

External Measurements and Organ Weights of Five Weddell Seals (*Leptonychotes weddelli*) Caught near Syowa Station

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昭和基地周辺で捕獲した5頭のウェッデルアザラシの外部形態と臓器重量

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要旨: 第22次日本南極地域観測隊の研究課題の一つとして、1981-1982年に捕獲した5頭のウェッデルアザラシ (*Leptonychotes weddelli*) の外部形態ならびに臓器重量の測定結果を報告する。

Abstract: External measurements and organ weights of five Weddell seals (*Leptonychotes weddelli*) collected under a project of the 22nd Japanese Antarctic Research Expedition in 1981-1982 are presented.

Five Weddell seals (*Leptonychotes weddelli*) were collected by one of the authors (H. HIDAKA) during the 22nd Japanese Antarctic Research Expedition (JARE-22) under the catch permission of the Ministry of Agriculture, Forestry and Fisheries of Japan.

Two adult Weddell seals were caught by electric shock at Tottuki Point, about 13 km northeast of Syowa Station (69°00'S, 39°35'E), and three carcasses of newborn pup were collected at Ongulkalven Island (about 6 km west from Syowa Station) and Tottuki Point (Table 1). These specimens were stored at -18°C or lower in a freezer till they were dissected at Ehime University on April 28-30, 1982. Twenty nine external measurements were employed (Fig. 1). Blubber thickness was measured at intervals of 10 cm in three girths (see Table 4). After dissection, the blubber was made flat. Then, its surface area was calculated by drawing a figure on the section paper on the scale of one-tenth. Ages of these seals were determined by Dr. Y. NAITO.

The external measurements (Table 2), organ weights (Table 3) and blubber thickness (Table 4) are presented in this report.

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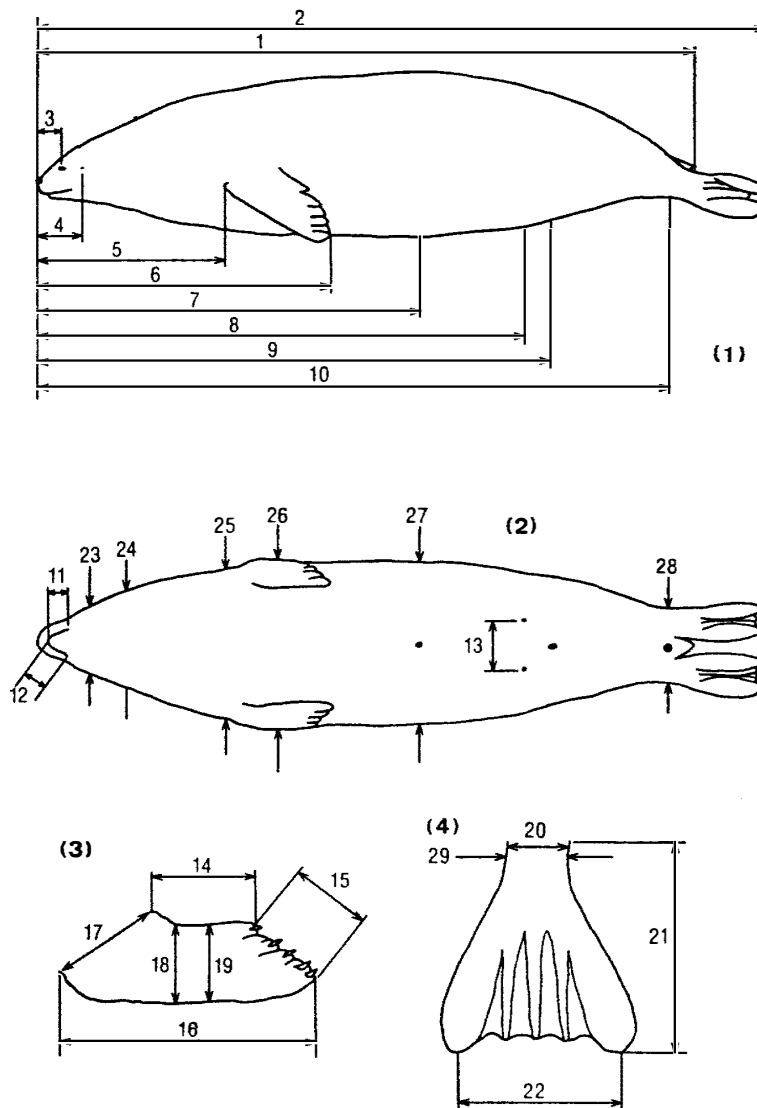


Fig. 1. Scheme of external measurements. (1) Lateral view of the body, (2) Ventral view of the body, (3) Left fore-limb, (4) Hind-limb. Numbers refer to Table 2.

Table 1. List of five Weddell seals used in this study.

Specimen no.	Sampling date	Locality	Sex	Body length (cm)	Body weight (kg)	Age or growth stage
1	9 Oct. 1981	Tottuki Point	F	212	317	3 years and 11 months
2	9 Oct. 1981	Tottuki Point	M	235	383	13 or 14 years
3	27 Oct. 1981	Ongulkalven	M	116	26.1	newborn
4	7 Nov. 1981	Ongulkalven	F	110	18.1	newborn
5	12 Nov. 1981	Tottuki Point	F	121	19.3	newborn

Table 3. Organ weights (kg) of five Weddell seals.

Organs	Specimen no.				
	1	2	3	4	5
Skin	20.1 (6.34)	24.2 (6.32)	3.39 (13.0)	2.43 (13.4)	2.59 (13.4)
Blubber	94.0 (29.7)	115.7 (30.2)	3.37 (12.9)	2.19 (12.1)	1.24 (6.42)
Bone	11.8 (3.72)	12.9 (3.37)	2.67 (10.2)	1.93 (10.7)	3.09 (16.0)
Muscle	106.0 (33.4)	138.3 (36.1)	9.01 (34.5)	5.98 (33.0)	8.59 (44.5)
Brain	0.502 (0.16)	0.496 (0.13)	0.375 (1.44)	0.341 (1.88)	0.283 (1.47)
Internal organs	33.0 (10.4)	41.8 (10.9)	3.82 (14.6)	3.17 (17.5)	3.05 (15.8)
Liver	6.87 (2.17)	8.35 (2.18)	0.768 (2.94)	0.508 (2.81)	0.481 (2.49)
Stomach	1.62 (0.51)	2.02 (0.53)	0.151 (0.58)	0.107 (0.59)	0.102 (0.53)
Small intestine	4.19 (1.32)	5.53 (1.44)	0.619 (2.37)	0.608 (3.36)	0.419 (2.17)
Large intestine	0.259 (0.08)	0.342 (0.09)	0.339 (1.30)	0.359 (1.98)	0.367 (1.90)
Heart	1.73 (0.55)	1.49 (0.39)	0.170 (0.65)	0.166 (0.92)	0.182 (0.94)
Lungs	3.49 (1.10)	5.30 (1.38)	0.568 (2.18)	0.446 (2.46)	0.601 (3.11)
Spleen	5.16 (1.63)	4.82 (1.26)	0.248 (0.95)	0.146 (0.81)	0.086 (0.45)
Kidney (left)	0.517 (0.16)	0.856 (0.22)	0.156 (0.60)	0.064 (0.35)	0.087 (0.45)
(right)	0.668 (0.21)	0.669 (0.17)	0.139 (0.53)	0.076 (0.42)	0.083 (0.43)
Testes		0.118 (0.03)	0.004 (0.02)		
Ovaries	0.013 (0.004)			0.003 (0.02)	— (—)
Other organs*	8.48 (2.70)	12.3 (3.21)	0.658 (2.52)	0.687 (3.80)	0.642 (3.33)
Others**	51.6 (16.3)	49.6 (13.0)	3.43 (13.1)	2.07 (11.4)	0.465 (2.41)
Body weight	317 (100)	383 (100)	26.1 (100)	18.1 (100)	19.3 (100)

Figures in parentheses indicate percentages of body weight.

* Including eyes, tongue, bladder and so on.

** Including blood and body fluid.

Table 4. *Blubber thickness and surface area of five Weddell seals.*

Specimen no.	Girth position from the tail (cm)	Blubber thickness (mm)				Surface area (cm ²)
		N*	Range	Mean	S.D.	
1	130	17	67-46	57	6	19 072
	70	13	47-66	59	6	
	30	9	44-55	49	4	
2	130	13	51-71	66	6	20 096
	70	12	58-77	68	6	
	30	8	44-52	50	3	
3	60	11	5.2-7.9	6.7	0.7	5 015
	40	10	6.0-9.1	7.4	1.3	
	20	7	4.0-9.5	7.0	1.9	
4	55	11	4.0-6.0	5.0	1.0	3 812
	35	9	4.0-6.0	5.0	1.0	
	15	7	4.0-6.0	5.0	1.0	
5	65	13	1.9-4.0	2.5	0.6	4 526
	45	12	1.5-4.0	2.6	0.7	
	25	8	2.0-4.0	3.1	0.6	

* Number of the measured points in each girth.

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