

and would be the means of obviating in future the confusion which at present prevails for want of it.”

The following papers were read :—

1. On the Cranium of a new Species of *Hyperoodon* from the Australian Seas. By WILLIAM HENRY FLOWER, LL.D., F.R.S., P.Z.S., &c.

[Received April 18, 1882.]

Dr. Günther has been so good as to submit to my examination the cranium of a Cetacean lately added to the British-Museum collection which presents sufficient interest to justify its being brought before the notice of this Society. The specimen was found upon the sea-beach of Lewis Island in Dampier Archipelago, North-western Australia.

Unfortunately the cranium is in a greatly mutilated state, having evidently been rolled for a considerable period among pebbles and sand, from which cause many of its most important characters are destroyed. The lower jaw is wanting. The whole of the elongated narrow part of the rostrum is broken away. There is therefore nothing remaining to indicate the character of the dentition. Many prominent parts of the cranium, especially the supraorbital ridges, are worn down to such an extent that their contour is completely destroyed. This, as seen in figure 1 (p. 393), is carried to a greater extent upon the right than the left side. The slender jugal arches and the petrotympanic bones have disappeared. There is, however, enough remaining to show that it does not belong to any known species, and also to indicate, as far as they may be inferred from the cranium alone, its affinities. It should be premised that the animal to which it belonged was not very aged, as the sutures are mostly open; but there is no reason for supposing that it had not arrived at its full size.

It is evidently one of the Ziphioids; and as the characters of the four generic modifications of this group are plainly indicated in the conformation of the upper surface of the cranium (see ‘Transactions of the Zoological Society,’ vol. viii. p. 203), which is here well preserved, there is no difficulty in recognizing that it is neither a *Berardius*, nor a *Ziphius*, nor a *Mesoplodon*, but that it comes so near to *Hyperoodon* that it is only with animals of that genus that it will be necessary to compare it.

An adult skull of the common species, *H. rostratus*, in the British-Museum collection, which presents all the typical characters of its kind, will serve very well for the purpose.

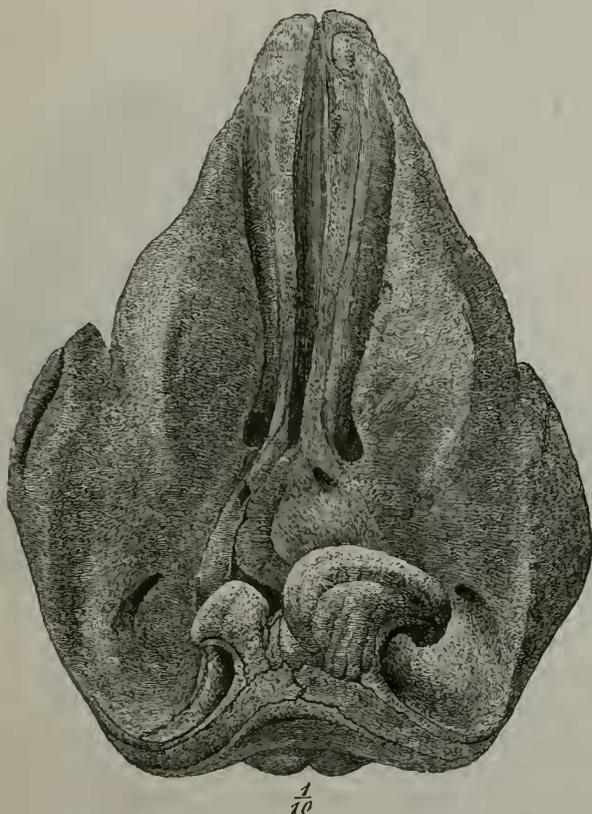
Although the proportions differ somewhat, in general size the two are nearly equal, the *H. rostratus*, on the whole, having the advantage.

In the posterior or occipital aspect, the new cranium differs from that of *H. rostratus* in being narrower and somewhat higher,

and the foramen magnum and the condyles are considerably smaller, as seen by the following dimensions :—

	<i>H. planifrons.</i> millim.	<i>H. rostratus.</i> millim.
Height of supraoccipital, from upper margin of foramen magnum to top of occipital crest	375	340
Width of supraoccipital, at narrowest part between hinder margins of temporal fossæ . .	375	432
Width of foramen magnum	68	83
Width of condyles	212	257
Height of condyle	153	192

Fig. 1.

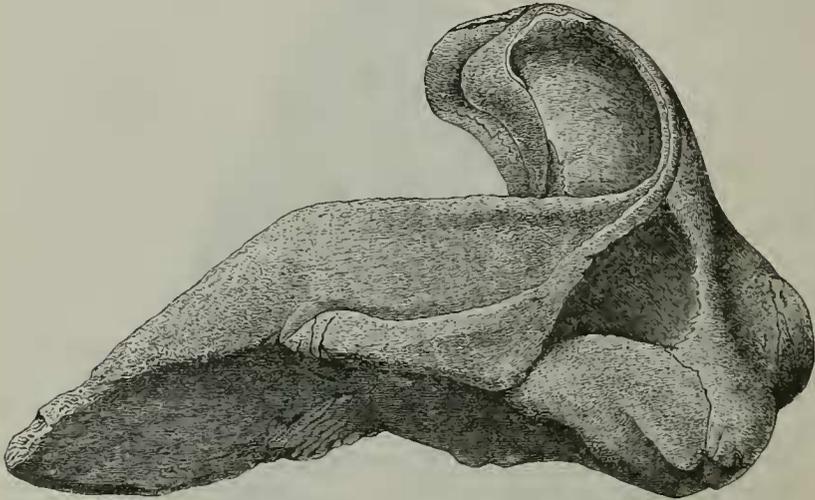


Upper surface of cranium of *Hyperoodon planifrons*.

In the upper surface (fig. 1) the want of bilateral symmetry in the region of the blowholes is extremely marked. The two characteristic prominences overhanging the anterior apertures to the nares, formed by the posterior ends of the præmaxillæ, with the nasals flanking their inner and the maxillæ their outer surface, are larger and more massive than in *Hyperoodon rostratus*, especially the right one. The groove between them is narrower. The septum between

the nares is thrown exceedingly to the left side. So far, however, there is nothing essentially different from *Hyperoodon rostratus*. It is in the region immediately in front and to the side of the blowholes that the great difference is seen. This part in *H. rostratus* is characterized by the very prominent maxillary crests, the inner surfaces of which rise vertically from the outer border of the great "infraorbital"¹ foramen, the two opposed surfaces being nearly parallel with one another, or even slightly hollowed, so that their summits have a tendency to inversion. Although the amount of elevation to which the corresponding crests might have attained in the new specimen cannot be satisfactorily ascertained, as their surfaces have evidently been subjected to the attrition previously alluded to, it is perfectly evident that they differed greatly in form from those

Fig. 2.

Side view of cranium of *Hyperoodon planifrons*.

of *H. rostratus*, as the still unworn (because protected) inner surfaces slope gently outwards and upwards from the edge of the foramen, and the crests therefore, though with a base even broader from side to side than in *H. rostratus*, must have been low and rounded and quite devoid of any tendency to inversion. Another great difference (better seen in the side view, fig. 2) is that the crests do not sink abruptly at their hinder end, leaving a deeply depressed surface of the maxillary bone intervening between them and the occipital elevation, but they are continued backwards, above the temporal fossa, and so pass gradually into the occipital crests, forming a continuous outer wall to the great basin in which the blowholes are placed, which is completely interrupted in *H. rostratus*. Among minor differences,

¹ Or the foramen corresponding to the infraorbital in man, in transmitting the branch of the fifth pair of nerves that supplies the cheek and upper lip, but not infraorbital in position in the Cetaceans.

the "infraorbital" foramina are smaller—a character probably related to the smaller surface-region to be supplied by the nerves and vessels which pass through it, occasioned by the reduced size of the crests and a possibly shorter rostrum,—and that the temporal fossa is shorter from before backwards, and higher vertically, more resembling that of *Ziphius cavirostris*.

There is little, in such portions of the under surface of the skull as are preserved, that shows any striking difference from the common species.

A sufficient portion of the vomer is preserved to show that it was not complicated by the adherence to it of an ossified medio-rostral bone, in which respect it agrees with all known specimens of *Hyperoodon* and *Berardius*, and differs from the adults of *Ziphius* and *Mesoplodon*.

(Owing to the destruction of some of the more prominent of the external parts of the cranium, very few dimensions can be given beyond those at p. 393; but the following comparisons may be useful:—

	<i>H. planifrons.</i> millim.	<i>H. rostratus.</i> millim.
Width between anteorbital notches	432	385
Width of base of each maxillary crest opposite anteorbital notches	160	127
Interval between crests	105	130

As the cranium thus differs from that of *H. rostratus* in the comparative lowness and rounded form of the maxillary crests, from *H. latifrons* (with its enormous, vertically raised, flat-topped and converging crests) it deviates in a so much more marked degree that a detailed comparison between them is quite unnecessary¹.

With so imperfect a knowledge even of the cranium, and with absolutely none of the remainder of the animal's organization, any determination of its generic affinities can only be provisional; but if the genus *Hyperoodon* include both *H. rostratus* and *H. latifrons*, there is no reason against this new form being contained in it also. If, on the other hand, they are separated, as was done by the late Dr. Gray, it would have to form a distinct genus, as it differs quite as much, or more, from *H. rostratus* in one direction as *H. latifrons* (*Lagenocetus latifrons* of Gray) does in the other. Not wishing to multiply genera, I prefer the former course, and shall consider it a *Hyperoodon*; and as it differs from both of the other species in the comparative flatness of the fore part of the head (which looks externally like, although not strictly homologous with, the animal's forehead), it may be specifically called *planifrons*. It is evidently

¹ *H. latifrons* is considered by some zoologists to be the adult male of *H. rostratus*. Captain David Gray, of Peterhead, who is perfectly familiar with both forms, has furnished me with some evidence strongly tending to the opposite conclusion. I hope, with further information from the same source to be collected during the present whaling-season, to be soon in a position to clear up this important and still doubtful question in cetology.

a more generalized form than either of the known species, showing more resemblance to the other types of Ziphoids. One of its chief points of interest is the locality in which it was found. Although *Ziphus* and *Mesoplodon* are both cosmopolitan genera, and *Berardius* an inhabitant of the Southern hemisphere, no specimen of the genus *Hyperoodon* has hitherto been met with anywhere but in the North Atlantic.

2. On three new and interesting Species of Rhopalocera.

By DR. O. STAUDINGER.

[Received April 24, 1882.]

(Plate XXIV.)

PAPILIO HAHNELI, sp. n. (Plate XXIV. fig. 1.)

This wonderful new species was discovered by Dr. Hahnel in the autumn of 1880 near Massanary, on the Rio Manés, Lower Amazons. He only took the ♂ here figured and a somewhat damaged ♀, just like the ♂, only a little larger, and the anal angle of the under wings not produced as in the ♂.

The fore wings of this species remind one of the genus *Thyridia*. *Papilio hahneli* comes nearest to *P. triopas*, Godt., although quite distinct from it.

Length of the fore wing of the ♂ 48 millimetres, of the ♀ 51 millimetres. Fore wings black, with three transparent smoky yellow spots at the base after the middle and near the apex. Hind wings yellowish, deeply bordered with black, the outer margin serrate and with a long tail on costa (4 sect. *Herrich-Schäffer*).

The anal angle in the ♂ is very sharp and produced, in the ♀ very slightly so, but rather rectangular.

Head, body, and legs black, excepting a carmine spot on each side at the base of the body; the female has a similar spot below the anal segment, which the male has not. There is also a trace of a little reddish spot below the head (on the prothorax), and some reddish hairs on the mesothorax above the middle legs.

I have named this species in honour of the discoverer Dr. Hahnel, who is doubtless one of our best collectors, and has discovered other new species of Lepidoptera on the Amazons, where he is still at work.

HELICONIUS VENUS, sp. n. (Plate XXIV. fig. 2.)

This new species was taken by Herr E. Trötsch on the river San Juan, in Colombia, in some numbers, together with almost equal numbers of *H. vulcanus*, Butler.

Both species are at the first sight very similar, almost exactly so. They are black, with broad red spots behind the middle of the fore wings. They are distinguishable by the following characters:—*H. venus* has on the upperside a brilliant deep steel-blue reflection, which