

It may be distinguished from the common species of our coast, *Belone longirostris*, (Mitchill) Gill, by many characters, the most salient of which are the more elongate form, the lesser proportionate length of the head, the much greater number of rays in the vertical fins (*B. latimanus* has D. 25: A. 23. *B. longirostris* has D. 13-16: A. 16-19), the broader and proportionately shorter pectorals, and the forked caudal.

The length of the specimen was 49 inches (1244.6 millimetres), its weight $5\frac{1}{4}$ pounds (2381 grams).

COLOR:—Back, top of head, and snout dark green in dead specimen, probably beryl-green in life. Fin-rays greenish-brown. Fin-membranes and protected parts, such as axils of pectoral fins, colorless. Sides light brownish, with silvery overwash. Belly, cheeks, throat, and lower part of lower jaw silvery-white. Eye greenish-yellow.

Radial formula.—Branchiostegals XIV. D. 24: A. 25: C. 7-6 + 7-5: P. 12: V. 6.

JANUARY 15, 1878.

THE VOICES OF CRUSTACEANS.

By G. BROWN GOODE.

The observations of Mr. Saville Kent and Mr. J. Wood Mason (*NATURE*, vols. xvi, p. 565, and xvii, p. 11) recall to mind some similar facts recently noted by me in the Bermudas.

Several species of *Alpheus* were observed to have the power of producing loud clicking sounds. Two or three of the larger species are accustomed to lurk under flat stones near low-water mark. Some of these are two inches long. When one of them is taken between the fingers by an inexperienced collector, the sudden, convulsive snap almost invariably causes him to drop it. The effect is like that of a sharp blow across the knuckles. Some smaller species of the genus are found only in the cavities of a large aplysine sponge, abundant on the reefs. I have picked out seventy or eighty from a fragment of sponge not more than three inches in diameter. When the sponge is taken in the hand, the quick succession of clickings reminds one of the sound of instruments in a large telegraph office. When one of these animals is put in an earthen or glass vessel, it makes a much louder noise, resembling a quick tap with the finger-nail or the back of a knife upon the edge of the same vessel. This noise is produced by a convulsive snapping of the last joint of the large claw, by a movement resembling that of the spring beetles (*Elatridæ*), and the sounds are quite similar. Possibly these movements may have a protective object, enabling the little decapods to escape from the grasp of enemies, or to work out from under the stones and loose sand in which they must often become buried.

Another maerurous crustacean, *Gonodactylus chiragra*, known to the

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.

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:—