

Up to the time of d'Orbigny (1840), the *Pneumonoderma* of the North Atlantic (*Pneumonoderma violaceum*), was described under the same name; and under this name also, Souleyet¹ reunites some different *Pneumonoderma*, of which not one was the true *Pneumonoderma peroni*.

It is true that in 1815 Oken² had distinguished the two forms (*Pneumonoderma peroni* and *Pneumonoderma violaceum*), and had respectively named them *Ægle cucullata* and *Pneumodermis atlantica*; but the diagnoses he gave of them are so brief and incorrect that these names cannot be retained, and must be regarded as synonyms.

The two other names to retain with *Pneumonoderma peroni* and *Pneumonoderma violaceum*, are *Pneumonoderma mediterraneum*, van Beneden, and *Pneumonoderma pacificum*, Dall.

Thus, among the ten different specific names above mentioned, there are only four which can be considered as definitive in the actual nomenclature. Besides these four species I shall describe two new ones, *Pneumonoderma souleyeti* and *Pneumonoderma boasi*, of which the former was collected by the Challenger Expedition.

As I have already said, the different species of *Pneumonoderma* are very difficult to distinguish from one another. The distinctive character proposed by Boas is founded on the number and form of the suckers of the buccal appendages; but this character is not sufficient for all the species. By adding to it the character drawn from the conformation of the gills, one can much more easily distinguish the six species above mentioned.

By the conformation of the posterior gill, these six forms are divided into two groups, each including three species:—

I. In the first group the radiating crests of the posterior gill are one-fifth of the length of the body, and bear numerous fringes (from seven to twelve), which are long and subdivided. The species of this group generally have the free part of the lateral gill rather short; one of them does not possess fringes on the lateral somatic crest of this gill.

II. In the second group, the radiating crests of the posterior gill are short (one-tenth of the length of the body), and bear a few fringes (about three), little projecting, and simple. Two species of this group (*Pneumonoderma pacificum* and *Pneumonoderma souleyeti*) have the free part of the lateral gill long, and the fringes of the posterior gill little developed.

The following table, combining the characters taken from the gills with those of the acetabuliferous appendages, allows of the easy discrimination of the six species of *Pneumonoderma* described in this Report.

¹ Voyage de la Bonite, Zoologie, pl. xiv. figs. 7-16.

² Lehrbuch der Zoologie, Bd. i. p. 327.