly convergent and distinctly sinuate to the neck which is very slender, and distinctly convergent and nearly straight to the base which is transversely truncate and three-fourths as wide as the disk; angles somewhat narrowly rounded; disk one-third longer than wide, feebly convex, very minutely, evenly punctate, scarcely visibly subrugulose; punctures scarcely perceptibly more sparsely distributed than those of the head; median stria toward base nearly obliterated. *Elytra* at base scarcely perceptibly wider than the prothorax; sides distinctly divergent and very feebly arcuate; disk very feebly convex, very feebly impressed along the suture toward base, minutely and feebly subrugulose, finely, evenly, rather densely and subasperately punctate; slightly longer than wide and just visibly longer than the pronotum. *Abdomen* nearly as in *bicolor*, slightly more sparsely punctate. Length 2.1–2.5 mm.

Texas; (Austin and Waco).

The sixth segment in the male is broadly sinuate at apex, the sinus being slightly less than four times as wide as deep, rather acutely rounded; ligula long and narrow, perfectly flat, gradually wider toward the apex which is broadly and extremely feebly sinuate, angles rounded.

The anterior femora and tibiæ are as in *bicolor*, but the former are not so robust as in that species. The form of the head and the sexual characters will serve to distinguish this species from the preceding, to which it is otherwise closely allied.

L. longiceps n. sp.—Very slender, rather convex; sides parallel; head and elytra pale brownish-testaceous; prothorax paler, more flavate; abdomen dark fuscous, scarcely paler at apex; antennæ and legs throughout pale rufous.

testaceous; pubescence fine and dense throughout, longer on the head, less conspicuous on the pronotum. *Head* much longer than wide; sides parallel and distinctly arcuate; base transversely truncate; angles not prominent though rather narrowly rounded; front transversely, rather strongly convex, extremely minutely, feebly, evenly and not densely punctate; eyes at much more than twice their length from the base; antennæ short, scarcely longer than the head, rather robust, second joint very slightly longer than wide, slightly longer and much more robust than the third, tenth rather strongly transverse. *Prothorax* very slightly narrower than the head, widest at one-third its length from the apex; anterior angles very broadly rounded; sides almost parallel and distinctly arcuate; base transversely truncate, angles rather broadly rounded; disk nearly one-third longer than wide, moderately and evenly, cylindrically convex, very minutely, evenly and rather densely punctate; punctures appreciably closer than those of the head; throughout the basal three-fifths there is a fine, well-marked, median stria. *Elytra* at base distinctly wider than the prothorax and fully as wide as the head; sides parallel and very feebly arcuate; together distinctly longer than wide and just visibly longer than the pronotum; surface rather feebly convex, rather narrowly and feebly impressed along the suture toward base, very minutely, evenly and densely punctate; punctures slightly coarser and just appreciably more dense than those of the pronotum. *Abdomen* very slightly narrowed toward base, excessively minutely, feebly and rather densely punctate. Femora and tibiæ as in *bicolor*. Length 1.9 mm.

Texas; (Austin 1).

This species is aberrant not only in the more broadly rounded apical angles of the prothorax, the elongate head and shorter antennæ, but in the smaller eyes, more compressed and truncate third maxillary palpal joint, and especially in the position of the spongiose setigerous fovea, which is not at the middle of the upper margin of the eye as in the other species, but behind the eye one-half the length of the latter, and in a line with its upper margin. The neck also is relatively much less slender than in the other species. With exception of *Leptogenius brevicornis* it is the smallest Pæderide described from our territories. Unfortunately there is before me but a single representative, a female, so that the sexual characters of the male cannot be given; the form is very distinct, however, and will be easily recognizable.

The Central American species described by Dr. Sharp,

alluded to above, are apparently all distinct from those here brought to notice. *Filum* differs in the coloration of the antennæ and in the sexual characters; *concolor* decidedly in coloration of the entire body; the œdeagus, however, is apparently similar to that of *bicolor*; *Salvini* appears to be closely allied to *versicolor*, but as no ligula is described in alluding to the male sexual characters,⁷ and as the elytra appear from the figure to be longer and broader, and the apical angles of the prothorax much less pronounced, the two species are probably distinct, more especially in consideration of the very different faunal regions involved. *Obscurus* and *piceolus* are very distinct in color; *brevipennis* and *umbra* differ altogether in structure. *Exiguus* Er. differs radically in coloration.

Color appears to be a very constant character, as it is practically the same throughout large series of several species which I have before me.

ORUS Cas.

This genus, and the closely related *Leptorus*, constitute a group differing remarkably from *Scopæus* and *Scopæodera* in the structure of the intercoxal portion of the prosternum. In *Orus* the posterior edge of the prosternum is more swollen than in *Leptorus*, and the median portion is, posteriorly, elevated into a longitudinal ridge which becomes the lower edge of the intercoxal lamina. *O. punctatus* Cas. and the species here described are the only known representatives of this genus in the United States.⁸

⁷.—The ligula is present in all the species of this genus, but, probably only before copulation, is securely held within the long angular cleft of the seventh segment, and is only pushed down and out of the cleft, so as to be plainly visible, after sexual connection has occurred.

⁸.—By a very regrettable error it was stated by me (Bull. Cal. Acad. Sci. I, p. 315) that the ligula in *Orus* is bicuspid. One of the very minute teeth was in all probability hidden under a particle of dust, as the appearance in the specimen examined was undoubtedly that of a bicuspid ligula;

O. parallelus n. sp.—Narrow, rather depressed; sides parallel; piceous-black throughout; legs rufo-piceous; tarsi and antennæ throughout paler, rufo-fuscous; pubescence fine, rather sparse on the pronotum and elytra, denser and more conspicuous on the head and abdomen; integuments polished, head subalutaceous. *Head* very slightly longer than wide; sides distinctly convergent anteriorly from the base, distinctly arcuate behind the eyes; base broadly and extremely feebly arcuate; angles broadly rounded; surface broadly and feebly convex, very feebly impressed in the middle anteriorly, very minutely and densely punctate, also extremely finely and rather feebly subrugulose; punctures not sparser but rather coarser along the middle; antennæ slightly shorter than the head and prothorax together; basal joint slightly longer than the next two together, joints two to four subequal in length, slightly elongate, fifth very slightly shorter, joints five to ten decreasing rapidly in length, the former distinctly longer than wide, the latter very slightly wider than long. *Prothorax* very slightly narrower than the head, oblong; sides extremely feebly convergent from apex to base and nearly straight; anterior angles obtuse and broadly rounded; sides thence very strongly convergent to the nuchal emargination which is two-fifths as wide as the disk and feebly incurvate; basal angles broadly rounded; disk transversely and feebly convex, two-fifths longer than wide, rather finely, feebly and densely punctate; very narrow median area impunctate throughout the length. *Elytra* at base slightly wider than the pronotum; sides very feebly divergent, feebly arcuate toward the apex; together broadly, angularly and very feebly emarginate behind; disk slightly longer than wide and slightly longer than the pronotum, feebly convex, broadly and feebly impressed on the suture, more particularly near the base, finely, rather densely, evenly and subasperately punctate; suture finely margined with an elevated border which becomes rather abruptly less than one-half as wide near the scutellum, where also it is not so strongly elevated. *Abdomen* at base slightly narrower than the elytra; sides very feebly divergent posteriorly; surface broadly convex, extremely minutely and densely

subsequent observation, however, of cleaner and more perfect specimens, reveals the fact that the ligula is tricuspid, hence the statements made upon the apparent relationship of the genus with *Lithocharis* (l. c. II, p. 36), which were based primarily upon the assumption of a bidentate ligula must be considered ill-founded. The wide departure of the genus from *Scopæus* in general form, but particularly in the relatively wide neck and prosternal structure, is very convincing proof that the time has come for a division of the Scopæoid species into distinct generic groups, and also points strongly to the advisability of a division of the Pæderini into two sections depending upon the formation of the ligula.

Although Dr. Sharp has, in the *Biologia Centrali-Americana*, correctly placed the genus near *Scopæus* since the above was originally written, I still deem it proper to publish the rectification in the same work in which the error was committed.

punctate; fifth segment two-thirds longer than the fourth. *Legs* rather short; posterior tarsi short, first and second joints equal in length, slightly longer than wide, much shorter than the fifth; tibiæ obliquely truncate and finely fimbriate at tip. Length 3.3 mm.

California; (Napa and Sonoma Cos. 4).

The specimens are all females, the sixth segment being broadly rounded behind. The present species is remarkable for its long parallel prothorax, which is scarcely at all produced in front of the apical angles. It may be distinguished from *punctatus* by its slightly larger size and much finer and denser pronotal punctuation.

The oblique apical truncation of the hind tibiæ appears to characterize a large number of genera; the truncation is slightly excavated and bordered exteriorly by an erect line of long, slender, closely-placed setæ.

The tabular statement of our Pæderini given in this Bulletin (Vol. II., p. 38), requires modification since the publication of the Central American genera by Dr. Sharp in the *Biologia Centrali-Americana*, and as the assumption upon which the positions of one or two genera are assigned has been found to be erroneous, the following table is offered as a substitute until the entire group can be revised. This scheme would be much more useful if it could have included all the American genera, but as in the present state of literature there would be considerable doubt regarding the position of several, I have thought best to restrict it for the present to the genera occurring north of Mexico.

I—*Ligula* not tricuspid, usually bilobed.

Prosternum membranous under and behind the coxæ.

PÆDERI.

A—Fourth tarsal joint normal, not bilobed.

Antennæ anteriorly geniculate, first joint greatly elongate.

Neck broad; abdomen carinate at base **Hesperobium.**

Neck narrow; abdomen not carinate **Ababactus.**

Antennæ posteriorly geniculate, basal joint moderate in length.

First joint of the posterior tarsi not longer than the second.

The sequence of genera in the above tabular statement is, it must be confessed, unnatural in approximating *Stilicus* and *Pæderus*, these being undoubtedly widely divergent forms. It merely serves to show, however, that it is impossible to present in a linear arrangement, groups composed of elements which are divergent from one or more central types, and which can only be represented graphically by the diagrams adopted in chemical science to exhibit the structure of a compound molecule, the various affinities being shown by connecting lines.

If a linear arrangement be pursued, based upon the modification of any special organ or part of the body, similar breaks must inevitably occur. Assuming, as above, that the structure of the prosternum is of more importance than that of the tarsi, the latter being in turn of greater moment than that of the labrum or mandibles, we should isolate *Pæderus* as a group intermediate between the *Lathrobii* and the *Sunii*, and it would not be consistent to separate them by the the latter group, although it may include forms which in a radial arrangement would be brought very near certain types of the *Lathrobii*. Such for instance are *Stilicus* and *Echiaster*, in distinguishing between which the prosternal character loses some of the importance which it is supposed to possess, unless we regard the similarity of habitus as a mere coincidence. The latter I have assumed in the case of *Stilicus* and *Scopæus*.

NOTES.

ABABACTUS Sharp. — This genus is represented in our fauna by *A. nactus* Horn. and *A. pallidiceps* Cas.

TRACHYSECTUS Cas. — Represented by *T. confluens* Say.

CALODERMA Cas. — Recent investigation shows this genus to be similar in prosternal structure to *Medon*, from which it is distinguished by several important characters. The labrum is short, small, conical, very feebly explanate near

the sides, triemarginate, the notches being similar in shape, deep, the middle about twice as large as the lateral; laterally the apex is broadly sinuate, thus giving four small, acute, prominent denticles. In *Medon*, as represented by *M. fuscus* Mann., the labrum is much larger, nearly flat, broadly explanate at the sides, not at all sinuate laterally at the apex, so that it is at most bidentate.

In comparing the European *Medon*, as for instance *brunneus* Er., with many of the American genera, there is one feature relating to the metasternum which appears to have been generally overlooked, and which is indicated on the upper surface by the length of the elytra. The metasternum in the European genus is remarkably short, strongly convex, and much shorter than the intermediate coxæ. This appears to be a rather important character in the present comparison, and distinguishes *Caloderma* at once, for in this genus the metasternum is unusually well developed, and is more than one-half longer than the coxæ, which in turn are relatively distinctly smaller than in *Medon*.

The species having a rugulose pronotum are the most highly developed forms of the genus, and should be considered typical, although much less numerous in species than the form with punctate pronotum.

OLIGOPTERUS Cas.—Allied to *Medon* in prosternal and metasternal structure. It differs from *Medon* in the structure of the labrum, which is here distinctly 4-dentate, and from the more typical forms of that genus in the very widely distant gular sutures, rapidly divergent toward base, in this respect being more closely allied to *Pseudomedon* Rey. It differs from *Caloderma* in its very short metasternum.

MEDON Steph.—This genus as represented in our fauna will consist for the present of the two groups of species previously placed by me in *Lithocharis*. There is another group of nondescript species, occurring in the Southern

States, which may also be considered as *Medon* until future investigation can be made with more ample material. These three groups will then probably give rise to four allied genera, or perhaps more properly, subgenera.

LITHOCHARIS Lacord.—Represented in our fauna by *ochracea* Grav., *alutacea* Cas., and *quadricollis* Cas. The last two differ from the first in sexual characters—although they have the characteristic comb-like sculpture at the apex of the fifth segment—and in the smaller, more acute and prominent labral tooth.

METAXYODONTA Cas.=**LITHOCHARIS** Lacord.

LIPAROCEPHALUS Mann.—No description of the anterior tarsi is given, and the position of the genus is assumed.

ADEROCHARIS Sharp.—Represented by *A. corticina* Grav., and possibly also by *tabacina* Cas.

ECHIASTER Er.—No species of this genus has yet occurred within the United States, and it is therefore omitted from the table.

SCIOCHARIS Arrib.—Although Dr. Sharp intimates that this genus may occur within our limits, I have not yet seen it. It may be easily recognized by the very robust first and second joints of the antennæ. The labrum is bidentate and the integuments are generally very finely and densely punctate.

APOCELLUS Erichs.

A. niger n. sp.—Moderately robust, convex; upper surface intense black throughout, except the elytral suture which is dark piceo-testaceous; metasternum, abdomen and head beneath black; prosternum and side-pieces paler, piceo-testaceous; antennæ same toward base, black toward tip; legs pale luteo-testaceous, femora shaded piceous in the outer half; pubescence extremely sparse; integuments highly polished. *Head* distinctly longer than wide; sides behind the eyes distinctly convergent and rather strongly arcuate; base truncate and very feebly incurvate in the middle; angles very broadly rounded, coarctate with the sides; eyes small, in the middle, rather prominent; on a transverse line slightly less than their own length behind them,

there are two small, widely distant, deeply impressed occipital foveæ; antennal tuberculations slightly convergent posteriorly; epistoma distinct, declivous, wider than long, very feebly arcuate at apex; labrum short, broad, rather strongly and evenly emarginate throughout its width; antennæ slightly longer than the head and prothorax together, rather strongly incrassate; second joint much shorter than the third, longer than the fourth, tenth very slightly wider than long. *Prothorax* widest at one-third its length from the apex, where it is slightly wider than long and as wide as the head across the eyes; sides thence very strongly convergent to the apex which is squarely truncate and about one-half as wide as the disk, and rather feebly though distinctly convergent, evenly and distinctly arcuate to the base; the latter broadly and extremely feebly arcuate, two-thirds as wide as the disk; angles very obtuse and rather broadly rounded; sides at the apical third rather broadly rounded; disk strongly convex, with a few very widely scattered setigerous punctures. *Elytra* at base slightly wider than the prothorax; sides rather strongly divergent, distinctly arcuate toward the apices; together transversely truncate behind; disk rather depressed, abruptly strongly declivous at the sides, slightly wider than long, nearly one-fourth longer than the pronotum; suture narrowly and strongly margined with an elevated line; surface having a few very small, widely scattered, setigerous punctures having a tendency to lineal arrangement. *Abdomen* at base very slightly narrower than the elytra; sides parallel and nearly straight; border very thin, erect and deep, nearly equal on the five basal segments; surface very finely and sparsely pubescent and punctate toward the sides, almost impunctate in the middle. *Legs* moderate in length; femora robust; third joint of the posterior tarsi less than twice as long as the first and second together. Length 2.8-3.3 mm.

Texas; (Galveston 5).

The description is taken from the male, the sexual characters of which are of the usual form in this section of the genus; the double, posteriorly excavated emargination of the sixth segment is scarcely more than one-third the width of the segment, and the arched laminae of the seventh nearly meet over the broadly rounded excavation; eighth segment broadly impressed. It is a very distinct species and belongs immediately after *crassicornis* in the list of the genus as published by me (Cont. II, p. 153). The order of the species has been changed in the recently published check-list of Mr. S. Henshaw, so that the least characteristic forms of the genus there head the list, while the species upon which Erichson founded the genus appear last. My only comment is a passing allusion; I cannot refrain, however, from

expressing the opinion that the reversal was unnecessary, and that the order proposed is far less scientific than that published in the revision above referred to.

Apocellus brevipennis Cas.—Five specimens of this species were recently taken, also at Galveston, Texas; it was originally described from a single specimen from Louisiana.

PHLEOPTERUS Mots.

P. flicornis n. sp.—Rather robust, depressed, black throughout; trochanters slightly paler, dark rufous; legs piceous-black; tibiæ much paler and rufous toward tip; tarsi rufous; palpi fuscous; antennæ black throughout; pubescence rather long, very dense, subrecumbent and conspicuous, fuscocinereous in color; legs densely pubescent; tibiæ abruptly nearly glabrous in the apical fifth or sixth; tarsi glabrous, joints finely spinulose at the apices; shining. *Head* as long as wide, depressed, transversely and rather strongly impressed between the antennæ, deeply and widely biimpressed between the eyes; surface finely and rather densely punctate; ocelli very minute, round, distant, on a line slightly in advance of the posterior margins of the eyes; the latter very prominent; fourth joint of the maxillary palpi slightly more than twice as long as the third, the latter not three times as long as wide; antennæ very long, slender and filiform, not in the least incrassate, two-thirds as long as the body; second joint much shorter than the third, joints three to ten subequal in length, much elongated, eleventh slightly longer, fusiform. *Prothorax* widest slightly before the middle; sides thence very feebly convergent, feebly and evenly arcuate to the obtuse and rather broadly rounded anterior angles and somewhat strongly convergent, rather strongly and evenly incurvate throughout to the basal angles, which are nearly right and not at all rounded; base broadly and extremely feebly arcuate throughout, three-fourths as wide as the disk and distinctly narrower than the apex; the latter transversely truncate, feebly excurvate toward the apical angles; disk scarcely one-third wider than long, transversely, rather strongly and perfectly evenly convex; having at the middle of each side, a very deep punctiform impression; flanks thence to the basal angles very abruptly and strongly declivous; surface very finely, evenly and densely punctate; punctures perforate. *Elytra* at base slightly wider than the pronotum; sides moderately divergent; humeral and apical angles very broadly rounded; together broadly arcuate behind with the inner angles abruptly and rather strongly rounded; disk nearly one-third longer than wide, slightly more than twice as long as the pronotum, broadly and feebly convex, rather coarsely, very evenly and densely punctate; punctures impressed, slightly more distant than those of the pronotum. *Abdomen* very short behind the elytra, much wider than long, subalutaceous, very minutely, evenly and rather closely punctate. *Legs* rather slender; first joint of the posterior

tarsi slightly longer than the next two together; anterior tarsi distinctly dilated. Under surface of the abdomen minutely, densely and evenly punctate. Length 5.0 mm.

California; (Placer Co. 1). Mr. Fuchs.

The mesosternum is minutely and strongly rugulose and alutaceous toward the middle, finely and imperfectly carinate posteriorly, more strongly so anteriorly, terminating near the anterior margin in a small, abrupt, acute tubercle. The abrupt loss of the dense pubescence at the tips of the tibiæ is very remarkable.

This species is rather smaller and much more densely punctate than *longipalpus*, and has a much less transverse prothorax.

AMPHICHROUM Kraatz.

A. flavicorne n. sp.—Moderately robust, depressed; pronotum and elytra glabrous; abdomen very sparsely pubescent laterally; male black, with the lateral edges of the pronotum and elytra testaceous; female having the entire disk of the pronotum rufo-testaceous and the elytra luteous, except the suture, which is piceous; antennæ pale flavate throughout; legs piceo-testaceous; integuments polished. *Head* scarcely longer than wide, depressed, densely, rather coarsely and, deeply punctate in the middle; having a small, punctiform impression at the base of each antenna; obliquely and very deeply bifoveolate between the eyes; antennæ moderate in length, less than one-half as long as the body, rather slender; basal joint three-fourths as long as the next two together, second two-thirds as long as the third and about as long as the tenth, joints three to ten decreasing perceptibly in length and increasing in thickness. *Prothorax* two-thirds wider than long, widest in the middle; sides strongly and nearly evenly rounded, slightly more strongly convergent toward the apex, which is broadly and very feebly emarginate and equal in width to the base and to the head; base truncate; apical and basal angles broadly rounded, the former slightly the more narrowly so; disk moderately and evenly convex, more strongly so at the sides, which are narrowly and abruptly explanate, extremely sparsely, rather finely and very unevenly punctate except along the sides and base, where the punctures are much denser. *Elytra* at base very slightly wider than the prothorax; sides very feebly divergent and nearly straight; together truncate behind; humeral and exterior apical angles broadly rounded; disk as long as wide, slightly less than twice as long as the prothorax, depressed, more convex at the sides, narrowly elevated along the suture except near the base, feebly, rather sparsely and unevenly punctate. *Abdomen* as wide and long as the elytra; sides strongly arcuate; surface shining, extremely finely and feebly punctate,

very minutely, feebly and transversely reticulatè. *Legs* moderate in length; anterior tarsi feebly dilated. Length 3.5-4.0 mm.

California; (San Francisco 2; Lake Co. 2.) Mr. Fuchs.

The pronotum has a very small impressed fovea in the middle at the base which is sometimes absent and sometimes replaced by a larger and more irregular impression which, however, is not transverse as in *floribundum*.

This species resembles *floribundum* Lec. in several characters, especially in the punctate head and coloration of the body, but differs remarkably in the antennæ, which are of a pale and pure flavate throughout in the former; the antennæ are piceous in *floribundum* except the three basal joints, which are paler.

In all the species of *Amphichroum* here described, there are visible on the first, or sometimes the second, exposed dorsal segment of the abdomen two small, approximate patches of a more or less transversely oval shape, on which the pubescence is excessively short and dense and usually of a pale cinereous or bright fulvous color; they are also to be seen in a similar position, but oblique in direction, on the abdomen of *Homalium algarum* Cas. These pubescent and very minutely rugulose areas, which are probably sensitive, are not sexual, and appear to characterize a large portion of the Homalini.

A. alutaceum n. sp.—Form rather slender, depressed; head and abdomen black; pronotum, elytra, palpi and antennæ toward tip rather pale castaneous; basal margin and sides of the pronotum very narrowly pale flavate; antennæ same toward base; elytral suture dark rufo-testaceous; legs dark brownish-testaceous; pronotum and elytra rather densely pubescent; head and abdomen very sparsely so; integuments shining. *Head* longer than wide; surface depressed, impunctate, coarsely granulose, shining, broadly and distinctly impressed between the antennæ, obliquely, very finely and feebly bistrate between the eyes; ocelli small, approximate, distinct; antennæ scarcely two-fifths as long as the body, slender, slightly incrassate; basal joint very slightly longer than the second; joints two to ten nearly equal in length, the latter one-half longer than wide, eleventh longer, obliquely pointed at tip, cylindrical at base. *Prothorax* widest in the middle, where it is scarcely one-fourth wider than long; sides nearly parallel, feebly arcuate

throughout; apex very slightly narrower than the base, broadly and evenly sinuate; angles rather narrowly rounded; base very feebly arcuate throughout, angles rather broadly rounded; disk broadly, very evenly and rather feebly convex, very narrowly and abruptly explanate at the sides anteriorly, slightly more broadly and less abruptly so posteriorly, extremely finely, evenly and rather closely punctate; punctures slightly asperate; intervals finely subgranulose, subalutaceous. *Elytra* at base very slightly wider than the pronotum; sides rather distinctly but very feebly divergent, very feebly arcuate; humeral angles narrowly, apical broadly, rounded; together truncate behind; disk depressed, broadly impressed in the middle; as long as wide, slightly less than one-half longer than the pronotum, rather coarsely, very evenly, closely and rather strongly punctate; punctures subasperate; intervals polished. *Abdomen* at base as wide as the elytra, at the apex of the third segment nearly one-fourth wider; sides strongly arcuate; border rather broad, feebly inclined; surface depressed; three visible basal segments transversely impressed at base; segments two to four finely, evenly and rather densely punctate; segments one, five and six impunctate; second visible segment with two small, transverse, approximate, minutely rugulose and apparently pubescent patches. *Legs* moderate in length, slender. Under surface piceous-black, with exception of the pronotal and elytral hypomera, which are flavate. Length 3.5 mm.

California; (Marin Co. 1).

This species resembles *veterator* in the general character of its sculpture and pubescence, but differs greatly in general form, and especially in its much less transverse prothorax with but slightly arcuate sides.

A. pilosellum n. sp.—Males slender; females rather robust, depressed; color rather pale reddish-testaceous, nearly similar in the two sexes; head posteriorly, prothorax anteriorly, and elytra broadly and very indefinitely toward the suture and apices, clouded with a slightly darker castaneous tint; abdomen intense black throughout; antennæ fuscous toward tip, basal joints pale testaceous; legs rufo-piceous; pronotum and elytra finely and sparsely pubescent, integuments shining. *Head* very slightly longer than wide, rather depressed, glabrous, finely reticulate or subalutaceous, impunctate, broadly and rather feebly impressed between the antennæ, feebly, finely and obliquely bistrate between the eyes; antennæ rather short, moderately incrassate, less than one-half as long as the body; basal joint but slightly longer than the third, second nearly as long as the first, as long as the fourth, and slightly longer than the tenth, joints four to eight equal in length, eight to ten decreasing, the latter but slightly longer than wide. *Prothorax* widest in the middle, one-half wider than long; sides strongly rounded in the middle, feebly convergent and nearly straight anteriorly and

posteriorly; basal angles broadly rounded; apical more narrowly so; disk evenly and moderately convex, rather broadly and gradually explanate and feebly reflexed at the sides, and especially near the basal angles, very obsoletely impressed along the middle and in front of the scutellum, finely reticulate or subalutaceous, very finely, feebly and rather sparsely and evenly punctate. *Elytra* at base very slightly narrower than the prothorax; sides very feebly divergent, feebly arcuate; disk depressed, very slightly longer than wide, two-thirds longer than the pronotum, rather strongly, coarsely and sparsely punctate; intervals polished; punctures tending to form coarse, transverse rugulae. *Abdomen* as wide as and distinctly longer than the elytra; sides rather feebly convergent posteriorly, on the first four segments feebly arcuate; border depressed, scarcely at all inclined; surface polished, nearly impunctate in the middle, excessively minutely and feebly punctulate toward the sides. *Legs* slender; anterior tarsi very feebly dilated; first joint of the posterior as long as the next three together. Length 2.5-3.6 mm.

California; (Lake Co. 7). Mr. Fuchs.

Described from the male, which is more slender than the female. The species belongs near *puberulum* Fauv., but differs in its longer elytra and much sparser elytral punctation.

A. veterator n. sp.—Moderately robust, depressed, dark piceous-brown; antennae toward base, narrow side and basal margins of the pronotum, and under surface of the head and prothorax, pale testaceous; abdomen black throughout; femora piceo-testaceous; tibiae and tarsi darker, piceous; antennae infusate toward tip; palpi fuscous; head and pronotum subalutaceous; pronotum and elytra finely and densely pubescent, the latter shining. *Head* rather small, scarcely as wide as long, transversely and feebly impressed between the antennae, very finely, feebly and obliquely bistriate between the eyes; surface rather coarsely and strongly reticulate or subgranulate, impunctate; ocelli very small, round and distinct; antennae about one-half as long as the body, moderately slender, all the joints distinctly elongate, joints four to ten almost equal in length, the latter nearly one-half longer than wide, second distinctly shorter than the third, the latter subequal in length to the first. *Prothorax* anteriorly as wide as the head, widest in the middle; sides very slightly more strongly convergent anteriorly than posteriorly, evenly and rather feebly arcuate throughout; apex distinctly narrower than the base, broadly and feebly sinuate; the latter truncate in the middle, broadly arcuate toward the basal angles which are broadly rounded; apical broadly rounded, slightly less so than the basal; disk nearly one-half wider than long, evenly and very moderately convex, rather abruptly and very narrowly explanate at the sides anteriorly, broadly and very gradually explanate and feebly reflexed toward the basal angles, very obsoletely and vaguely impressed before the scutellum, finely and very feebly subgranulate, very minutely, feebly, subas-

perately, evenly and rather closely punctate. *Elytra* at base scarcely as wide as the pronotum; sides very feebly divergent, very feebly arcuate; outer apical angles rather narrowly rounded; together truncate behind; disk depressed, quadrate, two-thirds longer than the pronotum, rather coarsely, very densely, evenly, strongly and subasperately punctate. *Abdomen* as wide as and slightly longer than the elytra; sides convergent and evenly arcuate to the apex; border rather strong, very slightly inclined; surface polished almost impunctate in the middle, finely rather strongly and densely, subasperately punctate laterally. *Legs* rather slender. Under surface finely, evenly and sparsely pubescent; tibiæ finely pubescent, sparsely and minutely spinulose. Length 3.0 mm.

California; (Lake Co. 2). Mr. Fuchs.

This species also belongs near *puberulum*, from which it is easily distinguished by its much longer elytra. It bears a very deceptive resemblance to the following species, so that the identification and separation of the two will require some care.

A. crassicorne n. sp.—Moderately robust, depressed, piceous-black; head dark rufous; basal third of the pronotum and the lateral and anterior margins very narrowly pale testaceous; just behind the elytral humeri there is on each side a small, very indefinite paler spot; under surface of the abdomen and metasternum piceous-black; prosternum, head, legs throughout, palpi and antennæ toward base, pale brownish-flavate; antennæ toward tip piceous; head and pronotum subalutaceous; elytra polished; head glabrous, remainder finely and moderately densely pubescent. *Head* rather small, finely reticulate and subrugulose, transversely impressed between the antennæ, finely, deeply and obliquely bistrate between the eyes; ocelli large, flat, not distinctly limited, round; antennæ rather strongly incrassate, scarcely one-half as long as the body; joints four to ten decreasing very slightly in length, the latter slightly longer than wide. *Prothorax* scarcely more than one-third wider than long; anterior angles much more narrowly rounded than the posterior; form and sculpture nearly as in *veterator*; punctures slightly coarser and more distinct. *Elytra* at base fully as wide as the pronotum; outer apical angles rather broadly rounded; together quadrate, two-thirds longer than the pronotum, nearly as in *veterator*, except that the punctures are obliterated along the apex. *Abdomen* in form nearly as in *veterator*, punctate throughout; punctures fine, asperate, evenly and rather closely placed, and more distinct toward the sides. *Legs* slender. Length 3.3 mm.

California; (Siskiyou Co. 1). Mr. Behrens.

The fourth joint of the maxillary palpi is nearly circular in cross-sections and convex throughout, while in all the

other species which I have seen the fourth joint is more or less deeply excavate interiorly, nearly throughout its length and is, in addition, strongly bent in *flavicornæ*.

Although the present species bears a remarkably strong resemblance to *veterator* in its sculpture, it may be distinguished by its sparser pubescence, slightly more elongate prothorax, much deeper interocular striæ, but especially by the form of the ocelli, which in this species are fully twice as wide as in *veterator*, and more indefinite in outline; no dependence is placed on color as this is known to vary greatly; it is, however, strikingly different in the representatives of the two species.

A. floribundum Lec.—One specimen which I have referred to this species was collected by Mr. Fuchs in Lake Co. The antennæ are relatively longer and more filiform than in any here described, and are piceous except the first three joints and the bases of some of the succeeding ones.

The relationship of the species here described with those given by Mr. Fauvel (Not. Ent. vii, p. 72), is best shown by the following table, which is merely a continuation of the one given by that author, with a few slight alterations.

Elytra shining, with more or less distinct punctuation.

Pronotum and elytra glabrous.

Pronotum polished.

Elytra with very sparse, nearly obsolete punctuation.....*sparsum*.

Elytra coarsely and generally distinctly punctate.

Head distinctly and densely punctate; elytra black or maculate with testaceous, with the suture blackish or brownish.

Antennæ piceous, three basal joints paler.....*floribundum*.

Antennæ clear flavate throughout....*flavicornæ*.

Head impunctate.

Head shining, with two oblique striæ between the eyes..*scutatum*.

Head dull, granulose, strongly bifoveolate between the eyes.

lævicolle.

Head and pronotum alutaceous, size large.....*testaceum*.

Pronotum and elytra visibly pubescent or pilose.

Size large; pronotum and elytra very strongly and densely punctate, the former distinctly impressed along the middle.....*maculatum*.

Size rather small; pronotum very finely, elytra generally densely and more coarsely punctate; pronotum not distinctly impressed in the middle.

Elytra less than one-half longer than the pronotum.

Sides of the prothorax very strongly arcuate..... **puberulum.**

Sides of the prothorax very feebly arcuate..... **alutaceum.**

Elytra more than one-half longer than the pronotum.

Elytra coarsely and not densely punctate..... **pilosellum.**

Elytra very finely and densely punctate.

Interocular striæ very fine; ocelli minute and distinct. . **veterator.**

Interocular striæ deep; ocelli large, not very well defined.

crassicorne.

Elytra dull, very finely and transversely rugulose..... **opaculum.**

The genus is probably a very extensive one in California, which region also appears to be very rich in the entire group Homalini.

PELECOMALIUM n. gen. (Homalini).

Body depressed, winged; elytra longer than the prothorax; antennæ filiform, very feebly incrassate, front not produced. Maxillary palpi with the first joint small; second elongate, slender; third and fourth flattened, the former slightly longer than wide, obconical; fourth about one-half longer than the third, strongly securiform. Labial palpi small; first joint very small; second much wider and longer, slightly longer than wide, sides parallel, tip transversely truncate; third slender, oblique, truncate at tip, sides nearly parallel, much narrower and slightly longer than the second; second and third joints flattened. Posterior tarsi very long and slender, shorter than the tibiæ; first and second joints elongate, the former much the longer; fourth deeply bilobed. Posterior tibiæ slender, terminated by two slender, unequal spurs and several small spines. Tibiæ rather finely and sparsely pubescent, having a very few small lateral spines.

It will be seen from the above diagnosis that this genus bears a great resemblance to *Amphichroum*, and in fact if the palpi were removed, it would be almost impossible to distinguish *P. modestum* from *A. veterator*, so great is the resemblance in every feature of the body, antennæ and legs.

The two species described below may be recognized by the following characters:—

Size large; elytra coarsely and rather sparsely punctate..... **binotatum**

Size small; elytra finely and very densely punctate..... **modestum**

P. binotatum n. sp.—Rather robust; body and legs throughout dark rufo-testaceous; head, abdomen, and under surface except the prosternum, black; elytra and hypomera rather paler and more luteous; each elytron having a median apical spot of piceous-black, clearly limited and very distinct; antennæ piceous-black, three basal joints abruptly pale testaceous; palpi and mandibles same; head and prothorax alutaceous, remainder shining; pronotum almost glabrous; elytra and abdomen finely and very sparsely pubescent, the latter toward the sides only. *Head* slightly longer than wide, depressed, nearly flat, transversely and feebly impressed between the antennæ, finely, not deeply and obliquely bistrate between the eyes; surface finely and strongly granulose and subrugulose, impunctate; antennæ scarcely two-fifths as long as the body, very slightly flattened and incrassate toward tip; joints one, and three to seven nearly equal in length and one-half longer than the second; joints seven to ten rather rapidly decreasing in length, the latter one-fourth longer than wide. *Prothorax* anteriorly as wide as the head, widest in the middle, about one-fourth wider than long; sides parallel, evenly and moderately arcuate throughout; apical angles rather narrowly rounded, basal very broadly so; apex and base equal in width, the former broadly and distinctly sinuate throughout, the latter very feebly and broadly sinuate in the middle; disk very broadly and very moderately convex, narrowly and obsoletely impressed along the middle, broadly and very feebly so near the scutellum, narrowly and abruptly explanate anteriorly at the sides, more broadly and gradually so thence to the base, finely and strongly reticulate, excessively minutely, sparsely and feebly punctate except near the sides and especially along the base, where the punctures are closer, larger and deeper. *Elytra* at base as wide as the pronotum; sides feebly though distinctly divergent; apical angles moderately broadly rounded; together transversely truncate behind; disk depressed, about as long as wide, two-thirds longer than the pronotum, finely margined along the suture, rather coarsely, strongly, evenly and rather sparsely punctate. *Abdomen* about as wide as, and slightly shorter than, the elytra; sides convergent and strongly and evenly arcuate to the vertex; border rather narrow and feebly inclined, finely and densely punctate; surface broadly polished and impunctate in the middle. *Legs* slender. Length 4.7 mm.

California; (Marin Co. 1). Mr. Harford.

In the type of this very interesting species the middle tibiæ are broadly and strongly emarginate interiorly at one-third the length from the apex, the others being perfectly entire.

P. modestum n. sp.—Moderately slender; head and abdomen black; pronotum, except the lateral limbs, narrowly, and a short basal margin, antennæ toward tip, and elytra, dark blackish-castaneous, the latter having on each side near the humeri a small, very indefinite spot of slightly paler tint; an-

tennæ toward base, palpi, pronotal and elytral hypomera and anterior legs pale testaceous; middle and posterior legs infusate throughout; remainder of the under surface blackish; head and pronotum very feebly alutaceous, remainder shining; head glabrous, pronotum and elytra finely and densely pubescent. *Head* very slightly longer than wide, broadly and feebly impressed between the antennæ, finely, very feebly and obliquely bistriate between the eyes; surface finely and rather feebly reticulate, impunctate; ocelli small, round, distinct; antennæ long and slender, more than one-half as long as the body; joints one and three subequal in length, distinctly longer than the succeeding ones; joints two and four to seven nearly equal in length, tenth fully one-third longer than wide, cylindro-obconical. *Prothorax* anteriorly slightly narrower than the head, widest near the middle, where the sides are nearly evenly and moderately arcuate, slightly straighter toward the apex and base and very slightly more strongly convergent in the former direction; apex slightly narrower than the base, broadly and very feebly incurvate; the latter broadly and very feebly arcuate; apical and basal angles moderately broadly rounded, the former the more strongly; disk nearly one-half wider than long, moderately and evenly convex, not at all impressed, abruptly and narrowly explanate at the sides anteriorly, more broadly and gradually so toward the basal angles, where it is also slightly reflexed, extremely finely, evenly, feebly, subasperately and rather densely punctate, finely and distinctly reticulate. *Elytra* at base scarcely as wide as the pronotum; sides very feebly divergent and arcuate; apical angles moderately broadly rounded; disk depressed, quadrate, nearly three-fourths longer than the pronotum, very densely, rather finely, deeply and evenly punctate. *Abdomen* produced slightly at the apex, the last segment being rather long and slender; as wide at base as the elytra, polished, feebly and finely punctate near the sides, impunctate in the middle. *Legs* slender. Length 2.7 mm.

California; (Lake Co. 2). Mr. Fuchs.

Readily distinguishable from the preceding by its much smaller size, more transverse prothorax, finer and much denser elytral punctuation and coloration. Its approximation in appearance to *Amphichroum veterator* has been before alluded to, and is most remarkable; it is a smaller and slightly more slender species than the latter, but in pronotal and elytral form and punctuation it is almost precisely similar.

LATHRIMÆUM Erichs.

L. humerale n. sp.—Rather robust, moderately convex; head blackish, epistoma dark rufous; pronotum dark rufous, obscurely piceous in the middle; elytra pale luteous, dark rufous at the apices, immediately before

which there is a large rather indefinite area of dark piceous obliquely limited just behind the middle; on each elytron there is also, just before the middle, a small obscure spot of dark castaneous, not attaining the suture, and parallel to the oblique edge of the posterior spot; abdomen dark rufous; entire under surface and legs bright rufo-testaceous; antennæ piceous, apical joint paler, first three joints very dark rufo-fuscous, nearly glabrous, remainder finely and densely pubescent; integuments nearly glabrous; highly polished. *Head* slightly wider than long, convex along the middle, broadly impressed along the sides, obliquely and very feebly bisulcate between the eyes, finely and not very densely punctate; sides behind the eyes short, rectangular, ocelli rather large, very prominent; eyes moderately prominent; antennæ distinctly shorter than the head and prothorax together, feebly incrassate; third joint slender, distinctly longer than the second or fourth; the latter subequal, distinctly longer than the fifth, which is nearly one-half longer than wide; tenth slightly wider than long. *Prothorax* widest slightly behind the middle, where it is three-fourths wider than long; sides thence rather strongly convergent, strongly and evenly arcuate to the very broadly rounded apical angles, and slightly less strongly convergent and straight to the basal angles, which are obtuse and not rounded; edges finely serrulate; base broadly and very feebly arcuate, four-fifths as wide as the disk and wider than the apex; the latter truncate in the middle between the broadly rounded and slightly advanced lateral apices; disk rather strongly convex in the middle, where there is a rather deep longitudinal sulcation, limited laterally by two narrow well-defined ridges which terminate at one-third the length from the base; on each side, exterior to these, there are two rather strong, irregular elevations, thence to the lateral edges the surface is broadly explanate and feebly reflexed, broadly and very feebly impressed at the middle of each side; surface very coarsely, deeply and irregularly punctate; punctures sparser toward the sides. *Elytra* one-third wider than the pronotum, at base equal to it in width; sides nearly parallel and somewhat strongly arcuate; together broadly subtruncate behind; exterior angles broadly rounded; disk strongly convex, slightly less strongly declivous behind than on the sides, nearly one-third longer than wide, two and one-half times as long as the pronotum, coarsely, deeply punctate; punctures closely placed in rather well-defined striæ; intervals rather feebly convex, the third and seventh more strongly so; the latter near the humeri very strongly so. *Abdomen* very short and narrow behind the elytra, having two almost impunctate segments exposed. *Legs* long and very slender; posterior tarsi short, first two joints slightly elongate, the first slightly the longer; fifth much shorter than the first four together. Length 4.3 mm.

California; (Humboldt Co. 1).

The under surface, except the pronotal hypomera, and including the elytral hypomera, is very coarsely and deeply punctate; the abdomen finely subalutaceous and almost

impunctate. The femora are very sparsely pubescent, the hairs being very short, stout and recumbent; the tibiæ finely and densely spinulose. The mesosternum is finely carinate in the middle anteriorly. The maxillary palpi are very slender and filiform, the third joint being twice as long as wide, the fourth being very slender, pointed and more than twice as long as the third.

This species differs from *pictum* Fauv. in elytral structure, that species having all the elytral intervals equally and very feebly convex, and from *subcostatum* Mäkl. in the shape of the prothorax.

OROBANUS Lec.

O. rufipes n. sp.—Rather slender, cuneate; black throughout except the eleventh joint of the antennæ which is testaceous, and the legs which are rufous throughout; integuments shining; pubescence rather long, very fine, dense, recumbent, dark grayish-brown in color. *Head* moderate; eyes at nearly their own length from the base, moderately prominent, rather finely granulate; sides behind them feebly convergent and strongly arcuate, prominent; front feebly convex, very finely and extremely feebly punctate; having on a line slightly in advance of the middle of the eyes two deeply impressed, narrow, oblique and very short canaliculate punctures; ocelli minute, circular; antennæ moderate, slender, filiform, slightly less than one-half as long as the body; joints two to six subequal in length, the former slightly more robust and very slightly shorter; joints six to ten decreasing in length, the former nearly three times as long as wide, the latter distinctly thicker and three-fourths longer than wide, eleventh slender, shorter than the two preceding together, finely acuminate, compressed near the tip. *Prothorax* cordate, widest at one-third its length from the apex, where it is distinctly wider than the head and very slightly wider than long; sides very moderately convergent posteriorly, deeply and evenly incurvate throughout, strongly arcuate anteriorly; basal angles slightly obtuse, very slightly rounded; base broadly, evenly and very feebly arcuate, about three-fourths as wide as the disk and very slightly wider than the apex; the latter broadly, evenly and just visibly emarginate; apical angles almost obsolete; disk strongly and nearly evenly convex, having near the base a transverse row of small feeble erosions, and at each side, just before the middle, a rather strong impression which is continued posteriorly, gradually becoming more feeble and disappearing before reaching the basal angles; very finely, feebly, evenly and somewhat densely punctate. *Elytra* at base slightly wider than the prothorax, widest at the apex where together they are slightly less than twice as wide as the prothorax; sides nearly straight; each elytron broadly rounded behind; hu-

meri broadly rounded; disk depressed, with a feebly impressed line on each parallel and near the suture, minutely, evenly, very feebly and not very densely punctate, slightly more than twice as long as the prothorax, one-third longer than wide. *Abdomen* at base slightly narrower than the elytra; sides convergent to the apex, strongly and evenly arcuate; extremely minutely, densely and asperately punctate. *Legs* slender; first joint of the posterior tarsi distinctly longer than the next two together, much longer than the fifth. Length 3.0–3.7 mm.

California; (Hoopa Val., Humboldt Co. 7).

The type is a male, the sixth segment being broadly and feebly emarginate at tip; in the female the prothorax is much more distinctly wider than long and less strongly cordate; the antennæ are slightly shorter and do not attain the middle of the elytra; in size the female is smaller than the male.

There is scarcely a trace of a median sulcation on the pronotum, the sides of which are more deeply sinuate toward the basal angles than in either *densus* or the Vancouver representative of *simulator*. The species is chiefly remarkable because of its slender form, sparse punctuation and rufous legs. It was found in wet moss in the interior of a flume for conveying spring-water.

O. densus n. sp.—Rather robust, depressed; body entirely black above and beneath, oral organs rufo-testaceous; legs fuscous throughout; antennæ entirely piceous-black; pubescence cinereous, rather short, recumbent, extremely dense; integuments shining. *Head* moderate, slightly longer than wide; sides behind the eyes strongly convergent to the neck and strongly arcuate; eyes rather prominent, large, coarsely granulated, very densely setose; front depressed, feebly biimpressed between the eyes, finely and densely punctate, more sparsely so along the middle; antennæ filiform, fully one-half as long as the body; basal joint subcylindrical, three times as long as wide, second two-thirds as long as the third, the latter slightly shorter than the first, joints three to six equal, slender, six to ten gradually diminishing in length, the latter more than twice as long as wide, eleventh fusiform, slightly oblique at tip, one-half longer than the tenth. *Prothorax* widest at the anterior third, where it is distinctly wider than long and slightly wider than the head; sides strongly arcuate, strongly convergent and distinctly and evenly sinuate toward the base; apex transversely truncate, about equal in width to the base which is broadly, evenly and very feebly arcuate; basal angles slightly obtuse, very narrowly rounded; disk transversely, evenly and moderately convex; impress-

ed in the middle near the lateral edges, the impression becoming extinct toward the basal angles, finely, evenly and very densely punctate. *Elytra* at base two-fifths wider than the prothorax; sides distinctly divergent, nearly straight, slightly obliquely truncate at apex; exterior angles broadly, inner more narrowly, rounded; humeri broadly rounded; disk feebly convex, broadly and feebly impressed on the suture toward base, nearly one-third longer than wide, two and one-half times as long as the prothorax, very finely, evenly and extremely densely punctate. Three segments of abdomen exposed together wider than long, as wide as the base of the elytra; margin distinct, inclined; surface feebly convex, finely, very feebly and very densely punctate. Under surface and legs finely and densely pubescent, less densely so toward the tip of the abdomen. Length 3.4-3.9 mm.

California; (San Diego 3). Mr. W. G. W. Harford.

Distinguishable immediately from the preceding by its more depressed and broader form, more parallel elytra, nearly three times as dense punctuation, darker legs, etc. It differs from *simulator* in its much denser punctuation and more depressed form.

The three species may be distinguished as follows, the characters of *simulator* being taken from a specimen from Vancouver Island, kindly loaned me by the Museum of Comparative Zoölogy at Cambridge:—

Legs dark fuscous.

Surface polished; strongly convex.....**simulator.**

Surface under low power dull; very depressed.....**densus.**

Legs clear rufous; punctuation more sparse; form more slender.....**rufipes.**

Since it is now known that there are several distinct species of this genus, the absolute identity of the Vancouver specimens taken by Crotch with *simulator* Lec., which was described from the regions east of the Rocky Mountains, may reasonably be questioned; a careful comparison of the two is therefore very desirable. By careful comparison of the above Vancouver type with the description given by Dr. Le Conte and M. Fauvel, I am inclined to believe that the former is a fourth species, hitherto undescribed. M. Fauvel mentions the prothorax as being longer than wide; if this is actually the case, it is very distinct from any of the

specimens before me, all of which have it distinctly wider than long.

ACTIDIUM Matth.

A. rotundicolle n. sp.—Rather robust, strongly convex, piceous-black; legs and palpi pale flavo-testaceous; antennæ pale testaceous at base, becoming piceous-black at apex; pubescence fine, very short, not at all dense; integuments shining, subalutaceous. *Head* much wider than long, rather convex, very minutely and sparsely punctate; eyes moderate, rather prominent, coarsely granulate; antennæ as long as the head and prothorax together; funicle slender; club robust; joints increasing in length and thickness. *Prothorax* slightly wider than the head, about equal in length, two-thirds wider than long; sides parallel and strongly, evenly arcuate; base broadly arcuate, distinctly sinuate laterally; basal angles obsolete; apex broadly truncate; disk broadly, evenly convex, very minutely reticulate or subgranulose, minutely, evenly and sparsely punctate. Scutellum small, equilatero-triangular, coarsely asperate. *Elytra* at base as wide as the prothorax; sides parallel for two-thirds the length from the base, rather strongly, evenly arcuate, thence feebly convergent, very feebly arcuate to the apex which, conjointly, is rather abruptly truncate; exterior angles broadly rounded, inner angles narrowly rounded; disk widest at nearly two-fifths its length from the base, nearly one-half longer than wide, one-half longer than the head and pronotum together, strongly cylindrically convex, minutely, densely reticulate or subgranulose, shining, very minutely, evenly, rather sparsely, subasperately punctate; punctures without definite arrangement. *Legs* rather long, somewhat slender; posterior tibiæ very slender toward base; rapidly dilated, widest at the apical third, compressed; tarsi short, very slender. Length 0.4 mm.

Texas; (Galveston 2).

This species differs from those previously described from California in the sculpture which is much more feeble, and in the form of the prothorax. It is as robust as *robustum* and does not appear to possess many characters in common with the three species described by Mr. Matthews.

PTILIUM Erichs.

P. sulcatum n. sp.—Rather slender and convex; sides nearly parallel; color pale brownish-testaceous, antennæ and legs slightly paler, more flavate; integuments coarsely sculptured, shining; pubescence fine, subrecumbent, not very dense. *Head* moderate in size, much wider than long, triangular; surface moderately convex, rather coarsely, irregularly and feebly tubercu-

late; eyes small, at the base, convex, prominent, coarsely granulate; antennæ rather long, distinctly longer than the head and prothorax together; two basal joints robust; funicle very slender; club strong, joints increasing in length and thickness. *Prothorax* widest at two-fifths its length from the apex, where it is distinctly wider than the head, one-half wider than long; sides strongly arcuate anteriorly, strongly convergent and very feebly sinuate toward base; the latter broadly, extremely feebly arcuate throughout, very slightly narrower than the apex, nearly three-fourths as wide as the disk; apex transversely truncate throughout; basal angles obtuse, scarcely perceptibly rounded; disk transversely, moderately convex, densely, feebly, irregularly tuberculate or granulose, the tubercles nearly confluent and differing greatly in size; in the center there is a small, strongly marked canalication two-fifths as long as the disk, and, at each basal angle, a small impressed puncture. *Elytra* at base as wide as the prothorax; sides parallel, distinctly and nearly evenly arcuate; together abruptly, very broadly rounded behind; apex broadly truncate; disk widest in the middle, where it is distinctly wider than the prothorax, nearly one-half longer than the head and prothorax together, rather depressed in the middle, rather abruptly, strongly convex at the sides, finely, evenly, not very densely, subasperately punctate; asperities not definitely arranged. Scutellum moderate, asperate, triangular, slightly wider than long. Under surface pale brownish-testaceous, except the abdomen toward base, which is dark, blackish-piceous. *Legs* rather slender, short; tarsi rather short, very slender. Length 0.35 mm.

Texas; (Austin 1).

This species can be readily recognized by its very minute size, there being but one smaller species of Coleoptera known; it is also distinguished by the peculiar form and structure of the prothorax. The metasternum appears to extend to the elytra at the sides.

P. Hornianum Matth., which is of about the same size as the present species, differs from it in color, shape and sculpture.

SMICRUS Matth.

S. americanus n. sp.—Rather elongate; sides parallel; body depressed, black; legs and antennæ pale, dusky yellow; pubescence rather long, recumbent, not very dense; integuments shining. *Head* large, triangular, slightly wider than long; eyes large, strongly convex, prominent, coarsely setose; surface feebly convex, smooth, obsoletely and finely reticulate; labrum prominent, acutely rounded; second joint of antennæ distinctly shorter than the first, both rather slender and elongate. *Prothorax* as long as the head, very slightly wider, three-fourths wider than long, widest in the middle; sides

parallel, evenly and very feebly areuate throughout, not at all constricted at base; apex broadly, very feebly and evenly emarginate throughout its width; angles slightly acute, very narrowly rounded; base transversely truncate and straight throughout its width; angles nearly right, not rounded; disk broadly, feebly convex, more strongly so near the sides, not very densely covered with rather fine, flat, somewhat indefinite tubercles. Scutellum large, triangular, feebly, rather densely asperate. *Elytra* equal in width to the prothorax; sides parallel, nearly straight, abruptly transversely truncate behind; outer angles narrowly rounded; disk scarcely one-fifth longer than wide, very slightly longer than the head and prothorax together, depressed in the middle, rather convex at the sides, finely, feebly, not very densely asperate; asperities not definitely arranged. *Abdomen* with four fully exposed segments, the fifth, the basal, also being almost completely exposed; together as long as wide; outline parabolic; surface rather convex, rather finely, not densely, very feebly asperate or subgranulose, margined laterally with a flat border, becoming attenuated posteriorly; last segment as long as the three preceding together, rounded at apex. *Legs* rather short and robust. Length 0.9 mm.

Texas; (Austin 1).

The entire abdomen, extending under the elytra, is composed of eight segments; the under surface is polished and very feebly transversely asperate along the apex of each segment, and the apical two-thirds of the terminal; the latter at apex has a narrow, porrected, pale membranous border. The antennæ in the type are missing with exception of the two basal joints.

The apex of the abdomen, more especially beneath, and the sides of the elytra toward the base, are slightly pale. The abdominal border beyond the elytra is not appreciably elevated, and its surface is almost continuous in convexity with that of the upper surface; under the elytra and toward the base of the abdomen it becomes thinner, deep and erect.

This species differs greatly from *filiicornis* Fairm. in the structure of the pronotum, which is not at all constricted at base.

DITAPHRUS n. gen. (Byrrhidae.)

Body oval, pubescent. Head deflexed, retractile; eyes large, rather coarsely granulated, nearly hidden in repose, front excavated at the sides near the

eyes for the reception of the antennæ when in repose; epistoma very small, deflexed, divided by a fine distinct, straight suture; labrum small, transverse, vertical, detached from and covered by the epistoma; antennæ inserted under the sides of the front, immediately before the eyes, 11-jointed, base thick, gradually diminishing in thickness to the sixth joint, seven to nine very small, tenth wider, small, transverse, eleventh widest, longer than wide, ovoidal, maxillary palpi small, last joint slightly longer than wide, ovoidal, pointed, slightly compressed. Prosternum well developed, transversely truncate anteriorly, widely separating the anterior coxæ; process transversely truncate at apex, on the same level and in contact with the anterior edge of the mesosternum; the latter extremely short, strongly transverse, very broadly and feebly emarginate anteriorly; metasternum large, long; episternum narrow, elongate, obliquely truncate anteriorly, widest and angulate anteriorly near the apex; metasternum slightly excavated at the side anteriorly for the reception of the tips of the intermediate femora, the excavation extending very deeply and obliquely into the base of the elytra hypomera. Anterior coxæ very small, transverse, attenuate laterally, open behind, widely separated; trochanters large; middle coxæ not at all prominent, transversely oval, very widely separated; trochanters large; posterior coxæ strongly transverse, attaining the metasternal episterna, short, distinctly separated. Ventral segments five; three basal not distinctly connate; first four uniformly and gradually decreasing in length; fifth as long as the two preceding together; first segment deeply and transversely excavated at base for the reception of the posterior femora. Prothorax short, broad; sides with an acute edge; inflexed sides divided from the prosternum by a very distinct suture; prosternum laterally and inflexed sides deeply and transversely excavated for reception of the anterior femora; pronotum excavated laterally at apex for reception of antennal club. Scutellum small, triangular. Elytra convex, covering the entire abdomen; hypomera distinct, extending only for two-fifths the length from the base, devoid of hypopleuræ. Legs short, rather slender; femora not very robust, excavated along the lower edge for reception of the tibiæ; the latter simple, rather slender, not grooved, having a line of short, very fine, densely placed cilia along the outer edge; tarsi free, rather short, five-jointed joints simple; first of the anterior as long as the next two together; two to four very small; fifth as long as the three preceding together; claws divergent, small, simple, slender.

This genus is very remarkable in antennal structure, in its excavated pronotum and many other characters. The single representative almost exactly resembles a minute *Scymnus* in external form.

The median portions of the three sterna form a continuous surface from the head to the posterior coxæ, the meso-

sternum being not at all depressed or impressed, and divided from the metasternum by a very feeble straight suture.

Ditaphrus is related to *Bothriophorus* Muls., but is very distinct in antennal structure and in the form of the prosternum, this not being broadly emarginate at apex, nor "postérieurement rétréci en point," as in the latter. From *Physemus* Lee. it is apparently distinguished by its antennal structure.

D. scymnoides n. sp.—Form elliptical, distinctly longer than wide, convex, black; under surface, legs and antennæ fuscous; integuments alutaceous; pubescence fine, pale, short, subrecumbent, rather dense. *Head* rather small, wider than long; surface broadly, evenly convex, finely, deeply and densely punctate; punctures coalescent and scabrous at base; antennæ as long as the width of head; occiput margined laterally along the eyes with a narrow impressed channel for the reception of the antennæ which joins the deep apical excavation of the pronotum. *Prothorax* about three times as wide as long; sides convergent anteriorly, feebly arcuate; base broadly arcuate, abruptly more strongly so in the middle; apex broadly emarginate; surface broadly convex, very minutely, deeply, evenly, not very densely punctate; punctures separated by three or four times their own diameter. *Scutellum* slightly longer than wide. *Elytra*, viewed vertically, nearly three times as long as the head and prothorax together, widest at one third the length from the base; sides strongly arcuate, coarctate with those of the pronotum, evenly rounded to the apex which, conjointly, is rather narrowly rounded; surface strongly convex, rather finely, evenly, deeply and moderately densely punctate; punctures decidedly larger than those of the pronotum, distant by two to three times their own diameters. *Legs* short; tarsi slightly reflexed. Under surface alutaceous and minutely punctate; abdomen finely, rather densely pubescent. Length 0.8-1.0 mm.

Texas; (Austin 11; El Paso 1).

Rather abundant amongst decaying vegetable matter on the soft mud left by the receding water of the Colorado River. The antenna is figured on the plate and is seen to be of very singular structure. The club in *Physemus*, the only genus with which this can be confounded, is described as being three-jointed and almost solid. It is also highly probable that *Physemus* is distinct from *Bothriophorus*. These three genera should be separated as a group distinct from *Limnichus*.

In the Californian species of *Limnichus*, the prosternum is very long, prolonged between the coxæ, the apex of the process being strongly rounded and entering a deep emargination of the mesosternum; along the middle the surface is deeply grooved. The first two ventral segments are subequal in length, the first three connate. The first four joints of the anterior tarsi are short, equal and together but slightly longer than the fifth. The antennæ are eleven-jointed; club loose, three-jointed, joints gradually increasing in thickness; first joint, as in *Ditaphrus*, deeply seated in the lateral excavation of the front.

I have carefully verified this observation regarding the number of antennal joints in three or four species of *Limnichus* and several specimens of *Ditaphrus*, and can state with great certainty that the antennæ are not 10-jointed, as represented (*Class. Col. N. A.*, LeConte and Horn pp. 159, 161). Du Val had already corrected this error in his classic work on the genera of European Coleoptera (*Vol. II*, p. 267 foot-note).

ELEATES n. gen. (*Tenebrionidæ*).

Body oblong, strongly convex. Epistoma and sides of the front coarctate at apex, very broadly and evenly arcuate; front distinctly dilated before the eyes; the latter small, completely divided by the lateral edges, more than their own length in front of the prothorax; epistoma transverse, enclosed by the front; suture distinct and impressed in the middle. Maxillary palpi scarcely at all dilated; third joint distinctly longer than wide, slightly shorter than the second; fourth twice as long as wide, distinctly longer than the second, subcylindrical, slightly bent and compressed, obliquely truncate at tip. Labial palpi rather small; third joint most robust, longer than the first two together, ovoidal, narrowly and obliquely truncate at tip. Mentum moderate, wider than long, its plane below the general surface of the head; ligula large, strongly and broadly bilobed; lobes almost entirely exposed. Maxillæ exposed at the sides. Antennæ gradually and very strongly incrassate, very strongly compressed; second joint globular, one-half as long as the third; the latter longer than the succeeding joints; four to seven, densely spongiose at the exterior apical angles; the remainder more extensively so and at both apical angles; joints more strongly pointed outwardly than on the inside; five to ten transverse, the latter very strongly so; eleventh large, as wide as the tenth, as long as wide, obliquely conoidal; antennal grooves deep near the eyes, obliterated in the middle. Anterior coxæ transversely oval,

strongly convex, slightly separated. Middle coxæ with small trochanters; posterior transverse, separated by a triangular process of the first ventral segment. Tibiæ scarcely dilated; spurs small but distinct, unequal; tarsi moderate, setose beneath, the posterior more densely so at base; last joint slightly longer than the preceding together; first four joints of the anterior and middle very short equal; first of the posterior as long as the next two combined. Elytral hypomera continuous throughout the length, rather narrow, strongly inflexed, nearly equal in width throughout, slightly concave near the base, elsewhere plane. Prothorax transverse; sides of the pronotum very abruptly and narrowly explanate or feebly reflexed; edges neither denticulate nor crenulate. Elytra finely costate; intervals punctate.

The affinities of this genus are very readily seen to be in the direction of *Bolitophagus* and *Eledona*; it agrees with the first in the structure of the front and eyes, but differs in appearance, in this respect agreeing more closely with *Eledona*, from which, in turn, it differs radically in the structure of the eyes. In *Eleates* the epistoma is separated from the labrum by a very short, coriaceous bond, as is usual in this group, but the eyes are well in advance of the prothorax. It differs from both *Bolitophagus* and *Eledona* in the non-denticulate sides of the prothorax, a character considered more or less important by Lacordaire and Du Val, who divide the European genera into groups depending upon the presence or absence of denticulations.

E. occidentalis n. sp.—Rather robust; sides nearly straight and parallel; black throughout; legs, palpi and antennæ dark rufo-fuscous; glabrous; integuments rather finely sculptured. *Head* nearly twice as wide as long; apex very narrowly reflexed throughout; surface near the apex and in front of the eyes slightly tumid; front broadly and feebly convex, extremely densely, rather deeply and coarsely punctate; punctures very much finer and obsolete on the epistoma. *Prothorax* widest near the base, where it is two-thirds wider than the head and twice as wide as long; sides feebly convergent from base to apex, feebly arcuate; base broadly arcuate, more strongly so in the middle; angles slightly obtuse, not rounded; apex slightly narrower than the base, broadly and rather strongly emarginate; angles slightly prominent, anteriorly narrowly rounded; disk broadly, strongly and very evenly convex, rather coarsely, evenly, deeply and excessively densely punctate; punctures polygonal, intervals in the form of very narrow, strongly elevated lines. *Scutellum* broader than long, rounded behind. *Elytra* at base slightly wider than the prothorax; sides nearly parallel and straight to within a very short distance of the apex, where, together, they are abruptly and very broadly rounded;

humeral angles distinctly rounded; sides narrowly reflexed, edges acute; disk broadly and very strongly convex, nearly three times as long as the pronotum; ridges very fine, rather feebly elevated; intervals evenly concave, each with a single series of round, rather deep punctures, distant by slightly more than their own widths; along each side of the immediate crests of the costæ there is a line of very small, round, closely-placed areolæ; remainder of the surface slightly and irregularly roughened or subalutaceous, moderately shining. *Legs* moderate; femora compressed, excavated beneath through two-thirds the length for the reception of the tibiæ; tibial spurs situated at the inner apex, arranged parallel to the lower edge of the apex and almost in line with the point of insertion of the tarsi, claws large, simple, divergent. Length 4.5-5.0 mm.

California; (Truckee, Nevada Co. 2). Mr. Harford.

The lateral edges of the prothorax are sometimes extremely feebly and irregularly undulated.

This species, the first of its tribe to be announced from the Pacific slope of the continent, lives in fungus growing upon fallen logs.

BARINUS n. gen. (Curculionidæ.)

Body rather slender and elongate, clothed with large, elongate scales, entirely without hairs. Beak very short, rather stout, much shorter than the prothorax, slightly flattened, rather strongly arcuate; scrobes beginning slightly before the middle, descending obliquely to the eyes; the latter large, vertically oval, not very prominent, finely granulated; interocular surface scarcely wider than the beak, feebly impressed. Antennæ rather slender; first joint of funicle slightly shorter than the scape, rather strongly clavate, very slender toward base, nearly as long as the remainder of the funicle; second to seventh nearly equal, cylindrical, more slender than the apex of the first; club abrupt, very elongate, oval, finely pubescent, slightly longer than the preceding six joints of the funicle combined. Prothorax without postocular lobes. Prosternum rather long in front of the coxæ, rather narrowly and deeply sulcate throughout its length, moderately separating the coxæ. Middle and posterior coxæ widely separated. Metasternum longer than the first ventral segment. First two segments of the abdomen rather long, nearly equal in length; suture almost entirely obliterated in the middle; third and fourth segments short, equal, together scarcely longer than the first; fifth rounded behind, as long as the third and fourth together; posterior sutures strongly sinuate at the sides. Elytra conjointly rounded at tip, concealing the pygidium. Legs moderate in length, rather robust; tibiæ not grooved, all mucronate at tip; spur of the anterior and middle pairs vertical, of the posterior oblique and nearer the insertion of the tarsi; all very small and robust; second and third

joints of the tarsi broadly dilated, the latter strongly bilobed; fourth slender; claws very small, narrow, connate throughout their length except at the immediate apex.

It will be noticed that this genus corresponds quite closely with *Zygobaris*, and I have drawn up the description in such form that it can be readily compared with the one given by Dr. LeConte for the latter (*Proc. Am. Phil. Soc.* XV, p. 321). It differs conspicuously in its shorter beak, in antennal structure and in its strongly grooved prosternum; also in the claws, which are connate nearly through their length.

B. squamolineatus n. sp.—Form very narrowly elliptical, moderately convex, black; legs and antennæ dark fuscous; coxæ black; integuments shining. *Head* rather small, hemispherical, subalutaceous, finely and not very densely punctate, with a few small robust scales along the inner margins of the eyes; beak scarcely twice as long as the head, slightly enlarged and flattened toward tip, finely and rather densely punctate toward the base, much more sparsely so near the apex. *Prothorax* about as long as wide, very feebly constricted near the apex, sides very feebly convergent from base to apex, abruptly and more strongly arcuate behind the constriction, base broadly arcuate, more strongly so in the middle; apex transversely truncate, three-fifths as wide as the base; disk transversely, nearly evenly and strongly convex, coarsely, rather densely and evenly punctate; punctures round, deep, perforate, separated by about their own width, distinctly finer along the apex; surface abruptly and densely squamose at the sides, with a narrow, sparsely squamose line along the middle; elsewhere each puncture bears a very minute, slender scale; scales all arranged transversely. *Elytra* at the humeri slightly wider than the prothorax; sides gradually convergent, broadly and nearly evenly arcuate to the apex, which, conjointly, is rather narrowly rounded; humeri longitudinally and rather strongly swollen; disk transversely and rather strongly convex, fully twice as long as the pronotum, extremely feebly constricted at one-fifth the length from the apex, deeply and narrowly grooved; striae finely, deeply and rather distantly punctate; intervals finely, feebly and more closely punctate, alternating broader and narrower; the narrow intervals having a single, the broad ones two rows, of large elongate scales arranged longitudinally; humeral row broader; the scales along the suture and also those near the sides very much smaller and narrower. Scutellum slightly longer than wide, oval. *Legs* feebly and rather sparsely squamose; tarsi densely covered above with fine hair-like scales, densely spongiose beneath. *Abdomen* densely squamose at the sides, sparsely so in the middle; devoid of scales along the bases of the last three segments. Length 3.8 mm.

Central Illinois 1; Mr. F. M. Webster.

The scales are generally white, but are slightly darker along the flanks of the elytra, where they are very small. The rows of scales upon the elytral intervals are not uniformly single or double, but in many spots become more crowded and irregular.

RENOCIS n. gen. (Hylurgini).

Body subcylindrical. Head prominent, not concealed by the prothorax, inserted in the prothorax nearly to the eyes; slightly deflexed, not at all produced, beak entirely obsolete; eyes rather finely granulated, not at all prominent, on the sides, extending slightly under the head, short, very strongly transverse, with a small feeble sinuation in the anterior margin; antennæ inserted on the sides of the head just before the eyes, short, ten-jointed; basal joint longer than wide, rather robust; second not one-half as long, subglobular; three to six very small; joints seven to ten forming a very abrupt, elongate, oval club, longer than the entire preceding portion, strongly compressed, sparsely pubescent. Mandibles prominent, short and stout, perfectly chisel-shaped apex transversely truncate, straight; inner face at apex obliquely truncate. Mentum short, transverse; maxillæ, ligula and palpi very small, invisible under a mass of coarse hair surrounding the mentum. Labrum wanting. Anterior coxæ prominent, subglobular, contiguous; middle coxæ widely distant, small, not prominent; posterior separated, transverse, attenuated laterally, only attaining the metasternal episternum, which is long, rather wide; sides parallel; epimeron not visible. Anterior coxæ in contact with the head beneath; prosternum entirely obsolete before them; femora rather robust, simple; tibiæ very narrow at base, rapidly dilated and compressed toward apex, margined externally with a row of short, very robust spinules, obliquely truncate at apex; tarsi rather short, slender, not at all dilated but rather compressed, five-jointed; third obliquely truncate and slightly produced beneath, not bilobed; fourth very minute; fifth slender, longer than the preceding united. Abdominal segments five in number; first two subequal, each nearly as long as the third and fourth together. Elytra covering the entire abdomen; pygidium invisible; prothorax strongly rounded at the sides, transverse, convex; sides continuous in curvature from the dorsal surface to the anterior coxæ. Integuments covered with a dense scabrous mass of scales; base of elytra elevated and tuberculate. Scutellum not distinctly visible.

In this genus the antennal club is strongly compressed, elongate-oval, obtusely pointed and four-jointed, the joints being connate and separated by straight transverse sutures. Both surfaces are glabrous, except the apices of the joints,

which are fringed with hairs, and the terminal joint which is sparsely pubescent over the entire surface. The scape is rather short and robust, distinctly shorter than the funicle and is not received in transverse grooves in front of the eyes, these being almost completely obsolete. The genus therefore seems to form a group intermediate in many of its characters between the Polygraphi and the Hylurgi, but for the present it should be placed between Chetophloeus and Carphoborus, from the latter of which it differs in the structure of the elytra behind,—these being evenly convex with no spinulose crests,—and in the structure of the antennal club, which is here divided by three sutures, and not by two, as in Carphoborus.

R. heterodoxus n. sp.—Oblong; sides parallel; integuments black, densely clothed with scales mostly dark fuscous in color, but interspersed with whitish ones especially on the flanks and toward the base of the pronotum, replaced on the head by a dense growth of longer, robust, shaggy pubescence. *Head* wider than long; front impressed, coarsely and sparsely punctate, shining; antennæ dark brown. *Prothorax* more than twice as wide as the head; sides in the basal two-thirds parallel and distinctly arcuate, slightly constricted near the apex which is broadly arcuate and slightly sinuate in the middle, more than one-half as wide as the base; the latter transversely truncate; disk transversely, strongly convex, two-thirds wider than long, very coarsely, rather densely punctate; scales generally recumbent toward base, erect toward apex; the latter fringed with a dense row of short, very robust, squamiform hairs. *Elytra* at base as wide as the prothorax; sides parallel and nearly straight for two-thirds the length from the base, then gradually rounded; to the apex, which, conjointly, is almost semicircularly rounded; disk cylindrical, nearly one-half longer than wide, two and one-half times as long as the prothorax, elevated along the basal margin, the summit of the elevation being broken into small crests; surface feebly striate; striæ punctate; intervals flat, coarsely, rather sparsely and unevenly punctate; smaller scales usually recumbent; along the middle of each interval there is a row of longer, erect, fuscous scales. Under surface scabrous, black, coarsely punctate. *Legs* piceous; tarsi paler. Length 1.7 mm.

Nevada; (Washoe Co. 1).

The scales of the pronotum are generally entire, but upon the flanks they become narrow, almost hair-like, and are bifurcate from their base, becoming, anteriorly and near the

coxæ, trifurcate. The sparse vestiture of the entire under surface is of this same nature.

The single representative of this interesting species was beaten from the low trees bordering the Truckee River, in early spring, at Reno, Nevada.

Chaetophlæus hystrix Lec., found at San Diego, California, is another singular species and appears to resemble that above described in the structure of the head, but as that species is described as robust and oval, having the surface clothed with erect hair, it is abundantly distinguished from the present which is squamose and nearly cylindrical.

APPENDIX.

NOTES.

I.

The genus *Colusa* is apparently regarded as identical with *Echidnoglossa* Woll. In order to determine if possible the truth in regard to the mutual relationship of these two genera, I have, therefore, made a short comparative study, taking as a basis the careful description of *Echidnoglossa*, given by Wollaston (Cat. Can. Col., p. 530). As this study may be useful in future systematic investigations, it is given below: —

In *Echidnoglossa* the ligula is slender, minutely bifid at apex; the labial palpi are distinctly 3-jointed, the joints subequal in length, the width decreasing. The posterior tarsi have the joints gradually and slightly decreasing in length to the fourth.

In *Colusa* the ligula is elongate, very slender, slightly longer than the terminal joint of the labial palpi and is apparently perfectly simple at apex. The first two joints of the labial palpi are apparently cylindrical, rather short,

equal in diameter and closely connate or anchylosed; in most cases the suture is completely obliterated so that they appear to form but a single joint; the last joint is very long and slender, affixed very obliquely and is generally slightly longer than the first two together. The posterior tarsi are of rather peculiar structure; the first joint is fully as long as, sometimes distinctly longer than the next two together, the latter being equal in length and each distinctly *shorter* than the fourth; the fifth is generally longer than the first.

If the words "*elytris brevissimis*" are to be accepted in their ordinary meaning, the genus of the Atlantic Islands must be remarkably different in appearance, since the elytra in Colusa are unusually long, wide and well developed. In the description of the single species of *Echidnoglossa*, Wollaston states that it is alutaceous, scarcely punctulate, and sparsely pubescent. In Colusa the integuments are not alutaceous but polished, rather densely pubescent and deeply punctate, the elytra very coarsely and conspicuously so.

The two genera are, nevertheless, allied by a very striking character which I have repeatedly verified in Colusa—the pentamerous tarsi—and Colusa is evidently the American representative of the eastern *Echidnoglossa*. I believe that enough has been said, however, to show that they should not be united without a much more careful comparison than has yet been accorded them.

II.

The species described by me under the names *Ilyobates* (Bull. Cal. Acad. Sci. I, p. 307) belong in reality to *Bolitochara*. By an unfortunate oversight the number of joints in the tarsi was recorded erroneously; both these genera possess the strongly elevated mesosternal carina. I am indebted for this rectification to M. A. Fauvel.

III.

Attention is called to a very singular sexual character in a Californian species of *Leptacinus*, a figure of which is given on the plate. The species may possibly be *brunnescens* Lec. The pronotum of this specimen is not foveate at the sides, but another specimen of apparently the same species has a large deep fovea at about the middle of each side of the pronotum and very near the edge; the latter example has the sixth ventral segment simple and broadly rounded at the apex.

IV.

In the classification of the Coleoptera of North America—p. 97—occurs the sentence: “The second ventral segment is marked with two short ridges.” As there is no such structure in our species of *Stenini*, the insertion of this phrase must be the result of an oversight.

V.

Although the synonymical notices recently published by M. Fauvel through Dr. Horn (Proc. Ent. Sec. A. N. S., Phil., June, 1886, p. xiii) relating to several species of *Stenini* described by me may possibly be correct, there is a much greater probability of error. This probability almost amounts to a certainty in the case of *Hemistenus reconditus*, which is not the same as *tarsalis* Ljungh. In order to substantiate this statement I would refer the reader to the outlines of the tarsal claws of the two species, which I have figured on the plate accompanying the Revision.

As for the other synonyms indicated by M. Fauvel, it can only be said that the descriptions of the species mentioned which are given by Erichson and Rey do not agree very satisfactorily with those which I have drawn up as carefully as possible in the Revision of the North American *Stenini* for the corresponding American forms.

In a group where the species are so excessively numerous and closely allied as in the *Stenini*, great care should be exercised in making synonymical statements, and, it may be added, there are probably extremely few species common to Europe and North America. It is even possible that our familiar *juno* is not the same species as the European *juno*, for the figure of the male sexual characters of this species given by Rey does not correspond, particularly the modification of the fifth segment, which scarcely agrees at all with the description which I have given for the American species.

VI.

PINOPHILI.—The statement made concerning this group (Class. Col. N. A., p. 99), viz, that the species are found under the bark of trees, is erroneous as far as the genus *Pinophilus* is concerned; the correct derivation of the word is given by Erichson (Gen. Staph., p. 670). Of the four species in my cabinet, the two collected by myself were taken in damp earth, under decomposing vegetable matter, and in a few instances under stones; the other two were attracted at night to the electric lights at El Paso, Texas.

VII.

PLATYSTETHUS SPICULUS Er.—Specimens of this species, which was described by Erichson from Colombia, South America, were recently taken at Galveston and Austin, Texas. These specimens correspond with others communicated by Dr. Dugès, taken at Guanajuato, Mexico, showing that the species is of very wide distribution. The name should be added to our lists.

VIII.

AGLENUS Er.—A colony of about forty specimens of a species which is probably *A. brunneus* Gyll., was recently taken by me in the environs of San Francisco. Full de-

tails concerning the locality and other circumstances have been sent to the Entomological Society of Washington.

IX.

The statement of Dr. Horn (Proc. Ent. Sec. A. N. S. Phil.; June, 1886, p. xiii) concerning the identity of *Platycerus Agassii* Lec. and *californicus* Cas. is erroneous. These two species are mutually more dissimilar in outline, punctuation and general appearance than even *oregonensis* and *depressus*. Before describing *californicus* I had access to a very fine series of ten specimens of *Agassii* in the cabinet of Mr. C. Fuchs, a specialist in this family, who had previously written a synopsis of the American species (Bull. Bk. Ent. Soc. V., p. 57). The specimens of this series agree perfectly with Mr. Fuchs' description of the type of *Agassii*, and also with the description recently given by Mr. F. Blanchard (Tr. Am. Ent. Soc., XII. p. 169).

Such absolute and unqualified assertions as the one referred to on the part of Dr. Horn, unaccompanied by any comparative statements and hastily made without examining the type or even an authentic representative of the species condemned, are entirely uncalled for and generally of very little scientific value.

ADDENDUM.

As the present paper was passing through the press, it was found that the specific name *exilis* had already been employed for a species of *Heterothops*, and I therefore substitute the word *occidentis*.

EXPLANATION OF THE PLATE.

- Fig. 1—*Reichenbachia tumorosa* Cas.—Antenna ♂
- Fig. 1a—*R. tumidicornis* Cas.—Antenna ♂
- Fig. 1b—*R. informis* Cas.—Antenna ♂
- Fig. 2—*R. deformata* Lec.—Antenna ♂
- Fig. 2a—*R. fundata* Cas.—Antenna ♂
- Fig. 2b—*R. franciscana* Cas.—Antenna ♂
- Fig. 2—*Eumitocerus tarsalis* Cas.
 - 3a—Anterior tibia and tarsus.
 - 3b—Maxillary palpus.
 - 3c—Posterior coxa.
- Fig. 4—*Leptacinus* sp. incog.—Abdominal vertex showing long rigid sexual spine.
 - 4a—Lateral view of same.
- Fig. 5—*Hesperobium* Cas.—Base of abdomen beneath, showing structure.

NOTE—This figure is referred to in the introductory notes of the present paper, p. 159.
- Fig. 6—*Leptogenius brevicornis* Cas.
 - 6a—Maxillary palpus.
- Fig. 7—*Scopæus levigatus* Gyll.—Infralateral view of prothorax showing form of intercoxal lamina.
 - 7a—Labrum.
- Fig. 8—*Scopæodera nitida* Lec.—Same.
 - 8a—Labrum.
- Fig. 9—*Leptorus picipes* Cas.—Same.
 - 9a—Labrum.
- Fig. 10—*Orus punctatus* Cas.—Same.
 - 10a—Labrum.
- Fig. 11—*Pelecomalium binotatum* Cas.—Labrum.
 - 11a—Maxillary palpus.
 - 11b—Posterior tarsus.
 - 11c—Labial palpus.
- Fig. 12—*Lathrimæum humerale* Cas.
- Fig. 13—*Orobæus rufipes* Cas.
- Fig. 14—*O. densus* Cas.
- Fig. 15—*Actidium rotundicolle* Cas.
- Fig. 16—*Ptilium sulcatum* Cas.
- Fig. 17—*Smicrus americanus* Cas.
- Fig. 18—*Ditaphrus scymnoides* Cas.—Antenna.
- Fig. 19—*Eleates occidentalis* Cas.
- Fig. 20—*Renocis heterodoxus* Cas.
 - 20a—Slightly oblique side view of head.

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