

GIANT FISHES, WHALES AND DOLPHINS

BY

J. R. NORMAN, F.L.S., F.Z.S.

ASSISTANT KEEPER, DEPARTMENT OF ZOOLOGY, BRITISH MUSEUM
(NATURAL HISTORY)

AND

F. C. FRASER, B.Sc., F.Z.S.

ASSISTANT KEEPER, DEPARTMENT OF ZOOLOGY, BRITISH MUSEUM
(NATURAL HISTORY)

ILLUSTRATED BY

LIEUT.-COL. W. P. C. TENISON, D.S.O., F.Z.S.

PUTNAM . LONDON

42 GREAT RUSSELL STREET, W.C. 1

CONTENTS

INTRODUCTION	xvii
------------------------	------

PART I: FISHES.

CHAPTER	PAGE
I. SHARKS	I
II. SHARKS (<i>continued</i>)	27
III. RAYS	56
IV. SOFT-RAYED BONY FISHES	86
V. PERCH-LIKE FISHES	114
VI. PERCH-LIKE FISHES (<i>continued</i>)	141
VII. BARRACUDAS, REMORAS AND OTHERS	169
VIII. KEY TO THE PRINCIPAL FISHES DESCRIBED IN THIS BOOK	188

PART II: CETACEANS.

IX. RIGHT WHALES	203
X. RORQUALS OR FIN WHALES	218
XI. HUMPBACK WHALE ; CALIFORNIAN GREY WHALE	242
XII. SPERM WHALES AND BOTTLE-NOSED OR BEAKED WHALES	256
XIII. PORPOISES AND DOLPHINS	283
XIV. PORPOISES AND DOLPHINS (<i>continued</i>)	306
XV. FRESH-WATER DOLPHINS	338
XVI. KEY TO THE PRINCIPAL CETACEANS DESCRIBED IN THE BOOK	344
INDEX	350

ILLUSTRATIONS

FIG.	PAGE
1. Topography of a Fish	xix
2. Topography of a Cetacean	xx
3. Flipper of a Sperm Whale	xx
4. Skull of a Whalebone Whale (Californian Grey Whale)	xxiii
5. Skull of a Toothed Whale (False Killer Whale)	xxiii
6. Respiratory Organs in a Shark and a Bony Fish	xxiv
7. Six-gilled Shark or Griset (<i>Hexanchus griseus</i>)	6
8. Seven-gilled Shark or Perlon (<i>Hepttranchias perlo</i>)	6
9. Sand Shark or Slender-toothed Shark (<i>Odontaspis taurus</i>)	6
10. Elfin or Goblin Shark (<i>Scapanorhynchus owstoni</i>)	11
11. Common Porbeagle (<i>Lamna cornubica</i>)	11
12. Mediterranean Mackerel Shark (<i>Lamna oxyrhynchus</i>)	11
13. Great White Shark or Man-eater (<i>Carcharodon rondeleti</i>)	19
14. Basking Shark (<i>Cetorhinus maximus</i>)	19
15. Thresher or Fox Shark (<i>Alopias vulpes</i>)	19
16. Common Nurse Shark or Gata (<i>Ginglymostoma cirratum</i>)	32
17. Wobbegong or Carpet Shark (<i>Orectolobus barbatulus</i>)	32
18. Zebra Shark (<i>Stegostoma tigrinum</i>)	32
19. Great Blue Shark (<i>Carcharimus glaucus</i>)	41
20. Tiger Shark (<i>Galeocerdo arcticus</i>)	41
21. Hammer-head Shark (<i>Sphyrna zygaena</i>)	41
22. Greenland or Sleeper Shark (<i>Somniosus microcephalus</i>)	52
23. Bramble or Spinous Shark (<i>Echinorhinus spinosus</i>)	52
24. Monk-fish or Angel-fish (<i>Squatina squatina</i>)	52
25. Ulavi or Plough-headed Ray (<i>Rhynchobatis djiddensis</i>)	61
26. Common Saw-fish (<i>Pristis pectinatus</i>)	61
27. Mediterranean Torpedo (<i>Torpedo marmoratus</i>)	61
28. Common Skate (<i>Raja batis</i>)	73
29a. Stingaree or Clam-cracker (<i>Trygon centrurus</i>)	73
29b. Common Eagle Ray (<i>Myliobatis aquila</i>)	73
30. Cow-nose Ray (<i>Rhinoptera quadriloba</i>)	80
31. Manta or Greater Devil-fish (<i>Manta birostris</i>)	82
32. Mobular (<i>Mobula mobular</i>)	82
33. Common Sturgeon (<i>Acipenser sturio</i>)	94
34. Tarpon (<i>Megalops atlanticus</i>)	94
35. Common Conger (<i>Conger conger</i>)	94
36. Common Gar-fish (<i>Belone belone</i>)	103

FIG.	PAGE
37. How a Flying-fish flies	105
38. Northern Deal-fish (<i>Trachypterus arcticus</i>)	110
39. Common Stone Bass or Wreck-fish (<i>Polyprion americanus</i>)	118
40. California Jew-fish (<i>Stereolepis gigas</i>)	118
41. New Zealand Yellow-tail (<i>Seriola grandis</i>)	118
42. Leer-fish (<i>Lichia amia</i>)	130
43. Meagre or Kabeljau (<i>Sciæna hololepidota</i>)	130
44. Common Escolar or Oil-fish (<i>Ruettius pretiosus</i>)	130
45. Snoek (<i>Thyrssites atun</i>)	139
46. Scabbard-fish (<i>Lepidotus caudatus</i>)	139
47. Black Scabbard-fish (<i>Aphanopus carbo</i>)	139
48. Common Tunny (<i>Thunnus thynnus</i>)	149
49. Atlantic Albacore (<i>Germo alalunga</i>)	149
50. Atlantic Yellow-finned Tuna (<i>Neothynnus argentivittatus</i>)	149
51. Peto or Wahoo (<i>Acanthocybium solandri</i>)	155
52. Louvar (<i>Lwarus imperialis</i>)	155
53. Black-finned Barracuda (<i>Sphyræna commersoni</i>)	155
54. Striped Marlin (<i>Tetrapturus mitsukurii</i>)	163
55. American Sail-fish (<i>Istiophorus americanus</i>)	163
56. Sword-fish or Broadbill (<i>Xiphias gladius</i>)	163
57. Shark-sucker (<i>Echeneis naucrates</i>)	175
58. Common Sun-fish (<i>Mola mola</i>)	175
59. Teeth of Sharks and Rays	189
60. Greenland Right Whale (<i>Balæna mysticetus</i>)	212
61. Black Right Whale (<i>Balæna glacialis</i>)	212
62. Skeleton of Pigmy Right Whale (<i>Neobalæna marginata</i>)	212
63. Finner Whale or Common Rorqual (<i>Balænoptera physalus</i>)	229
64. Sei Whale or Rudolphi's Rorqual (<i>Balænoptera borealis</i>). (After Andrews)	229
65. Piked Whale or Lesser Rorqual (<i>Balænoptera acutorostrata</i>)	229
66. Californian Grey Whale (<i>Rhachianectes glaucus</i>)	258
67. Sperm Whale (<i>Physeter catodon</i>)	258
68. Pigmy Sperm Whale (<i>Kogia breviceps</i>)	258
69. Bottle-nosed Whale (<i>Hyperoodon rostratus</i>)	271
70. Cuvier's Beaked Whale (<i>Ziphius cavirostris</i>)	271
71. Sowerby's Whale (<i>Mesoplodon bidens</i>)	271
72. Lower jaw of <i>Berardius</i>	274
73. Skull and lower jaws of species of <i>Mesoplodon</i>	279
74. Killer Whale (<i>Orcinus orca</i>)	295
75. False Killer (<i>Pseudorca crassidens</i>)	295
76. Irawadi Dolphin (<i>Orcella brevirostris</i>)	295
77. Pilot Whale (<i>Globicephala melæna</i>)	309
78. Burmeister's Porpoise (<i>Phocæna spinipinnis</i>)	309
79. True's Porpoise (<i>Phocænoides truei</i>)	309
80. Spectacled Porpoise (<i>Phocæna dioptrica</i>)	313
81. Finless Black Porpoise (<i>Neomeris phocænoides</i>)	313
82. Right Whale Dolphin (<i>Lissodelphis peronii</i>). (After Gray)	313

FIG.	PAGE
83. Heaviside's Dolphin (<i>Cephalorhynchus heavisidei</i>)	317
84. Hector's Dolphin (<i>Cephalorhynchus hectori</i>). (After Van Beneden)	317
85. Commerson's Dolphin (<i>Cephalorhynchus commersonii</i>)	317
86. White-sided Dolphin (<i>Lagenorhynchus acutus</i>)	323
87. <i>Lagenorhynchus cruciger</i>	323
88. Fitzroy's Dolphin (<i>Lagenorhynchus fitzroyi</i>). (After Water- house)	323
89. Dusky Dolphin (<i>Lagenorhynchus obscurus</i>). (After Lille)	325
90. Bottle-nosed Dolphin (<i>Tursiops truncatus</i>)	325
91. Rough-toothed Dolphin (<i>Steno rostratus</i>)	325
92. <i>Prodelphinus euphrosyne</i> . (After Pucheran)	335
93. Gadamu (<i>Sotalia gadamu</i>)	335
94. Skulls of Common Porpoise and Common Dolphin	335
95. Gangetic Dolphin (<i>Platanista gangetica</i>)	340
96. Amazonian Dolphin (<i>Inia geoffrensis</i>)	340
97. La Plata Dolphin (<i>Pontoporia blainvillei</i>)	340

COLOURED PLATES

PLATE I	FRONTISPIECE	
A. Opah or Moon-fish (<i>Lampris luna</i>).		
B. Oar-fish (<i>Regalecus glesne</i>).		
		PAGE
PLATE II		30
A. Whale Shark (<i>Rhineodon typus</i>).		
B. Black-finned or Black Shark (<i>Carcharinus melanopterus</i>).		
C. Spotted Eagle Ray (<i>Aëtobatus narinari</i>).		
PLATE III		100
A. Sierra or Pintado (<i>Scomberomorus regalis</i>).		
B. Pilot-fish (<i>Naucrates ductor</i>).		
C. Black Grouper (<i>Epinephelus nigritus</i>).		
D. Green or Black Moray (<i>Lycodontis funebris</i>).		
PLATE IV		128
A. Two-winged Flying-fish (<i>Exocætus volitans</i>).		
B. Four-winged Flying-fish (<i>Cypsilurus lineatus</i>).		
C. Dolphin (<i>Coryphæna hippurus</i>).		
PLATE V		182
A. Hammer-head Shark (<i>Sphyrna zygaena</i>).		
B. Tailed Sun-fish (<i>Mola lanceolata</i>).		
C. Halibut (<i>Hippoglossus hippoglossus</i>).		
D. Tope (<i>Eugaleus galeus</i>).		
PLATE VI		220
A. Blue Whale (<i>Balænoptera musculus</i>).		
B. Humpback Whale (<i>Megaptera nodosa</i>).		
PLATE VII		284
A. Risso's Dolphin (<i>Grampus griseus</i>).		
B. White Whale (<i>Delphinapterus leucas</i>).		
C. Narwhal (<i>Monodon monoceros</i>).		
D. Chinese River Dolphin (<i>Lipotes vexillifer</i>).		
PLATE VIII		310
A. Common Porpoise (<i>Phocæna phocæna</i>).		
B. Commerson's Dolphin (<i>Cephalorhynchus commersonii</i>).		
C. White-beaked Dolphin (<i>Lagenorhynchus albirostris</i>).		
D. Common Dolphin (<i>Delphinus delphis</i>).		

