

NEW SPECIES AND MISCELLANEOUS NOTES.

BY GEO. H. HORN, M. D.

The few new species described below are mostly of curious forms, or of groups not previously represented in our fauna. Others have interest in their relationship with Mexican forms, while several are indicated as inhabitants of our fauna known previously from more tropical regions to the south.

A few synonyms have been given which need no special comment.

PTEROSTICHUS Bon.**P. (*Hyperphes*) *inanis*** n. sp.

This name is suggested for a species closely allied to *angustus*, but of rather less parallel form and somewhat larger size, and always of darker color. The head is broader, and more distinctly narrowed behind the eyes, which are larger and more convex. The thorax is more distinctly narrowed behind from being somewhat more arcuate in front. The basal impressions are deeper and longer, while the basal marginal line is very short (in *angustus* extending across the entire base). The elytra are more depressed, the sides more arcuate. The under side does not present any essential differences. Length 10–12 mm.; .40–.48 inch.

In the male the hind trochanter is always two-thirds the length of the femur, and sometimes slightly longer than that, the apex very acute, while in *angustus* the same member is rarely more than half the length of the femur and obtuse at tip.

The essential differences from *angustus* are—larger size and less parallel form, prothoracic impressions deeper and longer, basal marginal line here almost absent, except at hind angles, and finally the form of the male hind trochanters.

Occurs in Washington, Nevada, and as far south as Placer County, California.

P. (*Hyperphes*) *caligans* n. sp.

Very like *angustus*, but still more slender and elongate. Castaneous, shining, elytra very finely alutaceous; head relatively larger, frontal impressions moderately deep, optic prominences normally large, the eyes very small; thorax longer than wide, narrower at base, sides very feebly arcuate, slightly sinuate in front of the hind angles, which are sharply rectangular, median impression moderately deep, extending to base and nearly to apex, basal impressions single,

moderately deep, arcuate, basal marginal line entirely absent; elytra oblong, nearly parallel, humeri slightly dentate, surface moderately deeply striate, striæ obsoletely punctate, intervals very slightly convex; beneath similar in color, abdomen finely alutaceous, indistinctly punctate at sides in front. Length 10–11 mm.; .40–.44 inch.

In the male the hind trochanter is about half as long as the femur and obtuse at tip.

Two specimens have been examined, taken by Mr. L. E. Ricksecker at Sylvania, Cal.

This species is evidently closely related to *longissimus* Bates (Biol. Cent. Am. i, p. 81, pl. iv, fig. 6), although that species is said to have non-dentate humeri. Direct comparison will be necessary to indicate the real differences, as it can hardly be supposed that an almost blind species from middle California is identical with one from Guatemala.

The two species above described constitute, with *angustus*, a small group of *Pterostichus*, characterized especially by a very narrow, almost parallel form. All have small eyes, although they vary in size in the three species. Of the three *inanis* has the largest eyes, and *caligans* the smallest.

The characters separating them may be tabulated in the following manner:

Thorax with two distinct linear basal impressions, the basal marginal line entire; hind trochanters of ♂ longer than half the femur and very acute at tip; scutellar stria rarely well marked, often absent	<i>inanis</i>.
Thorax with two basal impressions, the outer quite short, basal marginal line variable, sometimes entire, often visible near the angles only; hind trochan- ters of male half as long as the femur and obtuse at tip; scutellar stria dis- tinct.....	<i>angustus</i>.
Thorax with but one basal impression, the basal marginal line entirely wanting; hind trochanters of male as in <i>angustus</i> ; scutellar stria distinct..	<i>caligans</i>.

The last species resembles in a marked degree, small specimens of *Stenomorphus rufipes*.

P. Blanchardi n. sp.—Form rather robust, piceous, shining, legs and antennæ rufo-testaceous. Head smooth, frontal impressions short; thorax cor-
date, wider than long, sides strongly arcuate, rather deeply sinuate posteriorly,
the hind angles rectangular, surface smooth and shining, without punctures at
base, median line fine and entire, basal impressions single, deep, straight, ex-
tending nearly a third to the front, basal marginal line entire and very distinct;
elytra rather broadly oval, more acute behind, moderately convex, humeri not
dentate, striæ rather deep, distinctly punctured, the sides of the intervals slightly

crenate, the intervals slightly convex, a dorsal puncture on the third stria behind the middle; body beneath smooth, shining, prosternum not margined at tip. Length 6 mm.; .24 inch.

This is the smallest species outside of some in the *Cryobius* series known to me in our fauna. It has the general aspect of *honestus*, although less convex, and somewhat more acute posteriorly. It may be known from that species by the following points:

Thorax punctate at base, without marginal line, basal impressions arcuate; striæ not punctate.....**honestus.**
 Thorax smooth at base, marginal line entire, basal impressions straight; striæ punctate, intervals crenate.....**Blanchardi.**

The unique before me was collected by Mr. F. Blanchard at Highland, North Carolina.

BEMBIDIUM Latr.

B. haplogonum Chd. is a variety of *erosum* Motsch. (*mannerheimii* Lec.), in which the elytra are piceous with æneous surface lustre, a faint paler space near the humerus, and an oblique space near the apex.

B. plagiatum Zimm. is a *picipes* Kby., with a faint pale spot at apical third.

B. lacunarius Zimm. is a *picipes* with imperfectly colored elytra.

B. arcuatum Lec. agrees perfectly with specimens of *undulatum* St. as sent me from London.

B. planum Hald.; the name is preoccupied, and *Guexii* has been suggested by Chaudoir, Rev. Mag. Zool. 1868.

DISCODERUS Lec.

D. cordicollis n. sp.—Form rather depressed, piceous to castaneous in color, shining, the darker specimens with a faint æneous lustre, antennæ and legs always paler. Head smooth, frontal impressions short, in some specimens two punctiform foveæ between the eyes; thorax rather more than half wider than long, broadly cordate, sides arcuate and gradually narrowing to the base, the hind angles entirely obliterated, disc feebly convex, smooth, rarely feebly transversely wrinkled, basal impressions short, but rather broad; elytra subdepressed, oblong oval, striæ fine not punctate, intervals slightly convex and smooth ♂, or flatter and feebly alutaceous ♀, the usual rows of punctures on the alternate intervals; body beneath smooth, less shining than above, prosternum not margined at tip. Length 7.5—8.5 mm.; .30—.34 inch.

In both sexes there is but one anal puncture on each side. The male is more shining than the female, and the elytral intervals more convex. The last ventral of the male is more obtusely arcuate at

apex, that of the female being much more acute and slightly elevated in an obtuse carina near the middle. The male has a few squamules on the anterior tarsi. Tibiæ straight in both sexes.

This species is the most depressed of any in our fauna, and has the thorax much more narrowed behind, resembling a diminutive *Polpochile capitata*. There is no depression of the lateral margin of the thorax, as is usual in our heretofore described species.

Occurs from Fort Yuma eastward to Tucson, Ariz. (Wickham.)

D. crassicollis n. sp.—Form robust, convex, piceous, shining, without trace of metallic surface lustre; antennæ, palpi, and usually the labrum, castaneous; head impunctate, frontal impressions very short; thorax quadrate, a little wider than long, slightly narrowed at base, widest one-third from apex, sides regularly arcuate, margin not depressed, hind angles obtusely rounded, disc convex, median impression faint and short, basal impressions broad, but shallow and vague; surface smooth, with a few longitudinal wrinkles at base; elytra not wider than the thorax, sides feebly arcuate, disc convex, finely striate, striæ not punctate, intervals smooth, very feebly convex, the inner sides of 3-6-8 with the usual punctures fine and rather indistinct; body beneath slightly paler, shining, prosternum not margined at tip, but with two (usually) prominent bristles on each side; abdomen very sparsely punctate, coarser punctures on the intercoxal process. Length 12.5 mm.; .50 inch.

Although reasonably certain that both sexes are before me in the five specimens examined, no well marked sexual differences have been observed. The last ventral segment bears two setæ on each side. The middle tibiæ are not longer than the anterior, are broader toward the tip, slightly arcuate and beset on the outer side with short spinules. The posterior tibiæ are also very slightly arcuate. The anterior tarsi are not furnished with squamules.

This species is evidently very closely allied to *acinopoides* Bates (Biol. Cent. Am. Col. i, p. 63), which is described as having the elytra cupreous and the sides of the thorax straight and not arcuately narrowing as in the present species.

It is the most robust and convex species in our fauna, quite unlike our others, and resembling an *Acinopus* more nearly than *Discoderus*.

Occurs in southern Arizona.

ANATRICHIS Lec.

This genus has been divided by Chaudoir (Ann. Fr. 1882, p. 322) into *Anatrichis* and *Oodiellus*, the former represented by our *minuta*, the latter (which Mr. Bates very properly considers a synonym of *Oodinus* Mots.) typified by *mexicanus* Chd. (1882) = *piceus* Mots. (1864). In the paper above cited Chaudoir describes three addi-

tional species of *Anatrichis*, two from the East Indies, the third Australian. Four species are referred to *Oodiellus*, one from Mexico and three from Brazil. Mr. H. W. Bates describes as *Anatrichis* two more from Mexico which must be referred to *Oodiellus*, whether regarded as a section or a valid genus. The characters of the latter genus are derived entirely from the mouth parts and do not seem to be of sufficient moment for generic separation, as Mr. Bates has remarked, an opinion in which I fully concur.

In his posthumous work Chaudoir fails to mention a character of the male of *Anatrichis* observed by LeConte (Trans. Am. Philos. Soc. 1853, x, p. 391). The middle tibiæ have on the inner side at the lower third an emargination resembling somewhat that of the front tibia. This character is not observed in the only male of *Oodinus* examined. It would be interesting to know what value this has, in addition to those given below, for the separation of *Anatrichis* and *Oodinus*.

There is, however, one character more easily seen which will separate the species of the two divisions without, to my mind, having any greater weight than those used by Chaudoir.

As far as can be gathered from descriptions the species separate in the following manner:

Elytral striæ distinctly punctate.....S. G. **Anatrichis**.
Elytral striæ fine and simple S. G. **Oodinus**.

The former is represented in our fauna by *A. minuta* Dej., with shining, finely punctate surface, the basal impressions of the thorax deep but short. The apex of the prosternum is distinctly margined.

The subgenus *Oodinus* is represented by two species.

Form more broadly oval than *A. minuta*, surface more opaque; first and second elytral striæ uniting at base, terminating together in an ocellate fovea; prosternum not margined at tip..... **picea** Mots.

Form oblong, recalling a diminutive *Lachnocrepis parallela*, surface shining; striæ all partly obliterated at base, an ocellate fovea near the end of the second; prosternum margined at tip **oblonga** n. sp.

The genus *Anatrichis* is properly considered feminine in its termination by LeConte, Chaudoir and the Catalogus. Mr. Bates, however, appears to regard it as masculine from his specific names.

A. picea Mots. (*Oodinus*), Bull. Mosc. 1863, iv, p. 353; Bates, Biol. Cent. Am. Col. i, p. 47, pl. iii, fig. 11.

mexicanus Chaud. (*Oodiellus*), Ann. Fr. 1882, p. 323 (partim).

More broadly oval than *minuta*. The surface is less shining, without punctuation and extremely minutely alutaceous; the median line of the thorax is ex-

tremely fine and the basal impressions very shallow and vague; the elytral striæ are fine and sharp, without punctures, the intervals flat, minutely alutaceous, the third with the two dorsal punctures behind the middle; the prosternum is obtuse at tip and without marginal line. Length 6 mm.; .24 inch.

The specimen before me is a male. The first four joints of the anterior tarsi are dilated as in *minuta*, but the middle tibiæ are simple.

Occurs in our fauna in southern Texas and Central America to Santarem, in Brazil.

A. oblonga n. sp.—Oblong, piceous-black, somewhat shining; antennæ piceous, the three basal joints and palpi rufo-testaceous; head without frontal impressions, the surface extremely minutely alutaceous; thorax about one-third wider at base than long, sides arcuately narrowing to apex, median line very finely impressed, the basal impressions deep but short, surface minutely alutaceous; elytra oblong, sides feebly arcuate, striæ sharply impressed but not punctate, not quite reaching the base, an ocellate fovea near the base of the second, intervals flat, very minutely, sparsely punctate and finely alutaceous, the dorsal punctures of the third interval indistinct; body beneath more shining than above, the prosternum with marginal line at tip; legs castaneous. Length 6 mm.; .24 inch.

This species is evidently closely related to *longula* Bates, and may even be the same, although I can hardly apply his description of the thorax to my specimen: "transversim quadrato, antice paullo magis quam postice angustato."

The surface sculpture is so minute that a moderately high power is required to detect the alutaceous structure and the elytral punctures.

One specimen ♀, Texas near the lower Rio Grande.

OODES Bon.

From the description given by Chaudoir, in 1882, it seems that the species known to us as *texanus* Lec. is the same as *mexicanus* Chev.

O. duodecimstriatus Chev. According to Chaudoir, who has examined types, this name should replace *O. Lecontei* Chd. in our lists.

STENOCREPIS Chd.

A specimen in my cabinet collected near the lower Rio Grande of Texas seems to be referable to *S. chalcas* Bates (*chalcochrous* Chd.), Biol. Cent. Am. Col. i, p. 47. It is nearly as elongate as *Lachnocrepis*, but with a form of thorax as in our *Oodes* s.s. The striæ are very distinctly punctate and the sides of the intervals crenate. The under side of the body is iridescent, the sides of the metasternum with coarse punctures, the first two ventral segments at the sides with very coarse punctures. Prosternum not margined at tip. On the elytra the seventh stria is replaced by a row of extremely indistinct fine punctures.

If the insect before me really represents *S. chalcas*, and of this I have very little doubt, the genus seems to me intermediate between *Oodes s.s.* and *Lachnocrepis*. With the former it agrees in having the first *four* joints of the anterior tarsi of the male dilated and papillose beneath, although the posterior tarsi are not pubescent beneath. The mode of dilatation of the tarsi is the same as in *Lachnocrepis*.

It seems to me that Chaudoir was not true to his own methods in uniting *Stenocrepis*, *Stenous* and *Crossocrepis* as sections under the first name. If it be advisable to separate any of them from *Oodes*, it seems to me desirable to retain *Stenocrepis* apart, while the other two could be very well united.

In *Oodes s.s.* the entire under side of the body is comparatively smooth, in the others above mentioned the sides of the metasternum and the metapleuræ, and usually the sides of the first two ventral segments are very coarsely punctate.

EUPHORTICUS Horn.

E. occidentalis n. sp.

This name is proposed for a species occurring near Los Angeles, Cal., resembling *pubescens* Dej., and differing in the following manner:

Surface more brilliantly æneous. Elytral striæ very faint, the punctures fine, round and rather distant, intervals flat, punctulate. Length 4 mm.: .16 inch.

The punctures of the elytral striæ do not extend beyond the middle in either species, but in *pubescens* they are large and more closely placed than their own diameters. On the other hand the fine punctures of the intervals are sparser and less distinct in *occidentalis* than in *pubescens*. In the latter species the tibiæ are always paler than the femora, in the former they are as dark as the femora.

PÆCILOCHRUS Bonv.

To this genus should be referred the species described by me as *Stethon errans*.

Pæcilochrus may be distinguished from *Stethon* by the straight prosternal sutures. In both genera the metasternum has a short groove limited by an elevated line beginning at the inner side of the middle coxæ and directed backward in a straight line.

Dromæolus pusillus Horn.—This species, while very unlike our others, has a number of related forms in the Mexican fauna. They nearly all have the prosternal sutures very finely grooved and the

propleural triangle is in absolute union with the prosternum, or very nearly so. In facies they more nearly resemble *Thambus* than *Dromæolus*.

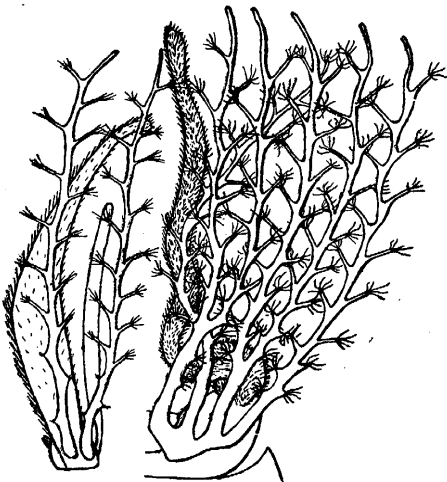
I have already called attention to the fact that in *Microrhagus* (Trans. Am. Ent. Soc. 1886, p. 35) the pubescent fovea on the last or penultimate segment was a sexual character. While the fact is correct, I have wrongly attributed the possession of it to the male. Since then the same character has been elsewhere observed, *Entomophthalmus americanus*, where the female has the fovea and the male a small tubercle.

In the table of *Microrhagus* (Mon. des Eucnémides) under "23," p. 528, two series of species are separated, the one with femora scarcely darkened, the other with them decidedly brown or nearly black. Fortunately but three species are separated under the last division, otherwise confusion might result, as the color of the legs, as above defined, has no value whatever.

CLADUS Bonv.

While this genus of Eucnemidæ is not represented in our fauna, belonging exclusively to the central American region, I have thought it worth while to call attention to it, as but few interested in purely North American entomology will see the illustration of the extraordinary modification of the mouth parts published by me in the "Biologia Centrali-Americana."

The accompanying illustration is the same as used in that publication, and shows the maxilla of the right side uncovered by the removal of the half of the mentum and on the right side of the cut the remaining half of the mentum. The maxillary palpus is transformed into two long stalks bearing ciliate branches. The labial palpus is primarily divided into four branches, two of which, the first and third, are again divided; all with ciliate branches. The ribbon-like prolongation behind the palpar modification is a modified ligula. The two lobes of the maxilla are sufficiently well shown in the cut and need no explanation.



The utility of this modification in a family in which the mouth-parts are otherwise quite constant is, for me, beyond explanation. The Eucnemidæ seem to live their short lives by the ingestion of liquid food, the juices of decaying wood and similar matters, so that this modification may assist capillary action, although there does not seem any reason why *Cladus* should be so provided and the closely-allied *Fornax* not.

PALÆOXENUS n. g.

This new generic name is suggested for a species described by me some years ago as *Cryptostoma Dohrnii*.

At that time I had seen no specimen of *Cryptostoma*, and the failure to record several important characters in the Bonvouloir description caused me to refer my specimen to that genus. Through the kindness of Mr. Ed. Fleutiaux I have been enabled to study a specimen of *C. spinicorne*, and can now indicate the differences:

Palæoxenus.—Antennæ simple in both sexes, the last two joints shorter, the terminal joint broader than long, squarely truncate, but chisel-shaped on its terminal edge. Mesosternum oblique, broadly grooved. Eyes longer in their vertical diameter and without distinct supra-orbital ridge.

Cryptostoma.—Antennæ with a spiniform process from the base of third joint ♂, or with a spine on the posterior side near apex of first joint ♀, the terminal joint longer than the preceding and either slender ♂, or very acutely oval at tip ♀. Mesosternum prominent, the sides elevated, forming the usual receptacle for the tip of prosternum. Eyes oval, very little longer vertically and with distinct supra-orbital ridge.

PHENGODES Latr.

P. picicollis n. sp.—Head piceous black, deeply, arcuately impressed between the eyes, and longitudinally toward the clypeus, in front of the transverse groove coarsely and closely punctate, behind it coarsely longitudinally strigose and punctate; antennæ not half as long as the body, piceous-black, the branches fuscous, the basal joint yellow: eyes relatively small; thorax about one-half wider than long, apex arcuate, sides arcuate near the front, then parallel to base, lateral explanate border moderate, disc moderately convex, a round fovea each side near the apex, a slight longitudinal impression at middle nearer the base, surface shining, rather finely not closely punctate, more distinctly near the sides, sparsely flavo-pubescent, color piceous, with the entire limb narrowly testaceous; scutellum piceous; elytra yellowish testaceous, gradually fuscous toward the apex; abdomen yellowish testaceous, the segments piceous along their anterior border, beneath piceous, shining, the border and last segment pale; meso-meta-

sternum piceous, shining, punctate; legs yellowish testaceous, the coxæ and tarsi piceous. Length 10.5 mm.; .42 inch.

The explanate border of the thorax is broader than in *fusciceps*, but less explanate than in *plumosa*, *frontalis*, or *laticollis*. It should be associated with *fusciceps* and *Sallei* from the antennæ being shorter than half the body. It is the only species in our fauna with a piceous thorax.

One specimen, collected in Ramsey County, Minn., and given me by Mr. Otto Lugger.

P. plumosa Oliv.

The type of this species, which is now in the British Museum, was collected by M. Francillon in Georgia. An examination of it in comparison with *frontalis* shows, among other characters, much smaller eyes, *i.e.*, the eyes when seen from above are scarcely wider than half the distance to the median line of the head, while in *frontalis* the eyes are fully as wide as the distance to the middle.

ERGATES Serv.

E. neomexicanus Casey is an absolute synonym of *E. spiculatus* Lec. The characters given to separate the two are purely individual, and are seen in specimens from Vancouver as well as in those from New Mexico.

ACOMA Casey.

The reference of this genus to the Melolonthine series is a mistake. It is plainly a Laparostict, and, like Pleocomma, has the mouth-parts of the male (the only sex known) much reduced, and in a manner similar to Pleocomma. Its position in our series is after the latter genus.

Polyphylla speciosa Casey, described from the female, is the female of *decemlineata* Say.

ELEODES Esch.

E. Wickhami n. sp.—Elongate, black, shining, elytra with slight velvety lustre; antennæ a little longer than the head and thorax. the third joint decidedly longer than the next two; head sparsely punctate; thorax subquadrate, a little wider than long. slightly narrowed behind, sides slightly arcuate in front, oblique posteriorly, anterior angles not everted; disc moderately convex, sparsely, very finely and indistinctly punctate; elytra elongate oval, attenuate posteriorly, disc convex with rows of extremely fine, indistinct punctures; body beneath more shining than above, the abdomen transversely wrinkled. Length 27 mm., including cauda 33 mm.; 1.08 inch.; 1.32 inch. Pl. 1, fig. 12.

Male.—Elytra prolonged in a narrow cauda, which is channeled beneath and curved slightly downward at tip; anterior femora with a small tooth near the knee, the tibia narrowed at base; middle and posterior femora simple; posterior tibiae slightly arcuate, narrow at basal half, rather abruptly dilated in apical half, in which part the surface is quite asperate.

This species belongs in the series near *E. lucae* Lec., but the males may be easily known by the sexual characters in the front and hind tibiae of *Wickhami*, which do not exist in the other. The anterior angles are quite acute forward or even faintly everted in *lucae*, and in the male the elytra are vaguely sulcate, with coarse obsolete punctures. The legs are relatively longer than in any other *Eleodes* known to me.

Collected by Mr. H. F. Wickham near Tucson, Ariz., and named as an evidence of my appreciation of his labors in that region.

E. longipilosa n. sp.—Piceous-black, moderately shining, surface sparsely clothed with long, black, flying hairs; head coarsely not closely punctate, smoother at middle; thorax about a fourth wider than long, sides arcuate in front, obliquely narrowed posteriorly, disc moderately convex, coarsely sparsely irregularly punctate, apex slightly emarginate, anterior angles subacute, but not everted; elytra elongate oval, more attenuate posteriorly, disc feebly convex, very vaguely sulcate, surface irregularly sparsely muricate, the two grooves nearest the suture coarsely punctate; propleuræ wrinkled and sparsely muricate; abdomen with first three segments very coarsely punctate and rugose, the last two segments much smoother. Length 19 mm.; with cauda, 21.5 mm.; .76—.86 inch. Pl. 1, fig. 13.

Male.—Elytra prolonged at tip in a cauda, the apices slightly separated, beneath grooved.

This species is related to *caudifera*, and like it has the femora not toothed in either sex. The general form is the same as in that species, but the elytra are much less evidently striate. It is, however, especially remarkable in the rather long flying hairs of the surface, which extend also on the legs even to the humeral joint of the tarsus.

Collected in Humboldt Valley, Nev., by Mr. Krause, and kindly given me by Mr. L. E. Ricksecker.

EPICAUTA Redt.

E. straba n. sp.—Black, subopaque, sparsely clothed with short brownish and inconspicuous pubescence. Antennæ black, setaceous; head broadly oval, densely punctate, occiput rather deeply impressed; eyes obliquely oval, prolonged in an acute angle toward the occiput, limited behind by a smooth depressed space; thorax quadrate, narrowed near the apex, closely punctate, a median longitudinal impression, and another less distinct on each side arcuate; elytra closely punctate scabrous, subopaque; body beneath black, shining, punctulate; legs black. Length 7—8 mm.; .28—.32 inch. Pl. 1, fig. 10.

In the males the anterior tibiae have two terminal spurs, the tibiae flattened on the inner side and densely silken pubescent. In the female the anterior tibiae are not flattened on the inner side and have a narrow pubescent line.

This species belongs to a small group containing *Rileyi* and *caviceps*, both of which have peculiarly formed eyes limited behind by a smooth depressed space. This is the only species known to me with the eyes oblique and acute above.

Collected by Mr. W. G. Wright at San Bernardino, Cal.

E. Merkeliana n. sp.—Form slender, piceous, subopaque, not densely clothed with short cinereous pubescence, entire head, antennae and legs pale rufo-ferruginous. Antennae filiform; head punctate, less closely along the middle and less densely than the thorax, the median line finely impressed, occiput entire; thorax longer than wide, sides feebly arcuate, slightly narrowed at base, apical third obliquely narrowed, median line impressed, a little deeper posteriorly, surface densely punctulate; elytra closely punctulate, somewhat scabrous; body beneath more shining than above, the pubescence longer, although less dense on the abdomen; legs rather shining, sparsely punctate, scarcely pubescent. Length 8.5 mm.; .34 inch.

This species belongs to the series with filiform antennae, and in the arrangement proposed by me (Proc. Am. Philos. Soc. 1873, p. 95) should be placed immediately after *trichrus (convolvuli)*, from which it differs in its narrow thorax and pale antennae and legs. In the last two particulars it is the only one so formed in the group.

One specimen from Arizona, probably Fort Whipple, given me by Mr. A. Merkel.

E. heterodera n. sp.—Oblong, piceous-black, densely clothed with fulvous pubescence, varying to cinereous, the thorax of male entirely naked. Antennae black, filiform; head closely punctate, median line finely impressed, occiput slightly impressed; thorax broader than long, rather wider in the male, base arcuate, sides behind the middle slightly convergent in front and then abruptly narrowed to the apex, disc rather flat, the median line distinctly impressed; elytra densely punctulate, vaguely bicostate, the pubescence a little denser along the suture; body beneath black, densely punctulate, vestiture similar to the upper surface; legs black, less densely pubescent. Length 7—9.5 mm.; .28—.38 inch.

Male.—Thorax smooth, glabrous, subopaque; anterior tibiae with two slender terminal spurs.

Female.—Thorax densely pubescent, the pubescence much shorter than on the elytra, along the basal margin on each side are four punctiform glabrous foveae, which are, however, very indistinct in the smaller specimens.

In facies this species resembles *ferruginea* and *sericans*, although with a broader thorax than either. It is the only species in the group with filiform antennae in which the thorax is decidedly broader

than long. The most striking character it possesses is in the great dissimilarity of the vestiture of the thorax in the two sexes.

Occurs in northern Florida. Specimens were given me by Dr. Hamilton and Mr. Henshaw.

TEGRODERA Lec.

T. erosa Lec.

The usual form of this species as found at San Diego and vicinity, has the reticulations of the elytra very coarse. The color is pale orange-yellow, always with the tip piceous for a short distance. The specimens seem about equally divided between those with a piceous band across the middle and those without it.

There occurs in Owen's Valley, where I collected it rather abundantly, a form which seems almost entitled to rank as a distinct species, although I consider it merely a race.

T. erosa, race *latecincta*.

Elytra with reticulations much closer than in the typical form, piceous space at apex better indicated, at middle a rather wide, exactly transverse piceous fascia, the edges undulating.

This form seems a little more robust, and the texture of the elytra firmer and less coriaceous.

PYROTA Lec.

P. Akhurstiana n. sp.—Elongate, black, surface shining, the front, a triangular space at apex of thorax, the base and entire limb of the elytra narrowly red; antennæ black; head sparsely punctate, a vague longitudinal impression of the front; thorax narrow, sides parallel near base, narrowed at apical third, a vague depression at middle of base, surface shining, sparsely punctate; elytra vaguely bicostate, the surface nearly smooth, the punctures minute and very indistinct; body beneath black, shining, very sparsely punctate; legs black. Length 15—22 mm.; .60—.80 inch. Pl. 1, fig. 9.

Male.—Third joint of antennæ broader at base than apex, forming a rounded angle; terminal joint of maxillary palpus placed transversely, elongate oval, narrower at apex, under side concave, with a sensitive surface covering half the area; last ventral segment feebly emarginate.

Female.—Third joint of antennæ narrower at base than at apex; last joint of maxillary palpus flattened cylindrical, slightly curved; last ventral segment with a small but acute incisure.

This species is related to *dubitabilis* (*vittigera* || Lec.), but differs notably in the smoother and more shining surface, the costæ of the elytra are less distinct and finely, the color of the thorax and legs is different.

Occurs in N. Mexico (Akhurst) and at Tucson, Ariz. (Wickham).

PYROCHROA Geoff.

P. californica n. sp.—Black, subopaque, thorax and scutellum orange-yellow, the former with a darker central cloud; antennæ black, acutely serrate; head shining, sparsely punctate, deeply transversely impressed between the eyes; thorax transversely oval, median line impressed, terminating in an oval depression posteriorly, surface sparsely punctate, but with an area of dense coarse punctures each side of the oval depression, surface clothed with fine silken pubescence; elytra densely punctate scabrous, vaguely striate, clothed with short fine black pubescence; body beneath very black, shining, moderately closely punctate; legs and coxæ black. Length 13 mm.; .52 inch.

Very distinct from any of our species by the entirely black color, the thorax and scutellum alone orange-yellow.

One specimen ♀, collected by Mr. D. W. Coquillett near Los Angeles, Cal.

BUPRESTIDÆ.

Pæcilonota debilis Lec. An examination of the type of this insect shows it to be merely a female, rather poorly developed of *P. cyanipes*. In the female of the latter when of full development there is a feeble emargination of the last ventral segment. In the *debilis* the segment is nearly entire.

DYSTAXIA Lec.

The males of *D. Murrayi* Lec., the only species known, have the last ventral deeply and acutely triangularly emarginate. The antennæ are slender and extend to a point opposite the first ventral suture. the female has the last ventral segment broadly rounded and entire, the antennæ shorter, not reaching beyond the end of the metasternum.

In mature specimens the body above is of an entirely uniform malachite green, with but feeble trace of pubescence.

Before attaining maturity the specimens are dark bronze, with a coppery tinge, and the gray pubescence is more conspicuous. On a specimen of this kind is founded *D. Lecontei* Thoms.

SCHIZOPUS Lec.

In the typical species of this genus, *S. lætus* Lec., the sexes differ in a more striking manner. In the male the under side of the body, head and thorax, all the femora and the first two joints of the antennæ are bluish submetallic. The elytra are orange-red, with a narrow sutural edge blue. Probably when quite recent the elytra are brighter red. The tibiæ, tarsi and antennæ, are rufo-testaceous.

The last ventral segment is broadly triangularly emarginate. The antennæ do not extend much beyond the hind angles of the thorax, and are similar in the sexes.

The female is entirely of a uniform blue above and beneath, sometimes quite green, the last ventral entire.

For the opportunity of recording the sexual differences I am indebted to the National Museum at Washington, where numerous specimens were received from San Diego, Cal.

S. Sallei Horn was described from a female with scarcely any trace of metallic surface color. The elytra are similar in color to *lætus* ♂, except that there is a darker oblique vitta extending from the humeral umbone nearly to the sutural angle. The head and thorax are darker in color.

The oblique impression of the thorax, on which I laid some stress, seems not to have great value, as it seems to be a variable quantity in *lætus*. The claws of *Sallei* are, however, much less distinctly cleft, and seem rather to be provided with a small tooth at middle after the style of some *Lachnosternæ*.

This species was collected at Mariposa, Cal., by Mr. Alphonse Thevenet.

Mr. F. Blanchard is quite correct in recording the presence of the "ante-coxal piece" of the metasternum in both *Schizopus* and *Dystaxia*. The presence of this piece seems to be quite characteristic of the Buprestidæ. In the genus *Lissomus*, of the Throscidæ, there is no trace of this piece, so that by the fortunate discovery by Mr. Blanchard we have a more ready method of separating the latter family from the Buprestidæ than previously existed, *Lissomus* having always been an annoying element.

While the presence of the "ante-coxal piece" and its modification, or entire absence, plays an important part in the Adephagous series, it would hardly have been suspected to have similar utility in a series so remotely separated as the Serricornia.

ACTENODES Lac.

A. mendax n. sp.—Form of *calcarata*, but somewhat more convex, color dark greenish bronze varying to cupreous, feebly shining; antennæ short, obtusely serrate; front rather flat, coarsely and closely punctate, not longitudinally impressed, surface rather uneven in the female; thorax more than twice as wide as long, sides parallel, with a slight sinuation, obliquely narrowed at anterior third, disc regularly convex, moderately coarsely and closely punctate, with a

tendency to form transverse strigæ; elytra with rarely a trace of a costa near the suture, the surface scabrous, with a tendency to form transverse strigæ to a slight extent, the oblique portion of the margin serrate; body beneath more shining than above, punctate and transversely strigose, prosternum more coarsely punctate; anterior femora toothed at outer third. Length 12—17 mm.; .48—.68 inch.

In both sexes the last ventral is truncate, squarely in the ♀, slightly emarginate ♂. The anterior tibiæ are serrate in the male very distinctly, but in the female this is but faintly indicated.

This insect has been a long time in my cabinet, but I refrained from naming it, hoping that it was a known Mexican form, or that it would be described in the "Biologia." This not proving the case, and as specimens are occasionally being sent me I have thought it well that it should be described.

Known to me from Texas to Fort Yuma. A specimen before me is labeled Illinois, but the locality is open to doubt.

Bibliographical Reviews.

In a recently published part of the "Biologia Centrali-Americana (vol. iii, pt. 1)," in reviewing the Throscidæ, it was observed that Throscus, as then constituted, was clearly divisible into two genera:

THROSCUS includes those in which the metasternum is simply obliquely impressed, while

AULONOTHROSCUS will receive those with a rather deep and well-defined groove. To this division belong *validus*, *punctatus*, *invisus*, *constrictor*, *convergens* and *pugnax*, the remaining species will continue as Throscus, all the European species belonging here, and must be accepted as the typical forms.

In the same essay, a few pages after, it will be observed that the name Tharops has been superceded by Isorhipis, the former name having been previously used.

As an illustration of the rather restricted distribution of the Eucnemidæ generally, it will be observed that but few species occur south of our boundary which are found within it, these are *Nematodes atropos*, *Microrhagus humeralis* and *Anelastes Druryi*, the first being somewhat doubtful, while the last is represented in both its races the shining (*Latreillei*) and opaque (*Druryi*) as far south as Guatemala.

In the Mexican fauna the species of the family Throscidæ show nothing in common. In our fauna *Throscus sens. lat.* is represented by thirteen species, and in Mexico by five, while *Drapetes* contains twenty-six in Mexico and but four with us, in addition to which *Lissomus* has twelve Mexican species, and is totally unknown in our fauna. *Pactopus* makes a closer approach to the *Eucnemidæ* without having any parallel in Mexico.

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There has recently appeared from the able hands of Dr. Candéze a work entitled, "Catalogue Méthodique des Elaterides connus en 1890," which will have great value to those interested in the study of that family. In it all impertinent synonymy has been omitted, only such being given as has not already obtained sufficiently wide circulation. But little has been observed worthy of correction in reference to our species, except that *Megapenthes granulatus* Mels. is on p. 98, while its male is found on p. 190 as *Ludius limbatus* Hbst. Our *Betarmon bigeminatus* Rand. has been omitted. The results of my studies of *Cryptohypnus* are included in the list, although I have slightly modified the arrangement of the species since my communication to him.

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EXPLANATION OF PLATE I.

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- Fig. 1.—Maxillary palpus of *Cryptohypnus littoralis*.
 " 2.—Maxillary palpus of *C. planatus*.
 " 3.—Maxillary palpus of *C. restrictulus*.
 " 4.—Last ventral segment ♂ of *C. restrictulus*.
 " 5.—Last ventral segment ♀ of *C. restrictulus*.
 " 6.—*Anthracoptyx hiemalis*.
 " 7.—Maxillary palpus of *Anthracoptyx hiemalis*.
 " 8. Claw of *Oedostethus femoralis*.
 " 9.—Antenna and maxillary palpus ♂ of *Pyrota Akhurstiana*.
 " 10.—Head of *Epicauta straba*.
 " 11.—Head of *Epicauta* of usual form.
 " 12. *Eleodes Wickhami*.
 " 13.—*Eleodes longipilosa*.

