

example of the whole animal at hand, we have taken the opportunity to make the most thorough and careful measurements and drawings of parts, with reference to completing its identity.

Reference to authors on the history of cetology shows many very curious as well as absurd conceptions. The works of Belou and Rondelet exhibit among the first accurate and scientific delineations and text, but they knew very little of the whale. Belou, 1553, figures several dolphins accurately enough, but one especially bulky he denominates *Balæna*. For a long period so little was known of the animals of this order that they were generally regarded and described as fishes.

The great Greenland whale (*Balæna mystecetus*)—called the Right whale—is the most familiar of the baleen species; yet a glance at the list of synonyms shows that the few other forms now known as distinct were confounded in one. The great bowhead and the Seibold whale of the northwest coast are of this genus, but are seen to have distinct specific characters. One of the most prominent external distinctions between the present *Cisartctica* and the two latter is the proportionate length of head; that of the latter is as 1 to 3.5-6, while the others are as 1 to 2.

It is surprising that so much uncertainty should exist through so long a period concerning the identity of this species. A most noticeable feature seems never to have been mentioned in descriptions, and no figure is extant. The beautiful dolphin-like snout is so well marked that it is very surprising it has not been mentioned. A feature so handsome and well defined should have sufficed to render this species recognizable at once.

A glance at the literature of this subject is sufficient to see that the material at hand is very meager, most measurements and descriptions relating to the baleen, the carbones, and to the skeleton generally. The proportions of the present species are very striking as compared with those of others. We have seen that the head is a little more than one-fifth of the body in length; that of the Greenland whale being one-third.

The tail in this example measures, from tip to tip of flukes, 16 feet, and each fluke is 10 feet in length by 4 feet in width at the median line. This proportion of width of tail to the length of body greatly varies from that of the above cited species. The great size of the tail in the present species and the more slender body and smaller head altogether must credit it with greater activity. The body at the junction of the tail is but 80 inches in circumference, and a most graceful form is seen in the gradual enlargement towards the deepest point, near the head.

The whole length is about 46 feet. The length of head in an axial line from the angle of mouth to the symphysis of the lower jaws is 11½ feet.

The pectoral fins measure at their base 3 feet, in a line leading from the anterior to posterior edge over the superior surface, being, probably, about one-half the circumference. Their length is 7 feet and breadth 3 feet 10 inches.

The spiracles are situated somewhat below and behind the more prominent portion of the cranium and directly above the eyes. They are 16 inches apart at the posterior portions; 2 inches in greatest width, and a line running directly between the two terminations of the sulcus measures 12 inches, the spiracles being crescent shaped—*dos à dos*.

The space between the inner canthus of the eye and the upper lip measures 3½ inches; from the outer canthus to the nearest point of the axilla, 29 inches; from the lower eyelid to the angle of mouth, 26 inches.

The relative positions of external ear and eye are: A line drawn 6 inches in length, perpendicularly upwards from the centre of the eye, subtends one sixteen inches in length which terminates in the ear.

The beak or snout is 2 feet in width at the point where the rounded process rises above it. The latter is 16 inches across its thickest portion, and maintains a uniform bulk until it is lost in the form of the head; its height at the front is 20 inches, where it is bold and handsome in proportions. The baleen plates at the deepest portion of the mouth measure between 6 and 7 feet in length and 7 inches in breadth.

The palate and tongue are of a delicate pinkish color; more deep in tone in the former. The anterior aspect of palate measures at its greatest width 16 inches, arching in Gothic figures forward to the outline of the mandible, and suddenly contracting posteriorly to a space of 3 or 4 inches. A deep sulcus extends along the median line.

The baleen plates lie about one inch apart. According to Gray, who established the genus *Eubalæna*, to which this

species is referred, the baleen is "thick, not polished, with thin enamel coat on each side, and a coarse, thick fringe," these being his sub-family characters, as in part distinguishing the present from the Greenland whale. The baleen of the latter is twice the length of that of the present species, which accounts for the great depth of the under jaw and bowed upper, which latter features give rise to the trivial name *bow-head*.

A marked difference is noticeable in the anatomical characters of the various species. The number of vertebrae vary; in this there are, according to Gray, "fifty to fifty-nine." The cervical are united at their bases. This feature is common to most whales. They are, also, reduced to such thinness that the whole number thus coalesced does not occupy more room than one average cervical would naturally be supposed to.

Though this species is the true *cisartctica* whale, and therefore a denizen in the more temperate latitudes of the Atlantic, yet its great rarity, from causes here mentioned, renders it unfamiliar, and it is not probably often met with by vessels crossing to Europe. The whale that is so often seen by passing vessels is a fin-back, a baleen whale having much smaller and shorter plates and a fish-like fin on the after third of the back. The profile of the whale is strikingly different from those we have considered, as the baleen being so short, the head is not proportionately large and deep. The fin-back is a very comely animal, yet fish-like in form, saving always the radical difference in tail, the whale having one of horizontal form, which is suggestive of the hinder limbs, as seen in walrus, seals, etc.

The tongue of the baleen whale is a curious mass, containing considerable oil. It is not susceptible of movement externally. The gullet is small, scarcely large enough to take in a small herring. Their food, however, is of another character, being largely the masses of jelly fishes and minute ocean forms that realize with a slight variation the words of Macbeth's soliloquy, for they do "the multitudinous seas incarnadine, making the green one red." This is true in respect of the salps, and certain lower organisms, but the Arctic seas are tinged an olive green by the extended masses of various medusæ.

The uses of the baleen will now be apparent. When we consider that masses of minute jelly-like objects are taken into the enormous open mouth of the whales and the water unavoidably closed within the mouth must be forced out, we see the frayed edges of the baleen acting as a sieve, and the water passing out between the plates.

The eyes are remarkable for comparative dimensions, the largest being about the size of a large orange. They are beautiful organs, being possessed of all the prominent features of the typical eye of mammals, having lids and lashes; and they are said to have acuteness of visions equal to any other animal. The eye is so placed that it commands a view from every point.

The internal ear is like that of other mammals, but the external part is reduced to a mere orifice, just large enough to take in a pen-holder. The sense of hearing is, however, acute.

These whales are regarded as silent as to voice, though a roaring sound is heard when the creature is hard pushed, which is thought to proceed from the blowing hastily repeated.

They have but one cub at a birth, though, as in the case in other mammals, twins sometimes appear. The teats are situated on the abdomen, about two feet apart. They are not prominent, the glands being concealed internally. The young at birth are said to be nearly one-fourth the size of the mother. The milk is remarkably rich.

The baleen of commerce is denominated whale fin. At various periods this portion has been no inconsiderable part of the profitable results of the whale hunting. The baleen of the present example is said to be worth over one thousand dollars.

With regard to the past year's history of the Paris Academy of Sciences, we note that three members have died—viz: M. Delesse, and M. Sainte-Claire Deville (both in the section of mineralogy), and M. Bouillaud (in medicine); also two correspondents, viz: M. Kuhlmann, of Lille, and M. Pierre of Caen (both in rural economy). MM. Jordan and Fouqué have been elected new members, and Mr. Gould, of Cordoba, a correspondent. M. Blanchard has been elected vice-president for 1882. The *Annuaire du Bureau des Longitudes* for 1882 contains an account of all comets observed during the last decade, important data in thermo-chemistry, a resumé of what is known about intra-Mercurial planets, a *fac-simile* of M. Janssen's photograph of the comet of last summer, &c.