

Bermudians as the "split-thumb", from its power of wounding by a sharp appendage of the larger claws, produces a viciously sharp, snapping noise, apparently in the same manner with *Alpheus*.

The "Bermuda lobster" (*Panulirus americanus* M. Edw.) makes a loud grating noise. Mr. Kent describes the voice of the allied species (*Panulirus quadricornis*) as being produced by the rubbing together of the spinous abdominal segments. In the species observed by me, the sound was produced by means of certain modifications of the lower joints of the antennæ. There is at the base of each antenna, upon the anterior part of the cephalo-thorax, a broad elevated ridge, parallel with the axis of the body, which in an adult of eighteen inches would be about two inches long. The rounded crests of these ridges are closely embraced by processes from the sides of the basal antennal segments. The profile of each ridge describes the segment of a circle, the centre of which is the centre of articulation of its accompanying antenna. When the antennæ are moved forward and backward, their tips waving over the back of the animal, the close contact of the hard, smooth, chitinous surfaces produces a shrill, harsh stridulation, like the sound of filing a saw. I have never heard the noise when the animals were under water, though I have seen them waving their antennæ. I have no doubt that they can thus produce vibrations perceptible to their mates at great distances, especially if their other senses are as acute as that of smell, which I have tested in a very curious manner. Both sexes are provided with the vocal organs.

DECEMBER 25, 1877.

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**ON A NEW HUMMING BIRD (ATTHIS ELLIOTI) FROM GUATEMALA.**

**By ROBERT RIDGWAY.**

Having had occasion, recently, to examine some specimens of Humming Birds, I happened to notice certain striking differences between two examples labelled "*Atthis heloisa*"—one from Guatemala, belonging to Mr. D. G. Elliot, the other a Mexican specimen, in my own collection, obtained from M. Boucard. The differences observed between these were so obvious that I immediately inspected the series contained in the collection of the National Museum, and on comparison found them repeated in the specimens contained therein, including two males from Jalapa and one from the Volcan de Fuego, Guatemala. The former of course represent the true *A. heloisa*, being from the locality whence the types of that species were procured, and with them my Mexican example agrees in all essential particulars. Both the Guatemalan specimens, however, are very different from any of these, and undoubtedly represent a distinct species, which being, so far as I have been able to ascertain, hitherto unnamed, I propose to characterize as follows:—

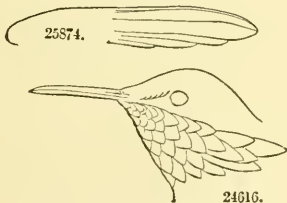
ATTHIS ELLIOTI.

"*Selasphorus heloisæ*", SCL. & SALV., Ibis, i, 1859, 129 (Guatemala); *ib.* 1860, 195 (Dueñas, Guatemala).—SALVIN, *ib.* 266 (Guatemala; Tierra Caliente, and slopes of Volcan de Fuego).

"*Atthis heloisæ*", B. B. & R., Hist. N. Am. B. ii, 1874, 465 (part: Guatemala references).

*Specific Characters.*—*Adult male*:—Outer primary broad, the end not attenuated. Gorget uniform reddish-purple (much as in *Calypte annæ*), without varying tints of violet, as in *A. heloisæ*. Jugulum wholly white; middle of the abdomen white; sides light rufous, slightly glossed with golden-green; crissum white, tinged with light rufous. Upper parts metallic-green, decidedly less golden than in *A. heloisæ*. Tail with the basal half (approximately) bright cinnamon-rufous, the subterminal portion black; three outer feathers (on each side) tipped with rusty-white; the middle pair with the black portion above glossed with metallic-green anteriorly. Wings uniform dusky, the smaller coverts metallic-green. Wing, 1.35; tail, 1.00–1.05; culmen, 0.38–0.40. [Type, No. 20494, ♂ ad., Coll. U. S. Nat. Mus., Volcan de Fuego, Guatemala.]

With a very close general resemblance to *A. heloisæ*, this species may be immediately distinguished by the very different form of the outer primary, the redder and more uniform color of the throat-gorget, and the shorter bill. The peculiar characters of the two may be contrasted as follows:—



*Atthis heloisæ*. ♂. Jalapa. Dr. Heermann.



*Atthis ellioti*. ♂. Guatemala. Bourcier.

*A. ellioti*.

Outer primary broad, the end not attenuated. Gorget uniform purplish-red, without varying violaceous tints. Wing, 1.35; tail, 1.00–1.05; culmen, 0.38–0.40.

*Hab.*—Guatemala.

*A. heloisæ*.

Outer primary very narrow, the end abruptly attenuated. Gorget reddish-violet, showing decided violet tints in certain lights. Wing, 1.30–1.50; tail, 0.95–1.10; culmen, 0.48–0.50.

*Hab.*—Eastern Mexico.

The principal synonymy and characters of *A. heloisæ* are as follows:—

ATTHIS HELOISÆ.

*Ornismya heloisæ*, LESS. & DELATTE, Rev. Zool. 1839, 15 (Jalapa and Quatepu, S. E. Mexico).

*Mellisuga heloisæ*, GRAY, Gen. B. i, 1849, 113, sp. 62.

*Tryphæna heloisæ*, BONAP., Rev. et Mag. Zool. 1854, 257.

*Selasphorus heloisæ*, GOULD, Monog. Trochilid. iii, 1852, pl. 141.

*Atthis heloisæ*, REICHENB., J. f. O. 1853, App., 12.—GOULD, Introd. Trochilid. 8vo ed. 1861, 89.—ELLIOT, Illustr. Am. B. i, 1869, pl. —.—COOPER, Orn. Cal. i, 1870, 361 (El Paso, Texas; Mexico).—B. B. & R., Hist. N. Am. B. ii, 1874, 465, pl. 47, fig. 6 (El Paso, Texas; Mexico).

*Specific Characters.*—*Adult male*:—Outer primary very narrow, the end abruptly attenuated. Gorget violet-purple, with changeable tints in varying lights. Jugulum wholly white; middle of the abdomen white; sides light rufous, slightly glossed with golden-green; crissum white, tinged with light rufous. Upper parts metallic golden-green, more bronzy than in *A. ellioti*. Tail with the basal half (approximately) clear cinnamon-rufous, the subterminal portion black, with the three outer feathers (on each side) tipped with rusty-white; middle pair of feathers glossed with golden-green on the upper surface to the extreme tip. Wings uniform dusky, the smaller coverts golden-green. Wing, 1.30–1.50; tail, 0.95–0.10; culmen, 0.48–0.50.

Of the three adult males of *A. heloisæ* now before me, the two from Jalapa are much alike; but that in my own collection, which is evidently from another part of Mexico, although, unfortunately, the precise locality is not stated on the label, differs in several very noticeable particulars. The bill is very much more slender, the wing shorter (about 1.30, instead of 1.50), and the general size decidedly less. What is most conspicuous, however, is the fact that the lateral feathers of the gorget are not elongated as in the Jalapa specimens, in which they are 0.25 to 0.30 of an inch longer than the longest feathers of the middle portion, while there is a mixture of bluish-violet in the gorget not observable in the other specimens. It is barely possible that the longer lateral plumes of the gorget have been lost from this specimen; but in any event, the differences are quite sufficient to characterize a well-marked local race.

JANUARY 29, 1878.

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FOSSIL MOLLUSKS FROM LATER TERTIARIES OF CALIFORNIA.

By W. H. DALL.

The National Museum has recently received from Mr. Henry Hemplill a series of fossil shells collected by him from the later Tertiary deposits of the Californian coast. Some of them are from the vicinity of Santa Barbara, but the majority are from San Diego, part of them