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Cetaceans with two dorsal fins

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Abstract

Cetacean species continue to be discovered nowadays. The search for new species is thus fully justified. Six accounts of cetaceans—or alleged cetaceans—with two dorsal fins are analysed in this article. They seem to refer, respectively, to an unidentified stranded animal, possibly a large shark; a teratological dolphin; and two distinct species still unknown to science: a small odontocete (?*Delphinus rhinoceros*, Quoy and Gaimard, 1824), and a large mysticete (*Amphiptera pacifica*, Giglioli, 1870).

Introduction

It should be clear to every zoologist, that animal species still unknown to science, including cetacean species, remain to be discovered: among cetaceans, no less than ten 'good species', of which nine are marine cetaceans, have been described from 1900 to 1963 (Honacki, Kinman & Koeppl, 1982):

—Splaytooth or Andrew's beaked whale (*Mesoplodon bowdoini*, Andrews, 1908).
—Spectacled porpoise (*Phocoena dioptrica*, Lahille, 1912).
—True's beaked whale (*Mesoplodon mirus*, True, 1913).
—Yangtze dolphin or beiji (*Lipotes vexillifer*, Miller, 1918).
—Longman's beaked whale (*Indopacetus pacificus*, Longman, 1926).
—Tasman beaked whale (*Tasmacetus shepherdi*, Oliver, 1937).
—Fraser's dolphin (*Lagenodelphis hosei*, Fraser, 1956).
—Gulf porpoise or Cochito (*Phocoena sinus*, Norris and Macfarland, 1958).
—Japanese (or gingko-toothed) beaked whale (*Mesoplodon ginkgodens*, Nishiwaki and Kamiya, 1958).
—Arched (or Hubb's) beaked whale (*Mesoplodon carlhubbsi*, Moore, 1963).

Of these ten cetaceans, four represented new genera (*Lipotes, Indopacetus, Tasmacetus* and *Lagenodelphis*).

Two Soviet mammalogists have described since, a new species of killer whale from the Antarctic waters as *Orcinus glacialis* (Berzin and Vladimirov, 1983). However, this form has not been accepted as a distinct species by the scientific community, and it is considered only a new subspecies of *Orcinus orca* (Bigg, Ellis, Ford & Balcomb, 1987).

More recently, a new beaked whale has been named *Mesoplodon peruvianus* from a skull, a skeleton and several caught specimens (Sylvestre, 1989).

Consequently, the hope for future discoveries of new cetacean forms still unknown to science and a cryptozoological research for them are fully justified. It should be stressed for instance that the Yangtze dolphin was well known to the Chinese as *beiji* ('white flag') long before it was officially discovered and named by Western science as late as in 1918: the discovery of this species could have been made much earlier from an analysis of the Chinese reports.

In effect, several other forms of unknown cetaceans have been reported but yet never caught, such as the 'high-finned sperm whale' once reported off Scotland and Shetland, first described by Sir Robert Sibbald, the father of cetology.

Recently, three cetologists have observed and photographed an unknown beaked whale in eastern Pacific, off the coast of Mexico: they have suggested that it is either *Mesoplodon pacificus* (= *Indopacetus pacificus*), or an unknown species of *Mesoplodon*, or another new ziphiid (Pitman, Aguayo & Urban, 1987).

However, the strangest of the unidentified cetaceans are certainly those said to possess *two* dorsal fins: a very brief review of this file has already been made by Heuvelmans (1965 and 1986), but all the available data are gathered here for the first time.

Historical analysis

In 1814, French-American naturalist Constantin-Samuel Rafinesque-Schmalz was the first scientist

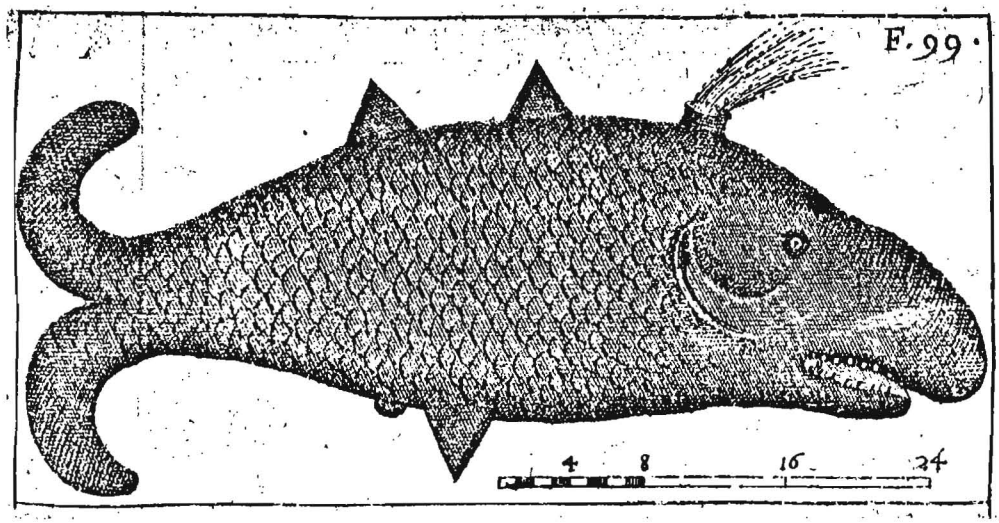

Figure 1. The 'monstrous fish' of Sicily, 1741 (from MONGITORE 1742–1743).

who was bold enough to name such a two-finned cetacean:

'In my Sicilian Mastodology, I shall fix and describe several other cetaceans, from the seas of Sicily, figured by Mongitore; I have named them *Delphinus dalippus, Physeter urganantus, Oxypterus mongitori* [Mongitore's one with sharp fins], N.G. [new genus] with two dorsal fins, etc.' (Rafinesque-Schmalz, 1814).

However, Rafinesque left Sicily in 1815 because of matrimonial problems, and all his manuscripts were lost in the wreck of the vessel which brought him to America, so that his 'Sicilian Mastodology' (i.e. mammalogy) was never published, so far as the authors know; in any case, it is not mentioned in the list of his 939(!) publications compiled by Fitzpatrick (1911).

There is only a simple further mention of this new generic name in a later work by Rafinesque, where *Oxypterus* is classified among toothed cetaceans, in the 'delphinia' family, now known as the odontocete sub-order (Rafinesque-Schmalz, 1815).

One of us (M.R.) was able to check Rafinesque's source: in his book about Sicily, Mongitore mentioned that in September 1741, a 'monstrous fish' had been found stranded on the coast of Sicily:

'It was 54 palms [about 13.9 m] long, with a circumference of 28 palms [7.2 m], and its tail was forked in two parts, 12 palms [3.1 m] long. There was a hole on its head, from which water came out. Its mouth was armed with strong teeth.' (Mongitore, 1742–1743).

The illustration (Figure 1) is quite naïve, and it was made certainly by a drawer who did not see the animal himself: even the proportions are not drawn accurately (from the dimensions given in the text, the animal was more elongated). The 'hole' on its head might be the vent of a cetacean, but what about the scales and the ventral fin? Moreover, nothing is said in the text about the dorsal fin (or fins?). This account is thus too vague to be considered seriously as evidence for the existence of two-finned cetaceans: it might be a very large shark, possibly an oversized basking shark (*Cetorhinus maximus*).

In 1819, a whole herd of strange cetaceans was observed by Quoy and Gaimard, two French naturalists, from the vessels *Physicienne* and *Uranie*, 5°28′ North latitude, between Sandwich Islands (Hawai) and New South Wales (Australia):

'Everybody in the boat was as surprised as we were, to see on their snouts a horn or fin curved backwards, like that of the back. The volume of the animal was about double that of the common porpoise, and the top of the body, to the dorsal fin, was marked with black and white spots.' (Quoy and Gaimard, 1824).

They swam close to the vessel, their heads remaining in the water, so that the head and the snout could not be seen, and they did not jump out of the water. Quoy and Gaimard made drawings of these animals (Figure 2), and though none of them were caught, they named them 'rhinoceros dolphins' (*Delphinus rhinoceros*). It should be stressed that the first dorsal fin or 'horn' appears to be located not on the snout, as said in the text, but behind the head, judging from the drawing.

No cetacean with two dorsal fins is known to exist, but it is by no means impossible: the dorsal fin of the cetacean (when they have one), is only made with connective tissue (nothing to do with the fins of the

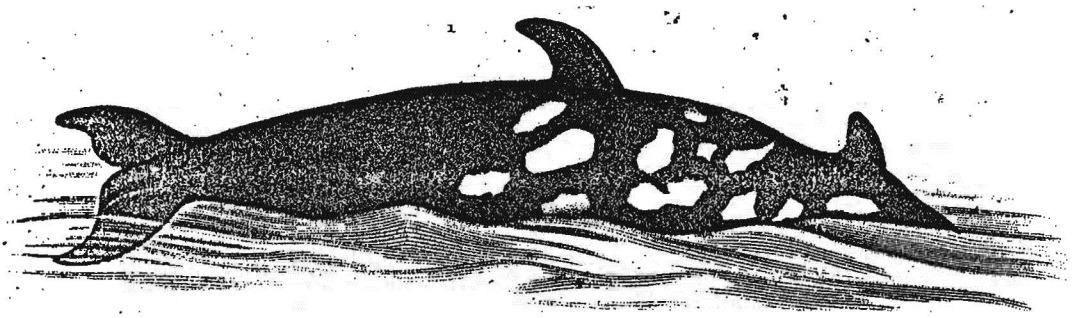

Figure 2. The 'rhinoceros dolphin' (from QUOY and GAIMARD 1824).

fishes, which do possess a skeleton), and it takes a part in the stabilization of the animal: a careened head, like that of the sperm whale (*Physeter catodon*), or several humps on the back like in the humpback (*Megaptera novae-angliae*), are other solutions for the same problem of biomechanics. There are thus cetaceans with no dorsal fin, with one dorsal fin, with a ridge of humps rich in connective tissue: therefore, why not with two dorsal fins?

'Volume' is an ambiguous word: Quoy and Gaimard allude of course to the 'length' of the animals. The common porpoise (*Phocoena phocoena*) is about 1.2 to 1.8 m (4 to 6 ft) long: the cetaceans reported by both French naturalists were thus about 3 m (10 ft) long. But were they really dolphins? It is not at all sure, but they were certainly odontocetes, at least because of their very short size.

According to British naturalist Jonathan Couch, in April 1857, a 'close and accurate observer of nature' saw a group of dolphins at play off the coast of Cornwall, of which one had two dorsal fins. He provided the following description:

'The snout of the dolphin was distinctly visible; length of the body from 6 to 8 ft [1.8 m to 2.4 m]—the shape more slender than in the common dolphins, of which about a dozen were in the company. The colour much as in the ordinary species; and as it repeatedly came to the surface, it was noticed that the first dorsal fin was at about the middle of the length, and the other, two feet [0.6 m] nearer the tail. Its motions were like those of the other cetaceans that were then amusing themselves at their leisure near the rocks in Lantivet Bay'. (Couch, 1856).

It should be emphasized that this abnormal dolphin was swimming among a group of normal ones.

On September 4, 1867, during his voyage round the world made on the steamer *Magenta*, Italian naturalist Enrico Hillyer Giglioli saw a large whale off the coast of Chile (SE Pacific):

'The gray greenish back of a great cetacean appeared, which, very remarkable a thing, showed *two* dorsal fins, well developed, erect, triangular, and separated by a large, apparently smooth space.'

This whale looked much like a balaenoptere; it was about 18 m (60 ft) long, the distance between the dorsal fins was about 2 m (6.5 ft). The mouth contained black whalebones. When the animal surfaced for the first time, it blew in a spout which made a long noise like that of the 'air in a large copper tube'. Then the animal blew each two minutes, but with much less noise and with no spout. The lower parts were greyish white, no furrow was visible. The flippers seemed to be falciform and rather long.

Giglioli provided an accurate drawing of this animal (Figure 3), and he proposed for it the name of *Amphiptera pacifica*, 'the one from the Pacific with a fin on each side' (Giglioli, 1870, 1874 and 1875).

There may be another report, taken from Bernard Heuvelmans' extensive files on the famous 'Sea-Serpent' (Heuvelmans, 1965): in October 1898, off Stonehaven (Scotland), Alexander Taylor and his crew, on the fishing boat *Lily*, saw a strange 'sea monster' only fifty yards away:

'The skipper describes it as having a back somewhat like the upturned bottom of a ship, on which were two fins about 20 ft [6 m] apart, and the size of the sails of a small boat, which they closely resembled.

'Behind one fin was a protuberance the shape of a camel's hump. The body was of a bluish colour, and in appearance the head was much flatter than that of a whale.

'[. . .] At intervals it raised its head high out of the water, and spouted in the manner of a whale, the only difference being that it took a shorter period to blow.

'The skipper of the boat describes the part of the creature that was visible as being twice the length of its 34 ft [10.40 m] boat. He did not see its tail, so that there is no knowing what is total length might have been.' (Anonymous, 1898).

Another possible sighting which occurred in 1983 in the Mediterranean Sea, has been recorded by Maigret (1986):

'On July 17, while traveling between Bonifacio [Corsica Island] and Cavalaire [Var, France], the crew of a sail boat 13 m [43 ft] long, claims having seen a large-sized animal which followed their boat: it

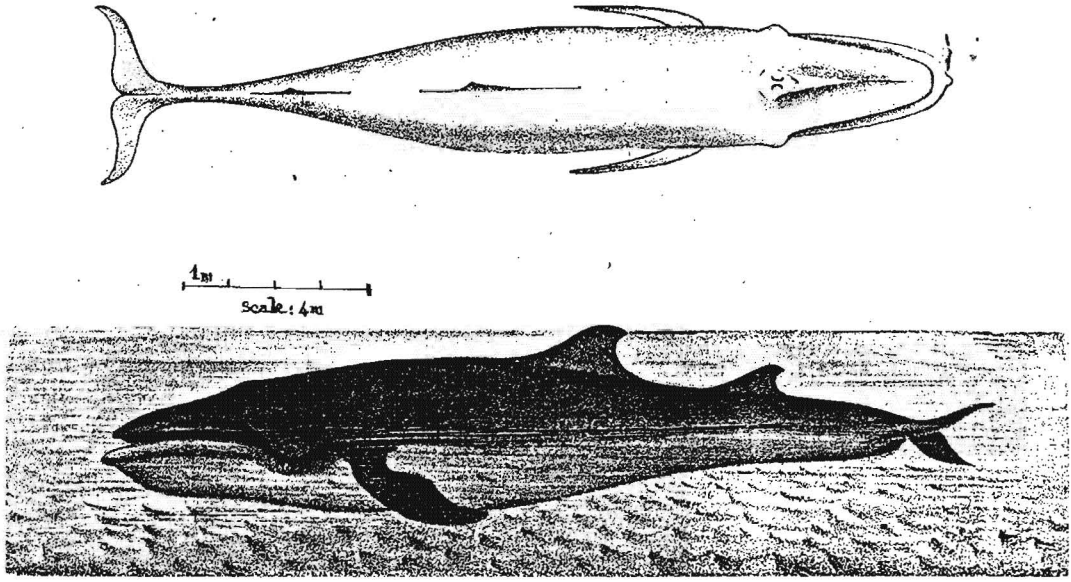

Figure 3. The whale of the *Magenta* (from (GIGLIOLI 1870).

Figure 4. Kwakiutl painted grave marker.

had two dorsal fins, a trapezoidal head and a white belly. It was not a rorqual, of which they had seen several individuals previously.'

In addition to these reports, the Haida Indians of the coast of British Columbia (Canada) have 'legends of two-, three- and even five-finned killer whales'. A Kwakiutl painted grave marker at Alert Bay (British Columbia) Figure 4 may represent such a two-finned cetacean; but it has been suggested that 'these legends could have originated from the sight

of a cluster of dorsal fins where whales surfaced together' (Stewart, 1979).

Cryptozoological analysis

We have thus on file six reports on marine creatures with two dorsal fins, and a possible native tradition with an artistic representation.

Belgian cetologist Van Beneden, in a letter to Professor Giglioli, suggested that the presence of two dorsal fins in Giglioli's whale, was a terratological anomaly (Giglioli, 1870), somewhat like a three-legged duck. This opinion, also shared by Borri (1927) is quite likely for the dolphin sighted off the coast of Cornwall in 1857, as it was swimming among a dozen normal dolphins, and apart from its supernumerary dorsal fin, seemingly quite identical with them. If not a new species, such an atavistic dolphin would be very interesting to be studied, because this anomaly has never been recorded, as far as we know.

But this hypothesis cannot explain at all Quoy's and Gaimard's herd of 'rhinoceros dolphins'. Nor can it account for Giglioli's whale: in addition to its two dorsal fins, this cetacean possessed several distinct features, particularly a want of gular ridge, unlike all other great balaenopteres. These furrows allow them to increase the volume of water (hence the quantity of plankton) taken into the mouth, but they take also a part in the stabilization; in a whale with such a remarkable stabilization device (*two* dorsal fins), furrows would be probably unnecessary.

There is a remarkable resemblance between Giglioli's whale and the *Lily* 'sea monster': number of animals (one single individual), length (18 m and about 20 m), colour (greenish gray and blueish), shape of the back fins (triangular and like sails), and the shape of the head and the spout of the *Lily* sea monster were compared with that of a whale. The two dorsal fins were separated by an interval of about 2 m in Giglioli's whale, instead of about 6 in the *Lily* sea-monster, but it should be stressed that Giglioli's observation was more accurate and longer. Moreover, a study of the drawing of the *Magenta* whale, shows that the 2 m interval refers to the base of the dorsal fins; but the tops of the dorsal fins are in fact separated by an interval of about 3.5 m: the difference between the two accounts is thus quite relative.

The description of the animal observed in 1983 off Corsica sounds also like Giglioli's whale: its large size, trapezoidal head and white belly are consistent with such an identification. Again, it was a single individual. And the remark that 'it was not a rorqual' might mean that it did look like a rorqual anyway.

On the other hand, the cetaceans reported by Quoy and Gaimard are quite different: gregarious, about 3 m long (about 6 times smaller than Giglioli's whale), their dorsal fins located much more forward (also more forward than in the dolphin sighted off Cornwall in 1857), body marked with spots, etc.

Finally, Mongitore's 'monstrous fish' was probably a large shark rather than a cetacean: it is not even sure that it did possess two dorsal fins. However, as its size, its 'hole on its head' (the vent?), and the shape and place of the dorsal fins in the drawing, are similar enough with that of Giglioli's whale, it might possibly have been a specimen of that species; but the evidence is too vague to be sure, and Rafinesque-Schmalz's 'scientific' name (*Oxypterus mongitori*) must be invalidated as a *nomen nullum*.

The case of the Indian tradition and the representation of a double finned cetacean in British Columbia should be kept apart, at least until more detailed evidence becomes available.

Therefore, as unlikely as it may seem to some, we are dealing with two kinds of double finned cetaceans still unknown to science:—a small odontocete, described as *Delphinus rhinoceros* by Quoy and Gaimard in 1824, though it is not at all sure that it belongs to the genus *Delphinus*, nor even to the Delphinidae family. We would propose the name of *Cetodipterus rhinoceros* if it would turn out to represent a new genus—and a large whalebone whale, named *Amphiptera pacifica* in 1870, by Professor Giglioli; it looks much like a balaenoptere, but if a new family should be created for this whale, the name of Amphipteridae would be quite appropriate.

Though still *incertae sedis*, these unknown cetaceans show a very interesting example of convergence: both odontocete and mysticete sub-orders show in effect all the possible stabilization devices:

Number of dorsal fins	Odontocetes	Mysticetes
0	Right Whale Dolphin (*Lissodelphis* sp.)	Right Whale (*Eubalaena* sp.)
Dorsal ridge of humps	Sperm Whale (*Physeter catodon*)	California Gray Whale (*Eschrichtius gibbosus*)
1	Common Dolphin (*Delphinus delphis*)	Blue Whale (*Balaenoptera musculus*)
2	Rhinoceros Dolphin (?*Delphinus rhinoceros*)	Giglioli's Whale (*Amphiptera pacifica*)

This anatomy, with two almost similar back fins is similar enough with that of some sharks, such as the humantin (*Oxynotus centrina*).

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We would be of course very grateful for any information about unknown forms of cetaceans.

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