

one imperfect, was secured a few years ago. This year (1917) there emerged in one of my cages an abnormal *Samia cecropia* differing from any specimen I have ever seen. The cocoon from which the moth was bred did not differ from any of the hundred or more other cocoons that I had, all of which were collected on the outskirts of Philadelphia. A description of this specimen is not necessary, as it is well figured in this number of the NEWS (Plate IX, upper figure).

Studies in the Tenebrionid Tribe Eleodiini No. 3 (Coleop.).

By F. E. BLAISDELL, SR., San Francisco, California.

Eleodes pimelioides Mann., var. *brevisetosa* n. var.

Oblong-ovate, very densely and rather finely sculptured, dull black, the legs dark nigro-piceous.

Head very densely and confluent punctate, punctures rather fine. *Antennæ* moderate in length.

Pronotum about one-fifth wider than long; disc moderately convex, rather finely and very densely punctate, punctures more or less confluent, the intervals being mere lines; sides more or less angulate at middle, thence evenly and moderately arcuate to apex, conversely oblique, convergent, straight or feebly sinuate to the basal constriction, the latter distinct and about one-seventh of the total length, with sides straight and parallel.

Elytra slightly oblong, two-sixths longer than wide, vertically declivous posteriorly; sides broadly, evenly and moderately arcuate; humeri obtuse and not in the least prominent; disk widest at the middle third, moderately convex on the dorsum, broadly and arcuately rounded at the sides; surface densely sculptured with tuberculiform granules, which are bright and shining at their summits, each bearing a short seta. On the central part of the disk the granules are less developed and more asperately punctate, the asperities are absolutely without an orderly arrangement. Otherwise as in *brunnipes*.

Measurements.—♂—Length, 11.0 mm.; width, 4.75 mm. ♀—Length, 12.0-15.0 mm.; width, 5.0-7.5 mm.

Types in my own collection. Collector F. W. Nunenmacher.

Habitat. Lassen County, California (type locality), May; Verdi, Nevada, April. 21 specimens studied.

In the male the first joint of the protarsi bears a moderate

tuft of golden pubescence at tip beneath; the second joint has a narrow transverse tuft. The basal joint of the mesotarsi bears a very small tuft which does not wholly interrupt the plantar groove.

The female referred to under *brunnipes* in my monograph of the Eleodiini (Bull. 63, U. S. Nat. Mus.), and which was collected at Verdi, Nevada, belongs here. It was doubtfully referred to *brunnipes* and did not agree with my specimen of that species which was collected at Buena Vista, Colorado.

Eleodes nunenmacheri n. sp.

Robust, subovate, densely sculptured and dull black. Elytra tuberculate throughout, body setigerous throughout.

Head rather small, less than one-half the width of the prothorax, very densely punctate, punctures rather small, subperforate, and more or less coalescent; intervals very narrow or more or less obsolete; feebly and broadly impressed along the line of the frontal suture. Antennae a little longer than the head and pronotum, moderate in stoutness, outer four joints moderately compressed, very feebly incrassate; third joint as long as the fourth and fifth taken together, fourth to the seventh inclusive subequal in length and obconic, eighth triangular, ninth and tenth about as long as wide, eleventh obovate.

Pronotum wider than long, widest just in front of the middle; sides broadly and evenly arcuate anteriorly, oblique and converging posteriorly, and just noticeably arcuate to straight—not reëntrant, constricted in basal twelfth, sides of the constriction straight and parallel, sinuate only at the junction of the obliquely directed sides and the constriction, arcuately subangulate at middle; disk evenly and moderately convex, densely punctate, punctures moderate, subperforate, more or less coalescent and minutely setigerous, intervals very narrow to subobsolete, with scattered small smooth areas as if a puncture was now and then obsolete; apex very feebly sinuate and not beaded; base subequal to the apex, transverse and not beaded; apical angles obtusely and narrowly rounded; basal angles rectangular and not prominent.

Propleura opaque, densely and finely punctate, punctures minutely setigerous; surface rugulose at the acetabula.

Elytra slightly longer than wide, quadrato-ovate, widest in middle third; base truncate, slightly wider than the contiguous prothoracic base; humeri subangulate and not prominent; disk moderately convex on the dorsum, broadly and arcuately rounded laterally, arcuately and abruptly declivous posteriorly; surface strongly tuberculate

throughout, tubercles moderate in size, nearly simple, bearing small setae, laterally and on the apical declivity more distinctly muricate, setae longer, feebly reclinate, more strongly so at the extreme periphery, with minute tubercles scattered between the larger ones, all smooth and more or less shining, general surface minutely reticulate.

Epiptera very sparsely muricato-tuberculate, gradually narrowing from base to apex; surface minutely reticulate.

Sterna finely and densely punctate.

Paraptera finely and less densely punctate.

Abdomen smooth and shining, rather densely punctate, first segments distinctly so, fifth finely and moderately densely punctate.

Legs moderate in length and stoutness.

♂.—Less robust, somewhat narrower. Abdomen rather less than moderately convex, impressed at middle of the first two segments, slightly oblique to the sterna. First two joints of the protarsi clothed with a tuft of golden pubescence at tips beneath. First joint of the mesotarsi without tufts.

♀.—Robust. Abdomen quite strongly convex. First joint of the protarsi distinctly thickened at apex beneath and evidently clothed with coarse short setae; second joint with a narrow transverse tuft which is cleft at middle, plantar groove distinct basally, but obsolete on the first joint which is convex beneath.

Measurements.—♂—Length, 9.5-11.0 mm.; width, 4.5-5.0 mm. ♀—Length, 12.5 mm.; width, 6.5 mm.

Habitat.—Klamath and Lake counties, Oregon; Lassen and Modoc Counties, California. 17 specimens studied.

Types ♂ and ♀ in my own collection; type locality, Klamath County, Oregon. F. W. Nunenmacher, collector.

The males have the prothorax rather more strongly constricted before the base, but the sides in all instances are straight or feebly arcuate between the middle and the constriction and not re-entrant, as in *cordata* and *pimelioides*. The prothorax appears relatively wider as a result.

Nunenmacheri differs from *pimelioides* in the shape of the pronotum and in its denser punctuation; the tuberculation of the elytra is also more regular and less muricate. It should follow *pimelioides* and its races in our lists.

***Eleodes nunenmacheri*, var. *verrucula* n. var.**

Form as in *nunenmacheri*. Punctuation of the pronotal disk slightly finer. In the female the form of the pronotum is the same as in *nunenmacheri*, while in the male the basal constriction is more ab-

raptly formed; as a result the sides behind the middle are somewhat more strongly convergent and straighter, and the sides of the constricted portion are straight and parallel. The basal angles are rectangular.

The elytral disk centrally and along the suture is somewhat sub-obsolete tuberculo-rugulose, peripherally muricato-tuberculate, the tubercles being more reclinate than in *nunenmacheri*, their summits are bright and shining and about one-half as large as in the typical race; very small tubercles are scattered between the larger ones. The general surface is microscopically granulato-reticulate. Laterally the tubercles are setigerous, the setae are reclinate and in length about equal to the height of the tubercles; on the central part of the disk the setae are more hair-like.

The inter-coxal process of the prosternum is not mucronate in the specimens at hand.

♂.—Abdomen oblique to the sterna, rather feebly convex and quite strongly impressed on the first two segments. The basal two joints of the protarsi bear tufts of golden pubescence at tips beneath; basal joint of the mesotarsi bears a small transverse tuft.

♀.—As in *nunenmacheri*.

Frequently the apical tarsal tufts are piceo-fuscous, but usually become golden yellow after immersion in chloroform.

Measurements.—♂—Length, 9.5-11.0 mm.; width, 4.5-5.0 mm. ♀—Length, 12.5 mm.; width, 6.5 mm.

Habitat.—Lake and Klamath Counties, Oregon; Lassen and Modoc Counties, California; 78 specimens studied.

Types ♂ and ♀ in my own collection; type locality, Lake County, Oregon. F. W. Nunenmacher, collector. The specimens were collected in May.

***Eleodes propinqua* n. sp.**

Ovate, twice as long as wide, distinctly pubescent throughout, densely sculptured; elytra moderately scabrous.

Head rather finely and densely punctate, feebly convex. Antennae extending a short distance beyond the base of the pronotum, slightly compressed and feebly dilated in the outer three joints, scarcely incrassate; third joint just the least longer than the combined lengths of the fourth and fifth, fourth to the seventh joints inclusive subequal in length and width, eighth triangularly obconical, ninth triangulo-oval, tenth slightly wider than long, the eleventh short obovate.

Pronotum slightly wider than long, widest just in advance of the middle; disk moderately convex, more strongly so in the lateral thirds, closely and not finely punctate, intervals narrow, feebly convex but not rugose, somewhat scabrous laterally; base and apex subtruncate,

scarcely margined; sides subangulate, more or less feebly arcuate and convergent before the middle to apex, somewhat oblique, straight or feebly arcuate to the marked constriction posteriorly, the latter about or less than one-sixth of the total pronotal length; apical angles obtuse; basal angles rectangular.

Propleura rather densely punctato-rugose and submuricate.

Elytra oval, about one-fourth longer than wide, widest at middle third; base truncate, distinctly wider than the contiguous pronotal base; humeri obtuse and not in the least prominent; sides evenly arcuate, apex not broadly rounded; disk moderately convex on the dorsum, evenly and broadly arcuate laterally and vertically declivous posteriorly; surface densely sculptured, punctato-scabrous centrally about the suture, tuberculate laterally, tubercles rather small, somewhat muricate, more strongly so on the apical declivity, each tubercle or puncture with a *moderately long semi-erect hair*.

Epipectus subscabrous and not strongly defined from the elytral disk.

Sterna and *parapleura* shining and densely punctate.

Abdomen glabrous and shining, more or less densely punctate, especially on the first segment and basally on the others.

Legs moderate and rather slender. Anterior tarsi dissimilar in the sexes.

♂.—Somewhat narrow. Abdomen feebly oblique to the sterna and impressed at middle of the first two segments. Protarsi with the first two joints scarcely thickened at tips beneath, each with a tuft of pubescence, tufts piceo-flavous, that of the first joint rather broadly truncate, that of the second transverse and subtruncate; first joint of the mesotarsi with a small rounded and truncate tuft at tip beneath.

♀.—Broader and ovate. Abdomen horizontal. First joint of the protarsi somewhat thickened at tip, with the apico-marginal tufts of spinules contiguous at the median plane and blocking the plantar groove.

♂.—Length, 9.5-10.5 mm.; width, 4.5-5.0 mm. ♀.—Length, 10.0-12.0 mm.; width, 5.0-6.5 mm.

Habitat.—Modoc County, California. Collected May 15, 1913, by F. W. Nunenmacher; 52 specimens studied.

Types ♂ and ♀ in my own collection; type locality, Modoc County, California.

In a single female the joints of the protarsi are wholly denuded of spinules. The plantar grooves are not defined on the first four joints, which are evenly and smoothly convex from side to side, the first is subhemispherically promi-

ment in the apical two-thirds; the fifth joint is alone margined beneath.

Propinqua is related to *caseyi*, from which it differs in its coarser sculpturing, more strongly sinuate sides of the pronotum and many other details which can be determined by comparison of the two descriptions. The elytra are noticeably pubescent.

Eleodes brevisetosa, *nunenmacheri*, *verrucula* and *propinqua* belong to the subgenus *Blapylis*.

***Eleodes hispilabris* Say, var. *imitabilis* n. var.**

Syn. *E. hispilabris forma laevis*.

In order to express the relationships of the races of *hispilabris* properly, it becomes necessary to consider the smooth form (*forma laevis*) as a race instead of a *forma*. The original diagnosis given in my Monograph of the Eleodiini is as follows:

Robust, integuments decidedly black, thick and alutaceous, also quite smooth. Thorax rather large. Elytra usually evenly convex from side to side, sulci very shallow and subobsoletely punctured; intervals very feebly convex and with a single row of widely spaced punctures, that become minutely but distinctly muricate laterally and on the apical declivity. Legs somewhat slender.

Measurements.—♂—Length, 23.0 mm.; width, 8.0 mm. ♀—Length, 23.0-26.0 mm.; width, 9.2-10.0 mm.

Habitat.—Utah (Salt Lake, June, Coll. Hubbard and Schwarz); Oregon (The Dalles); State of Washington (Walla Walla, Coll. Chas. Fuch and F. E. Blaisdell).

Types in my own collection; type locality, The Dalles, Oregon.

While there are very close resemblances between the two sexes as to general form, a difference is obvious. The males are slightly narrower and the abdomen less convex. *E. hispilabris forma elongata* of the Monograph (Bull. 63, U. S. Nat. Mus.) is a variation of *imitabilis* and not of the type-species. Its relationship may be expressed as follows:

***E. hispilabris*, var. *imitabilis*, forma *elongata*.**

The essential diagnostic characters are as follows:—General form distinctly elongate and narrower as compared with the typical race.

Integuments thick, dull black and alutaceous. Elytra sulcate, but less so than in *E. hispilabris* var. *sculptilis*, and slightly more so than in *imitabilis*. The elytral intervals are more or less feebly convex. The prothorax is noticeably larger and the legs stouter. The general form is the same in both sexes,—the female is depressed on the dorsum as in the male and the elytra are but slightly wider than those of the male. There is here less sexual differentiation, as has already been mentioned in connection with other species or races, as *E. (Blaphylis) neotomae* for instance.

***Eleodes hispilabris* Say, var. *attenuata* n. var.**

Elongate, subfusiform, shining, black; elytra more or less slightly sulcate, moderately convex; integuments weak.

Head finely and sparsely punctate, punctures coarsest on the epistoma and finest on the vertex. Antennae long and as in *hispilabris*.

Pronotum widest at about the middle; disk smooth and more or less alutaceous, moderately convex, finely, very sparsely and irregularly punctured, narrowly granulate and opaque along the marginal bead; apex slightly narrower than the base, feebly emarginate and obsolete beaded; sides evenly and broadly arcuate, becoming slightly sinuate before the basal angles, which are subrectangular, distinct but not in the least prominent, marginal bead more or less strong; base feebly beaded and feebly arcuate; apical angles subacute and not dentiform to moderately dentiform, not or feebly everted.

Propleura smooth, subopaque, finely punctulate, and more or less feebly rugulose.

Elytra ovato-fusiform, about twice as long as wide, widest at the middle; base very feebly emarginate and just the least wider than the contiguous base of the pronotum; humeri minutely dentiform; sides evenly arcuate, feebly and broadly sinuate before the apex, the latter subacute, slightly deliscent and the suture impressed; disk feebly convex on the dorsum, broadly and rather evenly rounded laterally, gradually and arcuately declivous posteriorly; surface more or less sulcate; sulci shallow and with a single row of small, very closely placed punctures, intervals feebly to moderately convex and with a single row of widely spaced punctures. The deflexed sides are more coarsely, irregularly punctate, subsulcate and more or less asperate.

Sterna and *parapleura* more or less finely punctate.

Abdomen more or less glabrous, finely and sparsely punctate, punctures denser and rugulose on the first segment.

Legs slender; profemora armed. Tarsi grooved and similar in the sexes.

♂.—Slender, fusiform. Elytral apex more attenuate and the disk more gradually declivous on the dorsum. Abdomen horizontal and feebly convex.

♀.—Less elongate, broader. Abdomen more strongly convex.

Measurements.—♂—Length, 20.5-23.0 mm.; width, 6.0-6.5 mm. ♀—Length, 20.0-24.0 mm.; width, 6.2-7.0 mm.

Habitat.—Nogales, Santa Cruz County, Arizona. August and September, 1906. Eleven specimens studied. Collected by F. W. Nunenmacher.

Types in my own collection; type locality, Nogales, Arizona.

Attenuata can be recognized by its smoother sculpturing, more attenuate and fusiform body.

Some Bees of the Genus *Panurginus* (Hym.).

By T. D. A. COCKERELL, Boulder, Colorado.

It is a remarkable thing that the northern genus *Panurginus* has penetrated to Southern South America; while *Perdita*, so rich in species in our southwest, appears to be wholly absent from the South American desert regions.

Panurginus callurus sp. n.

♀.—Length nearly 5 mm., with broad abdomen; head and thorax black, abdomen clear orange-ferruginous, without hair-bands; flagellum short, bright ferruginous beneath, darker above; mandibles bright ferruginous, with the apex broadly black; hair of head and thorax whitish, scanty, abundant on postscutellum; facial quadrangle much broader than long; head and thorax shining and finely punctured, the mesothorax and scutellum polished; eyes gray; tegulae light rufo-testaceous; wings hyaline, nervures and stigma testaceous; b. n. falling far short of t. m.; base of metathorax with irregular plicae, and the surface microscopically reticulate; legs ferruginous, the anterior femora dusky; scopa of hind tibiae loose, of simple curved hairs, which are microscopically annulate; hind basitarsus about as long as the other joints together, and much broader; claws cleft; abdomen with very little hair except at apex. The stigma is smaller than in *P. vagabundus*.

Carcarana, Argentina (*L. Bruner* 76). United States National Museum. Easily known by the red abdomen. *P. rufiventris* Friese has also a red abdomen, but the head and thorax are dark blue. It is from Mexico.

Panurginus vagabundus sp. n.

♂.—Length about 5 mm., anterior wing 4; black, the hind margins of the abdominal segments rather obscurely castaneous; pubescence scanty, whitish; eyes slaty black; clypeus pale lemon yellow with two dark

dots, the surface rugoso-punctate, not polished; mandibles rufescent; labrum black, polished and shining; facial quadrangle about as broad as long; flagellum bright ferruginous beneath, reaching as far as base of wings; mesothorax and scutellum shining, finely punctured; base of metathorax rugulose, dull, with feeble plicae; tubercles faintly reddish or wholly black; tegulae rufotestaceous; wings hyaline, very faintly dusky apically; nervures and the large stigma ferruginous; b. n. falling a little short of t. m.; knees pale yellowish; anterior tibiae in front, and their tarsi, light reddish; the other tarsi whitish on outer side and light ferruginous on inner; abdomen shining, finely punctured, without hair-bands. Claws cleft; hairs on hind tibiae delicately plumose.

Carcarana, Argentina (*L. Bruner*, 40 and 72.) United States National Museum. This is separated from its nearest relatives as follows, the table based on males:

Legs black	1.
Legs partly yellow or pale reddish	2.
1. Clypeus yellow	<i>saltensis</i> Friese.
Clypeus white	<i>aeneiventris</i> Friese.
2. Tubercles yellow, wings dark	<i>steinbachi</i> Friese.
Tubercles not yellow, wings clear	<i>vagabundus</i> Ckll.

In Meadow Valley, northern Mexico, Prof. C. H. T. Townsend took three species of *Panurginus*. One is the Rocky Mountain *P. bakeri* Ckll., while the other two are new.

***Panurginus nitescens* sp. n.**

♀.—Length a little over 7 mm.; shining black, with scanty pale hair; eyes obscure green; clypeus polished, with large distinctly separated punctures, and a faintly indicated median groove; antennae black; an impunctate area on each side of the ocelli; mesothorax polished, with distinct but widely scattered punctures; area of metathorax rugosoplicate, with a prominent smooth shining rim; tegulae dark, with a large reddish spot; wings clear, nervures and stigma dull rather pale reddish; legs black, with pale hair; spurs ferruginous; abdomen shining, hind margins of segments 2 to 4 broadly reddish.

Meadow Valley, Mexico (*Townsend*). United States National Museum. This species is best distinguished by comparison with several others which it greatly resembles, as follows:

Middle of flagellum bright rufous beneath; wings brownish,

perlaevis Ckll.

Flagellum not thus marked; wings clear, or (*piercei*) slightly dusky..1.

1. Second s. m. narrowed fully half above, first r. n. joining second s. m. much more than twice as far from base as second r. n. from apex; mesothorax very smooth, without conspicuous punctures,

piecei Crawford.

Second s. m. not thus narrowed above, first r. n. joining second s. m. nearer base (especially in *innuptus*); mesothorax distinctly punctured 2.

2. Area of metathorax without a shiny rim; tegulae testaceous,

innuptus Ckll.

Area of metathorax with a shiny rim; tegulae reddish fuscous,

nitescens Ckll.

Panurginus planatus sp. n.

♂.—Length about 6 mm.; slender, black; quadrate spot on labrum, large spot at base of mandibles, clypeus entirely, lateral face-marks (pointed above at an angle of about 50 deg.), a lobe on inner side of lateral marks (representing part of dog-ear marks) and lower part of supra-clypeal area (pointed above), all pale yellow; the yellow patch on labrum is the process, which is broadly truncate, slightly emarginate, with a submarginal row of black spots; pubescence scanty and pale; antennae long, black; mesothorax polished, with strong punctures; area of metathorax with strong plicae, more or less branching, but without a shining rim; knees broadly, tibiae at apex, anterior tibiae in front, and the basitarsi, light yellow; tegulae rufopiceous; wings dusky, nervures and stigma fuscous; abdomen shining, sixth ventral segment with a large median depression.

Meadow Valley, Mexico, September (*Townsend.*) United States National Museum. Related to *P. concinnus* Fox, but especially to *P. rudbeckiae* Rob. The three are separated thus:

Flagellum pale testaceous beneath.. *concinnus* Fox (Lower California).

Flagellum dark 1.

1. Clypeus with a strong median sulcus .. *rudbeckiae* Rob. (Illinois).

Clypeus without such a sulcus *planatus* Ckll.

Membership in the Association of Economic Biologists.

EDITOR, ENTOMOLOGICAL NEWS: I beg to inform you that at a recent meeting of the Council of this Association it was decided to cancel the rule limiting its membership to those of British nationality. As foreign members will, therefore, have the same privileges as British ones, including the right to receive the *Annals of Applied Biology* for the annual subscription of £1. 1. 0. (which is sold to the public at 25 sh.), the fact may possibly be of some interest to readers of your journal.—S. A. NEAVE, *Honorary Secretary*, 89, Queen's Gate, London, S. W. 7.