NEW POGONOCHERUS AND ECYRUS (COLEOP-TERA, CERAMBYCIDÆ) WITH NOTES CONCERNING OTHERS

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The Pogonocherus and Ecyrus are the most closely related genera of the Pogonocherini, and are classified by Leconte and Horn as the subtribe *Pogonocheri*. As there has been no major paper on Ecyrus in recent years, and since the last papers on Pogonocherus were in 1909,1 1910,2 and 1913,3 it seems advisable to bring these genera up to date in regard to recently acquired knowledge and the addition of new species. Appreciation is expressed to Dr. E. C. Van Dyke of the University of California for the loan of certain species discussed in this paper, and for reading the manuscript and offering many helpful suggestions. For the two excellent drawings, I am indebted to Mrs. Frieda Abernathy of Berkeley, California.

Pogonocherus Latr.

The members of this genus are separated from all the other genera which have heretofore been included in the tribe Pogonocherini, by the long flying hairs of the antennæ, legs, and body, and the presence of lateral tubercles on the prothorax. The species are nocturnal and are usually restricted to certain types of food plant. The adults are found, usually in the shade, on dead and dying twigs. Storm-broken branches and windfalls-are especially attractive to them. The majority of the species are North American, although the genus is well represented in both Europe and Asia. The recent European writers have divided *Pogonocherus* into two groups, those species having truncate-emarginate elytral apices, and those having rotundatetruncate elytral apices. This classification can be conveniently followed in regard to the North American species, and is more nearly phylogenetically correct than the grouping used by Horn, Schaeffer, Fall, and Casey. L. M. Planet 4 places the species

¹ Schaeffer, C. W. Four New Cerambycidæ, Journal New York Ent. Soc., XVIII, 1909, pp. 99-103.
2 Fall, H. C. New Species of Pogonocherus, Ent. News, XXI, 1910,

pp. 5-9.
3 Casey, T. L. Memoirs of the Coleoptera, IV, 1913; Longicornia, pp. 345-349. 4 Planet, L. M. Hist. Nat. des Longicornes de France, Paris, 1924, pp. 280-289.

with emarginate-truncate apices in *Pogonocherus* (s. str.) and those with truncate or rotundate-truncate apices in the subgenus *Pityphilus* Muls. The use of subgenera for these two groups seems a trifle extreme, but the division is a convenient one to follow in forming a key, and is the method used in this paper. Leng, in his Catalogue of the Coleoptera of America North of Mexico, lists nineteen species of *Pogonocherus* (using the genus in its broadest sense), but upon close examination, there appears to be not more than fourteen known forms, including the one described in this paper, that are worthy of specific rank. The following table will separate the species:

Key to the North American Species of Pogonocherus Elytral apices truncate or rotundate-truncate, but not emarginate 1. Elytra with tufted subbasal tubercle; lateral tubercle of pro-Elytra without subbasal tubercle; lateral tubercle of prothorax acute at apex...... 3 2. Elytral apices distinctly spiniform, pubescence gray, flying hairs long. 6-10 mm. Northern California....(1) crinitus Lec. Elytral apices not spiniform, pubescence grayish brown, elytra with an oblique antemedian pale marking. 5.5-9 mm. California(2) propinquus Fall 3. Elytra with two or more postmedian subsutural tufts of erect black setæ. 6 mm. Southern Arizona....(3) arizonicus Schffr. 4. Elytra subcostate, antennal scape stout. 5.5-7.5 mm. Colorado, New Mexico,, Arizona.....(4) pictus Fall 5. Prothorax about as wide as long; outer angle of elytral apices bluntly dentate; body with numerous suberect long hairs. 4.5-6.5 mm. Central and eastern North America.....(5) mixtus Hald. Prothorax fully one-half wider than long, outer angle acutely dentate; suberect hairs short or missing. 4.5-6 mm. Atlantic Coast.....(6) salicicola Csy. Lateral tubercles of prothorax acute at apex.....14 Discal costæ of elytra indistinct or evanescent at base; lateral

8.	Elytra with a short extra humeral carina between lateral and median costæ; eyes with large callosities above; elytra
	two-thirds as wide as long. 8 mm. Southern Texas(7) vandykei n. sp.
	Elytra without extra humeral carina; eyes lacking callosities; elytra only half as wide as long. 6-11 mm. Southern California
9.	Prothorax with small shining tubercle on basal half of median line; elytra with large postmedian white spot, subsutural costæ with tufts of erect black setæ. 4.5-6 mm. Alaska, Canada, and eastern United States(9) penicillatus Lec. Prothorax without median tubercle; postmedian elytral white
10.	spot never present
	area; basal region blackish; lateral pubescence gray, costæ with a few subsutural tufts of short black hair in postmedian area. 6-8.5 mm. Southern Arizona
	Elytra lacking yellowish patch; either uniformly gray, gray and black, or with a distinct postmedian black band11
11.	Elytra with a distinct postmedian black band
12.	Postmedian black band broad at suture; discal tubercles of prothorax indistinct. 6-8.5 mm. California, Oregon, Idaho, and Colorado
13.	Body generally clothed with a uniform gray pubescence, sometimes with a vague postmedian black bar, or with a velvety black V-shaped postscutellar patch extending backwards as a sutural vitta which generally dilates into a more or less triangular area in apical region; series of small black tufts of hair on elytra often present but never forming four series. 6.8 mm. Central California
	Body clothed with blackish and ashy-gray hairs, the latter predominating, especially in the antemedian discal elytral area, the elytra also with four series of small black tufts of short hairs, the inner series close to the suture. 7-9 mm. Northern Arizona
14.	Antennal scape long, slender, attaining lateral thoracic tuber- cle; body clothed with a dense pale brown pubescence, elytral apices, sides, and basal area darker brown; median
	elytral area gray; flying hairs long. 5-8 mm. Lower California(14) volitans Lec

(1) Pogonocherus crinitus Lec.

This is one of the largest and most distinct *Pogonocherus*. It is more closely related to certain European species, especially *perroudi* Muls, than to any North American form. It is of a general gray color with very long flying hairs on antennæ, legs, and body, and is easily separated from the other members of the genus by the acute apical spine of the elytra and the prominently crested subbasal tubercles. It is found throughout the coastal mountain ranges of California from Monterey County to Mendocino County, and is recorded in literature from Vancouver Island, B. C. Host plant, *Quercus agrifolia* Neé.

(2) Pogonocherus propinguus Fall

Although somewhat resembling penicillatus Lec., this species is separated by the emarginate elytral apices and the obliquely set elytral pale markings. Although described from southern California, it is more commonly found in the northern and eastern portions of the state. Its range is continuous from the mountains of Oregon and northern California, through the Sierra Nevadas, to the San Bernardino Mountains on the south. It is normally taken at high altitudes on the western yellow pine, *Pinus ponderosa* Laws.

(3) Pogonocherus Arizonicus Schffr.

This species is closely allied to *P. mixtus* Hald. and *P. pictus* Fall. It differs from them in having two or more postmedian tufts of erect black setæ on the subsutural costæ of the elytra. Mr. Schaeffer, in his original description of the species, states that there are three such tufts. A specimen collected by the writer in the Huachuca Mountains, Arizona (type locality), has only two tufts of setæ, although it agrees with description in all other respects. Neither *mixtus* nor *pictus* have tufts of setæ and are therefore easily separated from *arizonicus*. The last differs from *penicillatus*, the only other species with such conspicuous tufts, in having emarginate elytral apices and in entirely lacking subbasal elytral tubercles. Habitat, the mountainous regions of southern Arizona, probably on pine.

(4) Pogonocherus Pictus Fall

In this species the elytral apices vary greatly as to truncation and dentation. Colonel Casey in his description of emargi-

natus (later stated by its author to be a synonym of pictus), speaks of the elytral apices as narrowly and deeply sinuate, and the sutural tooth as longer than the lateral tooth, which he describes as sharply marked but not prolonged. Certain specimens before me from Long's Peak Inn, Colorado (Van Dyke collection), lack the lateral tooth entirely, while others in the same series agree with Colonel Casey's specimen. A specimen from the Catalina Mountains, Arizona, is at the other extreme, with a well-defined lateral tooth and a poorly developed sutural tooth. The general color pattern of pictus is similar to mixtus Hald from which it may be separated by its larger size, subcostate elytra, and stout antennal scape. It is typically a Rocky Mountain species, ranging from Montana and Colorado, down into Arizona and New Mexico. P. fastigiatus Csy. is merely a variation of pictus Fall.

(5) Pogonocherus mixtus Hald.

This is one of our smallest species. The prothorax is about as wide as long, color black to piceous, with large pale elytral markings. The punctuation of the prothorax and elytra is very variable. The species is widely spread throughout eastern and northern North America on both coniferous and broad-leaved trees. P. parvulus Lec. is merely a small form of mixtus. P. simplex Lec. was placed by Fall, after a critical examination of the type, as a synonym of mixtus. This fact seems to have been overlooked by Casey, although the latter's paper was published three years later than Fall's. Leng, in his Catalogue of the Coleoptera, followed the latest writer and included simplex in his list. The species should, however, remain as a synonym of mixtus Hald.

6. Pogonocherus salicicola Casey (*P. salicola* Casey ⁵)

The size, color pattern, and superficial appearance of this species is very similar to mixtus Hald., although the wide pro-

⁵ When Casey first described this species in 1913, he had in mind the fact that it is found on Salix, but the name given to it, salicola, unfortunately gives a meaning very different from that intended by its author. Five years after Casey's description, Mr. F. J. A. Morris, in the Canadian Entomologist, Vol. 50, p. 41, pointed out the error in the Latin stem of the word. Soon after the publication of Mr. Morris' article, Casey, in Vol. 8 of his Memoirs of the Coleoptera (p. 415, 1918), changed the name to salicicola, stating that the original spelling was a misprint. Under the rules of nomenclature, salicicola will be valid.

thorax, the acute apical denticles of the elytra, and the scarcity of erect black hairs on the body, easily separate it. It is found throughout the Atlantic States on willow, Salix.

(7) Pogonocherus vandykei Linsley, n. sp.

Robust subcylindrical, piceous, clothed with a rather sparse, short, gray and brown pubescence, with a few longer, scattered flying hairs, on antennæ, legs and entire upper surface. Head broad, distinctly quadrangular when viewed from the front, longitudinally sulcate between the antennæ; eyes reniform, lower portion subtriangular, with large callosities above. Antennæ, annulate, longer than body; scape stout. Prothorax, wider than long, about two-thirds as wide as elytra at base; lateral and discal tubercles, large, obtuse. tellum, white. Elytra about three-fifths as wide as long, tricostate, with a short extra humeral carina between median and lateral costæ; subsutural costa elevated near base into a large tubercle, prominently crested with long black hairs, and again in postmedian area into a ridge of small black tufted tubercles; median costa with a series of similar but smaller tubercles in same region; apices truncate; general color pattern, grayish brown, with a lunate patch of gray pubescence extending from humerus to suture at middle, and margined posteriorly with an irregular black line; also with a row of yellow hairs along inner two costæ in antemedian gray area; apices gray; subbasal tubercles connected with a narrow black line. Beneath, clothed with a sparse gray pubescence. Underside of tarsi padded with soft yellow hairs. Length, 8 mm.; breadth, 3 mm.

Type (No. 2979, Mus. Calif. Acad. Sci.), a unique, probably a female, collected by the writer at Uvalde, Texas, June 13, 1930. I take pleasure in naming this species after Dr. E. C. Van Dyke, as a slight tribute for many favors.

In this species the elytra are much shorter in proportion to the total length of the insect, and the subbasal tubercles much more prominently crested than is the case in any other of the known forms. The former character gives the species a short robust appearance that is quite distinctive. The general color pattern is very similar to that of *pilatei* or *californicus*. The general body proportions, the extrahumeral carina, and the less rotundate elytral apices, will, however, easily separate it from either of these two species. It further differs in the large callosities above the eyes, the sparse pubescence, and the presence of two rows of yellow hairs along inner two costæ in the antemedian gray area of the elytra.

(8) Pogonocherus Pilatei Van Dyke

The average size of this species is greater than the average size of any other known *Pogonocherus*. It differs from all other species in the second group except *vandykei* in having distinctly tricostate elytra. The characters given above will separate it from the latter species. It is found in the foothill regions of southern California on the peculiar shrub *Fremonto-dendron californicum* Torr.

(9) Pogonocherus penicillatus Lec.

This is a grayish-brown species with a large white spot on each elytron and tufts of erect black setæ on the discal elytral costæ. There is also a small shining tubercle on the median line of the prothorax. It is distributed throughout eastern United States, Canada, and Alaska. After critically examining Schaeffer's description of P. alaskanus as well as many typical specimens of the species, the only character that I can find to separate it from *penicillatus* Lec., is the rounded elytral apices. However, examination of a series of each of these species shows this character to be inconstant. Certain specimens from Fort Yukon and Rampart, Alaska, the same general territory in which typical alaskanus is found, have definitely truncate elytral apices, which would classify them as penicillatus and from which they cannot be separated. Other specimens from eastern United States have rotundate-truncate apices as found in alaskanus. With extreme and intermediate phases to be found in both regions, and since there seems to be no other character with which to separate these forms, I am convinced that alaskanus Schffr. is merely a variant of P. penicillatus Lec. P. carinatus Csy. is an intermediate phase between typical penicillatus and the form alaskanus. It was described from a specimen taken in Colorado, the western limit of the range of penicillatus.

Pogonocherus fasciculatus De Geer

This European species is listed from Greenland in our literature, but since this locality has remained unverified, I have not included it in the table. In the key it would run to penicillatus, which it superficially resembles but from which it can be separated by the indistinct subbasal tubercles of the elytra and

the more acute lateral spines of the prothorax. Five to seven mm. Europe and Greenland (?).

(10) Pogonocherus negundo Schffr.

In this species the elytra have an oblique yellowish-brown band which extends from the lateral margin in the subhumeral region to the suture at middle. The basal elytral area is much darker. The species is closely allied to californicus Schffr. from which it differs in the general color pattern and the less distinct longitudinal sulcus between the antennæ. It is found on box elder, Acer negundo Linn., in the Huachuca Mountains of southern Arizona.

(11) Pogonocherus oregonus Lec.

This species is closely related to californicus Schffr. and differs from it in having the postmedian black band of the elytra about as broad at the suture as at the lateral edge. In addition, the discal prothoracic tubercles are much less distinct. This is an alpine form, most commonly taken in the high mountains from Tulare County, California, to Mount Hood, Oregon. Specimens in the Van Dyke collection from British Columbia and Mount Timpanogos, Utah, show that the distribution continues up the Pacific Coast and back down the western ranges of the Rocky Mountains. This species is always taken on the true firs, Abies.

(12) Pogonocherus Californicus Schffr.

Typical specimens of this species are characterized by having a gray antemedian V-shaped area on the elytra, a saddle-like postmedian black band narrowed at the suture, and the subbasal elytral tubercles crowned with tufts of black hair. It is usually found in the high mountains of northern and eastern California on the western yellow pine, *Pinus ponderosa* Laws, and in Arizona on *Pinus edulis* Engln. and *Pinus jeffreyi* Vasey.⁶

(12a) Pogonocherus californicus concolor Schffr.

This is a very distinct subspecies of *californicus*. It is extremely variable within the subspecies, but is easily separated from the typical form, which is quite constant as to color. The

⁶ Webb, J. L. Proc. Ent. Coc., Washington, Vol. X, 1908, p. 119.

form concolor varies from a uniform gray, through a phase suggestive of typical californicus, but much lighter, to a very divergent form with velvety black pubescence along the suture. In addition, typical californicus is a high altitude form taken on the western yellow pine, whereas concolor is always found in the dry foothill regions on the Digger pine, Pinus sabiana Dougl.

(13) Pogonocherus obscurus Fall

This species is very close to californicus Schffr., especially to its subspecies concolor Schffr. The last differs from Fall's description of obscurus in one point only, namely, that obscurus is stated to have four series of small black tufts of short hairs on the elytra. In a series of twenty-four specimens of concolor from Tulare County, California, a number of individuals have more than one series of such tufts, several have only one series, and many lack the tufts of hair altogether. In none of the specimens before me, however, are there four series. Up to the present time, concolor has only been taken in the Sierra foothills on Pinus sabiana, but californicus has been taken in Arizona on Pinus edulis and P. jeffreyi. Fall's specimens of obscurus were taken in a region where pine is abundant. Although I have not seen obscurus, I am inclined to believe from Fall's description that when a series of the concolor variety of californicus is examined with a series of obscurus, the two may be found to run very near together. Type locality of obscurus, Bright Angel, Arizona.

(14) Pogonocherus volitans Lec.

The long slender antennal scape of this species easily separates it from the other members of the genus, although the color pattern is somewhat suggestive of *negundo* Schffr. So distinct is the antennal scape of this species that its author first placed it in another genus. All other characters are, however, typically those of *Pogonocherus*. Type locality, Cape San Lucas, Lower California.

ECYRUS Le Conte

The members of this genus are confined to eastern and southern North America, and differ from *Pogonocherus* in having a feebly rounded prothorax without lateral tubercles. The antennæ are clothed along the inner side with flying hairs

which may or may not be present on legs and body. There appear to be only two valid species, including the one described in this paper, that are found within the United States. A third species from the West Indies and a questionable form from Mexico bring the total of recognizable species up to four. These may be separated as follows:

KEY TO THE NORTH AMERICAN SPECIES OF ECYRUS Prothorax with two large, laterally compressed, discal tubercles; elytra with two more or less prominently crested subbasal tubercles 1 Prothorax without large discal tubercles; subbasal area of elytra 1. Discal tubercles of prothorax prolonged backwards into a distinct horn, discal area with large quadrangular patch of white pubescence; elytra and upper surface clothed with long flying hairs, pubescence brown and white. 5-6.5 mm. Southern Texas.....(1) cornutus n. sp. Discal tubercles of prothorax not prolonged backwards into a horn, discal area clothed with tawny-brown pile; elytra and upper surface without flying hairs, pubescence blue gray. 13 mm. West Indies(2) hirtipes Gah. 2. Elytra with three black lines of hair pencils; anterior discal area of prothorax broadly convex, finely tuberculose. 8-11 mm. Mexico......(3) penicillatus Bates Elytra without definite hair pencils; prothorax more or less evenly convex. 6.5-11 mm. Atlantic Coast and Gulf States from Canada to southern Mexico.....(4) dasycerus Say

(1) Ecyrus cornutus Linsley, n. sp. (Figs. 1 and 2)

Robust, subcylindrical, color varying from brown to piceous, clothed with a rather dense, short, closely appressed pile, in addition to numerous suberect long hairs. Head transversely impressed between the eyes and longitudinally sulcate between the antennæ; pile brown at base of antennæ, white on face and mouth parts. Antennæ annulate, slightly longer than the body in female, distinctly longer in male; scape stout, second segment about as long as wide, third about five times as long as second, fourth about one and one-third as long as third, fifth about one-third as long as fourth, sixth and following segments diminishing in length toward apex. Prothorax two-thirds as wide as elytra at base, about as wide as long, without lateral spines, sides slightly arcuate; disk convex, with a laterally compressed tubercle arising from each side, which is prolonged backwards into a distinct horn; discal area clothed with a short dense white pubescence, supplemented laterally with longer

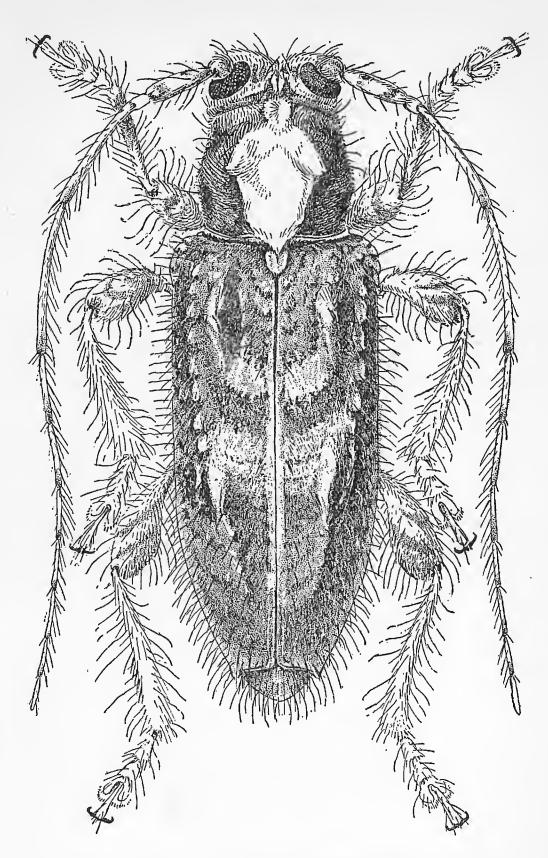


Fig. 1. Ecyrus cornutus Linsley

brownish hairs. Scutellum white. Elytra twice as long as wide, basal portion of disk somewhat depressed; third interval elevated near base into an elongate tubercle and again near middle into an elongate ridge which gradually diminishes toward apices; also a secondary ridge extending from humerus in an arcuate manner to almost unite with median ridge at middle; enclosed within this ridge is a lunate patch of white pubescence extending from third interval to sutural margin, and a second smaller patch just posterior to subbasal tubercles, lateral slope of ridge with two postmedian black spots. Elytral intervals somewhat flattened, with a scattering of minute tufted tubercles throughout; apices truncate-emarginate. Basal area of elytra generally brown; beneath, sides, and elytral apices, gray. Underside of third tarsal segment clothed with paleyellow hairs, the first and second segments clothed with darker, brownish hairs. Length, 6 mm.; breadth, 2.5 mm.

Holotype, male (No. 2980, Mus. Calif. Acad. Sci.), and allotype, female (No. 2981, Mus. Calif. Acad. Sci.), and twelve paratypes in my own collection were taken by the writer at Brownsville, Texas, June 24 and 25, 1930. All of the specimens were beaten from dead willow branches and show little variation except in size (5-6.5 mm.).

This attractive insect, taken in the peculiar subtropical floral region of Brownsville, might at first glance be mistaken for a Pogonocherus. The absence of lateral tubercles on the prothorax, however, place it in Ecyrus. It differs from all the known species of the latter genus, in the elytral sculpturing, and in being entirely covered with long flying hairs. In all of the described forms of Ecyrus these hairs are more or less evident on the legs and antennæ, but in no other case are they found on the upper surface of the body as in cornutus. In the latter character, which gives the species the appearance of a Pogonocherus, it differs from Le Conte's original description of Ecyrus, but as it seems to be congeneric in all other respects, I have placed it in this genus. The species shows a relationship to the West Indian, E. hirtipes Gahan, in the presence of discal prothoracic tubercles, but the shape of these tubercles, elytral sculpturing, size, and general color pattern, easily separate it. E. cornutus is also very distinct from E. dasycerus Say, differing in the large discal horns of the prothorax, the prominent subbasal elytral tubercles, and the long flying hairs covering the entire surface. The average size in my series of cornutus is 6 mm.

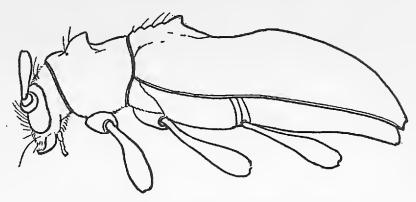


Fig. 2. Side view of Ecyrus cornutus Linsley

(2) ECYRUS HIRTIPES Gahan 7

This species was described from Grenada, West Indies. The average size, 13 mm., is greater than that of any other species of the genus. It is of a general bluish gray color, with flying hairs on antennæ, legs, and undersurface. The elytral costæ are more or less distinct throughout, the median one raised to form a tufted tubercle in subbasal region. The species is very distinct and may be further separated by the characters given in the key.

(3) Ecyrus pencillatus Bates 8

This species was described by Bates, from Vera Cruz, Mexico. It is evidently very close to *E. dasycerus* Say, the range of which extends well into Mexico. The author states that the anterior discal area of the prothorax is broadly convex and finely tuberculose, but this condition is also found in certain variations of dasycerus. The presence of hair pencils on the elytra, although sometimes suggested in dasycerus (as in variety fasciatus Ham.), may be a good character, but until a series of this species can be critically examined in connection with a series of dasycerus, the correct standing of this species cannot be determined. Size, 8-11 mm.

(4) ECYRUS DASYCERUS Say

This species is commonly found along the Atlantic coast and in the Gulf states, extending into Mexico. It is very variable, especially in the southern portion of its range, and many forms and variations have been named. It ranges in size from 4-11

⁷ Gahan, C. T. Longicorn Coleop., West India Island, Trans. Ent. Soc., London, 1895, p. 127.

8 Bates, H. W. Biologia Centrali Americana, V, 1880, Longicornia, p. 137.

mm., and in color from cinereous in the more typical forms to silvery white in the variety fasciatus Ham. The flying hairs, although moderate on antennæ, are very short or missing on legs and body.

(4a) ECYRUS DASYCERUS FASCIATUS Hamilton

I have before me a number of specimens of a light-colored phase of dasycerus from Florida, collected by Mr. J. N. Knull (Miami), and Mr. W. S. Blatchley (Royal Palm Park), that agree with Hamilton's description of fasciatus. The only character that I can find in them or the description that will separate fasciatus from the typical dasycerus is the whiter pubescence. The other characters mentioned by Hamilton, such as the three large tufts of coarse black bristles and the different type of thoracic punctuation may also be found in a series of the typical dasycerus. After critically examining a long series of dasycerus as well as a number of probable fasciatus, in connection with Hamilton's description, I am convinced that the latter is nothing more than a color variety of E. dasycerus Say.

(4b) ECYRUS DASYCERUS TEXANUS Schffr.

Although the description of this variety is rather indefinite, the author states that it differs from the typical form in the presence of two postmedian elytral fasciæ. Such fasciæ are vaguely seen in fasciatus as a part of the general color scheme. A series of specimens taken by the writer at Brownsville, Texas (type locality of both fasciatus and texanus), have these fasciæ indistinctly formed, but in all other respects they agree with the typical E. dasycerus Say.

(4c) Ecyrus dasycerus arcuatus Gahan 9

An examination of the original description of this species as well as the illustration accompanying it, shows it to be very close to *E. dasycerus*, especially the variety texanus Schffr. As there seem to be no characters to separate it from dasycerus, except the large white spaces on the elytra, which, as mentioned above, are seen in certain variations of the latter species, I have placed it as a variety. Should it later prove to be the same as the variety texanus, arcuatus would have priority.

⁹ Gahan, C. T. Longicornia of Mex. and Cent. Am., Trans. Ent. Soc., London, 1892, p. 259.