

Scarabaeus

A NEWSLETTER FOR THOSE INTERESTED IN SCARABAEIDAE

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T. W. HARRIS AND CREMASTOCHEILUS

In the course of biographical research into the Life of John Lawrence LeConte, Alan Hardy recently had occasion to read portions of the original correspondence between T. W. Harris (1795-1856) of Harvard University with S. S. Haldeman (1812-1880) of Pennsylvania, now housed in the archives of the Academy of Natural Sciences of Philadelphia. Several of the letters were deemed to be of potential interest to readers of Scarabaeus, and the Academy has generously granted permission for them to be printed here. One of these relates Harris' [and N. M. Hentz's (1797-1856)] early experiences with Cremastocheilus. In further investigations, a published record of the correspondence between Harris and Hentz was located (Occ. Papers, Boston Soc. N. Hist. 1:1-107). The whole gives interesting insight into the earliest North American investigations into the taxonomy and biology of this interesting group.

Extracted below is the portion of the correspondence between Harris and Hentz, which related to Harris' paper "Description of Three Species of the Genus Cremastocheilus" [J. Acad. N. Sci. Phila. 5(2):381-389; 1827 (1825?)].



T. W. Harris

HARRIS TO HENTZ.

November 28, 1825.

I have carefully examined the insects you sent me, several of which have not occurred in this place, and which, therefore, are very interesting to me; particularly your two species of *Chremastocheilus*; one of which, as I before observed to you, is assuredly the *C. castanea* of Knoch (not *castaneus*, as it is frequently written); the other, I am inclined to think with you, is a distinct species. It would be worth while to distinguish the sexes of these species, which would probably be determined by an examination of the antennæ; the laminae of the club are longer and larger in the males of most *Scarabæi*.

HENTZ TO HARRIS.

NORTHAMPTON, Dec. 4, 1825.

In the *Chremastocheilus* I have observed no material difference in regard to the antennæ, but the sex you can ascertain by softening the abdomen in warm water. If you are inclined to publish an account of these two very distinct species, you are fully authorized by me to make use of my communication to you, as well as any other remark I may have made on other subjects. The reason why I called the larger species *piger* is this: the first specimen I found (alive and in perfect health) I observed on dried leaves moving with swiftness and likely to escape me, but when I came near, I perceived that it was not by means of its own powers that it travelled at such a rate, but that it had taken a new mode of performing its journey, namely, the legs of a little ant, that dragged it peaceably and unopposed by one of its hind legs, an admirable *coursier*, and an unheard of method of travelling with speed among insects. I never found one actually walking by its own impulses.

HENTZ TO HARRIS.

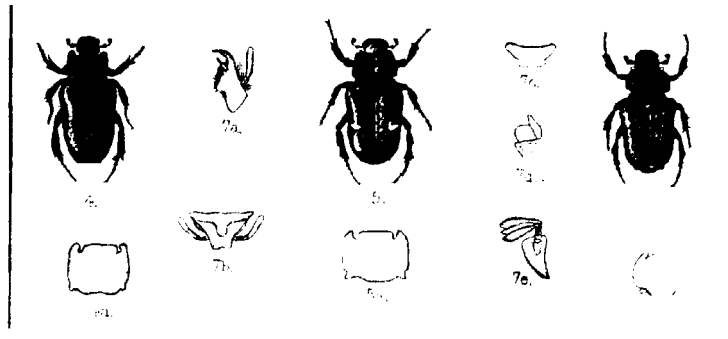
NORTHAMPTON, Jan. 1, 1826.

I have taken pains to dissect two specimens of *Chremastocheilus*; this is the result. The different parts of the mouth do not materially differ in shape; but in the smallest species, *C. castaneus*, I could not see any trace of the labium (upper lip), whilst in *C. piger* that part is quite large. Thinking that I might have lost or left unobserved the labium in the first dissection, I took another insect of the same species, the last but one in my cabinet, and became convinced that that part was certainly wanting in *C. castaneus*. I sent a drawing of both species to Mr. Say, with descriptions, more than three months ago, and thought my letter might not have reached him; but some days ago I received an obliging answer to my various questions. He thinks both species are new, as both differ from the description of *C. castaneus*; that I cannot decide, for all the knowledge I have of that species is derived from a very short description by Latreille (in the Hist. des Crust. et des Ins.) which describes it as being *tout noir*, and refers to Knoch, but I have not the work of that naturalist. Mr. Say proposes to me to publish those two insects, but he is now gone to the West, and may not return for some time, so that I would advise you to do it yourself if you are inclined.

HARRIS TO HENTZ.

MILTON, Feb. 6, 1826.

So long a time had elapsed since my last letter without my having heard from you, that I had made some examination of the mouth of *Chremastocheilus* in order to enable me to complete the paper which I had drawn up. [Pl. iv, figs. 7^a-7^c.]



This paper was sent to the publishers of the Boston Journal of Philosophy before I had received your letter, and is now probably in press.¹ As to the *labium superius* or *labrum* of these insects, I was contented with the observation of Latreille (Hist. des Crust. et des Ins., Vol. 3, p. 153). He observes that the "*upper lip* is concealed, corneous according to Knoch, probably membranous." Knowing this, I made no search for it. But it is the form of the *mentum* which takes the place of the *labium inferius* or *labium*, that particularly interested me. This part appears on examination to have a semicircular notch in the edge, which divides it into two lobes, and the lobes themselves are ciliated. Have you observed this character? I think I can hardly be deceived, and should like to know whether this circumstance was as evident to you as to me. The publishers have agreed to furnish an engraving of these and some other insects which I have described for the number to appear in April, when I shall gladly give you credit for the observations you have made of the parts of the mouth, and have only to regret that I cannot avail myself of them in the present number. The insects which I am about to describe are the two goliath species of *Trichius*, and one or two *Cetonia*, genera closely allied to *Chremastocheilus*. Descriptions of *T. eremicola* and *scaber* and *Cetonia barbata* are ready, and I should like to obtain one other native *Cetonia* that has not already been figured, to complete the paper. I found two specimens of *C. fulgida* last summer, and you gave me *C. nitida*; but both have been described by Olivier. I have one other, which I sent to Mr. Say, and he named it *C. vestita*; but it is of doubtful origin, and may have been introduced from Europe. If you have any other native species than the four named above, I should be very glad to borrow it for the purpose of giving a figure or description in the April number of the Journal.

¹ [This paper did not appear in the Boston Journal of Philosophy, but was afterwards sent to the Academy of Natural Sciences of Philadelphia and published in the 5th volume of their Journal.]

HENTZ TO HARRIS.

NORTHAMPTON, Feb. 19, 1826.

I am glad that you will publish an account of the *Chremastocheili* and *Cetonia*.

April 8, 1826.

In the Boston Collection I find your *Chremastocheilus piger*, and Dr. Pickering possesses the other, which he obtained on Lynn beach. The dimensions of these insects vary. Will you send me accurate measurements of the largest and smallest of each of your species; I should be glad to know them.

HENTZ TO HARRIS.

NORTHAMPTON, April 23, 1826.

I subjoin the dimensions of the elytra of the *Chremastocheilus*, measuring its length from its apex at the suture to its union with the thorax near the scutel. As the thorax, or the head, is more or less bent, the measurement might be more incorrect if I took the whole insect, than if I gave you the length of the elytra.

C. piger. Largest, nearly $\frac{4}{10}$ in.; smallest, a little more than $\frac{3}{10}$ in.

C. castanea. Largest, a little more than $\frac{3}{10}$ in.; smallest, fully $\frac{2}{10}$ in. This species varies less in size than *C. piger*.

HARRIS TO HENTZ.

January 19, 1827.

From Dr. Pickering I learn that there is a great deficiency in material for the Journal of the Academy of Natural Sciences of Philadelphia, and having been chosen a correspondent I have sent on descriptions of our *Chremastocheili*. I have taken the liberty of giving your name to the species you denominated *piger*, and that of *Sayi* to the small one. Of this latter I made a good sketch of natural size, but neglected taking an enlarged drawing of it. My friend Pickering thinks that it would appear better to be represented enlarged to about thirteenth-twentieths of an inch in length, and advises me to request you to make a drawing of that dimension. If you can send me one soon after the receipt of this letter, it will be forwarded with mine, and these three species will then appear on the same plate with the four insects which you described when in Philadelphia.

HARRIS TO HENTZ.

MILTON, March 10, 1827.

For your beautiful drawings of the *Chremastocheili* I give you my best thanks; they will appear with a note on the species in the first number of the next volume. [They are published now for the first time. Pl. iv., figs. 4-6.] I examined the mouth of another specimen of *C. Hentzii*, which I obtained from Fenton's collections, and find the upper lip (*labrum*)

very distinct. The figures of the trophi were from this specimen, and I trust will prove to be exact. [Pl. iv, fig. 7.]

I have lately received an interesting letter from Mr. Kirby, in which he makes some remarks on the species of *Chremastocheilus*. Some time since I wrote to him for Mrs. Peck, and sent to him, as I have before informed you, a specimen of the *Chremastocheilus* which we supposed to be the *castanea*. He says that he has seen the true *C. castanea*, which, according to figure and description of Knoch, has the thorax broadest behind, and that the specimen sent him must therefore be distinct. It is a matter of regret to me that this information was received too late to allow me to make use of it in my account of the species: but it will be communicated in a note accompanying the plate. Mr. Kirby further says that he has two other species, which he names; one, *C. canaliculatus*, is from Berkshire Co., Mass., and is the largest; the other is the smallest of the three, and is from Georgia; neither have been described.

HENTZ TO HARRIS.

CHAPEL HILL, March 25, 1827.

But what will you say when I tell you I have found three individuals of a fourth species of *Chremastocheilus*. It may prove to be the *C. castanea*, however, as it is entirely black, and the thorax somewhat narrower before. I will send you a design if you wish, and would have done so were it not that it would be too late for your paper.

HARRIS TO HENTZ.

MILTON, April 9, 1827.

Your having met with another species of *Chremastocheilus* confirms Mr. Kirby's conjecture that we probably have several species of this genus. My paper has been published, and you probably have seen it. Since I wrote you I have seen the *Zoölogical Journal* for April, 1826, in which Mr. Kirby acknowledges the receipt of an insect of the genus from me, which he describes in full as the *C. castanea*, but which, as I have informed you, he subsequently considered as distinct. He describes, also, in the same *Journal*, the species from Georgia, by the name of *variolosus*. This appears somewhat to resemble *C. Sayi* mî, but no mention is made of the abundant hairs which clothe the latter.

In the note which I am to furnish the next volume of the *Journal*, which will also contain the figures of these insects, I shall propose a new name for the first species. Mr. Kirby has already redescribed and named it.

MILTON, June, 1827.

Your specimen of *Chremastocheilus* arrived in due order; the head, however, was wanting, and the mentum was so much bruised as to leave me at loss to determine whether the jugular emargination was deep as in *C. Hentzii* and *C. castaneæ* (H.); or shallow, as in *C. Sayi* (H.) and *C. variolosus* Kirby.

Taking only the form of the thorax into consideration, *C. castaneæ*? (H.) may be characterized as having that part subquadrate, the lateral margin nearly straight and the tubercles prominent, subglobose. *C. Hentzii* (H.), thorax subquadrate, the lateral margin arched, the tubercles somewhat triangular, subacute. *C. Sayi* (H.), thorax transverse, a little broader behind the middle, suddenly contracted behind, lateral margin arched, tubercle slightly top-shaped or sub-tuberculate. Your Carolinian species appears to have the thorax transverse, conspicuously broadest behind the middle, then suddenly contracted; the lateral margin arched, the posterior tubercles large, turbiniform. But the following is the description I have drawn up from your specimen, and I would thank you to supply the deficiencies, correct the mistakes, and suggest any improvements which may appear proper.

C. —, black, opaque, setose; palpi piceous; thorax broadest behind the middle; anterior tubercles very small, acute and incurved; posterior ones large, polished, turbiniform.

Head — Clypeus? Mentum? Palpi pale piceous.

Thorax one third wider than long, with sharp distinct varioles, and short whitish hairs; anterior tubercles very small, acute, incurved; lateral margin arched to behind the middle, where the thorax is much the broadest; behind this, on each side, a deep emargination, within which is situated a large, polished, turbinated tubercle. Elytra with oblong, distinct, setiferous varioles on the disk, and circular crowded ones on the margin; hairs long, yellow, depressed.¹

Length nearly $\frac{8}{9}$ of an inch.

The tufts of ferruginous hairs within and beneath the thoracic tubercles and emarginations, as well as the small, umbilicated, anal tubercles, appear to be common to all the species of this genus.

¹ What are the most characteristic differences between this and *C. Sayi*?

HARRIS TO HENTZ.

MILTON, Sept. 3, 1827.

Are you not tired of the name *Chremastocheilus*? Nevertheless, I will once more beg your patience for a few minutes. The very hurried manner in which I examined the Carolinian insects for which I am so much indebted to you, must excuse me for so readily taking the specimen of *Chremastocheilus* to be identical with the one forwarded in your letter. A more careful examination has nearly convinced me that it must be distinct. The specimen last received has the posterior

tubercles of the thorax formed precisely like those of *C. Hentzii*; it has also on one elytra a whitish spot, which at first sight would appear to be fortuitous, but the microscope shows on the other a corresponding spot, which, cursorily examined, seems obsolete. I have found *C. Hentzii* in Milton, with the spots obsolete in the same way. Can yours be a small individual of that species? The specimen received in the letter is obviously distinct from the other; the thorax not only being much the widest behind, but the posterior tubercle rounded or top-shaped. This being the case, I am still ignorant of the appearance of the mentum, and will be greatly obliged to you to inform me whether the gular emargination is deep or shallow, and to note any other particulars in which in that part it may differ from its congeners. I am suspicious that this insect will prove to be the *C. variolosus* of Kirby, in which the notch of the back part of the mentum is very small, as in *C. Sayi*, and does not extend down to the bottom, as in *C. castanea?*, *C. Hentzii*, and your specimen. This can be ascertained without dissection.

HARRIS TO HENTZ.

MILTON, Sept. 4, 1828.

The small *Chremastocheilus* you sent me last summer, which had white spots on the elytra, and appeared to be a variety of *C. Hentzii*, is certainly a distinct species, and comes nearer to the *C. castanea* than any other I have seen. Knoch remarks that such spots existed in a specimen which had not been rubbed. The form of the posterior part of the thorax and its angles and punctures are different from those of *C. Hentzii*, although it resembles it so closely in many respects. The one you sent me in a letter also somewhat resembles the *C. castanea*; but from Kirby's figure and description of the *variolosus*, I judge it to be identical with the latter. Kirby has described *C. Hentzii* by the name of *C. canaliculatus*, but besides his not noticing the white spots of that species, his description was posterior to mine, and your name must be retained as the specific designation.

C. castanea? mí, Kirby calls *C. Harrisii*; it is certainly most distinct from the true *C. castanea* of Knoch.

HARRIS TO HENTZ.

MILTON, June 5, 1829.

I have found a few specimens of *Chremastocheilus Hentzii*, and one of *C. Sayi*, in this vicinity, in the middle of a hot day, in a dry road exposed to the sun. Their flight is short, irregular, and something like that of a dipterous insect. There are but few chestnut trees here, and I have searched them in vain for these insects.

(CONTINUED)

PLEOCOMA

In Scarabaeus No. 5, F.T. Hovore pointed out that P. rubiginosa transsierrae was the only taxon in Pleocoma with an unknown female. I collected a female of this subspecies on February 15, 1982, with Derham Giuliani near Division Creek, western Inyo County, California, elevation approximately 1,750 m (5,700 feet). The habitat was mixed-shrub on an east-facing slope of 30° incline. The time was 17:00, temperature around 4°C (40°F). Weather was light overcast with a slight drizzle.

I was able to locate the single female by following a male in flight and hence observe mating behaviour. She rested in a shallow burrow in a small clearing. The male located her and followed her into the hole where they presumably copulated. The male and female were in contact between 5 and 10 minutes. The male then dug a lateral, semicircular tunnel around the burrow entrance, burying the female, emerged and flew off.

We excavated the burrow and found the female about six inches below the surface, digging vertically downward. She was photographed in the lab and placed in a domicile made from a modified observation beehive. I am unfamiliar with detailed taxonomic features of the group and hence can only describe this specimen as not atypical of Pleocoma, reflecting the judgement of Mr. Giuliani.

I photographed the above-ground portion of the mating sequence using Kodachrome slide film. A more detailed report is in preparation.

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WANTED: Notes, articles, etc., for inclusion in Scarabaeus. Need to borrow material? Need an identification? Want literature? We will be pleased to consider anything.

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