

2.2 Key to Identification of Skulls of Cetacean Families

- 1a. Teeth absent; skull bilaterally symmetrical; lower jaw lacking bony symphysis; size always large (adults >1 m) (Fig. 116). (**Mysticeti**) → 2
- 1b. Teeth present (although they may not emerge from jaw bones in **Monodon** or some beaked whales); skull generally asymmetrical; lower jaw possessing a bony symphysis; skull generally relatively small (>1.5 m, except in **Physeter**) (Fig. 117) (**Odontoceti**) → 5

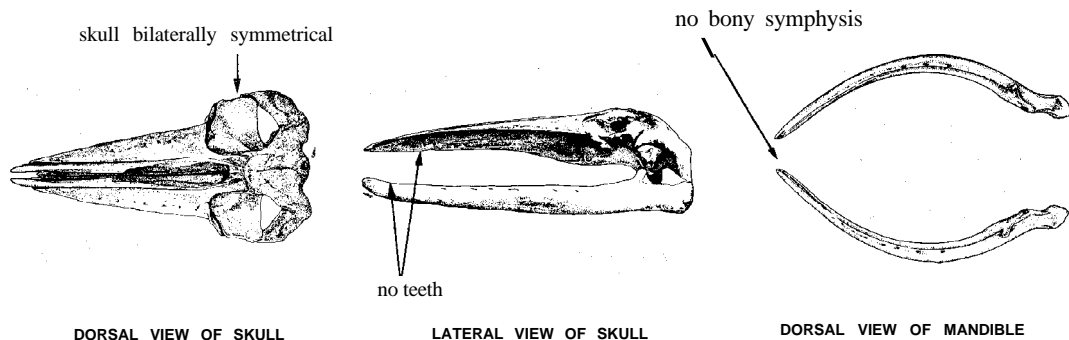


Fig. 116 Mysticeti

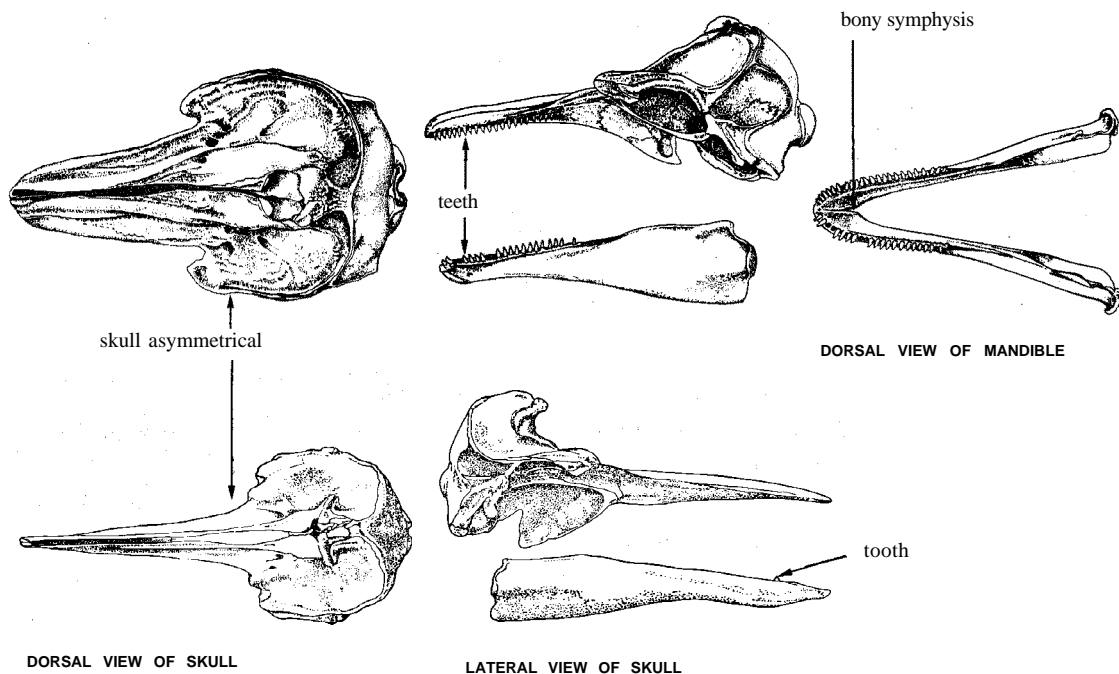


Fig. 117 Odontoceti

2a. Rostrum moderately to strongly arched in side view: from dorsal or ventral view, occipital condyles do not generally extend to or past posterior portion of cranium (Fig. 118) ...
 (Balaenidae or Neobalaenidae) → 3

2b. Rostrum flat or only slightly arched in side view; from dorsal or ventral view, occipital condyles extending to or beyond posterior portion of cranium (Fig. 119)
 (Balaenopteridae or Eschrichtiidae) → 4

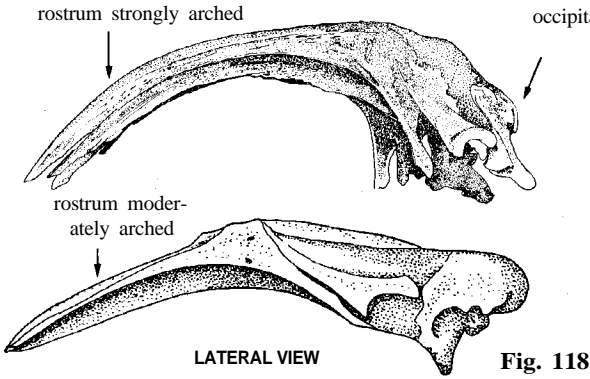


Fig. 118

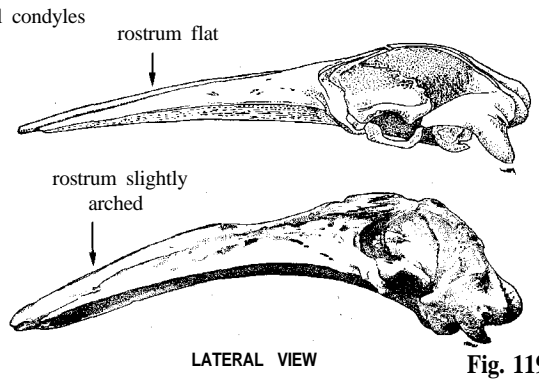


Fig. 119

3a. Base of rostrum much wider than tip; from side, rostrum moderately arched (Fig. 120)
 Neobalaenidae: *Caperea* (Pygmy right whale) p. 48

3b. Base of rostrum only slightly wider than tip; from side, rostrum strongly arched; mandibles extremely bowed out (Fig. 121)
 Balaenidae: Right or bowhead whales

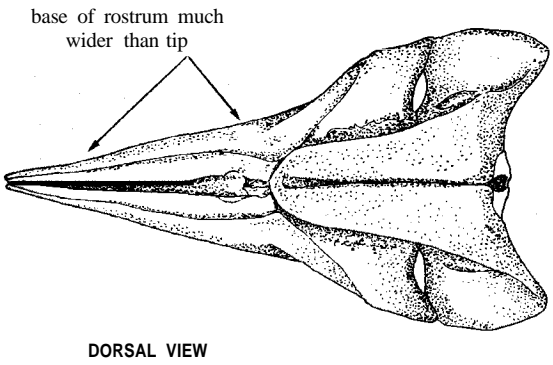


Fig. 120 Neobalaenidae

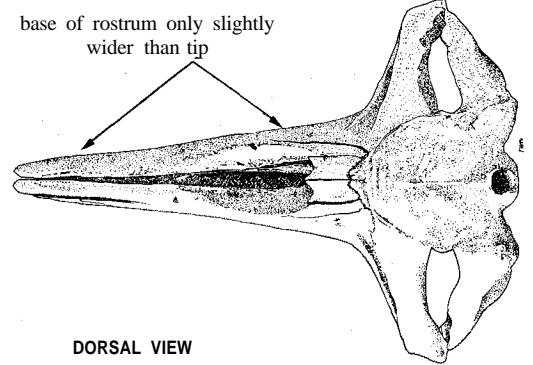


Fig. 121 Balaenidae

4a. Rostrum slightly arched from side; nasals large; frontals exposed on vertex (Fig. 122)
 Eschrichtiidae: *Eschrichtius* (Gray whale) p. 62

4b. Rostrum relatively flat from side (may be slightly arched in sei whale); nasals reduced; frontals barely, or not at all, visible on vertex (Fig. 123)
 Balaenopteridae: Rorquals

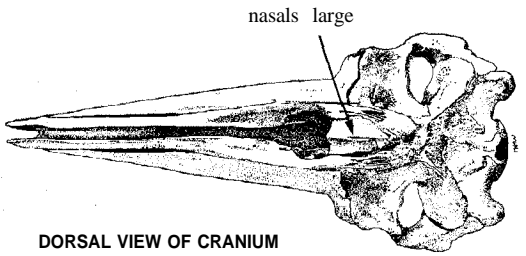


Fig. 122 Eschrichtiidae

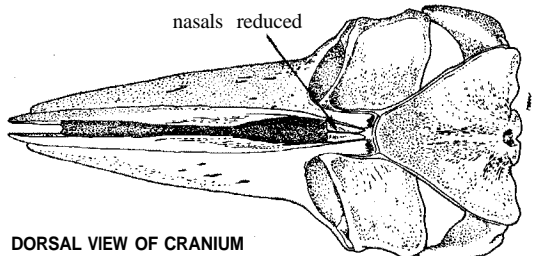
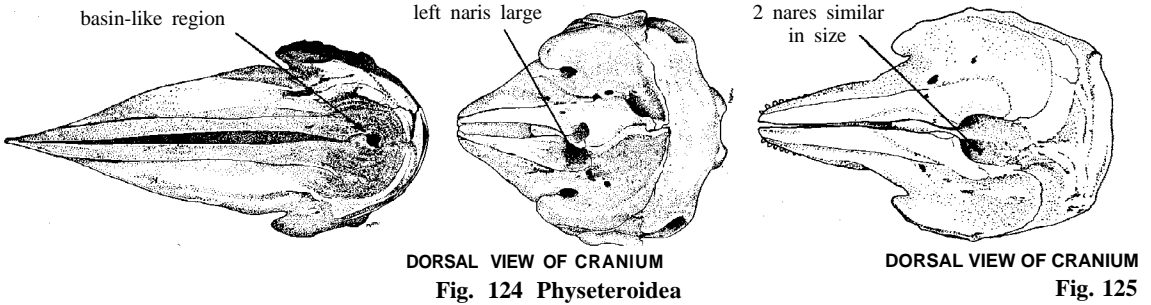
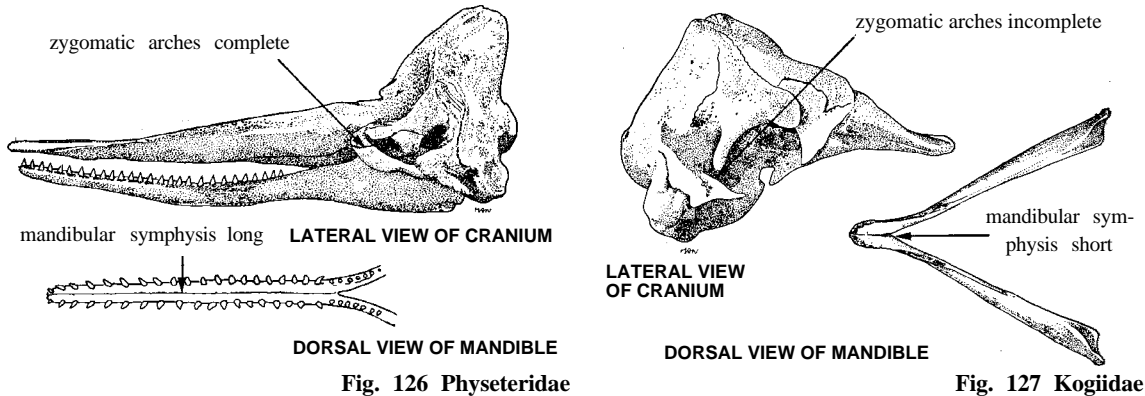


Fig. 123 Balaenopteridae

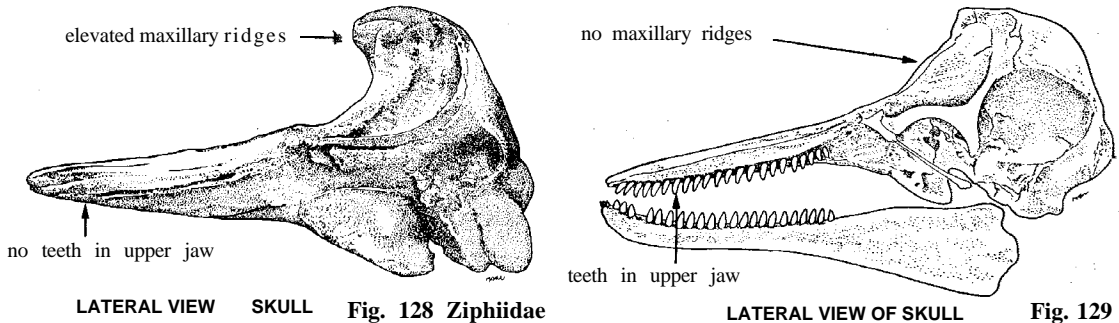
- 5a. Anterior cranial region basin-like; skull extremely asymmetrical; left naris much larger than right; teeth generally confined to lower jaw (except in some dwarf sperm whales) (Fig. 124). **(Physeteroidea)** → 6
- 5b. Anterior cranial region not basin-like; skull slightly to strongly asymmetrical: 2 nares similar in size (Fig. 125) → 7



- 6a. Rostrum long (greater than half length of skull); zygomatic arches complete; 18 to 25 pairs of teeth; mandibular symphysis long (>30% of mandible length) (Fig. 126) **Physeter (Sperm whale) p. 68**
- 6b. Rostrum short (less than half length of skull); zygomatic arches incomplete; 8 to 16 pairs of teeth; mandibular symphysis short (<30% of mandible length) (Fig. 127) **Kogiidae: *Kogia* (Pygmy or dwarf sperm whale) p. 70**



- 7a. Large teeth restricted to lower jaw (small, conical upper jaw teeth are present in ***Tasmacetus***); elevated maxillary ridges behind nasals; rostrum long and slender, depth nearly as great as, or greater than, width (Fig. 128). **Ziphiidae: Beaked whales**
- 7b. Teeth of uniform size (except in some ***Monodon***); no maxillary ridges (except in ***Platanista***, in which they arch inwards and upwards over the nasals); rostrum wider than deep (Fig. 129) . . . → 8



- 8a. Mandibular symphysis long (at least one-third length of mandible): rostrum long and narrow, of nearly uniform width from base to tip (Fig. 130) (**Platanistoidea**) → 9
- 8b. Mandibular symphysis relatively short (generally less than one-third length of mandible); rostrum generally narrows appreciably toward tip (Fig. 131) → 11

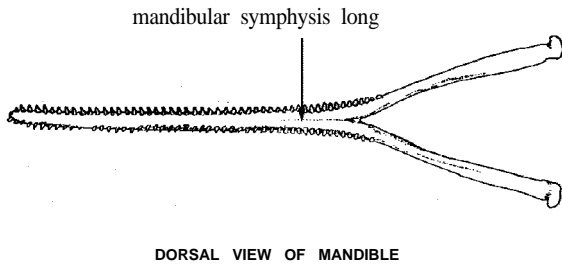


Fig. 130 Platanistoidea

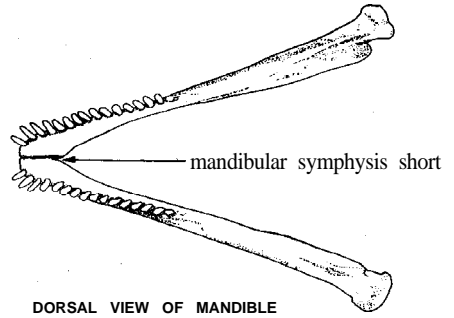


Fig. 131

- 9a. Well-developed maxillary crests present; 26 to 39 teeth in each tooth row, anterior teeth larger than posterior ones (Fig. 132) **Platanistidae: Platanista (River dolphins)** p. 194
- 9b. No enlarged maxillary crests; teeth of approximately uniform size (Fig. 133) → 10

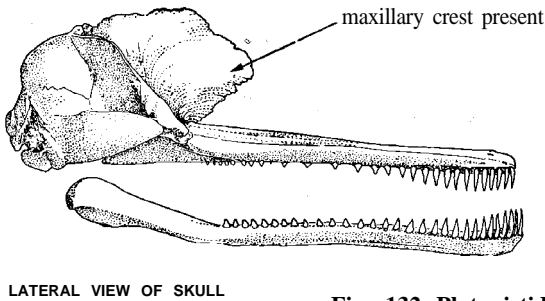


Fig. 132 Platanistidae

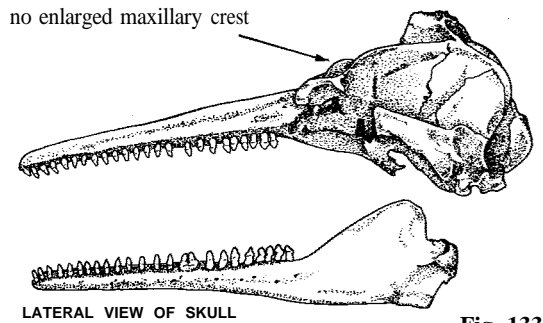


Fig. 133

- 10a. Mandibular symphysis less than one-half length of mandible; 23 to 35 teeth in each row, those at back have flattened crowns (Fig. 134) **Iniidae: Inia (Boto)** p. 198
- 10b. Mandibular symphysis at least one-half length of mandible: teeth undifferentiated (Fig. 135) **Pontoporiidae: Baiji and Franciscana**

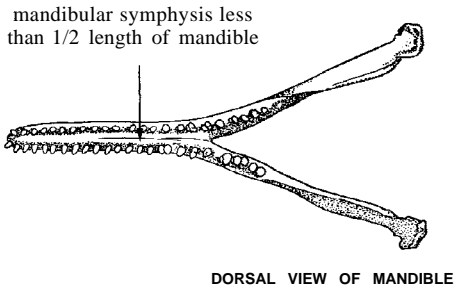


Fig. 134 Iniidae

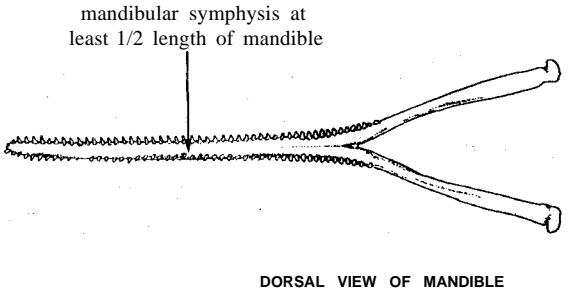


Fig. 135 Pontoporiidae

11a. Dorsal profile of skull nearly flat from side; teeth confined to front two-third of jaws, less than 12 in each row (Fig. 136) **Monodontidae: White whale and narwhal**

11b. Dorsal profile of skull rising sharply at level of nares; teeth generally numerous in both jaws (except for Grampus, which has teeth only in the lower jaw) (Fig. 137) **(Delphinidae or Phocoenidae) → 12**

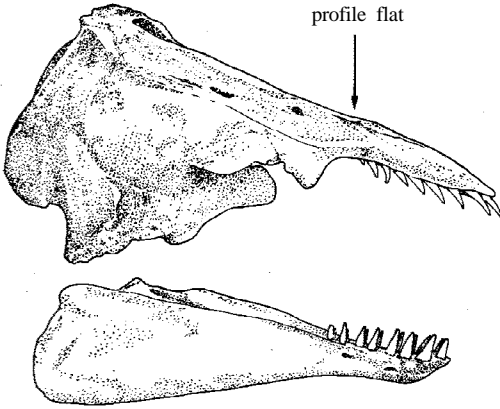


Fig. 136 Monodontidae

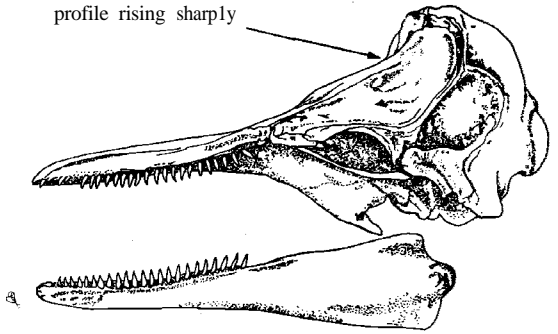
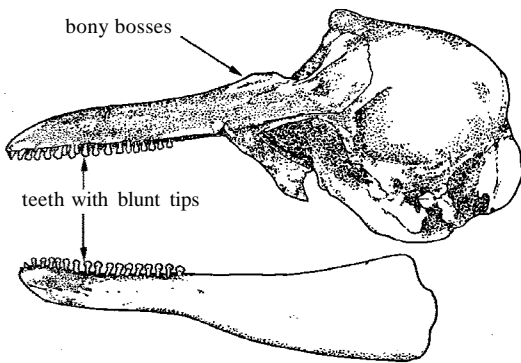


Fig. 137

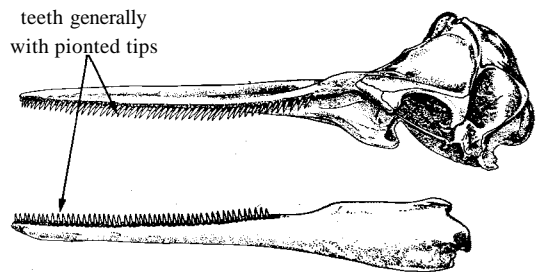
12a. Teeth spade-shaped, with blunt tips; raised bony bosses in front of nares; 10 to 28 teeth in each row (Fig. 138). **Phocoenidae: Porpoises**

12b. Teeth circular or oval in cross-section, generally with pointed tips (except in **Orcaella**, or unless worn or broken); no bosses in front of nares (Fig. 139) . . **Delphinidae: Oceanic dolphins**



LATERAL VIEW

Fig. 138 Phocoenidae



LATERAL VIEW

Fig. 139 Delphinidae