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CATALOGUE OF THE REMAINS OF PINNIPEDIA (MAMMALIA) IN THE COLLECTION OF THE INSTITUTE OF TAXONOMIC ZOOLOGY (ZOOLOGICAL MUSEUM AMSTERDAM)

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INTRODUCTION

As is usual in university museums, the Zoological Museum of the University of Amsterdam (now Institute of Taxonomic Zoology) had in its collection some representative material of Pinnipedia. Some mounted specimens, some mounted skeletons, a few skulls (mainly from animals, which died in the Amsterdam Zoological Garden "Natura Artis Magistra", commonly named Artis) and a few flat skins.

A growing interest in marine mammals in general, the enthusiastic collecting activity of the late Mr Erik Flipse (a biology student, who sadly was killed at a hold-up in Afghanistan in 1979) and the seal research programme of the Research Institute for Nature Management headed by Dr J.L. van Haften in the early years of the last decade, enlarged the collection considerably. Mr Flipse, an excellent photographer, was much interested in seals and the biology of seals and he made several trips on board of Norwegian sealing vessels and thanks to the kind cooperation of the captains and the crews, he could gather a large number of skulls of animals killed for their skins. The skulls were sent deepfrozen to Am-

sterdam where they were cleaned and prepared by the late Mr G. Verlaan and Mr P. Borgman. A number of these skulls were later exchanged against skulls of other seal species.

The drastic decline in the number of Harbour Seals, *Phoca vitulina*, in the Netherlands waters at the end of the sixties /early seventies induced the Research Institute for Nature Management at Arnhem to start a large seal research project. In the scope of that project also dead seals found on the coasts or seals which were turned in dead at or died in the Seal Keeping Facility on the Island of Texel (director: the late Mr G.J. de Haan) or in the Seal Recovery Station at Pieterburen (directrix: Mrs L. 't Hart) were collected and studied at the laboratory of the mentioned Nature Management Institute. Afterwards the remains of these animals (mostly the skulls) were donated to the Amsterdam Museum.

During 1988 a large number of Common or Harbour Seals in the Dutch Wadden Sea area (as elsewhere in Western Europe) became ill (by phocid distemper virus) and died. The heads and left forelegs of 43 dead specimens could be saved. The dissecting

and cleaning afterwards were done by Messrs. A.G. Rol and S.J.M. Frijters.

And last but not least there were a number of foreign colleagues and cooperative national correspondents of the museum, who enriched the collection by their donations. Thanks to the much appreciated cooperation of the mentioned institutions and persons (most of them not mentioned by name) the collection of pinnipeds grew considerably and now it has become a good base for further studies. To make the collection more accessible, it was thought useful to publish a catalogue of the collection. The catalogue is dedicated to those persons who helped to build up the collection.

ACCOUNT OF SPECIES

<i>Arctocephalus australis</i>	184
<i>Arctocephalus forsteri</i>	184
<i>Arctocephalus galapagoensis</i>	184
<i>Arctocephalus gazella</i>	184
<i>Arctocephalus pusillus doriferus</i>	186
<i>Arctocephalus pusillus pusillus</i>	186
<i>Arctocephalus tropicalis</i>	186
<i>Callorhinus ursinus</i>	186
<i>Cystophora cristata</i>	189
<i>Erignathus barbatus</i>	193
<i>Eumetopias jubatus</i>	186
<i>Halichoerus grypus</i>	193
<i>Hydrurga leptonyx</i>	195
<i>Leptonychotes weddelli</i>	195
<i>Lobodon carcinophagus</i>	195
<i>Mirounga leonina</i>	195
<i>Monachus monachus</i>	195
<i>Neophoca cinerea</i>	186
<i>Odobenus rosmarus divergens</i>	188
<i>Odobenus rosmarus rosmarus</i>	188
<i>Otaria byronia</i>	186
<i>Phoca (Histriophoca) fasciata</i>	195
<i>Phoca (Pagophilus) groenlandica</i>	195
<i>Phoca (Phoca) largha</i>	199
<i>Phoca (Phoca) vitulina richardsii</i>	199
<i>Phoca (Phoca) vitulina vitulina</i>	199
<i>Phoca (Pusa) caspica</i>	206
<i>Phoca (Pusa) hispida botnica</i>	206

<i>Phoca (Pusa) hispida hispida</i>	206
<i>Phoca (Pusa) hispida saimensis</i>	208
<i>Phoca (Pusa) siberica</i>	208
<i>Phocarctos hookeri</i>	186
<i>Zalophus californianus californianus</i>	186
<i>Zalophus californianus wollebaeki</i>	188

OTARIIDAE

Arctocephalus australis (Zimmermann, 1783)

ZMA 18.345. Female, juv. Playa Balneario, Bella Vista, Depto Maldonado, Rio de la Plata, Uruguay. 20-II-1976. Leg. R. Praderi; received in exchange. Total length 83 cm. Skull.

ZMA 18.346. Female. Playa Balneario Solis, Depto Maldonado, Rio de la Plata, Uruguay. 12-II-1975. Leg. R. Praderi; received in exchange. Calvarium.

ZMA 18.347. Female. Isla de Lobos, Uruguay. 28-X-1971. Leg. A. Ximenez; received in exchange (ex MNHN 2523). Skull.

Arctocephalus forsteri (Lesson, 1828)

ZMA 17.797. Female? juv. Beach of Gadgi, Ile des Pins, New Caledonia. Beginning of VIII-1972. Leg. P. Rancurel. Det. J.E. King, 1975. Skull, incomplete skeleton and skin. See: King, 1976.

ZMA 17.798. Male, juv. Touaoura near Yaté, southern New Caledonia, caught 3-VIII-1972. Died 5-IV-1973 at Noumea. Leg. P. Rancurel & Catala. Det. J.E. King, 1975. Mounted skin and complete unmounted skeleton. Total length 111 cm. See: King, 1976.

ZMA 24.588. Male, adult. Sinclair Head, south Wellington coast, New Zealand, 20-X-1990. Leg. A. van Helden & M. Huaki. Don. Museum of New Zealand. Complete unmounted skeleton.

Arctocephalus galapagoensis Heller, 1904

ZMA 14.118 Sex? juv. Beach of James Island, Galápagos Archipelago, 21-XI-1971, Leg. D. Hillenius. Skull.

Arctocephalus gazella (Peters, 1875)

ZMA 24.111 Female. Bird Island (34°00'S, 38°02'W) near South Georgia, 14-IV-1984. Leg. Mark John O'Connel, don. British Antarctic Survey. Skull.

ZMA 24.112. Male. Hope River near Undine Harbour, NW South Georgia, 1975/76 Season. Leg. T.S. McCann, don. British Antarctic Survey. Skull.

ZMA 24.113. Male. Undine, NW South Georgia, 1975/76 Season. Leg. T.S. McCann, don. British Antarctic Survey. Skull.

ZMA 24.115. Female. Bird Island (54°00'S, 38°02'W) near South Georgia, 10-III-1972. Leg. M.R. Payne (# ATG 179), don. British Antarctic Survey. Calvarium.

ZMA 24.116. Female. Bird Island (54°00'S, 38°02'W) near South

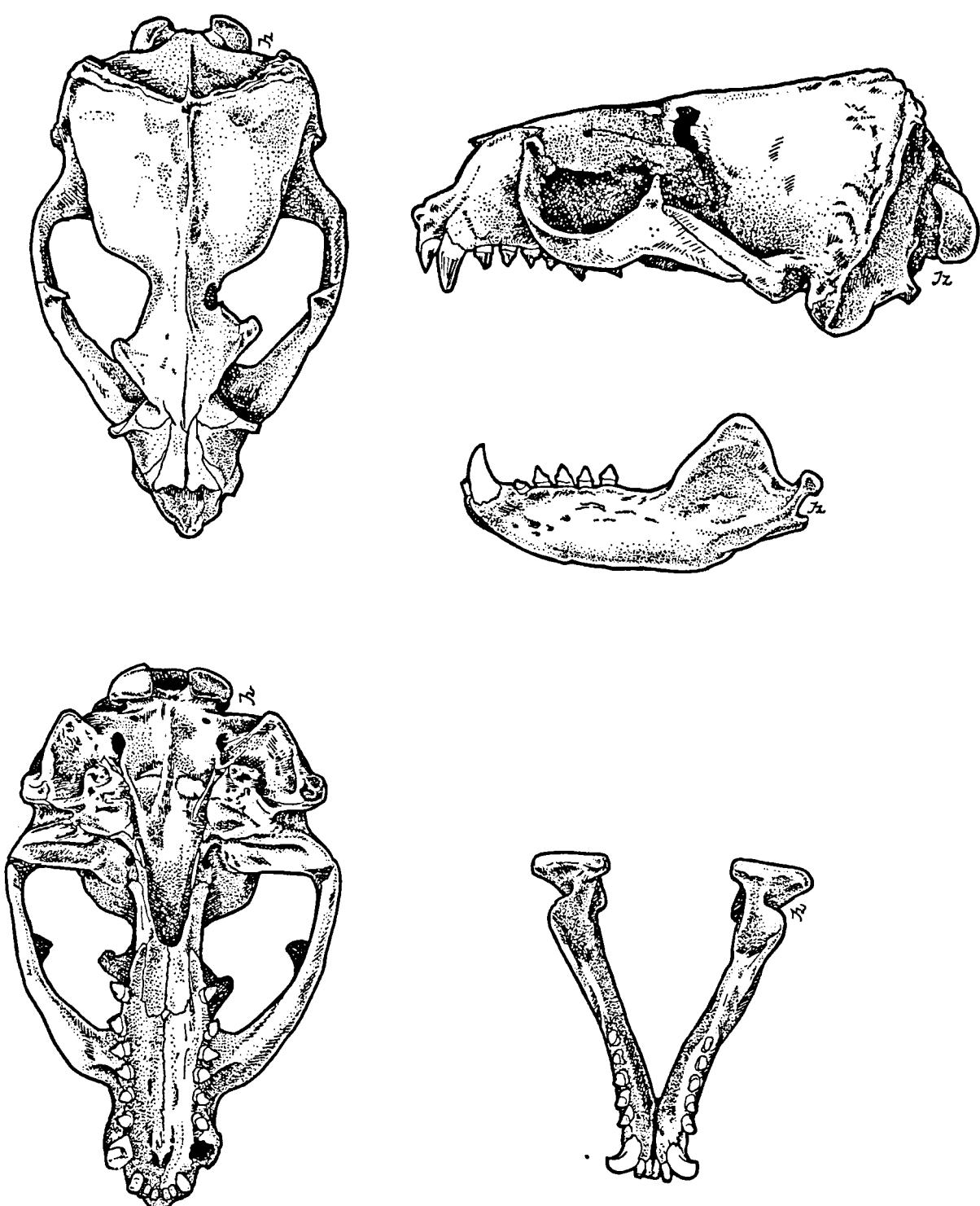


Fig. 1. Skull of *Artocephalus tropicalis*, ZMA 19.584. Condyllo-basal length 225.0 mm, J. Zaagman fecit.

Georgia, 10-III-1972. Leg. M.R. Payne (# ATG 182), don. British Antarctic Survey. Calvarium.

Arctocephalus pusillus pusillus (Schreber, 1776)

ZMA 11.403. Male. Walvis Bay, Namibia, VI-1968. Lived three months in captivity. Don. Firm van de Brink at Soest (the Netherlands). Skin, skull and unmounted skeleton.

ZMA 14.034. Sex ? Old collection, no data. Skull.

ZMA 16.741. Sex ? Flat Rocks, near Port Elizabeth, South Africa, V/VI-1968. Leg. G.J.B. Ross. Skull.

ZMA 19.436. Female, adult. Beach near Wolf Bay, 15 km S. of Luderitz, Namibia. About 0.5 km from the Wolf Bay colony, 24-I-1977. Leg. P.D. Shaughnessy. Skull.

ZMA 19.437. Male, adult. Beach near Wolf Bay, 15 km S. of Luderitz, Namibia. About 0.5 km from the Wolf Bay colony, 24-I-1977. Leg. P.D. Shaughnessy. Skull & baculum.

ZMA 24.359. Sex? St. Helena Bay, South Africa, 15-I-1991. Leg. K. Van Waerebeek. Damaged calvarium.

ZMA 24.578. Female. Paaltjesstrand, Walvis Bay, Namibia, 3rd week XI-1992. Leg. Klaas Post. Skull.

ZMA 24.579. Sex ?, juv. Paaltjesstrand, Walvis Bay, Namibia, 3rd week XI-1992. Leg. Klaas Post. Mandibles.

ZMA 24.585. Male. Paaltjesstrand, Walvis Bay, Namibia, 3rd week XI-1992. Leg. Klaas Post. Unmounted skeleton without skull.

Arctocephalus pusillus doriferus Wood Jones, 1925

ZMA 24.201. Male, adult. Lady Julia Percy Island, Australia (38°25'S, 142°00'E), 1934. Coll. C.W. Brazenor (# Mus. Victoria C1983). Received in exchange. Skull.

ZMA 24.202. Female, adult. Chelsea, Victoria, Australia (38°03'S, 145°07'E), IX-1965. Presented by Fisheries & Wildlife, Victoria (# Mus. Victoria C5718). Received in exchange. Skull.

Arctocephalus tropicalis (Gray, 1872)

ZMA 19.584. Male. Sealers Beach, Cape Davis, Marion Island, 10-I-1975. Leg. P.R. Condy. Skull. See fig. 2.

ZMA 19.585. Female. Sealers Beach, Cape Davis, Marion Island, 30-III-1975. Leg. P.R. Condy. Skull.

Callorhinus ursinus (Linnaeus, 1758)

ZMA 17.130. Female. St. Paul, Pribilof Islands, 27-VIII-1974. Leg. E. Flipse. Skull.

ZMA 17.131. Male. St. Paul, Pribilof Islands, 27-VIII-1974. Leg. E. Flipse. Skull.

ZMA 17.132. Male. St. Paul, Pribilof Islands, 27-VIII-1974. Leg. E. Flipse. Skull.

ZMA 17.992. Sex ? St. Paul, Pribilof Islands, 3-VIII-1975. Leg. E. Flipse. skull.

ZMA 18.181. Sex ? juv. Old collection, no data. Mounted skin.

Eumetopias jubatus (Schreber, 1776)

ZMA 900. Male. Bering Strait. Ex Museum Vrolik (# 666). Mounted skeleton. See: Dusseau, 1865.

ZMA 17.993. Sex ? St. Paul, Pribilof Islands, 2-VII-1975. Leg. E. Flipse. Skull.

Neophoca cinerea (Péron, 1861)

ZMA 24.465. Male? No data, received in exchange from the South Australian Museum, 1992. Skull.

Otaria byronia (de Blainville, 1820)

ZMA 11.341. male ?. Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Beachworn calvarium.

ZMA 11.385. Sex ? Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Beachworn calvarium.

ZMA 11.386. Sex ? Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Beachworn calvarium.

ZMA 11.387. Sex ? Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Part of beachworn calvarium.

ZMA 11.388. Sex ? Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Part of beachworn calvarium.

ZMA 11.389. Sex ? Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Part of beachworn calvarium.

ZMA 11.404. Sex ? Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Part of beachworn calvarium.

ZMA 11.405. Sex ?. Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Part of beachworn calvarium.

ZMA 11.406. Sex ?. Beach near Chimbote, Peru, V-1968. Leg. N.J. Beuk. Scapula.

ZMA 18.344. Female. Punta Solis, Depto Maldonado, Rio de la Plata, Uruguay, 6-II-1976. Leg. R. Praderi. Received in exchange. Skull.

ZMA 24.614. Female. Playa Villa, Lima, Peru, XI-1984. Leg. CEPEC, Lima. Skull and unmounted skeleton.

ZMA 24.624. Male. Playa Callao, Isla Independencia, Ica, Peru, I-1993. Leg. CEPEC, Lima. Skull.

Phocarctos hookeri (Gray, 1844)

ZMA 18.139. Female. Enderby Island, Auckland Islands. Between 1-XII-1972 and 24-II-1973. Leg. J.E. King & B.J. Marlow. Incomplete skull.

ZMA 19.712. Male. Rose Island, Auckland Islands, II-1944. Coll. J. Sorensen. Received in exchange, ex NMNZ 1355 DM. Skull. See fig. 2.

Zalophus californianus californianus (Lesson, 1828)

ZMA 667. Sex ? Old collection - no data. Skull.

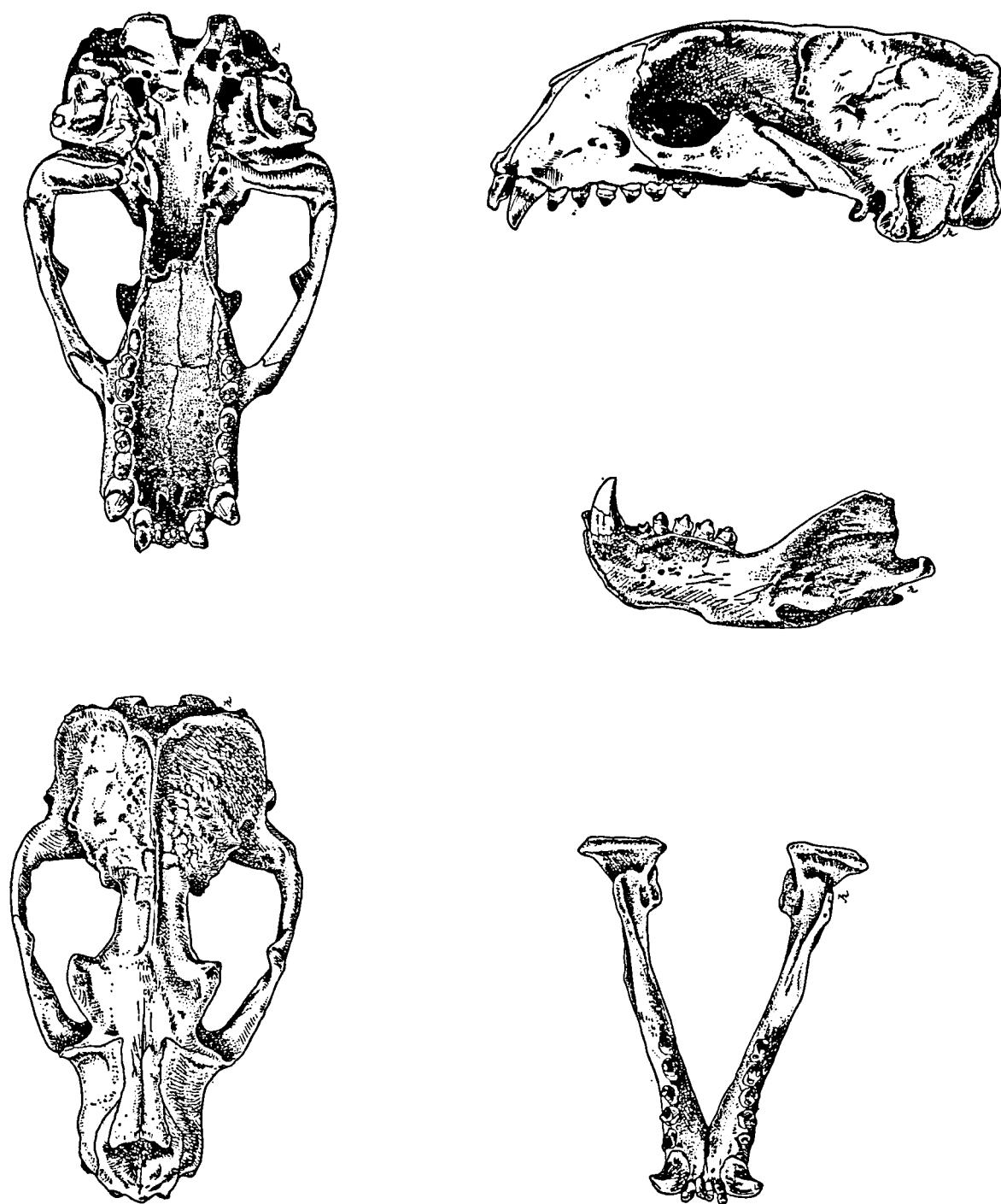


Fig. 2. Skull of *Phocartos hookeri*, ZMA 19.712. Condyllo-basal length 295.0 mm, J. Zaagman fecit.

ZMA 1698. Male, juv. Died in the Amsterdam Zoo on 22-VII-1954. Skull and unmounted skeleton of left fore- and hind limb.

ZMA 2493. Male. Died in the Amsterdam Zoo Artis on 25-XII-1956. Mounted skin, skull & baculum.

ZMA 7384. Male. Died in the Amsterdam Zoo Artis on 2-XII-1964. Skull and part of postcranial skeleton.

ZMA 8850. Male. Died in the Amsterdam Zoo Artis on 8-II-1928. Skull.

ZMA 9619. Male. Died in the Amsterdam Zoo Artis on 2-XII-1966. Skin, skull & baculum.

ZMA 11.124. Male. Died in the Amsterdam Zoo Artis on 21-IX-1940. Skull.

ZMA 11.125. Male. Died in the Amsterdam Zoo Artis on 30-XII-1939. Skull.

ZMA 11.126. Female. Died in the Amsterdam Zoo Artis on 25-X-1934. Skull.

ZMA 11.127. Female. Died in the Amsterdam Zoo Artis on 8-II-1928. Skull.

ZMA 13.837. Sex ? Old collection - no data. Skull.

ZMA 15.207. Male. Died in the Amsterdam Zoo Artis on 26-IV-1927. Skull & baculum.

ZMA 17.819. Female. Died in the Amsterdam Zoo Artis on 1-VII-1975. Skull.

ZMA 20.346. Male. Died in the Amsterdam Zoo Artis on 26-XI-1978. Skull & baculum.

ZMA 21.902. Female. Died in the Amsterdam Zoo Artis on 21-XI-1982. Skull.

ZMA 22.956. Female. Died in the Amsterdam Zoo Artis on 7-IV-1986. Skull.

ZMA 22.987. Male. Died in the Amsterdam Zoo on 8-VII-1986. Skull & baculum.

ZMA 24.440. Male. California, U.S.A., no further data, leg. R. Reynolds (# M.1801). Received in exchange from the Los Angeles County Museum (# 51172), 1992. Skull and baculum.

Zalophus californianus wollebaeki Sivertsen, 1953

ZMA 14.115. Sex ? James Island, Galápagos Archipelago, 21-II-1971. Leg. D. Hillenius. Calvarium.

ZMA 14.116. Sex ? Narborough Island, Galápagos Archipelago, 17-II-1971. Leg. D. Hillenius. Part of calvarium.

ZMA 14.547. Sex ? Santa Fé, Galápagos Archipelago. 1969. Leg. Tj. de Vries. Skull.

ODOBENIDAE

Odobenus rosmarus divergens (Illiger, 1815)

ZMA 2892. Male adult. Old collection - no data. Skull.

ZMA 7679. Female subadult. Old collection - no data. Complete

unmounted skeleton.

ZMA 7690. Male subadult. Ex Museum Vrolik (# 668). Complete mounted skeleton. See: Dusseau, 1865.

ZMA 14.640. Male. Old collection - no data. Pair of upper canines (tusks).

ZMA 24.577. Male. Bristol Bay, Bering Sea (Alaska), USA (57° 11' N, 158° 50' W), 20-IV-1981. Leg. R. Smiths & E. Muktoyuk (# RES-4-81). Don. Univ. of Alaska Fairbanks Museum. Total length 300 cm, weight 1175 kg. Age 72 years. Skull.

ZMA 24.613. Sex ? Pit NW side of Brown Ridge, North Sea (about 53°10'N, 3°20'E), 18-III-1993. Leg. M. de Boer (MV UK 95), don. Klaas Post. Subfossil humerus.

Odobenus rosmarus rosмарус (Linnaeus, 1758)

ZMA 2891. Male adult. Old collection - no data. Skull.

ZMA 2893. Female adult. Old collection - no data. Skull.

ZMA 2894. Female adult. Old collection - no data. Skull.

ZMA 2895. Female adult. Old collection - no data. Skull.

ZMA 7696. Sex ? Found during excavations along the Oude Gracht at Utrecht, the Netherlands, III-1941. Leg. W.F. Moddermans. Sculptured rostrum. See: van Deinse, 1943/1944; Kardas, 1965; van Bree, 1968.

ZMA 7697. Sex ? Found during excavations along the Oude Gracht at Utrecht, the Netherlands, III-1941. Leg. W.F. Moddermans. Sculptured rostrum. See: van Deinse, 1943/1944; Kardas, 1965; van Bree, 1968.

ZMA 8937. Male adult. Ex collection Tinholt - no further data. Baculum. See: Mohr, 1963.

ZMA 9746. Female juv. Purchased of an animal dealer at Harderwijk; dissection on 12-I-1967. Probably from European Siberia. Total length 138 cm; weight 59.5 kg. Complete unmounted skeleton.

ZMA 16.764. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen, 1968/69). Coll. Ned. Spitsbergen Exp. Don. H.I. Frank, 1974. Damaged calvarium.

ZMA 16.765. Female ?. Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1968/69. Coll. Ned. Spitsbergen Exp. Don. H.I. Frank, 1974. Mandible.

ZMA 16.766. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1968/69. Coll. Ned. Spitsbergen Exp. Don. H.I. Frank. Scapula.

ZMA 19.147. Male. Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), summer 1969. Leg. E. Flipse. Baculum.

ZMA 19.148. Male. Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), summer 1969. Leg. E. Flipse. Baculum.

ZMA 20.740. Female juv. Born on ice during VI-1974 at European Siberia. Arrived at the Dolfinarium at Harderwijk on 2-X-1974; died on 6-V-1977 (Zoo name "Katinka"). Don. W.H. Dudok van Heel. Skull & complete unmounted skeleton.

ZMA 21.076. Sex ? Recovered from the bottom of the North Sea near the Brown Ridge, 1980. Don. Dick J. Mol. Fossil left radius.

See: Bosscha Erdbrink & van Bree, 1986.

ZMA 22.112. Male. Old collection - no data. Baculum.

ZMA 22.648. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Right humerus. See Bosscha Erdbrink & van Bree, 1986.

ZMA 22.649. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Right humerus. See Bosscha Erdbrink & van Bree, 1986.

ZMA 23.389. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Left scapula.

ZMA 23.390. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Right scapula.

ZMA 23.391. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Innominate bone.

ZMA 23.392. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Innominate bone.

ZMA 23.393. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Calcaneum.

ZMA 23.396. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Femur.

ZMA 23.397. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Tibia + fibula complex.

ZMA 23.398. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Tibia.

ZMA 23.399. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Fibula.

ZMA 23.400. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Radius.

ZMA 23.401. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Radius.

ZMA 23.402. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Ulna.

ZMA 23.403. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Ulna.

ZMA 23.404. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Ulna.

ZMA 23.405. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Ulna without epiphyses.

ZMA 23.406. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen),

1977. leg. REES 77 Exp. Astragalus.

ZMA 23.407. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Phalanx.

ZMA 23.408. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Hemi-mandibula, sinister.

ZMA 23.409. Male ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Mandibula.

ZMA 23.410. Male? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Mandibula.

ZMA 23.411. Female ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Mandibula.

ZMA 23.412. Female ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77. Exp. Mandibula.

ZMA 23.413. Female ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Mandibula.

ZMA 23.420. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Sacrum.

ZMA 23.421. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REED 77 Exp. Sacrum.

ZMA 23.422. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Three phalanges.

ZMA 23.423. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Sacrum.

ZMA 23.427. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Damaged calvarium.

ZMA 23.428. Sex ? Collected at a 17th-century walrus butchery emplacement at Kapp Lee, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Damaged calvarium.

ZMA 23.454. Sex ? From bottom of the North Sea, about 15 miles E. of lightship "Smith-Knoll", XI-1987. Leg. P. van Es, don. D.J. Mol. Part of fossil humerus.

ZMA 23.473. Sex ? From bottom of the North Sea, S.W. of the Brown Ridge on the border of the Deep Water Channel, III-1988. Leg. P. van Es, don. D.J. Mol. Fossil femur dexter.

ZMA 23.811. Female. Old collection - no data. Ex coll. Zoöl. Museum Utrecht. Skull.

ZMA 23.813. Male. Old collection - no data. Ex coll. Zoöl. Museum Utrecht. Incomplete skull.

ZMA 23.910. Male. From Bottom of the North Sea, near the Brown Ridge, about 1979. Don. P.H. de Buissonié. Proximal part of calvarium.

ZMA 24.437. Sex? From bottom of the North Sea (55°25'N, 04°01'E), autumn 1991, leg. P. van Es (MV SL 27), don. D.J. Mol. Fossilised prox. part of mandible.

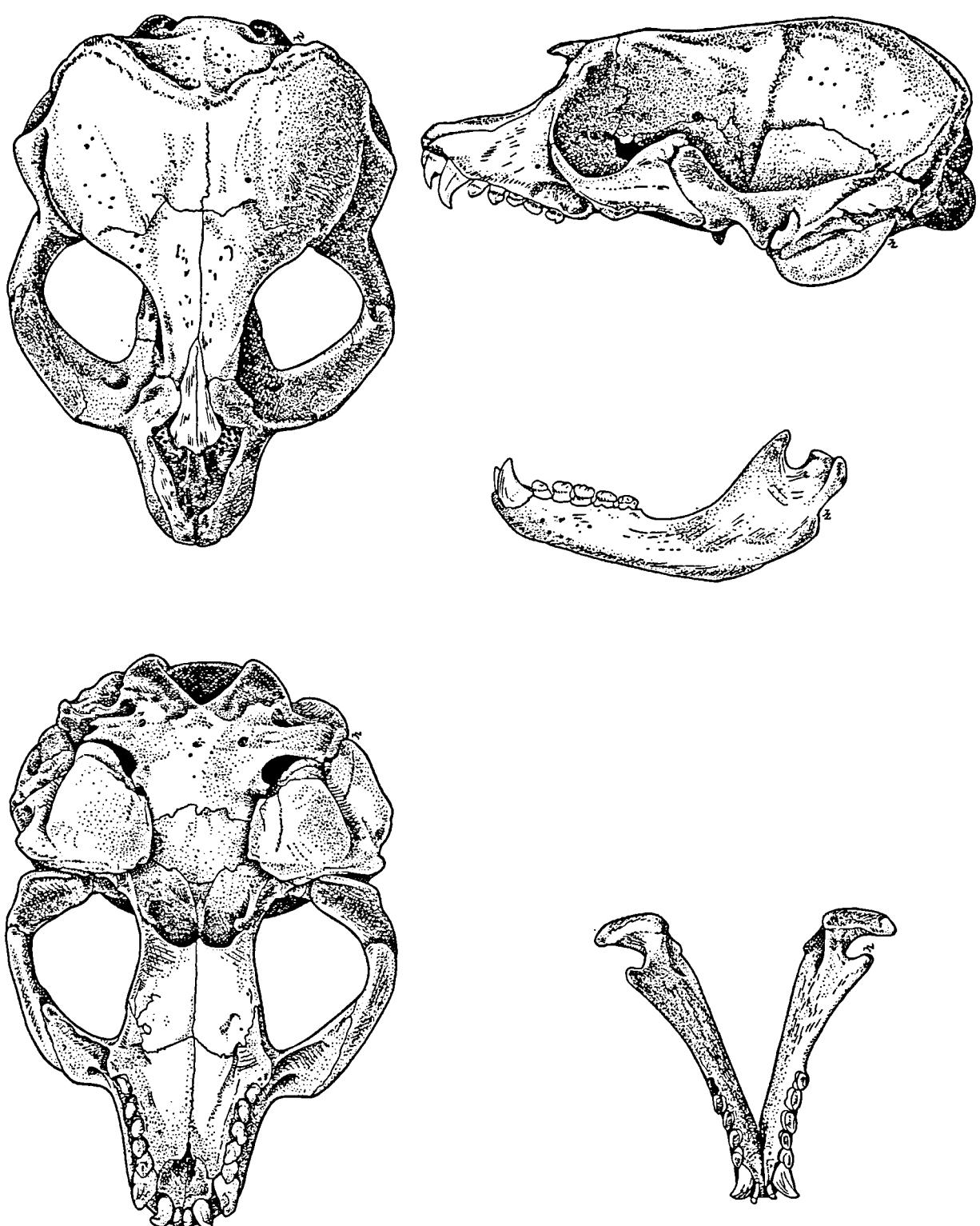


Fig. 3. Skull of juvenile *Cystophora cristata*, ZMA 23.415. Condyllo-basal length 205.6 mm, J. Zaagman fecit.

Phocidae

Cystophora cristata (Erxleben, 1777)

- ZMA 678; Sex ?; Old collection - no data. Skull.
- ZMA 679; Sex ?. Ex Museum Vrolik (# 360). Leg. D.F. Eschricht, Copenhagen. Skull. See: Dusseau, 1865.
- ZMA 16.334. Male adult. Drift-ice area N.E. of Jan Mayen (the so-called "West ice"), 24-III-1973. Leg. E. Flipse (# 7/Z1). Total length 225 cm. Skull.
- ZMA 16.335. Female adult. Drift-ice area N.E. of Jan Mayen, 24-III-1973. Leg. E. Flipse (# 9/Z2). Skull.
- ZMA 16.336. Male adult. Drift-ice area N.E. of Jan Mayen, 24-III-1973. Leg. E. Flipse (# 10/Z3). Skull.
- ZMA 16.337. Male adult. Drift-ice area N.E. of Jan Mayen, 24-III-1973. Leg. E. Flipse (# 11/Z4). Skull.
- ZMA 16.338. Female adult. Drift-ice area N.E. of Jan Mayen, 24-III-1973. Leg. E. Flipse (# 12/Z5). Skull.
- ZMA 16.339. Female adult. Drift-ice area N.E. of Jan Mayen, 25-III-1973. Leg. E. Flipse (# 49/Z7). Skull.
- ZMA 16.340. Male adult. Drift-ice area N.E. of Jan Mayen, 25-III-1973. Leg. E. Flipse (# 50/Z8). Total length 208 cm. Skull.
- ZMA 16.341. Male adult. Drift-ice area N.E. of Jan Mayen, 25-III-1973. Leg. E. Flipse (# 51/Z9). Total length 210 cm. Skull.
- ZMA 16.342. Male adult. Drift-ice area N.E. of Jan Mayen, 27-III-1973. Leg. E. Flipse (# 53/Z10). Total length 229 cm. Skull.
- ZMA 16.343. Female adult. Drift-ice area N.E. of Jan Mayen, 31-III-1973. Leg. E. Flipse (# 65/Z13). Total length 183 cm. Skull.
- ZMA 16.344. Female adult. Drift-ice area N.E. of Jan Mayen, 31-III-1973. Leg. E. Flipse (# 69/Z14). Total length 182 cm. Skull.
- ZMA 16.345. Female adult. Drift-ice area N.E. of Jan Mayen, 1-IV-1973. Leg. E. Flipse (# 75/Z15). Total length 193 cm. Skull.
- ZMA 16.346. Male adult. Drift-ice area N.E. of Jan Mayen, 2-IV-1973. Leg. E. Flipse (# 82/Z16). Total length 235 cm. Skull.
- ZMA 16.347. Male adult. Drift-ice area N.E. of Jan Mayen, 2-IV-1973. Leg. E. Flipse (# 84/Z18). Total length 228 cm. Skull.
- ZMA 16.385. Female. Drift-ice area N.E. of Jan Mayen, 24-III-1973. Leg. E. Flipse (# 1/Z30). Total length 177 cm. Skull.
- The following register numbers concern mandibles collected by E. Flipse in the drift-ice area N.E. of Jan Mayen. The variable data are:
- ZMA 16.386. Female 24-III-1973 # 5/Z31 TI of animal 238 cm.
- ZMA 16.387. Female 24-III-1973 # 6/Z32
- ZMA 16.388. Female 24-III-1973 # 13/Z91
- ZMA 16.389. Male 24-III-1973 # 14/Z34
- ZMA 16.390. Male 24-III-1973 # 15/Z35
- ZMA 16.391. Male 24-III-1973 # 16/Z36
- ZMA 16.392. Male 24-III-1973 # 17/Z37
- ZMA 16.393. Male 24-III-1973 # 18/Z38
- ZMA 16.394. Male 24-III-1973 # 19/Z39
- ZMA 16.395. Male 24-III-1973 # 20/Z40
- ZMA 16.396. Male 24-III-1973 # Z66
- ZMA 16.370. Female 24-III-1973 # Z33
- ZMA 16.398. Female 24-III-1973 # Z41
- ZMA 16.399. Female 24-III-1973 # Z42
- ZMA 16.400. Female 24-III-1973 # Z43
- ZMA 16.401. Female 24-III-1973 # Z44
- ZMA 16.402. Female 24-III-1973 # Z45
- ZMA 16.403. Female 24-III-1973 # Z47
- ZMA 16.404. Female 24-III-1973 # Z48
- ZMA 16.405. Female 24-III-1973 # Z49
- ZMA 16.406. Female 24-III-1973 # Z50
- ZMA 16.407. Female 24-III-1973 # Z51
- ZMA 16.408. Female 24-III-1973 # Z52
- ZMA 16.409. Female 24-III-1973 # Z53
- ZMA 16.410. Female 24-III-1973 # Z54
- ZMA 16.411. Female 24-III-1973 # Z55
- ZMA 16.412. Female 24-III-1973 # Z56
- ZMA 16.413. Female 24-III-1973 # Z57
- ZMA 16.414. Female 24-III-1973 # Z58
- ZMA 16.415. Female 24-III-1973 # Z59
- ZMA 16.416. Female 24-III-1973 # Z60
- ZMA 16.417. Female 24-III-1973 # Z61
- ZMA 16.418. Female 24-III-1973 # Z62
- ZMA 16.419. Female 24-III-1973 # Z63
- ZMA 16.420. Female 24-III-1973 # Z64
- ZMA 16.421. Female 24-III-1973 # Z65
- ZMA 16.422. Female 24-III-1973 # Z67
- ZMA 16.423. Female 24-III-1973 # Z68
- ZMA 16.424. Female 24-III-1973 # Z69
- ZMA 16.425. Female 27-III-1973 # Z55/Z70. TI 167 cm. Was together with its young.
- ZMA 16.426. Female 27-III-1973 # Z57/Z7. TI 1179 cm. Was together with its young.
- ZMA 16.427. Male 27-III-1973 # Z58/Z72 TI 238 cm.
- ZMA 16.428. Female 27-III-1973 # 59/Z73. TI 160 cm. Was together with its young.

- ZMA 16.429. Male 31-III-1973 # 62/Z74. TI 224 cm.
- ZMA 16.430. Female 31-III-1973 # 64/Z75. TI 178 cm. Was together with its just-born young.
- ZMA 16.431. Female 31-III-1973. # 65/Z76. TI 179 cm. Not with its young but lactating.
- ZMA 16.432. Male 31-III-1973 # 66/Z77. TI 229 cm.
- ZMA 16.433. Female 31-III-1973 # 67/278. TI 182 cm.
- ZMA 16.434. Male 31-III-1973 # 69/Z79. TI 210 cm.
- ZMA 16.435. Female 31-III-1973 # 70/Z80. TI 212 cm. Was together with its just-born young.
- ZMA 16.436. Female 31-III-1973 # 73/Z81. TI 208 cm. Pregnant, just before partus.
- ZMA 16.437. Female 1-IV-1973 # 75/Z82. TI 195 cm. Was together with its just-born young.
- ZMA 16.438. Female 1-IV-1973 # 76/Z283. TI 178 cm. Was together with its just-born young.
- ZMA 16.439. Female 1-IV-1973. # 77/Z84. TI 192 cm. Was together with its young.
- ZMA 16.440. Female 1-IV-1973 # 79/Z85. TI 232 cm. Was together with ZMA 16.345 and its young.
- ZMA 16.441. Female 2-IV-1973 # 80/Z86. TI 172 cm. Was together with its young.
- ZMA 16.442. Female 2-IV-1973 # 81/Z87. TI 186 cm. Was together with its young.
- ZMA 16.443. Female 2-IV-1973 # 82/Z88. TI 188 cm. Was together with its young.
- ZMA 16.444. Male 2-IV-1973 # 83/Z89. TI 240 cm.
- ZMA 16.445. Female 2-IV-1973 # 84/Z90. TI 196 cm. Was together with its young.
- ZMA 16.446. Female 2-IV-1973 # 88/Z46 TI 202 cm. Accompanied by a male. Pregnant, just before partus.
- ZMA 16.447. Male 2-IV-1973 # 89/Z92. TI 230 cm.
- ZMA 16.448. Female 2-IV-1973 # 90/Z93. TI 203 cm. Was together with its young.
- ZMA 16.449. Male 3-IV-1973 # 91/294. TI 220 cm.
- ZMA 16.450. Male 3-IV-1973 # 92/Z95
- ZMA 16.451. Male 3-IV-1973 # 93/Z96. TI 235 cm.
- ZMA 16.452. Female 3-IV-1973 # 94/297. TI 178 cm.
- ZMA 16.453. Male 3-IV-1973 # 95/Z98. TI 235 cm. Was together with an adult. Female without young.
- ZMA 16.454. Male 3-IV-1973 # 96/Z99. TI 210 cm.
- ZMA 16.455. Male 3-IV-1973 # 97/Z100. TI 240 cm.
- ZMA 16.456. Female 3-IV-1973 # 98/Z101. TI 194 cm. Pregnant, 3-5 days before partus.
- ZMA 16.457. Male 5-IV-1973 # 99/Z103. TI 225 cm.
- ZMA 16.458. Male 9-IV-1973 # 100/Z104. TI 210 cm.
- ZMA 16.486. Female 24-III-1973 # Z6
- ZMA 17.070. Female. Scoresbysund, East Greenland, 2-IX-1974. Leg. J. de Korte. Mandible.
- ZMA 17.071. Female. Kap Tobin, East Greenland, 7-IX-1974. Leg. J. de Korte Mandible.
- ZMA 17.072. Male. Kap Tobin, East Greenland, 8-IX-1974. Leg. J. de Korte, Mandible.
- ZMA 17.182. Female. Kap Tobin, East Greenland, 2-IX-1974. Leg. J. de Korte. Mandible.
- ZMA 18.059. Male. Drift-ice about 40 to 50 nautical miles N.E. of Jan Mayen, 29-III-1975. Leg. E. Flipse (# 217). Total length 245 cm. Skull. Was together with female # 216 and a young of 2 to 3 days old.
- ZMA 18.060. Female. On drift-ice N.E. of Jan Mayen, about 70°50'N, 9°52'W, 2-IV-1975. Leg. E. Flipse (# 273). Total length 190 cm. Skull. Aberrant dentition. Was together with a young of about one week old.
- ZMA 18.061. Male. On drift-ice about 20-25 nautical miles N.E. of Jan Mayen, 29-III-1975. Leg. E. Flipse (no fieldnumber). Total length 248 cm. Rostral part of skull, aberrant dentition. Was together with a female and a male at some distance.
- ZMA 18.062. Male. On drift-ice about 20 to 25 nautical miles of Jan Mayen, 29-III-1975. Leg. E. Flipse (# 232). Skull. Solitary animal.
- ZMA 18.063. Male. On drift-ice about 20 to 25 nautical miles of Jan Mayen, 29-III-1975. Leg. E. Flipse (# 240). Total length 235 cm. Skull.
- ZMA 18.065. Male. On drift-ice W.S.W. of Jan Mayen (70°33'N, 8°00'W), 13-IV-1975. Leg. E. Flipse (# 278). Total length 212 cm. Skull. Solitary animal.
- ZMA 18.066. Female. On drift-ice about 12 nautical miles S.E. of Jan Mayen, 30-III-1975. Leg. E. Flipse (# 252). Total length 202 cm. Skull. Was together with a male and a young of about 4 to 5 days old.
- ZMA 18.067. Male. On drift-ice about 20 nautical miles S.W.. of Jan Mayen, 30-III-1975. Leg. E. Flipse (# 261). Skull. Was together with a female (# 260) with a young.
- ZMA 18.068. Female. On drift-ice about 30 nautical miles S. of Jan Mayen, 13-IV-1975. Leg. E. Flipse (no fieldnumber). Skull. A so-called "gris".
- ZMA 18.069. Male. On drift-ice N. of Jan Mayen (about 72°31'N, 9°20'W), 22-III-1975. Leg. E. Flipse (# 3582). Skull.
- ZMA 18.080. Male. On drift-ice S.W. of Jan Mayen (about 69°22'N, 11°30'W), 10-IV-1975. Leg. E. Flipse (no fieldnumber). Total length 158 cm. Skull. A so-called "gris" of about 2 years old.
- ZMA 18.081. Male. On drift-ice N.E. of Jan Mayen (about 72°08'N, 9°20'W). 23-III-1975. Leg. E. Flipse (no fieldnumber). Skull.
- ZMA 18.082. Female. On drift-ice about 14 nautical miles N.W. of Jan Mayen, 31-III-1975. Leg. E. Flipse (# 2260). Skull.
- ZMA 18.083. Sex ? On drift-ice S.W. of Jan Mayen (about 69°35'N, 11°22'W), 12-IV-1975. Leg. E. Flipse (# 3505). Skull. A "blue back" of about 3 weeks old.

ZMA 18.085. Female, subadult. On drift-ice S.W. of Jan Mayen (about 69°35'N, 11°22'W), 12-IV-1975. Leg. E. Flipse (no fieldnumber). Skull.

ZMA 18.086. Female. On drift-ice N.E. of Jan Mayen, 29-III-1975. Leg. E. Flipse (# 2209). Skull. Was together with a young.

ZMA 18.087. Male. On drift-ice about 30 to 35 nautical miles N.E. of Jan Mayen, 29-III-1975. Leg. E. Flipse (# 2212). Skull. Was together with a female (# 2211) and its young of 2 to 3 days old.

ZMA 18.088. Male. On drift-ice about 40 to 45 nautical miles S. of Jan Mayen (about 70°15'N, 7°45'W), 15-IV-1975. Leg. E. Flipse (# 2279). Total length 236 cm. Skull.

ZMA 18.089. Male. On drift-ice about 20 nautical miles W. of Jan Mayen (about 70°52'N, 10°15'W), 28-III-1975. Leg. E. Flipse (# 2201). Total length about 240 cm. Skull. Was together with a female (# 2202) and its young.

ZMA 18.098. Female. On drift-ice S.W. of Jan Mayen (about 70°17'N, 7°03'W), 17-IV-1975. Leg. E. Flipse (# 280). Skull. Was solitary but still somewhat lactating.

ZMA 18.100. Male, subadult. On drift-ice about 45 nautical miles S.W. of Jan Mayen, 13-IV-1975. Leg. E. Flipse (# Gris 13/4). Skull. A so-called "gris" of about 2 years old.

ZMA 18.101. Sex ? On drift-ice S.W. of Jan Mayen (about 69°52'N, 7°33'W), 14-IV-1975. Leg. E. Flipse (no fieldnumber) Skull. Was about 3 weeks old.

ZMA 18.109. Mandibles collected by E. Flipse during III/IV-1975 around Jan Mayen. These mandibles, partly with fieldnumbers, are numbered 18.109-1 to 18.109 -390 .All the material collected by E. Flipse during 1973 and 1975 has been used for the study by Flipse & Veling, 1984.

ZMA 18.185. Sex ? adult. Old collection - without data. Mounted specimen.

ZMA 18.572. Mandibles collected by E. Flipse on 22 and 23-III-1976 at about 100 to 120 nautical miles N.W. of Jan Mayen. These mandibles are numbered 18.572-1 to 18.572-50.

ZMA 18.573. Mandibles collected by the crew of the M.V. "Polaric" in 1976 in the drift-ice area (Vesterisen) near Jan Mayen. These mandibles are numbered 18.573-1 to 18.573-44.

ZMA 23.415. Female, juv. Caught near the lock Kain-Lez-Toumai in the River Scheldt near Doornik /Tournai, Belgium, on 12-III-1987; transported to the Antwerp Zoo and from there to the Seal Recovery Centre at Pieterburen, the Netherlands, where it arrived on 17-III-1987 and died on 10-VI-1987. Leg. L. 't Hart. Total length 185 cm. Skull + complete unmounted skeleton. See fig. 3.

Erignathus barbatus (Erxleben, 1777)

ZMA 894. Sex ? At about 70°15'N, 33°00'E, 15-VI-1881. Leg. M. Weber. Skull. See: Anon., 1882.

ZMA 896. Sex ? At about 70°15'N, 33°00'E, 15-VI-1881. Leg. M. Weber. Skull. See: Anon., 1882.

ZMA 16.083. Sex ? Skinning place of seal hunters, Kap Stewart, Scoresbysund, East Greenland, early VII-1973. Leg. J. de Korte. Skull.

ZMA 16.485. Sex ? Storfjorden. East Spitsbergen (Svalbard), 8-VI-1973, Leg. E. Flipse. Skull.

ZMA 18.099. Male subadult. On drift-ice about 20 nautical miles N.W. of Jan Mayen, 1-IV-1975. Leg. E. Flipse (# 269). Total length 218 cm. Skull.

ZMA 20.332. Female. Barents Sea, about 160 nautical miles N.N.E. of Kanin Nos and 90 nautical miles W. of Ostrov Kolguyev (about 69°55'N, 43°28'E). 12-IV-1978. Leg. E. Flipse (# 136). Total length 184 cm. Skull.

ZMA 20.343. Female. S.E. Barents Sea (about 69°28'N, 44°50'E). 5-IV-1978. Leg. E. Flipse (# 120). Total length 148 cm. Skull.

ZMA 23.537. Female. Juliana Harbour at Yerseke, The Netherlands, caught on 27-VI-1988, died in the Seal Recovery Station at Pieterburen on 12-VIII-1988, Leg. L. 't Hart. Total length 193 cm, gross weight about 200 kg. Skull and complete unmounted skeleton. See: Van Bree & 't Hart, 1989.

Halichoerus grypus (Fabricius, 1791)

ZMA 668. Female ?. Old collection - no data. Skull.

ZMA 2744. Male. Drowned in net in the North Sea at 55°00'N, 3°30'E on 9-II-1960. Leg. Master Glas of the MV "K.W..153". Total length 225 cm, gross weight 210 kg. Skull, cervical vertebrae, scapulae & baculum. See: van Bree, 1972.

ZMA 4013. Male, juv. On beach near Bergen, the Netherlands, and brought to the Amsterdam Zoo Artis on 25-I-1961; died on 24-II-1961. Total length 89.6 cm. Skull. See: van Bree, 1972; van Haften, 1974.

ZMA 5845. Male, juv. Caught on 10-VIII-1963 near Capelle a/d IJssel. Brought from the Rotterdam Zoo Blijdorp to the Amsterdam Zoo Artis; it died on 2-IX-1963. Total length 118 cm. Skull and complete unmounted skeleton. See: van Bree, 1972; van Haften, 1974.

ZMA 5851. Female. Caught in the North Sea. Died in the Amsterdam Zoo Artis on 30-XII-1931. Skull. See: van Bree, 1972.

ZMA 6049. Male, juv. Near Den Helder, the Netherlands, 27-XII-1962 Brought to the Natural History Museum on the Island of Texel; died on 20-X-1963. Leg. G.J. de Haan. Total length 131 cm. Was marked on Staple, the Farne Islands, at an age of about 18 days (mark number A086). Skin, skull and complete unmounted skeleton. See: van Bree 1972.

ZMA 10.905. Male, juv. S.W. beach of the Island of Texel, the Netherlands; 29-XI-1966. Leg. G.J. de Haan & W.L. van Utrecht. Total length 95 cm. Skull and skin. See: van Bree, 1972; van Haften, 1974.

ZMA 10.906. Male, juv. S.W. beach of the Island of Texel, the Netherlands; 9-XII-1966. Leg. G.J. de Haan & W.L. van Utrecht. Total length 75 cm. Skull. See: van Bree, 1972; van Haften, 1974.

ZMA 11.655. Male. Probably from the beaches of the Island of Texel, the Netherlands. Brought to the Amsterdam Zoo Artis on 17-XI-1967; it died on 23-XI-1968. Total length 222 cm. Nasal passages infested by *Halarachne halichoeri*. Skin and mounted skeleton. See: van Bree, 1972.

ZMA 11.826. Female, juv. Beach 1 km S. of Zandvoort, the Netherlands, 3-I-1969. Brought to the Amsterdam Zoo Artis where it died on 17-II-1969. Total length 87 cm. Skin, skull (with fused atlases) and complete unmounted skeleton. See: van Bree, 1972; van Haften, 1974.

ZMA 14.293. Male. Drowned in fish-trap near the locks of Kornwerderzand-Oostdam, the Netherlands, 28-III-1971. Leg. Master Poepjes & W.L. van Utrecht. Total length 132.5 cm. Skin, skull and incomplete unmounted skeleton. See: van Bree, 1972; van Haften, 1974.

ZMA 14.514. Male ? Born on the Farne Islands in 1966. Beaches of the Island of Texel, the Netherlands; died at the seal keeping

facilities of the Natural History Museum on Texel on 3-VIII-1971. Leg. G.J. de Haan. Total length 190 cm; gross weight 110 kg. Skull and unmounted incomplete skeleton. See: van Bree, 1972; van Haaften, 1974.

ZMA 14.538. Male, adult. Drowned in net in the North Sea near Whitby Grounds (about 54°30'N, 00°30'W) on 24/25-VIII-1972. Received from the State Fishery Institute at IJmuiden (RIVO). Total length 214 cm; gross weight 209 kg. Skull and incomplete unmounted skeleton. See: van Bree, 1972.

ZMA 15.986. Male, adult. Drowned in net in the North Sea about 14 miles east of Flamborough-Head (about 54°00'N, 00°15'E) on 14/15-VIII-1973. Brought in by the MV "Texel 29" and "UK 218" on 17-VIII-1973; received from the State Fishery Institute at IJmuiden (RIVO). Total length 223 cm; gross weight 166 kg. Skin, skull and incomplete unmounted skeleton.

ZMA 19.289. Male, juv. Found alive in the North Sea, brought in by a fishing-ship from the former Island of Urk, the Netherlands, on 17-III-1972. Brought to Burgers Zoo Arnhem; died on 8-V-1972. Leg. Research Institute for Nature Management (RIN # 67). Total length 99 cm; gross weight 15.4 kg. Skull. See: van Haaften, 1974

ZMA 19.290. Male, juv. Beach near Zandvoort, the Netherlands in March 1970. Died on 17-XI-1972 at Burgers Zoo Arnhem. Leg. Research Institute for Nature Management (RIN # 141). Total length 150 cm. Skull. See: van Haaften, 1974.

ZMA 19.291. Female, juv. Foot of the dike of the Prins Hendrik-polder, Island of Texel; 11-VI-1972. Don. G.J. de Haan; leg. Research Institute for Nature Management (RIN # 106). Total length 121 cm; gross weight 46 kg. Skull. See: van Haaften, 1974.

ZMA 19.292. Female, juv. The Netherlands' coast. Died in the Arnhem Zoo Burgers on 6-III-1973 (about 3 months old, broken mandible) Leg. Research Institute for Nature Management (RIN # 23). Total length 104 cm; gross weight 18.75 kg. Skull.

ZMA 19.293. Female, juv. Near kilometer pole 44 on the Island of Vlieland, 20-XI-1972. Leg. Research Institute for Nature Management (RIN # 144). Total length 160 cm. Skull.

ZMA 19.294. Sex ? Beaches of the Island of Texel, 19-II-1976. Don. G.J. de Haan, leg. Research Institute for Nature Management (RIN # 17). Was marked "London Zoo 22009". Total length 125 cm; gross weight 30.7 kg. Skull.

ZMA 19.419. Male. From the beaches of the Island of Texel, the Netherlands. Died 25-IV-1972. Don. G.J. de Haan; leg. Research Institute for Nature Management (# RIN 46/72). Skull.

ZMA 19.598. Female. Beaches of the Island of Texel, II-1977. Leg. G.J. de Haan & the Research Institute for Nature Management (RIN # 79/77). Total length 94 cm; gross weight 11 kg. Skull.

ZMA 19.638. Sex ? West German North Sea coast. Brought to the Seal Recovery Centre at Pieterburen; died on 6-XII-1977 (a few weeks old). Don. L. 't Hart; leg. Research Institute for Nature Management (RIN # 120/77). Skull.

ZMA 20.159. Male. The Boschplaat on the Island of Terschelling on 30-VIII-1978. Leg. Hessel Wiegman. Don. J.L. van Haaften (RIN # 66/78). Total length of the animal 225 cm. Skull and baculum.

ZMA 20.209. Male. Foot of the dike near Scharendijke, Island of Schouwen on 10-III-1978. Leg. Doliframa & Research Institute of Nature Management (RIN # 15/78). Total length 163 cm; gross weight 78.7 kg. Skull and incomplete unmounted skeleton.

ZMA 20.363. Male, juv. Found at "de Richel" near the Island of Vlieland on 24-V-1978 (was about 1.5 year old). Leg. Hessel

Wiegman: don. L. 't Hart & the Research Institute for Nature Management (RIN # 44/78). Total length 131 cm; gross weight 42 kg. Skull and some bones.

ZMA 20.733. Female, neonatus. Still-born in the seal keeping facilities of the Nature Recreation Centre on the Island of Texel on 5-II-1979. Leg. G.J. de Haan. Don. Research Institute for Nature Management (RIN # 102/79). Total length 92 cm; gross weight 14.7 kg. Skull.

ZMA 21.468. Male. Dike of the Wilhelmina Polder near Goes, Province of Zeeland; died in XII-1981 (about 1 year old). Leg. Research Institute for Nature Management (RIN # 42/81). Skull.

ZMA 21.469. Male. Dike near Den Helder, 24-V-1978. Leg. G.J. de Haan. Don. Research Institute for Nature Management (RIN # 45/78). Total length 150 cm; gross weight 61 kg. Skull and baculum.

ZMA 21.470. Male. Island of Texel, XII-1974. Leg. G.J. de Haan. Don. Research Institute for Nature Management (RIN # 17/75). Total length 102 cm; gross weight 13.5 kg. Skull.

ZMA 23.310. Female. Drowned in fish-trap in the Westerschelde near Hoedekenskerke, the Netherlands on 29-V-1980. Leg. G. Doornenbos. Don. Research Institute for Nature Management (RIN # 40/80). Total length 161 cm; gross weight 65 kg. Damaged skull.

ZMA 23.451. Female. The Vliehorst, Island of Vlieland, 1-VI-1980. Leg. L. 't Hart. Don. Research Institute for Nature Management (# 45/80). Skull.

ZMA 23.787. Male. Arrived from Reykjavic, Iceland, in Ouwehands Zoo at Rhenen, the Netherlands, in 27-XI-1974; died there on 2-V-1977. Ex Zoöl. Museum Utrecht (# 77/256). Total length 166.5 cm. Skull.

ZMA 24.003. Male? From bottom of the North Sea, S.W. of the Brown Ridge, XII-1989. Leg. P. van Es, don. D.J. Mol. Femur dexter (fossil).

ZMA 24.007 Sex? From bottom of the North Sea, near Brown Ridge, 27-VI-1987. Leg. P. van Es, don. D.J. Mol. Metacarpale (fossil).

ZMA 24.391. Male. From seal keeping facility on the Island of Texel, the Netherlands, XII-1975. Leg. G.J. de Haan. Total length 127 cm. Don. J.L. van Haaften (# 15/75). Baculum.

ZMA 24.392. Male. Island of Terschelling, the Netherlands, 10-VI-1978. Leg. H. Wiegman. Don. J.L. van Haaften (# 50/78). Total length 122 cm. Baculum.

ZMA 24.393. Male. Beach of Renesse, Island of Schouwen, the Netherlands, 7-IX-1976. Leg. van Reijnst. Don. J.L. van Haaften (# 97/76). Total length 167 cm. Baculum.

ZMA 24.394. Male. Arrived at the Burgers Zoo, Arnhem, the Netherlands, on 27-XII-1972, died there on 15-XII-1973. Don. J.L. van Haaften (# 132/73). Baculum.

ZMA 24.395. Male. Island of Anrum, Atlantic coast of Germany, 1-VI-1978. Leg. L. 't Hart. Don. J.L. van Haaften (# 48/78). Total length 137 cm. Baculum.

ZMA 24.396. Male. Beach near km pole 7.600 between Oost Kapelle and Vrouwenpolder, Island of Walcheren, the Netherlands, 29-III-1978. Leg. P.A. Slim. Don. J.L. van Haaften (# 29/78). Total length about 97 cm. Baculum.

ZMA 24.397. Male. Found on the beach at Zandvoort, the Netherlands on III-1970, died at the Burgers Zoo on 17-II-1972. Don. J.L. van Haaften (# 141/72). Total length 150 cm. Baculum.

ZMA 24.398. Male. Island of Schiermonnikoog, the Netherlands, 24-V-1978. Leg. H. Koning. Don. L. 't Hart & J.L. van Haften (# 46/78). Total length 134 cm. Baculum.

ZMA 24.586. Male. East side Grevelingendam, the Netherlands, 28-I-1993. Leg. State Police & H. S. Zandstra. Total length ± 180 cm. Skull & baculum.

Hydrurga leptonyx (de Blainville, 1820)

ZMA 18.199. Sex ? Victoria Land, Antarctica, 1924. Leg. ? Mounted head.

ZMA 24.204. Male ad.? Atlas Cove, Heard Island (53°33'S, 73°33'E), 6-VI-1949, leg. A.N.A.R.E. (# 140) (# Mus. Victoria C7541). Received in exchange. Skull.

Leptonychotes weddelli (Lesson, 1826)

ZMA 11.129. Sex ? Schollaert Channel between Anvers Island and Brabant Island (South Shetland Islands), Antarctica, 1921. Purchased of Mr van Heyningen. Skull. See fig. 4.

ZMA 19.713. Sex ? Near Scott Base (77°51'S, 166°45'E), Antarctica, summer 1957. Received in exchange (ex. NMNZ). Skull.

Lobodon carcinophagus (Hombron & Jacquinot, 1842)

ZMA 19.711. Sex ? Cape Evans, McMurdo Sound, Antarctica, 15-II-1957. Coll. R.A. Falla. Received in exchange (ex NMNZ 1102). Skull.

Mirounga leonina (Linnaeus, 1758)

ZMA 11.121. Sex ? South Georgia, date ? Leg. van der Weel. Loose teeth.

ZMA 11.123. Sex ? No data (ex Museum Hamburg; gift to the late Prof. dr Max Weber). Molted hairs.

ZMA 18.340. Female. Captured at the Kerguelen Archipelago and brought to the Zoo de Vincennes in Paris, where it died in 1972. Received in exchange (ex MNHN 1972-118). Skull and unmounted complete skeleton.

ZMA 20.671. Female, juv. Caught at Trypot Beach, Marion Island, IV-1975 by John Visser. Tagged on 4-XI-1974 (about 28 days; tag number RSA 490). Brought to the Netherlands where it died. Leg. J. van den Brink & W.H. Dudok van Heel. Skull.

ZMA 23.394. Male, adult. Beach near Sörling Valley, Cumberland East Bay, South Georgia (36°19'W, 54°21'S), 11-I-1987. Leg. Netherlands South Georgia Exp., 1986/1987. Skull.

ZMA 23.431. Sex ? juv. Beach near Sörling Valley, Cumberland East Bay, South Georgia (36°19'W, 54°21'S), 11-I-1987. Leg. Netherlands South Georgia Exp., 1986/87. Skull.

ZMA 23.432. Sex ? juv. Beach near Sörling Valley, Cumberland East Bay, South Georgia (36°19'W, 54°21'S), 11-I-1987, Leg. Netherlands South Georgia Exp. 1986/87. Skull.

Monachus monachus (Hermann, 1779)

ZMA 24.174. Female. Found at Ikaria, Greece; died at the Seal Recovery Centre at Pieterburen on 13-XII-1989. Leg. 't Hart. Total length 918 mm; about 2 months old. Skin, skull and incomplete postcranial skeleton. See fig. 5.

ZMA 24.380. Sex? Found in cave Las Cuevecillas, Mauretania, XII-1978. Leg. J.F. Dejonghe. Received in exchange from the Muséum Océanographique at La Rochelle (# M. 2345). Skull.

Phoca (Histrichophoca) fasciata Zimmermann, 1783

ZMA 18.243. Male, adult. Gambell, St. Lawrence Island, Alaska, 24-V-1967. Leg. F. H. Fay. Skull. See fig. 6.

ZMA 18.244. Female, adult. Gambell, St Lawrence Island, Alaska, 24-V-1967. Leg. F.H. Fay. Skull.

Phoca (Pagophilus) groenlandica Erxleben, 1777

ZMA 670. Sex ? Old collection - no data. Skull.

ZMA 671. Sex ? Old collection - no data. Skull.

ZMA 699. Sex ? Old collection - no data. Skull.

ZMA 890. Sex ? Drifting ice at 72°15'N, 33°00'E, 15-VI-1881. Leg. Max Weber. Skull. See: Anon., 1882.

ZMA 891. Sex ? Drifting ice at 72°15'N, 33°00'E, 15-VI-1881. Leg. Max Weber. Skull. See: Anon., 1882.

ZMA 892. Sex ? Drifting ice 72°15'N, 33°00'E, 15-VI-1881. Leg. Max Weber. Skull. See: Anon., 1882.

ZMA 893. Sex ? Drifting ice 72°15'N, 33°00'E, 15-VI-1881. Leg. Max Weber. Skull. See: Anon., 1882.

ZMA 11.824. Sex ? No data. Don. Erna Mohr, 1969. Flat skin.

ZMA 16.851. Male. On icefields near Cap Whittle, Northern Gulf of St. Lawrence, Canada, 16-IV-1966. Leg. D.E. Sergeant (# G. 408). Skull.

ZMA 16.852. Male. On icefields near Cap Whittle, Northern Gulf of St. Lawrence, Canada, 15-VI-1966. Leg. D.E. Sergeant (# G. 234). Skull.

ZMA 18.054. Male. On drifting ice near Jan Mayen (about 70°33'N, 7°40'W). 13-IV-1975. Leg. E. Flipse (# Z 277). Total length 150 cm. Skull.

ZMA 18.055. Female, juv. On drifting ice near Jan Mayen (about 70°18'N, 7°20'W) 14-IV-1975. Leg. E. Flipse (# 27075). About two weeks. Skull.

ZMA 18.102. Sex ? On drifting ice near Jan Mayen (about 70°18'N, 7°20'W), 14-IV-1975. Leg. E. Flipse. About two weeks old. Skull.

ZMA 18.182. Sex ?, juv. Old collection - no data. Mounted specimen.

ZMA 18.183. Sex ?, adult. Old collection - no data. Mounted specimen.

ZMA 18.184. Sex ?, adult. Old collection - no data. Mounted specimen.

ZMA 19.491. Sex ? Rosenberg Valley, about 200 m from sea, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Skull.

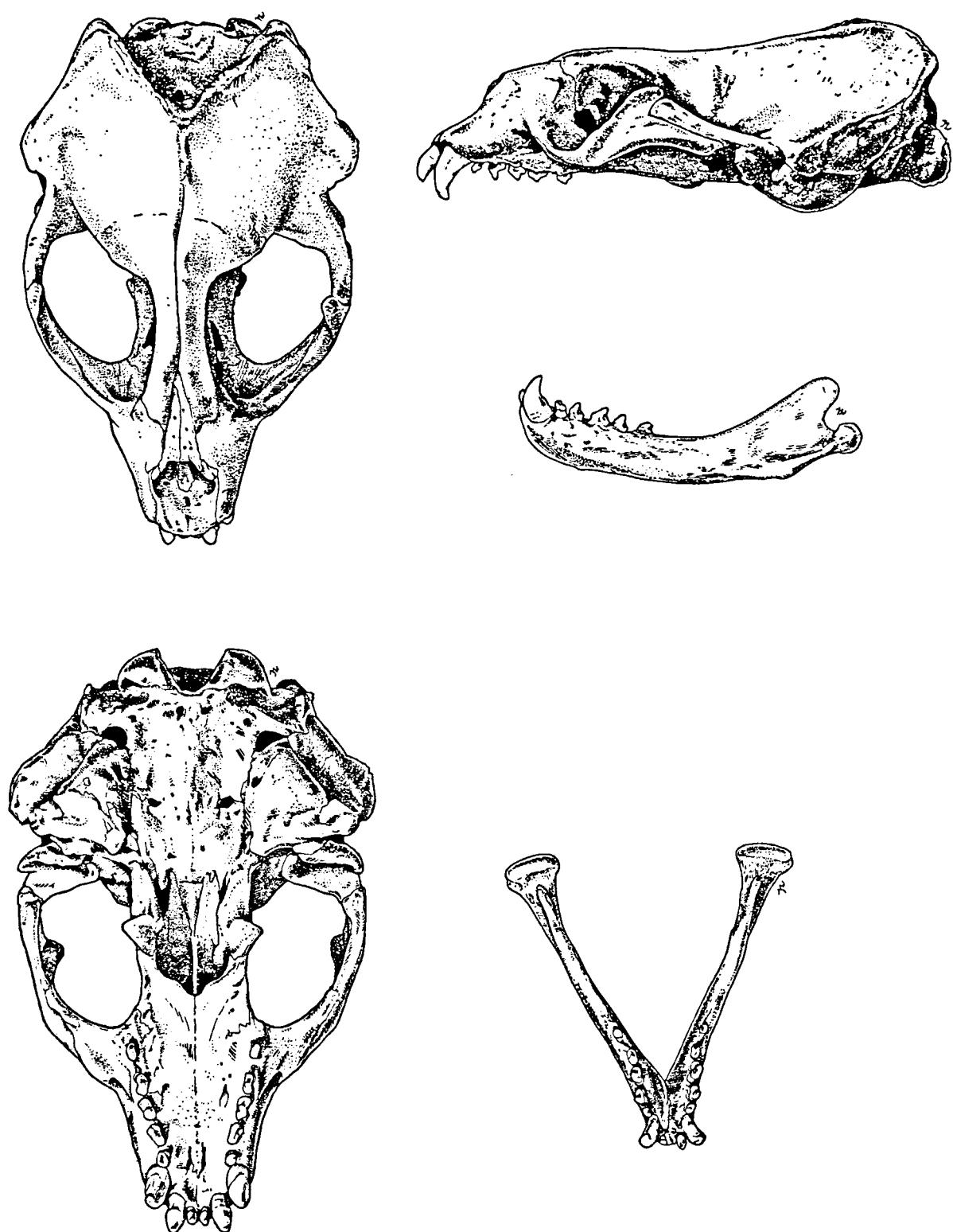


Fig. 4. Skull of *Leptonychotes weddelli*, ZMA 11.129. Condyllo-basal length 273.0 mm, J. Zaagman fecit.

ZMA 20.229. Male. About 85 nautical miles N.W. of Ostrov Kolguyev and 175 nautical miles N.N.E. of Kanin Nos (70°30'N, 46°16'E), 9-IV-1978. Leg. E. Flipse (# 128). Total length 198 cm. Skull.

ZMA 20.230. Female. About 83 nautical miles N.W. of Ostrov Kolguyev and about 100 nautical miles N.N.E. of Kanin Nos (70°00'N, 44°00'E), 2-IV-1978. Leg. E. Flipse (# 116). Skull.

ZMA 20.231. Female. About 83 nautical miles N.W. of Ostrov Kolguyev and about 100 nautical miles N.N.E. of Kanin Nos (70°00'N, 44°00'E), 2-IV-1978. Leg. E. Flipse (# 117). Skull.

ZMA 20.232. Male. About 83 nautical miles N.W. of Ostrov Kolguyev and about 100 nautical miles N.N.E. of Kanin Nos (70°00'N, 44°00'E), 2-IV-1978. Leg. E. Flipse (# 114). Skull.

ZMA 20.233. Female. About 45-50 nautical miles N.N.E. of Kanin Nos, about 90 nautical miles W..N.W. of Ostrov Kolguyev, 1-IV-1978. Leg. E. Flipse (# 112). Skull.

ZMA 20.296. Male. At 60°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 124). Skull.

ZMA 20.297. Male. At 69°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 126). Skull.

ZMA 20.298. Female. At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 131). Skull.

ZMA 20.299. Female. About 45-50 nautical miles N.N.E. of Kanin Nos, about 90 nautical miles W..N.W. of Ostrov Kolguyev, 1-IV-1978. Leg. E. Flipse (# 113). Skull.

ZMA 20.301. Male. About 45-50 nautical miles N.N.E. of Kanin Nos, about 90 nautical miles W..N.W. of Ostrov Kolguyev, 1-IV-1978. Leg. E. Flipse (no fieldnumber). Skull.

ZMA 20.302. Male. About 40-45 nautical miles N.N.E. of Kanin Nos, about 90 nautical miles W..N.W. of Ostrov Kolguyev, 1-IV-1978. Leg. E. Flipse. (no fieldnumber). Skull.

ZMA 20.303. Female. About 45-50 nautical miles N.N.E. of Kanin Nos, about 90 nautical miles W..N.W. of Ostrov Kolguyev, 31-III-1978. Leg. E. Flipse (# 110). Skull.

ZMA 20.323. Male. At 68°57'N, 41°54'E; about 34 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 30-III-1978. Leg. E. Flipse (# 100). Skull.

ZMA 20.324. Female. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos, 31-III-1978. Leg. E. Flipse (# 107). Skull.

ZMA 20.325. Female. At 70°00'N, 44°00'E; about 83 nautical miles N.N.E. of Kanin Nos and about 100 nautical miles N.N.W. of Ostrov Kolguyev, 2-IV-1978. Leg. E. Flipse (# 118). Skull.

ZMA 20.326. Female. At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 134). Skull.

ZMA 20.327. Male. At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 130). Skull.

ZMA 20.331. Female. At 69°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 123). Skull.

ZMA 20.333. Male. About 45-50 nautical miles N.N.E. of Kanin Nos, about 90 nautical miles W..N.W. of Ostrov Kolguyev, 1-IV-1978. Leg. E. Flipse (no fieldnumber). Skull.

ZMA 20.334. Male. At 69°10'N, 43°30'E; about 30-50 nautical

miles N.W. of Kanin Nos, 31-III-1978. Leg. E. Flipse (# 104). Skull.

ZMA 20.335. Female. At 69°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 121). Skull.

ZMA 20.344. Male. At 68°57'N, 41°54'E; about 34 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 101). Skull.

ZMA 20.345. Female. At 70°00'N, 44°00'E; about 83 nautical miles N.N.E. of Kanin Nos and about 100 nautical miles W.N.W. of Ostrov Kolguyev, 2-IV-1978. Leg. E. Flipse (# 119). Skull.

ZMA 20.347. Male. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 102). Skull.

ZMA 20.348. Female. About 45-50 nautical miles N.N.E. of Kanin Nos and about 90 nautical miles W.N.W. of Ostrov Kolguyev, 1-IV-1987. Leg. E. Flipse (# 111). Skull.

ZMA 20.364. Female. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 110). Skull.

ZMA 20.365. Male. At 69°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 127). Skull.

ZMA 20.366. Female. At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 133). Skull.

ZMA 20.367. Female. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 105). Skull.

ZMA 20.368. Female. At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 132). Skull.

ZMA 20.382. Male. At 69°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 125). Skull.

ZMA 20.383. Female. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 108). Skull.

ZMA 20.384. Female. At 69°50'N, 44°22'E; about 75 nautical miles W. of Ostrov Kolguyev and about 150 nautical miles N.N.E. of Kanin Nos, 11-IV-1978. Leg. E. Flipse (# 129). Skull.

ZMA 20.406. Female. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 106). Skull.

ZMA 20.408. Male. About 45-50 nautical miles N.N.E. of Kanin Nos and about 90 nautical miles W..N.W. of Ostrov Kolguyev, 1-IV-1978. Leg. E. Flipse (no fieldnumber). Skull.

ZMA 20.410. Male. At 69°10'N, 43°30'E; about 30-50 nautical miles N.W. of Kanin Nos (entrance of Belye More - White Sea), 31-III-1978. Leg. E. Flipse (# 103). Skull.

ZMA 20.411. Female. At 69°28'N, 44°50'E; about 70 nautical miles W. of Ostrov Kolguyev, 5-IV-1978. Leg. E. Flipse (# 122). Skull.

ZMA 20.412. Male. At 70°00'N, 44°00'E; about 83 nautical miles N.N.E. of Kanin Nos and about 100 nautical miles W.N.W. of Ostrov Kolguyev, 2-IV-1978. Leg. E. Flipse (# 115). Skull.

ZMA 20.413. Female. At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 135). Skull.

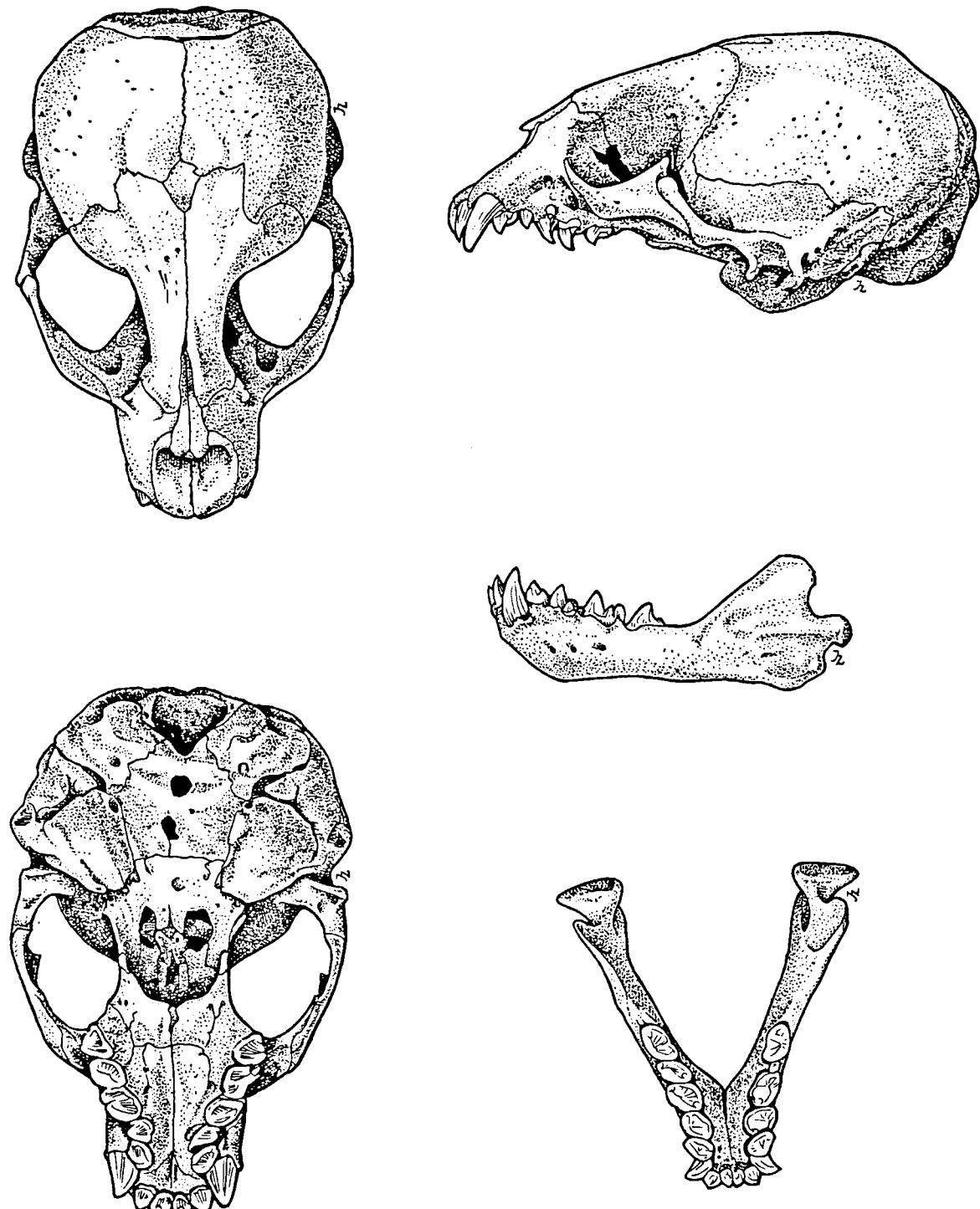


Fig. 5. Skull of juvenile *Monachus monachus*, ZMA 24.174. Condyllo-basal length 160.7 mm, J. Zaagman fecit.

ZMA 21.030. Female ? At 69°50'N, 44°22'E; about 150 nautical miles N.N.E. of Kanin Nos and about 75 nautical miles W. of Ostrov Kolguyev, 11-IV-1978. Leg. E. Flipse (# 135; used twice). Skull.

ZMA 23.233. Male. Veerse Dam near Onrust (= dike between Island of Walcheren and Island of Noord Beveland), the Netherlands, 25-III-1987. Leg. State Police, Don. L. 't Hart. Total length 170 cm; gross weight 94.6 kg. Skull and complete, unmounted skeleton.

ZMA 24.216. Male, juv. Ambleteuse-sur-Mer, Dept. Pas-de-Calais, France, 2-II-1991. leg. P. bernard, don. L. 't Hart. Skull, baculum and limb bones.

ZMA 23.483. Male. On beach near Noordwijk-aan-Zee, the Netherlands, 7-III-1988. Leg. L. 't Hart. Total length 175 cm; gross weight about 150 kg. Skull and complete, unmounted skeleton.

Phoca (Phoca) largha Pallas, 1811

ZMA 24.142. Female ad. Nome, Alaska, VI-1967. Coll. J. Burns (# N-51-67); don. F.H. Fay. Skull.

ZMA 24.143. Male? St. Lawrence Island, Bering Sea, 1961. Coll. J. Burns (# 21); don. F.H. Fay. Skull.

Phoca (Phoca) vitulina richardsii Gray, 1864

ZMA 24.140. Male ad. Kachemak Bay, Cook Inlet, Alaska, 11-IV-1978. Coll. K. Pitcher (# LCI-16-78); don. F.H. Fay. Skull.

ZMA 24.141. Female? Tugidak Island (S of Kodiak Island), about 1960. Coll. R. Bishop; don. F.H. Fay. Skull.

Phoca (Phoca) vitulina vitulina Linnaeus, 1758

ZMA 672. Sex ? North Sea - no data. Skull.

ZMA 673. Sex ? North Sea - no data. Skull.

ZMA 675. Sex ? Old collection - no data. Skull.

ZMA 677. Sex ? North Sea - no data. Skull.

ZMA 897. Sex ? Old collection - no data. Complete mounted skeleton.

ZMA 2090. Female, juv. Beach near Zandvoort on 19-IV-1958. Died in the Amsterdam Zoo Artis on 1-V-1958. Estimated age about 10 months. Skull.

ZMA 2270. Sex ? Shot near IJmuiden. Date ? Skull.

ZMA 2593. Female, juv. Caught in the North Sea Canal at Hembrug, W. of Amsterdam, early VIII-1959. Died in the Amsterdam Zoo Artis on 9-VIII-1959. Total length 86.5 cm. Skull.

ZMA 4290. Male, juv. On the Boschplaat on the Island of Terschelling, 10-IV-1961. Total length 108 cm. Skull and limb bones. The mounted skin is in the Natural History Museum at West-Terschelling.

ZMA 4494. Male, juv. Died in the Amsterdam Zoo Artis on 6-XI-1961. Total length 108 cm. Skin, skull and limb bones.

ZMA 4816. Female, juv. Found alive at Kornwerderzand, near the Eastern locks of the Afsluitdijk, died in the Amsterdam Zoo Artis on 10-VII-1961. Total length 79.2 cm. Skin and skull.

ZMA 5046. Female, juv. Arrived in the Amsterdam Zoo Artis on 5-VIII-1962, died on 28-IX-1962. Leg. A.D. de Koster. Total length 79.2 cm. Skull.

ZMA 5283. Female, juv., Petten, Province of Noord-Holland, 7-X-1962. Leg. D. Hillenius. Total length 83.8 cm; gross weight 11.2 kg. Skin, skull and limb bones.

ZMA 7698. Sex ?, juv. Netherlands' coast, 1962. Don. Research Institute for Nature Management (ITBON-Arnhem, XII-1964). Skull.

ZMA 8276. Female. Northern corner of the Noordsvaarder, Island of Terschelling, 8-VIII-1965. Leg. F.E. de Feyfer-Teutelink. Total length 160 cm; gross weight 61 kg. Skull.

ZMA 8723. Female, juv. Beach at Zandvoort on 11-XII-1965, died at the Amsterdam Zoo Artis on 19-XII-1965. Leg. Police of Zandvoort. Total length 79 cm; gross weight 13.7 kg. Skull.

ZMA 8995. Male. On outer side of the dike of the Preekhulpolder between kilometer poles 10 and 20, Island of Goeree. 22-IV-1966. Leg. C.H. Biersteker. Total length 101.5 cm. Skull.

ZMA 10.907. Male. Beach near Castricum, 27-XII-1966. Leg. W.L. van Utrecht (# W.O. 78). Total length 91 cm; gross weight 19 kg. Skull and limb bones.

ZMA 10.955. Sex ? Island of Terschelling near kilometer pole 18.200, 5-X-1967. Leg. W.R. van Mourik. Total length about 160 cm. Damaged skull.

ZMA 10.956. Male, juv. Island of Terschelling, 13-VIII-1967. Leg. W.R. van Mourik. Abandoned young. Baculum.

ZMA 11.111. Sex ? The Netherlands, died in the Amsterdam Zoo Artis. Skull.

ZMA 11.112. Sex ? No data, probably from the Amsterdam Zoo Artis. Skull.

ZMA 11.113. Male. Died in the Amsterdam Zoo Artis on 10-VII-1928. Skull.

ZMA 11.114. Sex ? The Netherlands' coast - no data. Skull.

ZMA 11.115. Sex? Beach near Wassenaar, 1899. Ex coll. MacGillavry. Skull and vertebrae.

ZMA 11.116. Male. Island of Texel, VII-1938. Leg. Kalff. Skull.

ZMA 11.117. Female. Beach between Zandvoort and Bloemendaal, N. of kilometer pole 65, 15-VI-1947. Leg. van Veen & Rondaal. Skull.

ZMA 11.118. Female. The Netherlands' coast, died in the Amsterdam Zoo Artis on 20-VII-1928. Skull.

ZMA 11.119. Female. Found at Durgerdam, E. of Amsterdam, on 29-X-1930. Skull.

ZMA 11.120. Female. Died in the Amsterdam Zoo Artis on 12-V-1939. Skull.

ZMA 11.128. Sex ? Old collection - no data. Skull and limb bones.

ZMA 11.742. Male. Island of Terschelling, between kilometer poles 27 and 28, 21-X-1968. Leg. W.R. van Mourik. Total length 84 cm. Skull and baculum.

ZMA 11.743. Female. Beach near Zandvoort on 1-I-1969, died in the Amsterdam Zoo Artis on 6-I-1969. Total length 92.3 cm; gross weight 13.9 kg. Skin, skull and limb bones.

ZMA 11.799 Male. S.W. point of the Island of Texel, 13-XII-1968.

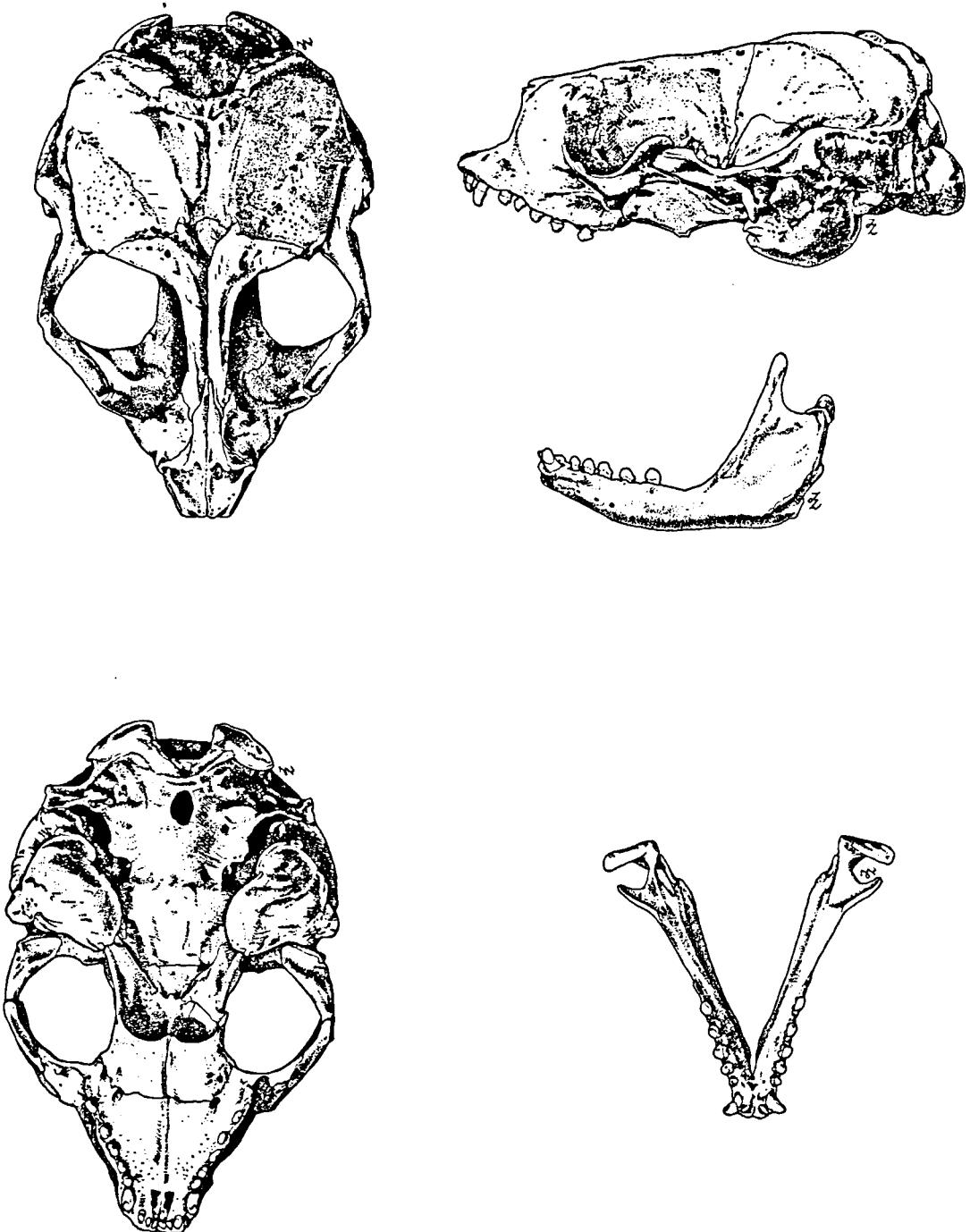


Fig. 6. Skull of *Phoca (Histriophoca) fasciata*, ZMA 18.243. Condyllo-basal length 194.8 mm, J. Zaagman fecit.

- Leg. G.J. de Haan. Total length 87.9 cm; gross weight 25.5 kg. Skin, skull and limb bones.
- ZMA 12.647. Male, juv. Island of Terschelling, near kilometer pole 19, period XI-XII-1966. Leg. W..R. van Mourik. Total length about 98 cm. Skull and baculum.
- ZMA 12.874. Sex ? Island of Terschelling, near kilometer pole 8, 14-IX-1961. Leg. H. Nijsen. Skull.
- ZMA 12.919. Female. Caught in a fish-trap near the Island of Texel, 24-III-1970. Leg. Netherlands Institute for Sea Research (NIOZ). Don. W..L. van Utrecht (# W.O. 96). Total length 131 cm; gross weight 62 kg. Skull and limb bones.
- ZMA 15.146. Female. Beach at Loosduinen near Den Helder, 25-III-1972. Leg. J. Jager. Total length 107 cm; gross weight 27 kg. Skull and limb bones.
- ZMA 15.176. Female, juv. Died in the Amsterdam Zoo Artis on 16-III-1972. Total length 90.5 cm; gross weight 13.1 kg. Skull.
- ZMA 15.318. Female, juv. Died in the Amsterdam Zoo Artis on 2-IX-1972. Total length 86.5 cm; gross weight 18.2 kg. Skull.
- ZMA 15.777. Female, juv. In a fish-trap near the "Stuifdijk" on the Island of Texel, 13-XI-1972. Leg. W. Jongejan. Total length 95.5 cm; gross weight 18.8 kg. Skull and limb bones.
- ZMA 15.987. Male. Beach near IJmuiden on 20-VIII-1973, died in the Amsterdam Zoo Artis on 23-VIII-1973. Leg. S.J. de Groot. Total length 82.5 cm; gross weight 8.4 kg. Skull.
- ZMA 17.871. Male, juv. Born on a sandbank in the Wash, England, in VI-1974. Caught and liberated on 24-IX-1974 at Skegness; found drowned in a fish-trap at Bergen op Zoom, the Netherlands on 18-X-1974. Leg. W.. Pfaff. Total length 97 cm; gross weight 13.5 kg. Skull.
- ZMA 18.195. Sex ?, adult. Old collection - no data. Mounted specimen.
- ZMA 18.196. Sex ?, juv. Old collection - no data. Mounted specimen.
- ZMA 18.197. Sex ?, juv. Old collection - no data. Mounted specimen.
- ZMA 18.198. Sex ?, adult. Old collection - no data. Mounted head.
- ZMA 18.454. Male, juv. Dike near Lauwersoog, 3-VII-1976. Leg. J.L. van Haaften - Research Institute for Nature Management. Probably born prematurely. Total length 80 cm; gross weight 7 kg. Skull and limb bones.
- ZMA 18.455. Female, adult. Nieuwe steiger on the Island of Schiermonnikoog, 6-VII-1976. Leg. J. L. van Haaften - Research Institute for Nature Management. Total length 163 cm; gross weight 74.8 kg. Skull and limb bones.
- ZMA 18.456. Female, neonatus. Born and died in the Amsterdam Zoo Artis on 21-VII-1976. Total length 82.2 cm; gross weight 12.3 kg. Skull and limb bones.
- ZMA 18.457. Female?, juv. Drowned in a fish-trap near Schanserwaard, Island of Texel, 31-VIII-1972. Leg. W. Jongejan. Total length 90.2 cm. Skull and limb bones.
- ZMA 18.487. Female, juv. Drowned in a fish-trap near Schanserwaard, Island of Texel, 24-III-1972. Leg. ? Total length 91.2 cm; gross weight 20.2 kg. Skull and limb bones.
- ZMA 19.393. Female, juv. Died in the seal-keeping facilities of the Natural History Museum on the Island of Texel, 19-II-1976. Leg. Research Institute for Nature Management. Total length 110 cm; gross weight 21 kg. Skull.
- ZMA 19.394. Male, juv. Island of Texel, 3-XII-1975. Leg. Research Institute for Nature Management (# 105/75). Total length 75 cm; gross weight 9.5 kg. Skull.
- ZMA 19.395. Male, juv. Island of Texel, 4-VII-1974. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 58/74). Total length 96 cm. Skull.
- ZMA 19.396. Sex ?, juv. Island of Vlieland, VI-1975. Leg. Research Institute for Nature Management (# 62/75). Skull.
- ZMA 19.397. Male, juv. Island of Ameland, near kilometer pole 7, 10-IV-1975. Leg. Research Institute for Nature Management (39/75). Skull.
- ZMA 19.398. Female, juv. Engelsman shoal between the islands of Ameland and Schiermonnikoog, 2-VI-1975. Don. R. Mes; leg. Research Institute for Nature Management (# 50/75). Total length 102 cm; gross weight 19.5 kg; about one year old. Skull.
- ZMA 19.399. Male, juv. Island of Ameland, 1-VIII-1975. Leg. Research Institute for Nature Management (# 82/75) Total length 103 cm; gross weight 23.25 kg. Skull.
- ZMA 19.400. Male, juv. Island of Texel, 25-VI-1971. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 79/71). Skull.
- ZMA 19.401. Female. Near Wierum, Province of Friesland, 5-VI-1975. Leg. Research Institute for Nature Management (# 53/75). Total length 117 cm; gross weight 18.75 kg; about 2 years old. Skull.
- ZMA 19.402. Sex ?, juv. Island of Ameland, XI-1974. Don. K. Nobel; leg. Research Institute for Nature Management (# 82/74). Total length 110 cm. Skull.
- ZMA 19.403. Female, juv. Foot of the dike of the Lauwersmeer, at the Frisian side, IX-1975. Don. L. 't Hart; leg. Research Institute for Nature Management (# 65/76) Total length 112 cm; gross weight 15 kg; about 2 years old. Skull.
- ZMA 19.404. Female, Island of Vlieland, XII-1976. Leg. Research Institute for Nature Management (# 5/77). Total length 116 cm; gross weight 25 kg. Skull.
- ZMA 19.405. Female, juv. Near Wierum, Province of Friesland, 6-VI-1975. Leg. Research Institute for Nature Management (# 56/75). Total length 109 cm; gross weight about 24 kg. Skull.
- ZMA 19.406. Female, juv. Near Wierum, Province of Friesland, 5-VI-1975. Leg. Research Institute for Nature Management (# 52/75) Total length 106 cm; gross weight 25.5 kg. Skull.
- ZMA 19.407. Male. Island of Texel, 20-IX-1973. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 108/73). Total length 103 cm; gross weight 17.75 kg; about 2 to 3 years old. Skull.
- ZMA 19.408. Female, juv. Island of Ameland, 30-VII-1974. Don. H. Wouters; leg. Research Institute for Nature Management (# 65/74). Total length 112 cm; gross weight 14.5 kg. Skull.
- ZMA 19.409. Male, juv. Near Den Helder, 5-VIII-1976. Leg. Institute for Nature Management (# 117/76). Total length 104 cm; gross weight 17.9 kg. Skull and limb bones.
- ZMA 19.410. Male, juv. Eemshaven, 31-VII-1975. Leg. Research Institute for Nature Management (# 87/75). Total length 107 cm; gross weight 18.25 kg. Skull.
- ZMA 19.411. Female. Island of Terschelling, 14-XII-1976. Don. H. Wiegman; leg. Research Institute for Nature Management (# 6/77). Total length 142 cm; gross weight 44 kg. Skull.

ZMA 19.412. Female. Lauwersoog, Province of Groningen, 23-V-1974. Leg. Research Institute for Nature Management (# 47/74). Total length about 130 cm. Skull.

ZMA 19.413. Male. Island of Terschelling, 8-XII-1972. Leg. Research Institute for Nature Management (# 152/72). Total length more than 160 cm. Skull.

ZMA 19.414. Female, The Slufter on the Island of Texel, 20-X-1972. Don. C. Boon; leg. Research Institute for Nature Management (# 138/72). Total length 155 cm. Skull.

ZMA 19.415. Female. N.E. side of the Island of Texel, 2-XII-1976. Don. K. Boot; leg. Research Institute for Nature Management (# 118/76). About 14 years old. Skull.

ZMA 19.416. Female. Dike near Wierum, Province of Friesland, 24-VI-1974. Don. G. Mast; leg. Research Institute for Nature Management (# 53/74). Total length 141 cm. gross weight 42 kg. Skull.

ZMA 19.417. Female, Dike near Krabbendijke, Province of Zeeland, 27-IX-1971. Leg. Research Institute for Nature Management (# 126/71). Skull.

ZMA 19.418. Sex ? Island of Ameland, 18-VII-1975. Don. K. Nobel; leg. Research Institute for Nature Management (# 72/75). Total length 155 cm. Skull.

ZMA 19.420. Female. Lauwersoog, Province of Groningen, 12-XI-1971. Leg. Research Institute for Nature Management (# 135/71). Total length 127 cm. Skull.

ZMA 19.430. Female. Lauwersoog, Province of Groningen, 17-IX-1972. Leg. Research Institute for Nature Management (# 114/72). Total length 180 cm. Skull.

ZMA 19.431 Female. On the Vliehorst, Island of Vlieland, 16-X-1971. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 132/71). Total length 147 cm. Skull.

ZMA 19.433. Female. In the Marsdiep near the Island of Texel, 23-X-1972. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 137/72). Skull.

ZMA 19.434. Female. The Island of Texel, 20-IX-1973. Leg. Research Institute for Nature Management (# 109/73). Total length 139 cm; gross weight 47.5 kg; age about 27 years. Skull.

ZMA 19.439. Female. Near De Cocksdorp on the Island of Texel, 29-VII-1972. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 15/72). Total length 133 cm; gross weight 45.7 kg. Skull.

ZMA 19.440. Female. On the Slufter on the Island of Texel, 24-VIII-1972. Leg. Research Institute for Nature Management (# 108/72). Total length 165 cm. Skull.

ZMA 19.441. Female. Near kilometer pole 2, Island of Ameland, 6-VIII-1972. Leg. Research Institute for Nature Management (# 94/72). Total length 142 cm; gross weight 36 kg. Skull.

ZMA 19.500. Sex ?, juv. The Island of Ameland, 31-VII-1974. Leg. Research Institute for Nature Management (# 63/74) Skull.

ZMA 19.550. Female, juv. Dike north of Pieterburen, about 16-VII-1971. Leg. Research Institute for Nature Management (# 94/71) Total length 101 cm. Age about 2 years. Skull.

ZMA 19.551. Sex ? Near Uithuizen, Province of Groningen, 10-VIII-1973. Leg. Research Institute for Nature Management (# 91/73). Total length 100 cm. Skull.

ZMA 19.552. Male. Beach on the Island of Texel, 10-V-1973. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 107/73). Total length 110 cm; gross weight 18.8 kg. Calvarium.

ment (# 45/73). Total length 122 cm; gross weight 30 kg; almost 2 years old. Skull.

ZMA 19.553. Male. Lauwersoog, Province of Groningen, 25-VIII-1974. Don. L. 't Hart; leg. Research Institute for Nature Management (# 61/74). Total length about 130 cm. Skull.

ZMA 19.554. Male. Beach on the Island of Schiermonnikoog, 16-VIII-1973. Don. R. de Wind; leg. Research Institute for Nature Management (# 74/73). Total length 110 cm; gross weight 13.25 kg. Skull.

ZMA 19.555. Female. Lauwersoog, Province of Groningen, 30-VII-1973. Leg. Research Institute for Nature Management (# 82/73). Total length 113 cm; gross weight 18.8 kg. Calvarium.

ZMA 19.556. Sex ? Island of Texel, 9-XI-1973. Leg. Research Institute for Nature Management (# 122/73). Total length 83 cm; gross weight about 11 kg. Skull.

ZMA 19.557. Female. Island of Schiermonnikoog, near kilometer pole 16, 23-X-1976. Leg. Research Institute for Nature Management (# 109/76). Gross weight 30 kg. Skull.

ZMA 19.558. Female. Caught near Ternaard, Province of Friesland on X-1975. Died on 16-VI-1976. Leg. Research Institute for Nature Management (# 64/76). Total length 90 cm; gross weight 19.2 kg. Skull.

ZMA 19.559. Female. Found near Netherlands Institute for Sea Research on the Island of Texel, date? Leg. Research Institute for Nature Management (# 101/76). Total length 115 cm; gross weight 26 kg. Incomplete skull.

ZMA 19.560. Male. Brought in at IJmuiden, 16-IV-1974. Leg. Research Institute for Nature Management (# 34/74). Total length 105 cm; gross weight 23.6 kg. Skull.

ZMA 19.561. Male. Island of Texel, near kilometer pole 9, 4-VII-1974. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 57/74). Total length 106 cm; gross weight 17 kg. Skull.

ZMA 19.562. Male. Found in the Westerschelde near Terneuzen, Province of Zeeland, 25-IV-1973. Don. G. Sponselee; leg. Research Institute for Nature Management (# 40/73). Total length 175 cm. Incomplete skull.

ZMA 19.563. Male. Arrived at the Arnhem Zoo Burgers on 22-I-1974 and died 4-XI-1974. Leg. Research Institute for Nature Management (# 70/74). About 7 years old. Total length 130 cm; gross weight 36 kg. Skull.

ZMA 19.564. Female. Island of Schiermonnikoog, January 1977. Leg. Research Institute for Nature Management (# 4/77). Total length 101 cm; gross weight 18.5 kg. Skull.

ZMA 19.565. Female. Island of Texel, 20-IX-1973. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 105/73). Total length 98 cm; gross weight 17.75 kg. Skull.

ZMA 19.566. Female. Drowned in fish-trap near the locks of Kornwerderzand-Oostdam, 27-VIII-1973. Leg. Research Institute for Nature Management (# 98/73). Total length 97 cm; gross weight 16 kg. Skull.

ZMA 19.567. Female. Island of Texel, V-1977. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 77/77). Total length 121 cm; gross weight 23 kg. Skull.

ZMA 19.568. Male. Island of Rottumerplaat, date? Leg. Research Institute for Nature Management (# 18/77). Skull.

ZMA 19.594. Male. Waddenzee, 15-IX-1977. Leg. Research Institute for Nature Management (# 107/77). Total length 98 cm; gross weight 15 kg. Skull and limb bones.

- ZMA 19.595. Sex ? Engelsman shoal between the Islands of Ameland and Schiermonnikoog, 4-IX-1977. Don. G. Mast; leg. Research Institute for Nature Management (# 97/77). Skull.
- ZMA 19.596. Sex ? Nes-Westdongeradeel; Province of Friesland, 14-VIII-1977. Don. G. Mast; leg. Research Institute for Nature Management (# 96/77). Skull.
- ZMA 19.597. Sex ? Island of Ameland, IX/X-1977. Don. K. Nobel; leg. Research Institute for Nature Management (# 114/77). Skull.
- ZMA 19.599. Male. Island of Rottum, 17-IX-1977. Leg. Research Institute for Nature Management (# 112/77). Total length 119 cm; gross weight about 25 kg. Skull.
- ZMA 19.600. Female. On the shoal Oude Zuid-Lauwers, between buoy 20 and 22, E. of the Island of Schiermonnikoog, 1977. Leg. Research Institute for Nature Management (# 103/77). Total length 154 cm; gross weight 50.1 kg. Age about 13 years. Skull.
- ZMA 19.601. Sex ? Island of Ameland, 1977. Don. K. Nobel; leg. Research Institute for Nature Management (# 99/77). Skull.
- ZMA 19.602. Female. juv. Drowned in a fish-trap near the Netherlands Institute for Sea Research on the Island of Texel, 16-XII-1976. Leg. P.J.H. Reijnders - Research Institute for Nature Management (# 121/76). Total length 84 cm; gross weight 22 kg. Skull and limb bones.
- ZMA 19.603. Male. Island of Terschelling, near kilometer pole 13, 1975. leg. Research Institute for Nature Management (# 80/75). Skull.
- ZMA 19.604. Sex ? Island of Ameland, 1977. Don. K. Nobel; leg. Research Institute for Nature Management (# 98/77). Skull.
- ZMA 19.605. Sex ? Island of Ameland, 1977. Don. K. Nobel; leg. Research Institute for Nature Management (# 101/77). Age about 17 years. Skull.
- ZMA 19.639. Female. Island of Terschelling, 23-IX-1977. Leg. Research Institute for Nature Management (# 104/77). Total length 94 cm; gross weight 15.6 kg. Skull and limb bones.
- ZMA 19.640. Male. Island of Terschelling, 28-VII-1977. Leg. Research Institute for Nature Management (# 109/77). Total length 110 cm; gross weight 19 kg. Skull and limb bones.
- ZMA 19.641. Female. Dike near Wierum, Province of Friesland, 29-IX-1977. Don. G. Mast; leg. Research Institute for Nature Management (# 113/77). Total length 145 cm; gross weight 59 kg. Skull and limb bones.
- ZMA 19.648. Sex ?, juv. The Netherlands' coast, no other data, 1970-1977. Leg. Research Institute for Nature Management (# KN). Skull.
- ZMA 20.361. Female, juv. Island of Terschelling, VIII-1978. Don. H. Wiegman; leg. Research Institute for Nature Management (# 72/78). Total length 90 cm; gross weight 13.8 kg. Skull and limb bones.
- ZMA 20.362. Female, juv. Island of Texel, X-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 89/78). Total length 78 cm; gross weight 9.7 kg. Skull and limb bones.
- ZMA 20.369. Male. Drowned in fish-trap near the Island of Tholen, Province of Zeeland, 6-IX-1978. Don. H. Venekamp; leg. Research Institute for Nature Management (# 77/78). Total length 97 cm; gross weight 18 kg. Skull and limb bones.
- ZMA 20.378. Female, neonatus, Nature Recreation Centre on the Island of Texel, 23-VIII-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 64/78). Total length 88 cm; gross weight 11.5 kg. Skull and limb bones.
- ZMA 20.385. Female, juv. Island of Texel, X-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 90/78). Total length 79 cm; gross weight 10.85 kg. Skull and limb bones.
- ZMA 20.386. Sex ? The Netherlands' coast, no data, 1978. Leg. Research Institute for Nature Management (no fieldnumber). Skull and limb bones.
- ZMA 20.407. Male. Shot at 68°32'N, 39°12'E, about 90 nautical miles W of Kanin Nos and about 30 nautical miles N of the Kolskiy (Kola) Peninsula, 18-IV-1978. Leg. E. Flipse. Total length 133 cm. Skull.
- ZMA 20.734. Male. Caught in net S. of the Dogger Bank, North Sea, 15-VI-1979. Don. Master van Ree (MV Yrn. 16); received from the State Fishery Institute at IJmuiden (RIVO)(# 103/79). Total length 103.5 cm; gross weight 25.65 kg; about 1 year old. Skull.
- ZMA 20.734-a. Female, adult. Found shot near the Kroonpolders, Island of Vlieland, early VI-1977. Leg. P.J.H. Reijnders - Research Institute for Nature Management (# 62/77). Total length 160 cm; gross weight 68.8 kg. Skull.
- ZMA 20.742. Female. Born in the Antwerp Zoo. Arrived in the Amsterdam Zoo Artis on 24-II-1977; died on 17-X-1979. Total length 154 cm; gross weight 81 kg. skull.
- ZMA 21.471. Sex ? Island of Ameland, 10-IX-1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 70/80). Age about 34 years. Skull.
- ZMA 21.472. Male. Foot of the dike between Ferwerd and Holwerd, Province of Friesland, 25-VI-1971. Don. G. Mast; leg. Research Institute for Nature Management (# 78/71). About one year old. Skull.
- ZMA 21.473. Female. Huisduinen, near Den Helder, 23-VII-1979. Leg. Research Institute for Nature Management (# 71/79). Total length 101 cm; gross weight 27.1 kg. Age about one year. Skull.
- ZMA 21.474. Male. Died in Seal Recovery Centre at Pieterburen, 12-II-1979. Don. L. 't Hart; leg. Research Institute for Nature Management (# 50/79). About 2 years old. Skull.
- ZMA 21.475. Male. Island of Texel, 25-VI-1971. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 79/71). Age about 11 months. Skull.
- ZMA 21.476. Female. The Vliehorst, Island of Vlieland, V-1979. Don.D.J.A. Heesen; leg. Research Institute for Nature Management (# 57/79). Skull.
- ZMA 21.477. Female. Foot of the dike of the Emmapolder near West-dorp, Province of Zeeland, 26-VII-1979. Don. L. 't Hart; leg. Research Institute for Nature Management (# 76/79). Total length 107.5 cm; gross weight 19 kg. About one year old. Skull.
- ZMA 21.479. Male. Island of Texel, 7-XII-1969. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 1/69). Total length 99 cm; gross weight 18.2 kg. Skull.
- ZMA 21.480. Female. Island of Terschelling, 1-IX-1978. Don. Hessel Wiegman; leg. Research Institute for Nature Management (# 71/78). About one year old. Total length 104 cm; gross weight 18.5 kg. Skull.
- ZMA 21.481. Male. Island of Schiermonnikoog, 8-VIII-1972. Don. R.de Wind; leg. Research Institute for Nature Management (# 95/72). Total length 82 cm; gross weight 11.8 kg. Skull.
- ZMA 21.482. Female. Island of Texel, 31-X-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 90/78). Skull.
- ZMA 21.483. Female. The Wash, England, 24-X-1980. Don. L. 't

Hart; leg. Research Institute for Nature Management (# 82/80). About one year old. Skull.

ZMA 21.484. Male. In fish-trap near the Island of Vlieland, 20-IV-1979. Don. Erwin Manninga; leg. Research Institute for Nature Management (# 65/79). About one year old. Total length 121 cm; gross weight 30 kg. Skull.

ZMA 21.485. Male. Near Lauwersoog, Province of Groningen, 19-VI-1971. Leg. Research Institute for Nature Management (# 75/71). Almost one year old. Skull.

ZMA 21.494. Female. Island of Rottum, 10-IX-1980. Don. L. 't Hart; leg. Research Institute for Management (# 64/80). Total length 150 cm; gross weight 41 kg. Age about 19 years. Skull.

ZMA 21.495. Female. The former Lauwerszee, between the Provinces of Friesland and Groningen, 19-IX-1969. Leg. Research Institute for Nature Management (# 106/69). Skull.

ZMA 21.496. Female. The former Lauwerszee, between the Provinces of Friesland and Groningen, 9-IX-1969. Don. Korthuis; leg. Research Institute for Nature Management (# 103/69). Age about 4 years. Skull.

ZMA 21.497. Female. Island of Rottumerplaat, 21-VII-1971. Don. J. Wolkers; leg. Research Institute for Nature Management (# 112/71). Skull.

ZMA 21.498. Female. Island of Terschelling, the Waddenze side, 16-VI-1980. Don. van Dijk; leg. Research Institute for Nature Management (# 48/80). Total length 152 cm; gross weight 48 kg. About 7 to 8 year old. Skull.

ZMA 21.499. Female. The Westerschelde near Borssele, Province of Zeeland, 13-XI-1979. Don. T. Meinsbergen; leg. Research Institute for Nature Management (# 116/79). Total length 161 cm; gross weight 55.5 kg. Age about 5 years. Skull.

ZMA 21.500. Female. The former Lauwerszee, between the Provinces of Friesland and Groningen, 19-IX-1969. Don. Korthuis; leg. Research Institute for Nature Management (# 107/69). Age about 4 years. Skull.

ZMA 21.501. Female. N. of Delfzijl, 3-VII-1979. Don. L.'t Hart; leg. Research Institute for Nature Management (# 61/79). Age about 20 years. Total length 160 cm; gross weight almost 70 kg. Skull.

ZMA 21.502. Female. The Mok Bay, Island of Texel, 23-VII-1979. Leg. Research Institute for Nature Management (# 70/79). Total length 142 cm; gross weight 51.5 kg. Skull.

ZMA 21.503. Female. Scharendijke, Province of Zeeland, 27-IV-1978. Leg. Research Institute for Nature Management (# 36/78). Total length 127 cm; gross weight 34.6 kg. About one year old. Skull.

ZMA 21.504. Female. Near Eemshaven, Province of Groningen, 28-IX-1978. Leg. Research Institute for Nature Management (# 83/78). Total length 154 cm; gross weight 63 kg. About 8 years old. Skull.

ZMA 21.508. Male. Island of Rottum, 10-IX-1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 71/80). Total length 113 cm; gross weight 21.7 kg. About one year old. Skull.

ZMA 21.509. Male. Island of Schiermonnikoog, 16-VII-1973. Don. R. de Wind; leg. Research Institute for Nature Management (# 73/73). Total length 117 cm; gross weight 13.5 kg; about one year old. Skull.

ZMA 21.510. Female. The Engelsman shoal between the Islands of Ameland and Schiermonnikoog, 27-VII-1978. Don. L. 't Hart; leg. Research Institute for Nature Management (# 56/78). Total

length 104 cm; gross weight 22.5 kg. About one year old. Skull.

ZMA 21.511. Male. Island of Terschelling, 11-III-1981. Don. L. 't Hart; leg. Research Institute for Nature Management (# 48/81). Age almost one year. Skull.

ZMA 21.652. Male. Netherlands' coast, 8-VIII-1978. Don. L.'t Hart; leg. Research Institute for Nature Management (# 58/78). Age about 6 years. Skull.

ZMA 21.653. Male. Province of Groningen, 9-VII-1981. Don. L. 't Hart; leg. Research Institute for Nature Management (# 69/81). Age about one month. Skull.

ZMA 21.654. Female. Lauwersoog. Province of Groningen, VI-1981. Leg. Research Institute for Nature Management (# 47/81). Age about one year. Skull.

ZMA 21.915. Female. Born in the Amsterdam Zoo Artis on 13-VII-1982; died on 7-I-1983. Total length 115 cm. Skull and limb bones.

ZMA 22.085. Sex ? Island of Vlieland, 1955. Don. W.F. Hoffmann. Calvarium.

ZMA 22.552. Male. Island of Terschelling, 20-VIII-1979. Don. L. 't Hart & H. Wiegman; leg. Research Institute for Nature Management (# 100/79). Gross weight 10.8 kg. Age about two months. Skull.

ZMA 22.553. Female. Island of Texel, 24-V-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 39/78). Age about 2 years. Total length 115 cm; gross weight 23 kg. Skull.

ZMA 22.554. Male. Island of Texel, 24-V-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (43/78). Total length 95 cm; gross weight 24 kg. About one year old. Skull.

ZMA 22.555. Male. From the Seal Recovery Centre at Pieterburen, 8-XI-1978. Don. L. 't Hart; leg. Research Institute for Nature Management (# 91/78). Skull.

ZMA 22.556. Male. Caught in net in the Eemshaven, Province of Groningen, 6-V-1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 42/80). Total length 125 cm; gross weight 35 kg. Skull.

ZMA 22.557. Male. Island of Ameland, 5-V-1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 41/80). Total length 108 cm; gross weight 23.5 kg. Skull.

ZMA 22.558. Female. Island of Terschelling, 31-V-1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 44/80). Marked in West-Germany (Nr 877/898). Total length 100 cm; gross weight 16 kg. Skull.

ZMA 22.559. Female. From the Seal Recovery Centre at Pieterburen, 28-III-1979. Don. L. 't Hart; leg. Research Institute for Nature Management (# 50/79). Age about 2 years. Skull.

ZMA 22.560. Female. Island of Terschelling, 13-II-1981. Don. L. 't Hart; leg. Research Institute for Nature Management (# 37/81). Age about 7 to 8 months. Skull.

ZMA 22.561. Female. Near Hansweert, Province of Zeeland, 14-XII-1979. Don. State Police at Goes; leg. Research Institute for Nature Management (# 123/79). Total length 94 cm; gross weight 28.5 kg. Skull.

ZMA 22.562. Female. Near Dijkmanshuizen on the Island of Texel, 26-IV-1979. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 6/79). Total length 102 cm; gross weight 28.5 kg. Skull.

ZMA 22.563. Female. Drowned in a fish-trap at the outerside of the Grevelingendam near Ouddorp, Province of Zuid-Holland, V-1979. Leg. Research Institute for Nature Management (# 76/81). Skull.

ZMA 22.564. Sex ? Island of Rottum, 3-VIII-1981. Leg. Research Institute for Nature Management (# 76/81). Skull.

ZMA 22.565. Female. Island of Terschelling, V-1981. Don. L. 't Hart; leg. Research Institute for Nature Management (# 46/81). Skull.

ZMA 22.566. Male. North Sea coast, West Germany, 16-XI-1978. Don. L. 't Hart; leg. Research Institute for Nature Management (# 92/78). Skull.

ZMA 22.567. Male. From the Seal Recovery Centre at Pieterburgen, 12-II-1981. Don. L. 't Hart; leg. Research Institute for Nature Management (# 44/81). Skull.

ZMA 22.568. Sex ? From the seal keeping facilities of the Natural History Museum on the Island of Texel, 23-VIII-1978. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 65/78). Age about 5 years. Total length 145 cm; gross weight 104 kg. Skull.

ZMA 22.569. Female. Island of Ameland. 2-VIII-1979. Don. L. 't Hart; leg. Research Institute for Nature Management (# 79/79). Age about 24 years. Skull.

ZMA 22.570. Female. Island of Terschelling. 1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 78/80). Age about 30 years. Skull.

ZMA 22.571. Female. Island of Terschelling, VI-1981. Don. L. 't Hart; leg. Research Institute for Nature Management (# 43/81). Age about 24 years. Skull.

ZMA 22.572. Female. From the seal keeping facilities of the Natural History Museum on the Island of Texel, 15-VII-1980. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 47/80). Total length 158 cm; gross weight 79.4 kg. Skull.

ZMA 22.947. Male. Wash, England, 1981. Don. P.J.H. Reijnders; leg. Research Institute for Nature Management (# 39/81). Skull.

ZMA 23.140. Sex ? Eems, opposite Abio Chemie, 8-VIII-1978. Don. J.L. van Haaften; leg. Research Institute for Nature Management (# 55/78). Total length 120 cm; about six years old. Skull.

ZMA 23.141. Male. Island of Texel, XII-1974. Don. G.J. de Haan; leg. Research Institute for Nature Management (# 16/75). Skull.

ZMA 23.295. Female. Uithuizerwad, N. of the Province of Groningen, 10-VIII-1978. Don. J.L. van Haaften; leg. Research Institute for Nature Management (# 54/78). Total length 160 cm; gross weight 56 kg. Skull.

ZMA 23.296. Male. Island of Terschelling, 3-XI-1980. Don. L. 't Hart; leg. Research Institute for Nature Management (# 89/80). Age about six months. Skull.

ZMA 23.452. Sex ? Dredged from the bottom of the North Sea, S.W. of the Brown Ridge. XII-1987. Leg. P. van Es., don. D.J. Mol. Fossil humerus dexter.

ZMA 23.453. Sex ? Dredged from the bottom of the North Sea, S.W. of the Brown Ridge. XII-1987. Leg. P. van Es., don. D.J. Mol. Fossil humerus dexter.

ZMA 23.551. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 161 cm. (# 32, RIN 104). Skull and bones of left foreleg.

ZMA 23.552. Male, juv. Netherlands' Wadden area, mass mortali-

ty during summer 1988. Leg. L. 't Hart. Total length 134 cm (# 33, RIN 100). Skull and bones of left foreleg.

ZMA 23.553. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 161 cm (# 30, RIN 92). Skull, bones of left foreleg and baculum.

ZMA 23.554. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 180 cm (# 35 RIN 106). Skull, bones of left foreleg and baculum.

ZMA 23.555. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 180 cm (# 38 RIN 117). Skull, bones of left foreleg and baculum.

ZMA 23.556. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 128 cm (# 26 RIN 74). Skull, bones of left foreleg and baculum.

ZMA 23.558. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 165 cm (# 22 RIN 63). Skull and bones of left foreleg.

ZMA 23.559. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 161 cm (# 29 RIN 94). Skull, baculum and bones of left foreleg.

ZMA 23.560. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 173 cm (# 21 RIN 57). Skull and bones of left foreleg.

ZMA 23.561. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 162 cm, (# 19 RIN 54). Skull, baculum and bones of left foreleg.

ZMA 23.562. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 157 cm (# 31 RIN 98). Skull and bones of left foreleg.

ZMA 23.563. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 152 cm (# 20 RIN 53). Skull, baculum and bones of left foreleg.

ZMA 23.712. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 164 cm (# 23 RIN 62; mark on skin 3 Z). Skull, baculum and bones of left foreleg.

ZMA 23.713. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 142 cm (# 24 RIN 65). Skull and bones of left foreleg.

ZMA 23.714. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 161 cm (# 28 RIN 93). Skull and bones of left foreleg.

ZMA 23.716. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 158 cm (# 1 RIN 29). Skull and bones of left foreleg.

ZMA 23.717. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 174 cm (# 9 RIN 37). Skull and bones of left foreleg.

ZMA 23.718. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 169 cm (# 34 RIN 105). Skull, baculum and bones of left foreleg.

ZMA 23.721. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 173 cm (# 36 RIN 101). Skull, baculum and bones of left foreleg.

ZMA 23.722. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 171 cm (# 40 RIN 125). Skull and bones of left foreleg.

ZMA 23.723. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 141 cm (# 40 RIN 125). Skull and bones of left foreleg.

ZMA 23.724. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 170 cm (# 4 RIN 33). Skull, baculum and bones of left foreleg.

ZMA 23.725 Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 162 cm (# 37 RIK 114). Skull, baculum and bones of left foreleg.

ZMA 23.726. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 173 cm (# 7 RIN 35). Skull, baculum and bones of left foreleg.

ZMA 23.735. Female. Netherlands' Wadden Area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 168 cm (# 13 RIN 44). Skull and bones of left foreleg.

ZMA 23.736. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't hart. Total length 162 cm (# 15 RIN 46). Skull, baculum and bones of left foreleg.

ZMA 23.737. Male. Sparregat, Netherlands' Wadden area, 19-VIII-1988, leg. J. de Boer; don. L. 't Hart. Total length 151 cm (# 43 RIN 126). Skull, baculum and bones of left foreleg.

ZMA 23.758. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 165 cm (# 2 RIN 25). Skull, baculum and bones of left foreleg.

ZMA 23.759. Female. Netherlands' Wadden area, 4-X-1988. Leg. L. 't Hart. Total length 162 cm (# 6 RIN 34). Skull and bones of left foreleg.

ZMA 23.760. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 186 cm (# 3 RIN 26). Skull, baculum and bones of left foreleg.

ZMA 23.771. Male. Harlingen, Netherlands' Wadden area, 23-VIII-1988. Leg. L. 't Hart, Total length 160 cm (# 5 RIN 28). Skull, baculum and bones of left foreleg.

ZMA 23.772. Female. Vlieland dam, Netherlands' Wadden area, 4-IX-1988. Leg. L. 't Hart. Total length 151 cm (# 12 RIN 43). Skull and bones of left foreleg.

ZMA 23.798. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 149 cm (# 41 RIN 122). Skull and bones of left foreleg.

ZMA 23.799. Male. Harlingen, Netherlands' Wadden area, 25-VIII-1988. Leg. L. 't Hart. Total length 151 cm (# 11 RIN 42). Skull, baculum and bones of left foreleg.

ZMA 23.800. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 174 cm (# 8 RIN 36). Skull, baculum and bones of left foreleg.

ZMA 23.817. Female. Netherlands' Wadden area, mass mortality during summer 1988. Total length 166 cm (# 16 RIN 51). Skull and bones of left foreleg.

ZMA 23.818. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 143 cm (# 14 RIN 45). Skull, baculum and bones of left foreleg.

ZMA 23.819. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length ? (# 39). Skull and bones of left foreleg.

ZMA 23.823. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 166 cm (# 25 RIN 64). Skull and bones of left foreleg.

ZMA 23.824. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 164 cm (# 17 RIN 52). Skull and bones of left foreleg.

ZMA 23.825. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 170 cm (# 44 RIN 132). Skull, baculum and bones of left foreleg.

ZMA 23.826. Male. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 152 cm (# 10 RIN 38). Skull and bones of left foreleg.

ZMA 23.827. Female. Netherlands' Wadden area, mass mortality during summer 1988. Leg. L. 't Hart. Total length 165 cm (# 10 RIN 49). Skull and bones of left foreleg.

ZMA 24.004 Sex? Dredged from the bottom of the North Sea near the Brown Ridge, 1987, Leg. P. van Es; don. D.J. Mol. Fossil femur dexter.

ZMA 24.005. Sex? Dredged from the bottom of the North Sea, SW of the Brown Ridge, summer 1988. Leg. P. van Es; don. D.J. Mol. Fossil radius.

ZMA 24.006 a + b. Sex? Dredged from the bottom of the North Sea, SW of the Brown Ridge, summer 1988. Leg. P. van Es; don. D.J. Mol. Two fossil humeri.

ZMA 24.399. Male. Beach at Bergen, the Netherlands, 23-VI-1975. Leg. Mrs. Dijkhuizen. Don. J.L. van Haften (# 58/75). Total length 147 cm.; 24 years old. Baculum.

ZMA 24.400. Male. Seal keeping facility on the Island of Texel, the Netherlands, 27-VIII-1977. Leg. G.J. de Haan. Don. J.L. van Haften (# 76/77). Total length 150 cm. Baculum.

ZMA 24.401. Male. Drown in fishtrap in the mouth of the river Humber, England, 4-XII-1975. Don. G.J. de Haan & J.L. van Haften (# 101/75). Total length 153 cm. Baculum.

Phoca (Pusa) caspica Gmelin, 1788

ZMA 23.538. Female. Caspian Sea, date?, leg. B. Baganuyin or Baganshin; don. Zool. Museum Moscow (# 45007 + 1829 fem. 130). Skull. See fig. 7.

Phoca (Pusa) hispida botnica Gmelin, 1788

ZMA 19.171. Sex ? Near Umeå, Island of Holmöön, Västerbotten, Sweden, V-1922. Leg. K. Hellsten, received in exchange in 1977. Skull.

Phoca (Pusa) hispida hispida Schreber, 1775

ZMA 898 Sex ? Drifting ice at 72°15'N, 33°00'E, 15-VI-1881. Leg. Max Weber. Skull. See: Anon., 1882.

ZMA 899. Sex ? Drifting ice at 72°15'N, 33°00'E, 15-VI-1881. Leg. Max Weber. Skull. See: Anon., 1882.

ZMA 11.122. Sex ? Advent Bay (near Longyearbyen), Svalbard (Spitsbergen), VIII-1921. Leg. G.J. van Oordt. Mandible.

ZMA 16.082. Sex ? Scoresby Sund near Kap Stewart, East Greenland, VII-1973. Leg. J. de Korte. Skull.

ZMA 17.155. Sex ? Near Kap Tobin, East Greenland. 6-IX-1974. Leg. J. de Korte. Calvarium.

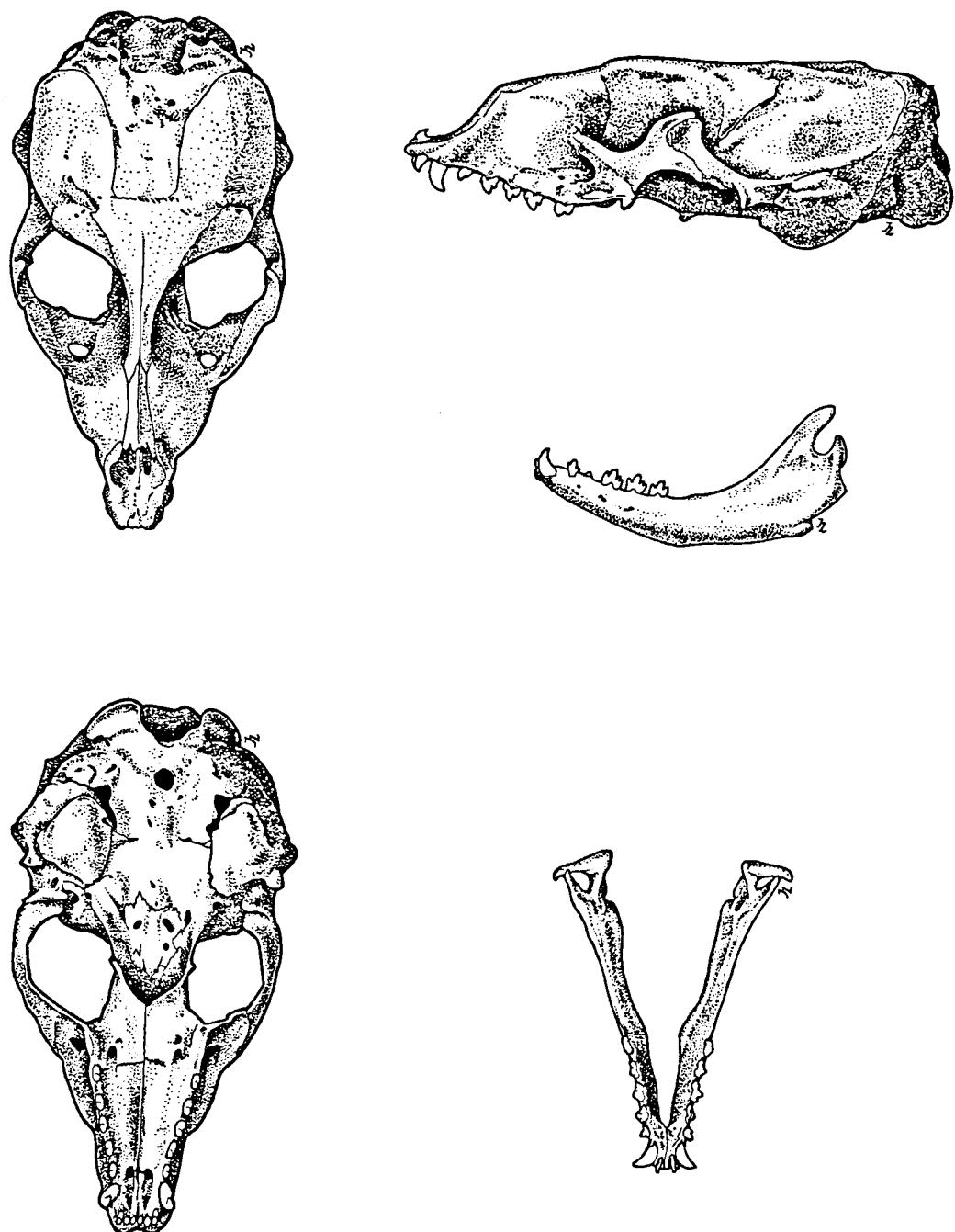


Fig. 7. Skull of *Phoca (Pusa) caspica*, ZMA 23.538. Condyllo-basal length 174.0 mm, J. Zaagman fecit..

ZMA 17.183. Sex ? Mouth of Kalkdalelv, Scoresby Sund, East Greenland, 23-VIII-1974. Leg. J. de Korte. Skull.

ZMA 17.184. Male, juv. Scoresby Sund near Kap Stewart, East Greenland, 7-VI-1974. Leg. J. de Korte. Skull.

ZMA 17.185. Male, juv. Near ice edge at Kap Stewart, Scoresby Sund, East Greenland, 29-V-1974. Leg. J. de Korte. Mandible.

ZMA 17.186. Male, juv. Scoresby Sund near Kap Stewart, East Greenland, 7-VI-1974. Leg. J. de Korte. Mandible.

ZMA 18.186. Female, juv. Old collection - no data. Mounted specimen.

ZMA 18.187. Sex ?, adult. Old collection - no data. Mounted specimen.

ZMA 21.065. Female. Bathing-beach of the Island of Schiermonnikoog, found on 21-VII-1979 and brought to the Seal Recovery Centre at Pieterburen; it died on 23-VII-1979. Leg. L. 't Hart & J.L. van Haaften. Total length 79 cm. Skin and complete unmounted skeleton.

ZMA 21.095. Sex ? Rosenberg Valley, about 200 m from sea, Edgeøya, Svalbard (Spitsbergen), 1977. Leg. REES 77 Exp. Mandible.

ZMA 24.348. Female. Found on 9-VI-1978 near the Slufter, Island of Terschelling, the Netherlands (about one year old), died at ECOMARE, Island of Texel on 24-V-1991. Total length 105 cm. Skull and limb bones.

Phoca (Pusa) hispida saimensis Nordquist, 1899

ZMA 24.214. Male. Haukivesi, Finland, 13-IX-1986. Ex Joensuu Biol. Institute. Don. O. Stenman. Skull.

Phoca (Pusa) siberica Gmelin, 1788

ZMA 4389. Male. Died in the Amsterdam Zoo Artis on 14-VIII-1961. Total length 105 cm. Skin, skull and limb bones.

ZMA 4390. Female, juv. Died in the Amsterdam Zoo Artis on 22-VI-1962. Total length 81.5 cm. Skin, skull and limb bones.

ZMA 4931. Female, juv. Obtained from animal dealer at Tilburg on 21-VI-1962. Skull.

ZMA 5047. Female, juv. Died in the Amsterdam Zoo Artis on 12-X-1962. Total length 89 cm; gross weight 14.3 kg. Skin, skull and limb bones.

ZMA 5610. Male, juv. Died in the Amsterdam Zoo Artis on 12-VI-1963. Total length 68 cm; gross weight 11.5 kg. Skin, skull, baculum and limb bones.

ZMA 5611. Female. Died in the Amsterdam Zoo Artis on 19-VI-1963. Total length 72.5 cm; gross weight 12 kg. Skin, skull and limb bones.

ZMA 5617. Male. Died in the Amsterdam Zoo Artis on 30-VI-1963. Total length 77 cm; gross weight 16 kg. Skin, skull, baculum and limb bones.

ZMA 7342. Male. Died in the Amsterdam Zoo Artis on 5-X-1964. Total length 112.9 cm; gross weight 36.2 kg. Skull and limb bones.

ZMA 7385. Male. Arrived at the Amsterdam Zoo Artis on 27-V-1961; died on 27-IV-1964. Skin, skull, baculum and limb bones.

ZMA 8271. Male. Died in the Amsterdam Zoo Artis on 4-VIII-1965. Total length 78.7 cm; gross weight 10.4 kg. Skin, skull,

baculum and limb bones.

ZMA 13.426. Female ? Died in the Amsterdam Zoo Artis on 20-IX-1970. Total length 125 cm. Complete unmounted skeleton.

ZMA 23.450. Sex ? From the Seal Recovery Centre at Pieterburen, 1-VI-1983. Don. L. 't Hart. Skull.

REFERENCES

- ANONYMUS, 1882. Verslagen omtrent den vierden tocht van de Willem Barents naar de ijszee in den zomer van 1881: 1-2, 1-5, 1-146, map (Tjeenk Willink, Haarlem).
- BREE, P.J.H. van, 1968. Ueber "verzierte" Walrosszschädel. Z. Säugetierkunde, 33: 312-315.
- BREE, P.J.H. van, 1972. On a luxation of the skull-atlas joint and consecutive ankylosis in a Grey Seal, *Halichoerus grypus* (Fabricius, 1791), with notes on other Grey Seals from the Netherlands. Zool. Meded., 47: 331-336, 2 pls.
- BREE, P.J.H. van & D.P. BOSSCHA ERDBRINK, 1987. Fossil Phocidae in some Dutch collections (Mammalia, Carnivora). Beaufortia, 37 (3): 43-66.
- BREE, P.J.H. van & D.P. D.P. BOSSCHA ERDBRINK, 1990. An upper Miocene Walrus from Sylt. In: U. von Hacht (Ed). Fossilien von Sylt, III: 15-19.
- BREE, P.J.H. van & L.'t HART, 1990. Over de eerste Baardrob, *Erignathus barbatus* Erxleben, 1777, in Nederland gevonden. Huid & Haar, 8 (4): 162-165.
- BREE P.J.H. van, E.J. VEDDER & L. 't HART, 1992. Over vondsten van ringelrobben *Phoca hispida* op de Nederlandse kust. Lutra, 35: 90-97.
- DEINSE, A.B. van, 1943/44. Over resten van fossiele en recente Pinnipedia, aangetroffen in Zeeland en elders in Nederland. Lev. Natuur, 48: 119-125.
- DUSSEAU, J.L., 1865. Catalogue de la collection d'anatomie humaine, comparée et pathologique de M.M. Ger. et W.. Vrolik, professeurs à l'Athénée illustré d'Amsterdam: I-XVI, 1-461 (de Roever Kröber, Amsterdam).
- ERDBRINK, D.P. BOSSCHA & P.J.H. van BREE, 1986. Fossil Odobenidae in some Dutch collections (Mammalia, Carnivora). Beaufortia, 36(2): 13-33.
- ERDBRINK, D.P. BOSSCHA & P.J.H. van BREE, 1990. Further observations on fossil and subfossil odobenid material (Mammalia, Carnivora) from the North Sea. Beaufortia, 40 (5): 85-101.
- FLIPSE, E. & E.J.M. VELING, 1984. An application of the Leslie matrix model to the population dynamics of the Hooded Seal, *Cystophora cristata* Erxleben. Ecol. Modelling, 24: 43-59.
- HAAFTEN, J.L. van, 1974. Zeehonden langs de Nederlandse kust. Wetensch. Meded. KNNV, 101: 1-36.
- KARDAS, S.J., 1965. Notas sobre el género *Odobenus* (Mammalia, Pinnipedia) I. Una nueva subespecie fósil del Pleistoceno superior - Holoceno. Bol. R. Soc. Española Hist. Nat. (Biol.), 63: 363 - 380.
- KARDAS, S.J., 1968.. Notas sobre el género *Odobenus* (Mammalia, Pinnipedia) II. Cálculos esta disticos .Bol. R. Soc. Española Hist. Nat. (Biol.), 66: 45-48.
- KING, J.E., 1976. On the identity of the three young fur seals (genus *Arctocephalus*). stranded in New Caledo-

- nia (Mammalia, Pinnipedia). *Beaufortia*, 25(324): 97-105.
- MOHR, E., 1963. Os penis und Os clitoridis der Pinnipedia. *Z. Säugetierkunde*, 28: 19-37.
- TEGENGREN, H., 1962. Der Handel mit Walrosszähnen und die russischen Fangstationen auf Spitsbergen im 17. und 18. Jahrhunderts. *Deutsches Jahrbuch für Volkskunde*, 8(2): 312-337.

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