2.4 SUBORDER ODONTOCETI - Toothed Whales

ODONTOCETI

With the exception of the sperm whale (males of which can reach lengths of at least 18 m), odontocetes are small to medium-sized cetaceans. Sexual dimorphism is the rule. Toothed whales are characterized by the presence of teeth throughout life (although teeth are buried in the gum or jawbone in some species, worn or lost in others, and take peculiar shapes in still others), a single blowhole, an asymmetrical skull with a concave profile, a sternum with 3 or more parts, a complex system of nasal sacs, and a fatty organ in the forehead areacalled the melon. All are hypothesized to be capable of echolocation (i.e., producing specialized sounds, and receiving and processing the echoes from these sounds to navigate, find food, and avoid predators), although this ability has been experimentally verified for only a handful of species held successfully in captivity. Odontocetes take individual prey, which consists largely of fishes and squids.

2.4.1 Guide to Families of Toothed Whales

PHYSETERIDAE

Sperm Whale (1 species in 1 genus) p. 68

The sperm whale is the largest toothed cetacean and has the highest degree of sexual dimorphism. There is a low dorsal hump, followed by a series of crenulations. It has a large head with a squarish profile, narrow underslung lower jaw, and functional teeth only in the lower jaw (these fit into sockets in the upper jaw). The blowhole is located at the left front of the head. The head is highly modified, and is divided into sections called the “junk" and the spermaceti organ, or “case.” The spermaceti organ is a large oil-filled reservoir, the function of which is controversial. Sperm whales have a dish shape to the facial area of the skull, extreme cranial asymmetry, and a long rostrum. Sperm whales are known to be capable of very deep, long dives.

Fig. 186 Physeteridae

KOGIIDAE

Pygmy and Dwarf Sperm Whales (2 species in 1 genus) p. 70

The pygmy and dwarf sperm whales are much smaller and share only a slight resemblance to the great sperm whale. They have blunt squarish heads, with under-slung lower jaws (like their larger counterparts), but the head is much smaller than in the sperm whale, and the blowhole is not located at the front of the head as it is in the sperm whale. The skull structure is curious; it shares a basin-like facial area and great asymmetry with the sperm whale, but is much shorter. The dorsal fin in both species is larger than that of the sperm whale. The biology of these animals is very poorly known.

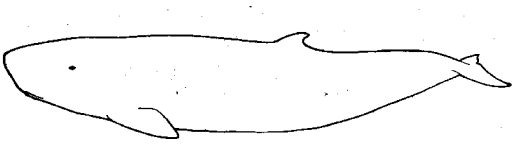

Fig. 187 Kogiidae

MONODONTIDAE

Narwhal and White Whale (2 species in 2 genera) p. 74

This is a family of small whales (less than 6 m in length), with stocky bodies, blunt bulbous heads, broad rounded flippers, and no dorsal fins. Both species are inhabitants of arctic and subarctic areas of the Northern Hemisphere. The skull is unique in that, in profile, it is very flat, with little or no rise in the area of the nares. Unlike the situation in most cetaceans, the cervical vertebrae are generally not fused, allowing monodontids a great range of neck flexibility.

Fig. 188 Monodontidae

ZIPHIIDAE

Beaked Whales (19 species in 5 genera) p. 78

The taxonomy of this group is unresolved and is currently under study. Although likely to change, there are 19 species currently recognized. The beaked whales are medium-sized cetaceans (4 to 13 m long), which as a rule, have reverse sexual dimorphism (females larger than males). In general, beaked whales have a pronounced beak, relatively small dorsal fin set far back on the body, small flippers that fit into depressions on the sides, 2 short throat grooves, flukes without a notch, and no more than 1 or **2** pairs of functional teeth in the lower jaw of males only (major exceptions are ***Berardius,*** in which females also have 2 pairs of exposed teeth, and ***Tasmacetus,*** in which both sexes have long rows of slender functional teeth). Beaked whales are poorly known as a rule; however, most are thought to be deep-diving squid feeders. They generally travel in small groups.

Fig. 189 Ziphiidae

DELPHINIDAE

Ocean Dolphins (32 species in 17 genera) p. 118

The family Delphinidae has been called a "taxonomic trash basket," because many small to medium-sized odontocetes of various forms have been lumped together in this group for centuries. Consequently, the so-called delphinids are diverse in form. They range in size from the 1 to 1.8 m dolphins of the genera ***Sotalia*** and ***Cephalorhynchus*** to the killer whale, in which males can reach lengths of at least 9.8 m. However, most delphinids share the following characteristics: a marine habitat, a noticeable beak, conical teeth, and a large falcate dorsal fin set near the middle of the back. There are exceptions to every one of these rules, except the presence of basically conical teeth.

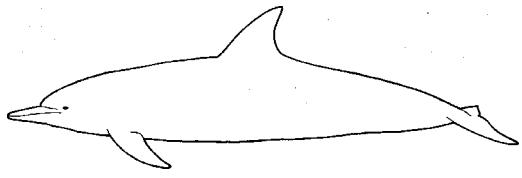

Fig. 190 Delphinidae

PHOCOENIDAE

Porpoises (6 species in 4 genera) p. 182

Porpoises (members of the family Phocoenidae) are small cetaceans (all less than 2.5 m) that some taxonomists classify with the delphinids. They tend to be coastal in distribution, rather stocky in form, with either a short indistinct beak or no beak at all. Most have a short triangular dorsal fin and all have have spade-shaped teeth. In some species, females are larger than males. Phocoenids appear to live in smaller groups and have a simpler social structure than do most delphinids.

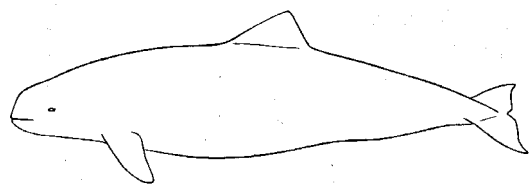

Fig. 191 Phocoenidae

PLATANISTIDAE

Ganges and Indus River Dolphins (2 species in 1 genus) p. 194

This family includes the susu and bhulan of the Ganges and Indus rivers, respectively. Animals in this family are nearly blind, and apparently rely largely on echolocation to navigate and find food. The body is small (to about 2.6 m) and "mushy." There is a long foreceps-like beak, with front teeth that extend outside the closed mouth. The blowhole is a longitudinal slit. The susu and bhulan have no true dorsal fin, only a low dorsal ridge. The most characteristic feature of the skull is a pair of enlarged maxillary crests that overhang the rostrum.

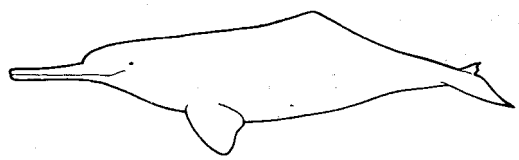

Fig. 192 Platanistidae

INIIDAE

Boto (1 species in 1 genus) p. 198

The single species in this family, the boto of the Amazon and Orinoco drainages in South America, is unique in several ways. It is a very large river dolphin, with a moderately long, thick snout dotted with sparse hairs. The dorsal ridge is very low and usually indistinct. Many adults are nearly totally pink in colour. The rear teeth are flattened and the zygomatic arches of the skull are incomplete.

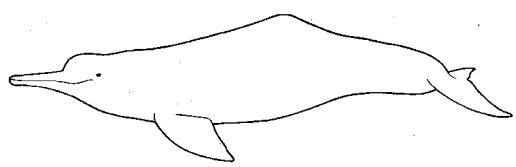

Fig. 193 Iniidae

PONTOPORIIDAE

Baiji and Franciscana (2 species in 2 genera) p. 200

This family contains 2 types of dolphins, one a true river dolphin of the Yangtze River in China, the other a coastal marine species of the east coast of South America. Females are larger than males in both species. Both have long beaks (extremely so in the franciscana) and rather low, triangular dorsal fins.

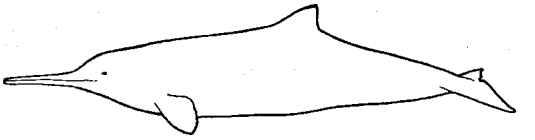

Fig. 194 Pontoporiidae