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THE GENERA *CHRYSINA* AND *PLUSIOTIS* OF NORTH CENTRAL MEXICO (COLEOPTERA, SCARABAEIDAE)

BY MONT A. CAZIER¹

The material on which this paper is based was collected on the David Rockefeller Mexican Expedition of the American Museum of Natural History (Spieth, 1950). However, it also includes species previously recorded from Chihuahua, Durango, Zacatecas, and Coahuila, and also one species (*beyeri*) known only from the United States.

Both genera are primarily Neotropical, with most of the species occurring south of the area being considered in this paper. *Chrysina* contains six species (Ohaus, 1934), two of which are endemic in Chihuahua, Durango, and Nayarit, and none reaches the United States. *Plusiotis* contains 49 species (Ohaus, 1934), only two of which appear to be endemic in Durango; one is a southern species, three occur both in the United States and north central Mexico, and one is known only from Arizona.

The writer wishes to express his thanks to Dr. David Rockefeller who is responsible for making the material available, and to Miss Marjorie Statham who made the drawings.

KEY TO THE GENERA²

1. Males with hind tibiae notched at base on inner margin; hind legs usually greatly enlarged. Females with side margins usually widely reflexed from base to near apex..... *Chrysina*

¹ Chairman and Associate Curator, Department of Insects and Spiders, the American Museum of Natural History.

² Further studies are necessary to determine the validity of *Plusiotis* and *Chrysina* as distinct genera. At present only the males can be distinguished with certainty on characters of questionable generic value.

- Males with no notch on inner margin of hind tibiae; hind legs not greatly enlarged. Females with side margins of elytra not reflexed much beyond middle.....*Plusiotis*

KEY TO THE SPECIES OF THE GENUS *Chrysina*

1. Mesosternal process wide though acute.....*beckeri*¹
 — Mesosternal process narrower and rounded.....*erubescens*

***Chrysina beckeri* Bates**

Chrysina beckeri BATES, 1889, *Biologia Centrali-Americana*, Coleoptera, vol. 2, pt. 2, p. 411.

No specimens of this species were collected on the expedition, and none was available for study. According to Bates (1889) it is closely related to *C. amoena* Sturm, but can be separated from it by the sparser punctuation of the upper surface, in which character it is intermediate between *C. amoena* and the more strongly punctured examples of *C. macropus* Francillon. It agrees with *C. amoena* in the prominent though small mesosternal process, which is narrower and more acute, though much stouter, than in *C. erubescens*.

This species was listed by Leng as occurring in Arizona, but this record was probably based on an incorrectly determined specimen of *P. beyeri*. There are no authentic records of any species of *Chrysina* from the United States.

TYPE LOCALITY: Canelas in the Sierra Madre de Durango.

***Chrysina erubescens* Bates**

Figure 1

Chrysina erubescens BATES, 1889, *Biologia Centrali-Americana*, Coleoptera, vol. 2, pt. 2, p. 411, pl. 24, fig. 23.

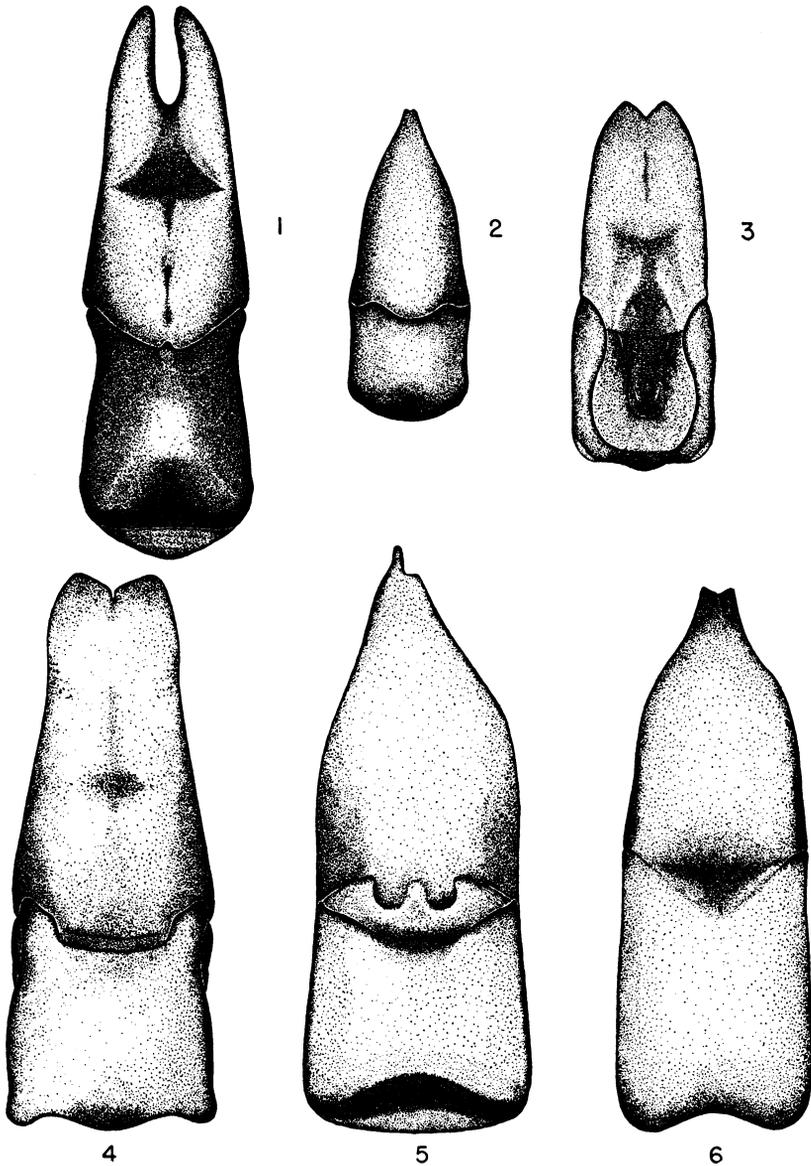
A series of 57 specimens of this species were collected on oak by members of the expedition, and the distribution of the species is considerably extended.

TYPE LOCALITY: Ciudad in Durango.

RECORDED MEXICAN DISTRIBUTION: Durango: Durango City. Nayarit: Sierra de Nayarit.

NEW RECORDS FOR MEXICO: Chihuahua: Matachic, July 7, 1947; 5 miles west of Matachic, July 8, 1947; 8 miles west of Matachic, July 8, 1947, 7200 feet; Kilo. 36, Santa Barbara-

¹ Placed in key on basis of description only; no specimens available for study.



FIGS. 1-6. Male genitalia. 1. *Chrysina erubescens*. 2. *Plusiotis lecontei*. 3. *Plusiotis gloriosa*. 4. *Plusiotis beyeri*. 5. *Plusiotis woodi*. 6. *Plusiotis adelaida*.

Ojito Road, August 17, 1947, 6900 feet (G. M. Bradt); Canon Prieto near Primavera, July 2, 1947, 6500–6800 feet; Santa Barbara, September 19, 1947, 6200 feet (G. M. Bradt); San Francisco del Oro, October, 1948 (Tommy Herndon). Durango: Palos Colorados, August 5, 1947, 8000 feet; 6 miles northeast of El Salto, Durango District, August 10, 1947, 8500 feet. Sonora or Nayarit: Santa Teresa (U.S.N.M.).

KEY TO THE SPECIES OF *Plusiotus*

1. Each elytron with four longitudinal silver vittae..... *gloriosa*
— Elytra without silver vittae..... 2
2. Tibiae and tarsi pale lavender..... *beyeri*
— Tibiae and tarsi not pale lavender..... 3
3. Tibiae brilliant green, tarsi dark green, blue, or purple..... *woodi*
— Tibiae and tarsi not bicolored as above..... 4
4. Middle of femora and tibiae reddish violet, tarsi silver green..... *flohri*¹
— Middle of femora and tibiae not reddish violet, tarsi not silver green... 5
5. Third elytral striae obsolete behind middle; sides of elytra somewhat erugos, especially behind the humeri..... *brevis*¹
— Third elytral striae not obsolete behind middle; sides of elytra not rugose. 6
6. Prosternum with median longitudinal groove; mesosternal process long, extending beyond middle coxae; labrum deeply emarginate.... *adelaida*
— Prosternum with median longitudinal carina; mesosternal process short, not extending beyond middle coxae; labrum shallowly emarginate. *lecontei*

***Plusiotis gloriosa* Le Conte**

Figure 3

Plusiotis gloriosa LE CONTE, 1854, Proc. Acad. Nat. Sci. Philadelphia, pp. 221–222.

One male and one female collected on juniper by members of the expedition do not differ from series taken in Arizona and New Mexico, and the genitalia are identical.

TYPE LOCALITY: Copper mines and at Camp No. 6 (Texas?).

RECORDED MEXICAN LOCALITIES: Sonora: Cananea.

NEW RECORDS FOR MEXICO: Chihuahua; 2 miles west of Matachic, July 7, 1947, 6400 feet.

***Plusiotis beyeri* Skinner**

Figure 4

Plusiotis beyeri SKINNER, 1905, Ent. News, vol. 16, p. 289.

Plusiotis beyeri ocularis CASEY, 1915, Memoirs on the Coleoptera, vol. 6, p. 83 (new synonym).

¹ No specimens of these species were available for study, and the characters used in the key were taken from the literature.

Plusiotis ampliata CASEY, 1915, Memoirs on the Coleoptera, vol. 6, p. 82 (new synonym).

Although this species has never been recorded from Mexico, it is included for the sake of completeness of the paper and to record the two new synonyms as given above. *P. beyeri ocularis* represents a small male and *P. ampliata* a large female of *P. beyeri*, both being within the range of variability of typical *P. beyeri*.

TYPE LOCALITY: Carr Canyon and Miller Canyon, Huachuca Mountains, Arizona.

Plusiotis woodi Horn

Figure 5

Plusiotis woodi HORN, 1885, Trans. Amer. Ent. Soc., vol. 12, p. 124.

No specimens of this species were taken on the expedition. It is rather common in northwestern Texas where it occurs on walnut.

TYPE LOCALITY: Rio Grande, Texas.

RECORDED MEXICAN LOCALITIES: Chihuahua: Pinos Altos.

Plusiotis flohri Ohaus

Plusiotis flohri OHAUS, 1905, Ent. Zeitg., Stettin, vol. 66, p. 321.

No specimens of this species were collected on the expedition. According to Ohaus it is closely related to *P. badeni* Boucard, *P. lacordairei* Boucard, and *P. sallaei* Boucard. It is relatively somewhat broader, but not broadened towards the apex as in *P. sallaei*. Above beautiful apple green with golden yellow sheen, below greenish shining silver, the middle of the femora and the tibiae reddish violet, the tarsi silver green, antennae red brown; apical convexity of the elytra less prominent and not metallic. Head rugosely punctured; pronotum bordered with fine silvery edge, extremely finely and densely punctured, and with coarser punctures between. Elytra regularly furrowed, striae strongly punctured, the three discal interstices with shortened rows of punctures, the whole upper surface extremely finely and rather densely punctate and, therefore, less shining than in the three species mentioned above. Pygidium densely punctate, with isolated, rather large punctures. Mesosternal appendage with a rather small, painted knob or elevation which scarcely extends

over the middle coxae. According to Ohaus (1934) *P. flohri* belongs to the *costata* group to which *P. lecontei* also belongs.

MALE: Length, 24 mm.; width, 14 mm.

TYPE LOCALITY: Ventanas, Durango, Mexico.

Plusiotis brevis Rothschild and Jordon

Plusiotis brevis ROTHSCHILD AND JORDON, 1894, Novitates Zool., vol. 1, p. 507.

No specimens of this species were collected on the expedition. The elytra have about nine stripes each, the outer ones irregular and feeble; the third and fourth interstices more raised behind, where they are confluent, the third stripe obsolete behind the middle; sides somewhat rugose, especially in the slight depressions behind the humeri, outer margin not dilated and only faintly flattened beside the posthumeral impression. According to Rothschild and Jordon this species is almost the same size and outline as *P. lecontei* Horn, but is more rounded, has a pale apple green color, and golden green tibiae; its pubescence is white; the head is broad as in *P. laniventris* and allies, and not small as in *P. lecontei*; the process of the mesosternum is a little longer than in *P. laniventris*; the last abdominal segment transverse, truncate, and transversely depressed before the apical margin.

FEMALE: Length, 22 mm.; width, 13 mm.

TYPE LOCALITY: West Mexico (taken on a journey from Durango to the Pacific).

Plusiotis adelaida (Hope)

Figure 6

Pelidnota adelaida HOPE, 1840, Proc. Ent. Soc. London, vol. 4, p. 11; 1840, Trans. Ent. Soc. London, vol. 4, p. 8.

Two specimens of this species were collected on the expedition at lights at night. Both specimens are green, with a median, reddish brown, longitudinal stripe on the pronotum. This species appears to be variable, and the correct synonymy can be established only by a study of the male genitalia, which are not now available.

TYPE LOCALITY: Mexico.

RECORDED MEXICAN DISTRIBUTION: Oaxaca: La Parada. Guerrero: Omiltene. Distrito Federal: Atlapanga, Anecholac,

Xololoya, Cofre de Perote. Durango: Promontorio; Sierra de San Francisco. Vera Cruz: Jalapa.

NEW RECORDS FOR MEXICO: Durango: 6 miles northeast of El Salto, Durango District, August 10, 1947, 8500 feet; Coyotes, Durango District, August 8, 1947, 8300 feet.

Plusiotis lecontei Horn

Figure 2

Plusiotis lecontei HORN, 1882, Trans. Amer. Ent. Soc., vol. 10, p. 120.

Plusiotina aeruginis CASEY, 1915, Memoirs on the Coleoptera, vol. 6, p. 85 (new synonym).

Plusiotina subenodis CASEY, 1915, Memoirs on the Coleoptera, vol. 6, pp. 85, 86 (new synonym).

Plusiotina angusta CASEY, 1915, Memoirs on the Coleoptera, vol. 6, p. 86 (new synonym).

Plusiotina sonora CASEY, 1915, Memoirs on the Coleoptera, vol. 6, p. 86, 87 (new synonym).

A study of the Casey types has shown that the four names listed above as synonyms represent individual variants of this common and widespread species. The male genitalia of the types of *P. subenodis* and *P. sonora* are the same as those of topotypical males of *P. lecontei*. The male type of *P. angusta* does not differ specifically from males of *P. lecontei* taken from numerous localities in Arizona. The distinguishing characters given by Casey represent individual differences rather than population differences. A series of 78 specimens of *P. lecontei* from Arizona were dissected, and it was found that 66 were males and 12 females, all of the latter being the larger and darker green or bluish specimens in the series. The type of *P. aeruginis* is a large, dark green female that does not differ specifically from the Arizona females. The male and female collected on the expedition in Durango do not differ from the Arizona series. *P. alticola* from Sierra Nevada de Colima, 11,000 feet, and *P. orizabae* from Suapam, Volcan de Orizaba, are closely allied and may eventually be shown to represent southern extensions of this species. There are good male genitalic differences between the various species of *Plusiotis*, but the genitalia of the two males of *lecontei* collected in Durango, Mexico, do not differ from those of specimens collected in Arizona and New Mexico.

TYPE LOCALITY: Prescott, Arizona.

RECORDED MEXICAN LOCALITIES: Chihuahua: Pinos Altos; Colonia Garcia, Sierra Madre Mountains (*aeruginis* and *sono-*

rica). Durango: Ciudad in Durango; Promontorio; Canelas; Durango (*subenodis*). Sonora: Cananea.

NEW RECORDS FOR MEXICO: Durango: 6 miles northeast of El Salto, Durango District, August 10, 1947, 8500 feet; 10 miles east of El Salto, August 9, 1947.

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