ON SEVERAL SKULLS OF SEALS

M. H. D. de BLAINVILLE*

Despite all the hard work undertaken by Mr. Desmarest to clarify the species of the genus *Phoca* of Linnaeus in the new Biology Dictionary, and though he could properly benefit from the observation of Péron, which is perhaps a generalized one, that the species living in the North Sea are essentially different from those of the South Seas because we do not encounter them in intermediary seas, still he is personally convinced that it was nearly impossible to reach sufficiently decisive determinations, because he could not find other authors who mentioned sufficient notions on the species of this genus. Indeed, with the exception of Fabricius, they only mentioned incomplete descriptions and often did not indicate the number, arrangement, and shape of the teeth which, undoubtedly, present the most distinctive characteristics of the species. The shape of these animals is almost always the same, but the size and color vary in the same species according to age, or are identical in several species, and the habits are slightly-different. Hence, the result is that it is one of the genera whose species have been the least properly classified until now. However, these species seem to be more numerous than we thought, due to the fact that it was quite difficult to obtain the cadavers of these animals in our collections, not only

* Original citation: de Blainville, M. H. D. 1820. Sur quelques crânes de Phoques. *Journal de Physique, de Chimie, d'Histoire Naturelle et des Arts* 91:286-300, 419. Chez Mme. de Courcier, Libraire. Translated for the U.S. Department of Commerce and the National Science Foundation, Washington D.C. by the Al-Ahram Center for Scientific Translations, 1980. Transferred to electronic copy and edited by Mark Uhen and Michell Kwon, Smithsonian Institution, 2007.

because of their large size but also because of their habitats, far away from Europe. That is why for a long time I had collected all available materials in the various collections that I have visited. I was able to strictly examine the skulls which pertained to many species of this genus. I shall provide here the description of those which I was able to study up to the present; afterwards, I shall try to relate them, if possible, to the known species.

1º Sea lion from Tinian Island[1)] by Commodore Byron. With this label, which means a sea lion from Tinian Island, given by Commodore Byron, I was able to observe a skull without the lower jaw in the London College of Surgeons collection. It was more than one foot long and undoubtedly originated from an adult animal: by the large prominence of the occipital and sagittal crests, it seemed to be quite remarkable to me and also by the extent of the temporal fossa, by the strength of the zygomatic arch, the narrowness and depth of the glenoid fossa, which is compressed between the zygomatic arch and the mastoido-occipital protuberance, and chiefly by an enormous development of the mastoid protuberance of the occipital line, which did not compare with any of the species that I have ever known. As for the remaining parts, the forehead and the chamfers, which are almost horizontal, though slightly bulging above the orbit, are then separated at the end of the sagittal crest by a quite deep excavation; the nearly horizontal opening of the nostrils is moderate and the muzzle, that is to say the space included between the anterior border of the orbit and that of the premaxillary bone, is at most one-third of the total length of the head. Thus, the orbit is more anteriorly located, in such a manner that the molar teeth are obviously carried backwards and that its anterior border corresponds to the space

[1)] This island is one of the Marianas or Larrons Islands, situated east of the Philippines or at 15º latitude south and 215º of long. east of Greenwich.

between the second and third molars. It follows that the palatine vault is considerably prolonged. We also notice, on this side of the skull, two enormous rounded incisive holes. For the record I examined a total of 22 teeth with more attention. I found six terminal incisors in a straight line, the external ones being larger and resembling the small canines; two enormous canines approximately one inch in diameter, and without intervals; six molars nearly identical in length and increasing in thickness from the extreme ones to the third one and which all seem to have been conical and pointed.

2º. Sea lion from the Falkland Islands. Another complete skull, that is to say with a lower jaw, from the same collection carrying a label denoting a sea lion from the Falkland Islands. It seemed to be related to the previous one as regards strength, size, etc. However, it differed in the superior or frontal line which is almost straight, and in the occipito-sagittal crest, which is less strong and does not mainly present the enormous mastoido-occipital protuberance observed in the first one. We find that the upper jaw carries the same number of teeth: six incisors, two huge canines, and six molars; however, these latter, though of nearly the same relative proportion, the third being the largest, differ in the fact that they are less simple and mainly present, especially the last two, the division into three lobes which is usually encountered in ordinary *Phoca*. With respect to the lower jaw, it is very strong and supplied with two cylindrical, obtuse, sufficiently slanted incisors, two strong canines shorter than the upper ones, and six molars of which the two median ones are the strongest. Yet they all end at their crown in an irregular manner, by a single sharp end like the last two molars, or by three unequal

lobes like the two medians, or finally by a sharp end with a small anterior hook like the first two.

3º. The third skull, which I was able to draw and describe in the same collection, existed without a label; it was much whiter and fresher than the preceding ones: therefore, I presumed that it originated from nearby seas, and was preserved for a shorter time. Its total length was 10 to 12 inches. At first sight, it seemed to have a closer resemblance to the common *Phoca* than to the previous two types. However, it differs by greater dimensions, mainly in length, by a lesser flattening of the skull, so to speak by a lesser postorbital narrowing, by a more elongate muzzle, and mainly by the existence of a well-developed occipito-sagittal crest, and larger nasal fossae, which indicates an enormous interorbital thickness, and by the presence of anterior and posterior openings. Concerning the remaining parts, as far as the common *Phoca*, the tympanic drum is remarkable, the mastoido-occipital protuberance is slightly sensible, and the orbit is proportionally larger than in the previous two species. We can also find a resemblance to the ordinary *Phoca* regarding the number and even the shape of the molar teeth, despite the fact that they are generally stronger, like all the dental system. Effectively, there are five on each side of both jaws; they are compressed with two roots, and the crown is formed of three very distinct pointed ends, slightly curved, the extreme ones towards the axis. The median one is larger posteriorly; the largest in both jaws is always the third one; the canines do not differ from those of the sea calf yet they are stronger; they are immediately adjacent to the molars; however, the most evident difference is found in the number of the superior incisors. In fact, there are only four; two on each side, the external being the strongest,

longest, and caniniform. As for the remaining teeth, there is no space left between the incisors and the true canine in either the upper or lower jaw.

4º. I have lately drawn and described a fourth skull of *Phoca* in the office of Mr. Hauville, at Le Havre. It has a still greater dimension than the former two that I have mentioned, because it presented a length of more than one and a half feet. However, it is evident that it has a certain number of relations to the previous ones, by the height and thickness of the occipito-sagittal crest that rises in the form of a pyramid like that of the rhinoceros, by the hugeness of the temporal fossa, and by the strength of the zygomatic arch which, in the middle of its superior border, presents a considerable orbital prominence formed by the union of the two bones of the arch. The mastoido-occipital prominence is also well developed, though less than in No. 1. However this skull mainly differs from the others by presenting a proper arrangement that may maintain any appendage or prolongation of the nostrils. In fact, the frontal bone above the orbit is extremely convex, slightly as in the elephant, and probably has an analogous use; as the latter, the bones of the nose which are extremely shortened are applied at the root of the frontal bone in such a way so as to not exceed the lacrimal* or the edge of the orbit, yet they slightly exceed the osseous portion of the vomer, which is very thick. Beyond that, a muzzle is present that is much longer than in any other species of *Phoca*, because it forms more than the two-fifths of the total length of the head from its anterior end to the edge of the orbit, and this muzzle is almost entirely formed from the maxillary bones, the premaxillary bones being quite small and as if floating between the end of the former.

* "unguis bone" [MTC/MU]

The space between the bones of the nose, the maxilla and the premaxilla, is entirely hollow and results in an enormous nasal opening of an elongated oval shape. From this advanced disposition of the maxillary bone, the result is that the dental line instead of being found under the orbit, as in other *Phoca*, is even far beyond, reaching its anterior edge, also the result is that the pterygoid prominence seems to be advanced by the backward position of the root of the zygomatic arch. As regards the lower jaw, although stronger than in other species of *Phoca*, it still did not preserve the same general forms which are only considered as exaggerated. Moreover, the symphysis of the two rami of the jaw is formed from an oval surface that is 5 inches long by 3 or 4 inches wide. In spite of this enormous development of the whole masticatory system, still the dental system is quite moderate. However, the canines are always considerable; moreover, the base diameter of the upper ones is approximately an inch and a half by 2 to 3 inches in height. Longitudinally grooved in the inferior two-thirds, they are smooth only in the upper third, which is curved. There are five molars on each side in both jaws; they are all simple with a more or less irregular conical shape and are separated from each other. There is a considerable space between the canine and the first molar. This might lead to the belief that this species could have six teeth; however, I could not see any trace of an alveolus. Moreover, the incisors offer a new combination. In fact, there are four above and two below. Among the upper ones, the internal ones are the thickest and the external are the very smallest. As regards the lower ones, I did not see them; however, judging by the alveoli, they should be quite strong.

This head was brought from Desolation Island.

To what species of *Phoca* (sea dogs) do these four skulls belong? In order to answer this question, we shall start by briefly establishing the characteristics of those that have been sufficiently observed by zoologists, by concentrating mainly on the dental system,[1)] which was not carried out until recently.

A. The earless seals.

1º. The ring seal. *P. foetida*. According to Fabricius: the dental system is the same as that of the common *Phoca*, as well as the same moniliform moustaches, or beaded as a rosary; the muzzle shorter than in this species; the eyes are small; the limbs are looser; the five forefingers have a more or less different length or are almost equal; the hind limbs are terminated by less extended fins; the hairs are short and provided with a large quantity of fluff at their base; the body is brownish, studded with whitish flames above but is entirely whitish below; the flesh is very offensive especially in males.

Its length is 4½ feet at the maximum: Greenland Seas.

2º. The bearded seal. *P. barbata*. According to Fabricius: the same dental system; the moustaches are smooth, very long, quite numerous, and flexible; the forelimbs are less entangled than those of the common *Phoca* and are similar to those of the sea otter; the fingers are less different in length; the middle finger is the longest of the five fingers,

[1)] Concerning this subject, I should point to the fact that we should have more confidence in the dental system of these animals because they are born with all their teeth, and this is quite singular.

which gives the hand a shape similar to that of man; the orifice of the ear is greater than in the following species but is similar to that of the previous ones; the color varies slightly according to age and ends by becoming almost entirely black in adult individuals.

Ten feet in length: Greenland Sea and generally the North Sea; because of this, we should undoubtedly relate this species to the huge *Phoca* of Parsons.

3º. The common seal. *P. vitulina*. Six incisors above, slightly different in size, four below; moderate canines; five molars on each side in both jaws, all are sharp, with one or two very small pointed ends at the anterior and posterior aspect of the median, which seems to be unique; the moustaches are moniliform; the opening of the ear is very close to the eye; the head is depressed and separated from the trunk by a well-marked neck; the forelimbs are slightly falciform, with five fingers decreasing from the first to the last, and are all supplied with long, pointed nails that are almost cylindrical; the hind fins are large and semilunar; the two external fingers are much longer than the three median ones; the nails are small; the body is conical, covered with a short hair, and varies in color from brown above to yellowish white below.

The maximum length is 5 feet: North Seas.

Under this nomenclature, it is probable that we may mix several distinct species. Hence, the common *Phoca* of Greenland, that of Fabricius, has small eyes according to this accurate zoologist; this fact does not apply to our sea calf.

4º. The harp seal. *P. groenlandica*. According to Fabricius: the same dental system and moustaches as the common *Phoca*; the muzzle is longer; the occiput is more elevated; the limbs have the same shape; the hairs are rare, shorter, bristled, and are rarely woolly at the base; the front is white and bears a large whitish spot in the form of a crescent on the back and flanks.

The length is 6 feet; very common in the Greenland Sea.

5º. The monk seal. *P. monachus*. According to Hermann: four incisors above and four below, the upper ones are small and are separated from each other; five molars on each side and in each jaw, all provided with pointed ends, the anterior ones are smaller than the posterior ones[1)]; the moustaches are smooth; the orifice of the ear is at a far distance from the eye; five fingers and five nails, decreasing from the first to the last in the

---

[1)] The dental system of this species has been more carefully described by Professor Ranzani, in the *Mémoires de Boulogne*, v. , p. . The following is a summary of what he mentioned: among the four upper incisors, the external ones are double the internal ones; one and the other are divided into two parts, the anterior part is longer and conical whereas the posterior one is smaller with a transverse excavation; the four lower incisors are equally separated into two parts by a transverse groove, especially the internal part which is more inwardly situated than the other one.

The canines present a sort of channeling.

The upper molars are triangular, large, short, with a median compressed, pointed end accompanied at its base by lateral pointed ends and an internal basal border that is quite low; the first is slightly smaller than the following three; the fifth is very short and presents an almost conical or simple shape.

In the lower jaw, the first three molars have three pointed ends of which the median one is the most elevated; the fifth is the highest but without the mark of the lateral pointed ends or the basal border of the others.

forelimbs[2]; five digits, decreasing from the extremes to the median, without apparent nails, in the hind limbs; the body is elongated, covered with short hairs of a brown color above and a whitish color below.

The length is 7 to 8 feet: Adriatic Sea.

6º. The ocean seal. *P. oceanica*. According to Lepechin: four very sharp upper incisors; the external lateral ones are the strongest; the lower four are less sharp; six molars on each side and in both jaws, all have three pointed ends, of which the median one is the longest and the strongest; the auditory orifice is less backwardly located; the limbs are those of the common *Phoca*; the nails are very strong, especially in the forelimbs; the body is covered with hairs that are very short and compact; the color is dirty white over the head, back, and flanks where large spots of a dark brown color can be seen forming a wide crescent.

The length is 7 to 8 feet: North Sea.

7º. The hare-like seal. *P. leporina*. According to Lepechin: the same dental system as the previous one, but generally stronger; the moustaches are composed of longer, more numerous hairs and fall all over the upper lip; the head is more elongate; the forelimbs

[2] It is quite singular that Buffon, who seems to have observed an individual of this species living in Paris, positively mentioned that the forefins have five fingers arranged in such a manner that the middle one is the shortest and the side ones are the longest, an arrangement which is equally encountered in the hind fins as Buffon ascertained.

are much weaker, and the hands are small as if cut; the tail is shorter and larger; the hairs are longer, especially in the young; finally; the color is yellowish white and is never spotted. The skin is remarkable for its thickness.

The length is 5 feet: the Mediterranean Sea and the rivers that flow into it.

This species could have some relation to the bearded *Phoca*, and might even be the same species, if the dental system was poorly observed either by O. Fabricius or, earlier, by Lepechin.

[2)] It is quite singular that Buffon, who seemed to have observed an individual of this species living in Paris, positively mentioned that the forefins have five fingers arranged in such a manner that the middle one is the shortest and the side ones are the longest, an arrangement which is equally encountered in the hind fins as Buffon ascertained.

8º. The crested seal. *P. cristata*.[1)] According to O. Fabricius: there are four teeth, above as below; four canines; five molars on each side of both jaws; the moustaches are quite long and are composed of moniliform hairs; a sort of a large, keel-shaped, vesicular tubercle is found in the forehead; the body is elongated, subconical, covered with long, fine hairs

[1)] It seems probable that we should separate the hooded *Phoca* from that with a crest or the *P. cristata* of Fabricius: in fact, the description that the northern authors gave to the hooded *Phoca* is not convenient to the crested *Phoca*, because one is provided with a sort of skin in which it can hide the head up to the eyes, a peculiarity that was not mentioned by Fabricius while describing his crested *Phoca*; moreover, we shall see later on that the true hooded *Phoca* has only two lower incisors.

with a thick fluff at the base; the forelimbs have some relation to the sole of the human foot, the big toe being the longest.

The length is 7 to 8 feet: Arctic Seas, toward Greenland.

9º. The sea elephant. *P. leonina.* According to ?[2)]: unknown dental system; the moustaches are composed of very long and twisted hairs as Péron mentions; a sort of trunk or erectile appendage terminating the nostrils in the male; the forefins have five small nails; the tail is very short; the body is subcylindrical and is covered with very short, rigid hairs of an ashy color.

For the males the length is 15, 18, and even 25 feet; the females rarely exceed 12 feet: Antarctic Sea.

B. The eared seals.

10º. The maned seal. The sea lion. *P. jubata.* According to Forster: There are six incisors in the upper jaw; the external ones are longer and have the canine shape whereas the two internal pairs have two pointed ends; the lower four have a single, pointed end; two

[2)] Quite a large number of passengers and naturalists have spoken of this enormous *Phoca*; however no one, it seems to me, has provided a more or less complete description. Therefore, we have absolutely no information on its dental system. I cannot even see that they have mentioned any satisfactory fact concerning the single organ that terminates the nostrils. The majority of the observers mentioned that it is a sort of bladder that the animal inflates intentionally; Mr. Péron, according to the denomination that he gave of this animal and its face, makes a real trunk out of it. Despite the long details that were provided by this famous passenger as regards this species of *Phoca*, still he supplied no positive facts on its organization.

canines are present in each jaw; the six molars are separated by a single curved, pointed end and two tubercles, one anterior and the other posterior, in the upper jaw; there are only five molars in the lower jaw; the appendages of the ear are arranged in 6 to 7 lines; the moustaches are smooth and hollow; the forelimbs are terminated by a bare triangular fin, with five fairly visible fingers that decrease from the first to the last and five tubercles as nails; the hind limbs are enlarged to form an equally bare fin, and the membranous part is prolonged beyond the fingers so as to form five strong lashes, of which the extreme ones are stronger than the others; there are visible nails for every finger; the three median ones being sharp and slightly free at the end; long, undulating hairs cover the head and neck of the male; all the remaining parts of the male and the entire body of the female are covered with shining, short, flat, and smooth hairs having a brownish-fawn color in the male and a lighter color in the female.

The length for the males is 10 to 11 feet; 7 to 8 feet for the females: North and South Pacific Seas, if Steller's sea lion does not differ from that of Forster.

11º. The sea bear. *P. ursina*. According to Steller: the same dental system; similar moustaches; the appendages of the ear are proportionally longer; the forelimbs have almost the same shape but with more visible nails; the fifth finger of the hind limbs is shorter than the others, and the lashes of the extra-digital membrane are long and linear; the other three being equal in length; the thumb is larger by one-third; the body is covered with thick, long hairs with a sort of felt at their bases; the color is brownish black.

The length is 8 to 9 feet: in all seas; it seems to me to be quite difficult to find sufficient characteristics in order to separate the large species of the sea bear of the south from that of the north.

12º. Péron's seal. *P. peronii*. According to Desmarest and my proper observations: six upper incisor teeth of which the external one, larger with a canine shape, is distant from the two internal ones as if bifurcated transversely for the support of the two lower incisors which are beveled; four strong canines, molars ?; the forelimbs are terminated by fins covered from above with short hairs, and show no trace of nails; the hind limbs are equally terminated by compressed and parallelogram-shaped fins which are bordered at the end by five short membranous lobes, of which the two ends are slightly longer; the fingers, almost equal, are distinguished only by the nails; only the three median ones are quite large, elongate, and perceptible; the general tint is grayish, as silver, and is lighter in the ventral surface.

The length is 2 feet 8 inches to 4 feet: Antarctic Sea.

It is probably the species described by Pages in his trip, perhaps the sea bear of the southern polar seas. I have seen an individual animal 4 feet 2 inches in length among the collection of Mr. Hauville; it showed no sign of nails on the forefins, and the lashes of the hind limbs were equally short.

13º. The crowned seal. *P. coronata*. According to my observations: it is a very small species of *Phoca* with ears, like the previous three, of which I could examine the exposed skin in the collection of Mr. Bullock in London; its general tint was a shining black with irregular yellowish spots; the head was equally black with a band of golden-yellow color over the cranium; and another band of the same color over the muzzle, which was quite elongated; hence the mouth was well shaped; the forelimbs are forwardly situated, short and large in their free part, carry five equal fingers that are armed with strong, arched, and sharp nails; the hind limbs are backwardly situated, and present five digits that are equally nailed, forming a sort of fan slightly larger than the hand, the tail seemed to me to be one and a half inches in length, although the entire animal is only one and a half feet long.

I ignore the origin of this species, which I could not study in a satisfactory manner, because it was enclosed in Mr. Bullock's Pantherion, hence I could see it only through the glass.

It would be easy for me to increase the number of species of this genus to the extent that I would never doubt that still more exist; however it would be absolutely impossible to characterize them. Thus I would not like to mention any more. It would also be easy for me to correct several synonymy errors; however, that would be less important compared to my proposed aim. Nevertheless I shall confine myself to this observation: it seems to me that it would be wrong if we look in the Mediterranean Sea for the small, eared *Phoca* that Buffon had already described in Volume XIII, p.53. In fact, on reading his article,

besides what Daubenton has added, we shall see that this animal originated from India and that it was quite wrong that Buffon assumed that it was the same animal which Rondelet mentioned under the name of the small Mediterranean *Phoca*, because the latter positively mentioned that this *Phoca* aures non habet, sed carum loco meatus angustissimos et volde exiquos, in viventibus evidentiores, in mortuis ita considunt ut vix reperias, which undoubtedly could not be convenient for the *Ph. pusilla*. As for the two individuals that served for Daubenton's diagram and description, I shall demonstrate that the disposition of the incisor teeth is quite different from that existing in the *Phoca* of Peron. In fact I have seen, together with the first author that I have just mentioned, that among the six incisors of the upper jaw, the first two pairs, quite separated and bifurcated at their crown, were arranged in an arc of a circle, and the external pair, much smaller, was almost outside the jaw; the canine was separated from the third incisor, and mainly from the first molar, by a large interval. As for the lower jaw, the first pair of incisors, larger than the other one, was trilobed at its border; then two very small alveoli followed which were quite distant, and two pointed molar teeth occupying the middle of the space between the site of the canine and the second molar tooth. Were these differences related to age? That seems to me quite probable; however, they are big ones. Whatever it is, I had to mention it. Let us now try to find, if possible, the species of our skulls.

According to the already mentioned facts concerning the twelve species that have been discussed, we could see that they might be divided into three sections; the first will include the ordinary harp, bearded, and ring seals; the number of incisors is always six

above and four below, and the compressed molars have almost a single lobe; however, as it seemed to me, with few traces of the other two.

The second section, which comprises the monk, oceanic, hare-like, and crested seals, has four incisors above as well as below, and five or six molars on each side in both jaws, which seem to me as always very regularly trilobed.

Finally, the third section, which consists of the genus *Otaria* of Péron, includes the eared seals that constantly present six incisors above besides the peculiarity of a transverse indentation, as well as only four incisors below; the molars are always simple, distant or separated from each other, and six are on each side above and only five below.

I have discarded the elephant seals because its dental system is entirely unknown.

Among the four skulls that we have observed, none is classified in the third section – and we could find only a single one related to the second section, that is No. 3. I had first thought that it could pertain to the monk *Phoca* or to that with a whitish ventral surface; however, as in the latter one and according to Hermann, the upper incisors are small and separated or are bifurcated at their pointed ends which, according to Mr. Ranzani, is not the case in No. 5 where the teeth are closely arranged and the externals are stronger than the internal ones; we should believe that this skull rather belongs to the crested *Phoca* because it is provided with only five molar teeth, as the latter, whereas the other two species of this section, that is the oceanic and the hare-like seals, have six molars.

However, I have seen in the collection of Mr. Hauville at Le Havre, a nice fluffy skin, 7 to 8 feet in length, originating from a species whose dental system and skull are quite similar to our skull No. 3; the number and shape of the incisors are indeed absolutely identical. This skin was brought from the South Seas and, as it seems, from the neighborhoods of the Falkland or Malvinas Islands; the body is elongated or conical at the length; the shape of the head, eyes, and nostrils is that of the monk seal; the moustaches seemed to me less numerous,[1)] short, simple, or smooth: I could not see the site of the ear orifice; the falciform forelimbs have five fingers decreasing from the first to the last and five small nails, though well evident; that of the thumb is not terminal; the backwardly situated hind limbs have equally five digits of which the extremes are the longest and all are provided with a tiny nail; the tail is short; the hair is identical to that of the common seal; the color is yellowish white over the entire part of the body except the back, which is brownish and non-spotted. We can give to this species the name of *P*. with small nails, *P. leptonyx*.

It is a possibility that it is the animal that the navigators of the Australian Seas have indicated under the name of the sea calf.

The other three skulls cannot be classified in any of the three established sections because the incisors are always six or four above and only two below, and the molars are constantly more or less conical, simple, separated from each other, and are six in number. However, the singular disposition of the forehead, of the bones of the nose and of the

[1)] Probably by alteration.

opening of the nostrils of skull No. 4, besides its enormous dimensions, do not allow any doubt that this skull pertains to the elephant seal; therefore we should include this species in a fourth section which will be intermediary between the second and the third established sections, and to which the other two skulls No. 1 and No. 2 should be added; however, there are still species that are evidently unknown or at least badly recognized. Hence it is not possible to admit that they could belong to female individuals of the elephant seal; the number and the proportion of the upper incisors being different. The places of their origin will help in the description of these species. We should first admit that they cannot originate from the same species. In fact the differences that we were able to observe between both skulls are quite important and confirm that they originated from localities situated at far distances, one being from the Larrons Islands in the Indian Archipelago and the other from the Falkland Islands close to the southernmost point of America. Therefore we have to resort to the passengers who visited these seas in order to find out whether some huge species of seals could have been described without being sufficiently distinguished. Unfortunately, Commander Byron mentioned only a few details concerning Tinian Island, on which he seemed to have remained for quite a long time. However he mentioned absolutely nothing of the seals or sea calves that he could have observed in these seas, whereas we find a sort of description, truly an incomplete one, of what he might have encountered in the Straits of Magellan and towards Juan de Fernandez Island. It seems to me that it is much easier to admit that the skull of the Falkland Islands originates from a large species of *Phoca* that is different from the three *Phoca* species that all the navigators have recognized. Indeed they speak of No. 1, Anson's sea lion, which is evidently the elephant seal, of No. 2, a small species provided

with long, rough neck hairs, that is *Ph. jubata*, and finally of the sea bear, which has neither a trunk nor the neck hairs. However, it can be none of these three species; hence there should be a fourth species that was also confused with the properly called sea calves, because it is evidently more closely related to ordinary species. Though we could not supply the characteristics of this species still we propose to describe it provisionally under the denomination of Anson's seal, *Ph. ansonina*.

We should now reveal the reasons why we do not consider the hooded *Phoca* as being of the same species as the crested *Phoca* (*Ph. leonina* of Fabricius); besides what we have mentioned before, that it is quite difficult to confuse the keel-shaped, vesicular tubercle, cited by Fabricius, with a skin in which the animal could hide his head as if in a hood, which probably originates from the posterior part of this head. A skin of *Phoca* with its head arrived at the Jardin des Plantes, sent by Mr. Milbert, and presented the peculiarity that, towards the occiput and the attachment of the neck, the skin was separated from the underlying flesh by a considerable mass of vessels or by a sort of erectile tissue. This disposition may lead to the belief that, at this site, the skin is susceptible to being reflected and may consequently cover more or less the entire head, perhaps up to the root of the eyes, as already mentioned concerning the hooded *Phoca*. Nevertheless, according to its dental system, this *Phoca* considerably differs from the crested *Phoca* because it has only two incisors in the lower jaw, besides the molars which are simple and well separated from each other. Hence it was quite certainly a new species; we may name it the hooded seal, *P. mitrata*; it seems that it exists toward the northernmost parts of the United States of America.

I shall also mention as pertaining to a distinct species a skull without the lower jaw existing in the collections of Comparative Anatomy at the King's Garden. In my opinion it does not resemble any of the species that I have mentioned, yet we absolutely ignore the country of origin. It is provided with six upper incisors, of which the external ones are the strongest, enormous canines, and six simple, distant molar teeth.

According to information on the dental system of the species of *Phoca*, in this report we can see that the family may perhaps be divided into five sections:

A. Six incisors above and four below; the molars are compressed and contiguous at a single pointed end, besides a few other irregularities.

1º. *P. foetida*; 2º. *P. barbata*; 3º. *P. vitulina*; 4º. *P. groenlandica*.

B. Four incisors above and four below; the molars are compressed and contiguous at three very distinct, pointed ends; there are five or six on each side of both jaws.

1º. *P. monachus*; 2º. *P. oceanica*; 3º. *P. leporina*; 4º. *P. cristata*; 5º. *P. leptonyx*.

C. Six incisors above and two below; the molars are simple and distant; there are six on each side of both jaws.

1º. *P. mitrata*; 2º. *P. byronia*? 3º. *P. ansonii*, to which we should probably add the skull from the Anatomy Gallery.

D. Four upper incisors, of which the external ones are the smallest; two lower incisors – and five simple, distant molars in both jaws.

1º. *P. leonina*, or better *elephantina*.

E. Six upper incisors; the external ones have the shape of canines; the other two pairs are transversely bifurcated; four lower incisors, five conical molars with pointed ends above and six molars below.

1º. *P. jubata*; 2º. *P. ursina*; 3º. *P. peronii*; 4º. *P. coronata*?

Explanation of the part of the diagram related to the account of some species of *Phoca* and inserted into the October notebook of this year

by Mr. H.D. of BLAINVILLE.

In order to give an accurate idea of the skulls of *Phoca* whose descriptions were published in the October edition, we thought that they required a lithography.

Figure I represents the skull described under No. 4.

Figure II represents one of its teeth at natural size.

Figure III represents the skull described under No. 1.

Figure IV represents the skull described under No. 5.

Finally, Figure V shows the disposition of the dental system of the skull described under No. 2.

We should add to what has been already mentioned about the species of *Phoca* from the Falkland Islands and the Straits of Magellan that, according to the observation of Mr. Desmarest, it seems quite probable that the skull that we have related to Péron's elephant seal originates from a species different from that encountered in the Falkland Islands, and which was given the name of sea elephant according to Lord Anson. He established this opinion following the examination he carried out on a skin of a fetus originating from a sea elephant from the Straits of Magellan, brought by the crew of a commercial ship, equipped by Mr. Dupius, the merchant from Nantes. In fact, this fetal skin that we have examined does not certainly present any trace of an extraordinary organ at the extremity of the nostrils; however, as this organ does not exist except in male individuals, as they mentioned, and is probably less developed at a younger age, we may still have a few doubts on the distinction between Mr. Péron's elephant and Lord Anson's sea elephant.