

*Fig. 4. Bombus fervidus.* The pupa state, where the body has become much shorter, the appendages of the head and thorax greatly differentiated, the external genital organs wholly retracted within the cavity of the abdomen, the head freer from the body, and the whole bulk of the head and thorax together, including the appendages, greater than that of the abdomen. *c*, the propodeum, nearly concealed in a side view; *p*, labrum; *q*, maxillæ, with the two-jointed palpi at the extremity; *r*, tip of the lingua.

XVI.—*On some Cetaceans.* By HERMANN BURMEISTER.

(From a Letter to Dr. J. E. Gray.)

[Plate IX.]

THE Museum has received another new species of Cetacea since my letter; it is a new *Orca*, which I name *O. magellanica*, and now send a figure of the skull with a description. The species is nearest to *O. capensis*, but more slender and different in many respects, as you will find by comparing my figure and description. The animal was found on the shore, near the mouth of the small river called "Arroyo de Cristiano muerto," in S. lat.  $38^{\circ} 50'$ , and was in a perfect state of preservation; but, by the negligence of the people who found it, the whole skeleton was lost, with the exception of the skull and two vertebræ (one dorsal, one caudal) which have come into my hands.

From your Catalogue I learn that you do not know the skull of the adult Sea-Lion or that of *Arctocephalus Falklandicus*. We have both in the Museum, these two species being the only ones which are found in the Atlantic, near the mouth of the Rio de la Plata. They were formerly very common on the small islands north of the mouth of the river, named from them "Islas de los lobos," *lobo marino* (sea-wolf) being the Spanish name for a Seal; and not unfrequently they come into the mouth of the river even as far as Buenos Ayres, where I have already twice seen full-grown living specimens of *Arctocephalus Falklandicus*. Both of these were, I believe, carried to France; but perhaps they died on the voyage. They were kept here for a long time in a large basin of fresh water; and I was one of the daily visitors to these very interesting animals\*.

We have in the Museum a young half-grown specimen nearly 3 feet in length. From this I have taken the skull, of which I now send you a description and drawings (Pl. IX. fig. 1 from above, and fig. 2 from the side, one-half natural size; fig. 3, end of the palatine bones, natural size; and fig. 4, some teeth, seen from the inside, also natural size. The numbers indicate the

\* I have no doubt it is one of these that is now alive in the Zoological Gardens in the Regent's Park.—J. E. G.



position of the teeth—2nd, 3rd, 4th, and 5th molars). The skull is not very flat, and has no crest; the upper surface is rounded and the orbits very large, with a sharp spine on the anterior, and a horizontal crest on the upper margin. Teeth  $\frac{6}{4}$  I. and  $\frac{6-6}{5-5}$  M.; the two outer incisors in the upper jaw are much more prominent and of a conical form, like the canines; but the other four are smaller than those in the lower jaw; the upper with two points, one before, the other behind, of equal size; the lower with a transverse obtuse margin, somewhat higher than the outer edge. The canines have not attained their full size. Of the six upper molars, the first four descend perpendicularly, the other two are sloping, with the apex backwards; each of them has a large conical crown, with a small acute tubercle on the anterior margin of the base, and the three last have another more elevated tubercle on the posterior part of the crown. In the lower jaw there are only five molars; but, as the last in the upper jaw is entirely white, and the others all brown and less developed, it is possible that a sixth molar might subsequently have been developed in the lower jaw. Each of the five lower molars has a small tubercle in front, at the base of the high conical crown; and the three hinder ones have also a more highly developed tubercle on the posterior part of the crown, which becomes higher and larger posteriorly. The palatine bones are deeply excavated anteriorly, and flat behind. The hinder margin is retracted forward in the middle, and has on each side an obtuse prominent angle, as shown in my drawing. The occipital condyles are wanting, and therefore only indicated in my figure.

#### On Tursio Eurynome.

The skull of the Dolphin in our Museum which I have called *Delphinus Euphrosyne*, perhaps by a change of the very similar names, is not *D. Euphrosyne* of the 'Voyage Ereb. and Terror,' pl. 22, but *D. Eurynome*, ibid. pl. 17, now named *Tursio Eurynome* in your Catalogue, p. 261. The skull agrees exactly with your figure, and cannot belong to a different species. The lower jaw is wanting, and both sides of the upper jaw want the tops; in the remaining parts there are twenty orifices or sockets for the teeth, wanting the five of the top, with that part of the maxillary bones; but as the intermaxillaries are completely preserved, I can hardly be in error as to the portion wanting of the maxillaries. The skull is very old, and may have been brought by a vessel from the East Indies to Buenos Ayres; but as it is very rare for any one here to take an interest in the preservation of such things, I supposed that it must have been obtained in this country.



On *Delphinus microps*.

Of this species we have now three skulls in the museum, it being the commonest species on the coast of Brazil south of the equator. I saw many troops of them during my voyage in the sailing vessel which first brought me here.

The animal is of the size and colour of your *Delphinus Walkeri* (fig. 100), and I think it may be the same species, if the skull is not very different. My three skulls are of equal size, 17 Rhenish (= 18.15 English) inches in length, and 7 (= 7½ English) inches in breadth at the widest point on the temporal arch, beneath the *fossa temporalis*. They have from forty-seven to forty-nine teeth in the upper jaw, and from forty-four to forty-eight in the lower; but the number seems to be variable, as the first and last teeth are very small, and often wanting on one side when present on the other. The upper jaw always has some more teeth behind, and the lower jaw probably some more in front. The form is exactly like your figure (pl. 25), even the deep groove on the right side of the frontal tubercle being the same, and the occipital crest very prominent in front, perhaps more so than in your figure. The teeth are six to an inch in the middle of the jaw.

In its general form the skull is nearly allied to that of *Steno attenuatus*, which I received last year from a friend on his return from Europe in a sailing vessel. This vessel took the animal in the middle of the Atlantic, south of the line; and my friend preserved the skull for me, the animal having been eaten by the sailors. The skull is exactly 17 inches long, and agrees precisely with your figure in the 'Voyage of the Erebus and Terror,' pl. 28.

Lastly, I have also received the skull of *Delphinus Styx* (Voy. Erebus and Terr. pl. 21) from a sailor, who captured the animal near Madeira. I am also in expectation of an entire well-preserved skeleton of a Dolphin taken in the river two miles above Buenos Ayres; but the owner would not give me the bones till to-day.

*Orca magellanica*, n. sp. Pl. IX. fig. 5.

This animal is known only by a skull found on the shore of the province of Buenos Ayres, in lat. 38° 50' S., near the mouth of the small Rio del Cristiano muerto. It seems to be very like *Orca capensis*, but rather more slender, as is proved by the following measurements of the skull, compared with the same in *Orca gladiator* and *capensis*, as given by Dr. Gray in his 'Catalogue of Seals and Whales, ed. 2. pp. 280 & 284.



	<i>O. gladiator.</i>	<i>O. capensis.</i>	<i>O. magellanica.</i>
Length, entire .....	33	36 $\frac{1}{2}$	36
Length of nose .....	19 $\frac{1}{2}$	18	19
Length of teeth-line .....	14 $\frac{1}{2}$	14	15
Length of lower jaw .....	27 $\frac{1}{2}$	29	30
Breadth at notch .....	10 $\frac{1}{2}$	12	10 $\frac{1}{2}$
Breadth at orbits .....	18	21	20
Breadth of temple.....	18	20	18
Breadth at middle of beak	9 $\frac{1}{2}$	10	10
Breadth of intermaxillaries	...	3 $\frac{1}{2}$	4 $\frac{1}{2}$
Breadth in front .....	4	4 $\frac{1}{2}$	4 $\frac{3}{4}$
Breadth in middle .....	3 $\frac{1}{2}$	3 $\frac{1}{4}$	4

These measurements show that the beak is longer than in the Cape species, and relatively shorter than in the European species, but perhaps of the same breadth; the teeth-line is longer than in either of them, and the after part, between the orbits and temples, rather smaller and not so broad. Other differences are presented by the forms of the different bones.

The intermaxillaries, which in *Orca gladiator* are narrowed to the apex, and in *O. capensis* are enlarged into an ovate figure (as shown by the drawings in the Voy. Ereb. and Terr. pls. 8 & 9), have a more rounded form in *O. magellanica*, and are broadest at the apex; from that point they go in a straight line to the base of the nose, only becoming rapidly narrower near the notch, where the breadth is only 3 $\frac{1}{2}$  inches (at the anterior extremity 4 $\frac{1}{2}$ ), and then are extended into the usual elliptical part surrounding the nasal apertures. In consequence of this breadth of the intermaxillaries in the anterior region, the maxillaries are slender, and narrower than in the other two species.

In the form of the occiput *Orca magellanica* agrees rather with *O. capensis* than with *O. gladiator*, being larger and having a somewhat excavated surface, and a sharp crest on the whole circumference above. This crest has in the middle a posteriorly protracted angle, into which enters the high protuberance of the frontal bones behind the nasal apertures; from the edge of this angle a sharp elevated margin or line descends along the middle of the occiput to the great occipital foramen. The sides of the occiput are sloped more backward, as in *O. capensis*, and thus form a larger posterior temporal cavity. The tuberosity before and above the orbits seems to be not so high; but the lower angle of this tuberosity in front of the entrance into the orbit is much sharper and more descendant, and the small notch in the middle of the upper margin of the orbit is somewhat broader; but the form of the entrance of the orbit is exactly the same as in *Orca capensis*. The postorbital process also shows some dif-



ferences: it has the same figure as in *O. capensis*, but is somewhat thickened only at the lower margin, whilst the upper part, near the suture with the maxillary bone, is deeply excavated, so that the suture is even more elevated than the bones beneath it.

The *fossa temporalis* resembles that of *O. capensis* in form, and is much more elongated than in *O. gladiator*; it is acute in front and rounded behind. It is 10 inches long, 4 inches broad in the middle; the lower margin is of a sigmoid form, and has a stronger protuberance over the region of the ear than in *O. capensis*; but the hinder part of the occiput, corresponding with the mastoid process of higher animals, is not so strong as it seems to be in *O. capensis*, and is somewhat shorter.

The tympanic bones are wanting, and the articular cavity for the lower jaw is strongly excavated, with a prominent lower margin.

The number of teeth is twelve in each jaw; each of them is situated in a large socket, the first sockets being somewhat smaller than the following ones. In front of the first socket, in the intermaxillary bone, there is a small and not very deep groove, in which there has probably been a small tooth, now wanting. The total number of teeth would then have been thirteen in the upper jaw.

Each tooth is of a conical form and somewhat curved, with the apex backward, and the anterior margin more perpendicular than the somewhat inclined posterior margin. The upper half of the crown is whitish, the lower half brown; on the former there is a thin layer of enamel, which is wanting on the lower brown portion.

Buenos Ayres,  
May 5, 1866.

Your sincere Friend,  
H. BURMEISTER.

XVII.—*Notulæ Lichenologicæ*. No. VIII.  
By the Rev. W. A. LEIGHTON, B.A., F.L.S.

NEW BRITISH LICHENS.

THE following additions to our British Lichens are made by Dr. W. Nylander in the 'Flora' for February 1866, p. 85.

1. *Lecidea chlorotiza*, Nyl.

Thallus cinereo-virescens, tenuis, subleprosus, effusus; apothecia carneo-flavida, convexiuscula vel convexa (latit. 0.4–0.6 millim.), immarginata (solum juvenilia margine obtuso), intus incoloria; sporæ 8<sup>næ</sup>, incolores, oblongæ vel oblongo-fusiformes, 1-septatæ, longit. 0.009–0.012 millim., crass. 0.002–



1866. "On some Cetaceans." *The Annals and magazine of natural history; zoology, botany, and geology* 18, 99–103.

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