On the Body Proportions of the Sperm Whales (Physeter catodon)

By

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Proportions of the various parts of body were examined on the sperm whales taken from the Antarctic, Bonin Islands and the Adjacent waters of Japan in the last several years basing upon the series of measurements used in the Discovery Investigations (1938).

According to Matthews (1938), Matsuura and Maeda (1942), Omura (1954) and Nishiwaki and Hibiya (1951 and 1952), any racial differences have not been pointed out in the external characters and the body length at which sexual maturity is attained between the sperm whales from the Antarctic and those from the Adjacent waters of Japan. After comparing the data obtained by the present investigation and the results of Matthews and Matsuura-Maeda, any differences by areas were not observed in the body proportions.

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Materials which were examined are shown in table I. As those on females are not taken in the Antarctic, the data in the report of Matthews (1938) concerning the females of southern hemisphere are used for comparison to those from other areas.

Table I Number of whales examined in each area

Area	Male	Female	Total
Antarctic	50	0	50
Bonin Is.	34	2	36
Adj. w. of Japan	68	30	98
Total	152	32	184

Size distributions of the sperm whales examined are fairly different each other according to area as shown in table II. In males, those from the Antarctic are the biggest, those from Bonin Islands moderate and those from the Adjacent waters of Japan the smallest.

In females those from Bonin Islands are about 10–11 metres and those from the waters adjacent to Japan between 10–11 and 11–12 metres.

Table II Size distribution of the sperm whales examined

Body length in metres	Antarctic		Bonin Is.		Adjacent waters of Japan	
	Male	Female	Male	Female	Male	Female
10–11	0	0	1	2	8	17
11–12	0	0	6	0	16	13
12–13	0	0	9	0	15	0
13–14	9	0	4	0	12	0
14–15	17	0	5	0	5	0
15–16	17	0	8	0	9	0
16–17	7	0	1	0	3	0
Total	50	0	34	2	68	30
Average length	14.94	—	13.50	10.50	12.93	10.93

As the numberings of the measurement of the various parts are retained for the sake of uniformity with the reports of Matthews except for nos. 23, 24 and 25, "Notch of flukes to posterior end of ventral grooves," applicable only to balaenopterid whales, was omitted. Nos. 23, 24 and 25 mean "Length of skull," "Length from tip to notch of tail flukes" and "Total spread of flukes, i.e., distance between both tips" respectively.

As the size distributions of whales examined in the various areas are, as already stated, different from each other and the proportions might vary with increasing of total length, data are compared in each metre of body length. Table III shows the average values and the standard deviations of the proportions.

Table III Mean values $\bar{x}$ and standard deviations σ of the proportions expressed as percentages of the body length

No. 2 Projection of snout beyond tip of lower jaw

B.L. (m)	Male: Antarctic n*	$\bar{x}$	σ	Male: Bonin n*	$\bar{x}$	σ	Male: Japanese coastal n*	$\bar{x}$	σ	B.L. (m)	Female: Bonin n*	$\bar{x}$	σ	Female: Japanese coastal n*	$\bar{x}$	σ
10～	0	—	—	1	7.20	0.00	7	5.15	0.92	10～	2	3.85	0.25	10	3.45	0.51
11～	0	—	—	6	6.05	0.75	13	5.22	1.00	11～	0	—	—	11	3.44	0.57
12～	0	—	—	8	7.11	1.06	15	6.00	0.93	12～	0	—	—	0	—	—
13～	9	6.08	1.12	3	6.46	1.25	9	6.08	0.95	13～	0	—	—	0	—	—
14～	17	6.77	1.11	5	8.40	0.87	4	7.30	0.52	14～	0	—	—	0	—	—
15～	16	7.05	1.03	8	8.61	0.79	9	7.08	0.75	15～	0	—	—	0	—	—
16～	7	7.21	0.93	1	8.50	0.00	2	7.30	0.50	16～	0	—	—	0	—	—
To.	49			32			59			To.	2			21		

* n: number of whales examined

Table III (cont.)

No. 3 Tip of snout to blow-hole

B.L. (m)	Male									B.L. (m)	Female					
	Antarctic			Bonin			Japanese coastal				Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	4.20	0.00	7	3.80	0.38	10～	2	4.35	0.75	9	3.63	0.47
11～	0	—	—	6	3.80	0.71	13	3.68	0.66	11～	0	—	—	11	3.94	0.44
12～	0	—	—	9	3.91	0.94	15	3.44	0.15	12～	0	—	—	0	—	—
13～	3	3.63	0.24	3	4.13	0.85	9	4.13	0.24	13～	0	—	—	0	—	—
14～	16	4.37	0.75	4	4.05	0.56	5	3.80	1.10	14～	0	—	—	0	—	—
15～	16	4.20	0.71	7	4.51	0.65	9	4.36	0.80	15～	0	—	—	0	—	—
16～	7	3.73	0.68	1	4.80	0.00	2	4.00	0.00	16～	0	—	—	0	—	—
To.	42			31			60			To.	2			20		

No. 4 Tip of snout to angle of gape

B.L. (m)	Male									B.L. (m)	Female					
	Antarctic			Bonin			Japanese coastal				Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	18.80	0.00	8	19.50	2.12	10～	2	15.50	1.00	10	16.40	1.05
11～	0	—	—	5	20.10	0.80	13	20.35	1.03	11～	0	—	—	11	17.14	1.77
12～	0	—	—	9	22.94	1.50	14	21.36	1.36	12～	0	—	—	0	—	—
13～	9	23.61	1.42	4	23.50	2.24	9	22.50	1.49	13～	0	—	—	0	—	—
14～	17	25.27	1.99	5	25.50	2.10	4	23.50	1.23	14～	0	—	—	0	—	—
15～	16	24.50	1.37	8	26.50	1.23	8	24.37	0.78	15～	0	—	—	0	—	—
16～	7	25.21	1.03	1	26.20	0.00	2	25.50	0.00	16～	0	—	—	0	—	—
To.	49			33			58			To.	2			21		

No. 5 Tip of snout to centre of eye

B.L. (m)	Male									B.L. (m)	Female					
	Antarctic			Bonin			Japanese coastal				Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	23.20	0.00	8	23.24	1.69	10～	2	19.60	0.50	11	19.71	0.88
11～	0	—	—	6	23.24	1.56	14	23.37	1.18	11～	0	—	—	12	19.97	1.81
12～	0	—	—	9	26.30	1.89	15	24.87	1.79	12～	0	—	—	0	—	—
13～	9	27.25	1.12	4	26.80	2.24	10	25.20	1.22	13～	0	—	—	0	—	—
14～	17	28.24	1.52	5	29.30	1.85	5	25.80	0.95	14～	0	—	—	0	—	—
15～	17	28.21	1.28	8	29.23	1.09	9	27.25	1.32	15～	0	—	—	0	—	—
16～	7	28.51	1.59	1	28.80	0.00	2	28.05	0.50	16～	0	—	—	0	—	—
To.	50			34			63			To.	2			23		

Table III (cont.)

No. 6 Tip of snout to tip of flipper

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10～	0	—	—	1	39.40	0.00	8	40.05	0.97	10～	2	33.85	0.75	10	35.30	1.10
11～	0	—	—	6	41.05	1.32	14	39.95	1.76	11～	0	—	—	10	36.15	1.92
12～	0	—	—	9	42.96	1.44	14	41.48	1.81	12～	0	—	—	0	—	—
13～	9	43.86	1.17	4	45.25	2.09	10	42.65	1.90	13～	0	—	—	0	—	—
14～	16	44.73	1.58	5	44.50	1.13	5	44.10	1.44	14～	0	—	—	0	—	—
15～	17	45.00	1.55	8	45.55	1.61	9	44.08	0.90	15～	0	—	—	0	—	—
16～	6	45.38	1.82	1	44.80	0.00	2	43.80	1.50	16～	0	—	—	0	—	—
To.	48			34			62			To.	2			20		

No. 7 Centre of eye to centre of ear

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10～	0	—	—	1	3.00	0.00	1	3.10	0.00	10～	2	2.70	0.00	3	3.27	0.66
11～	0	—	—	5	3.44	0.51	3	3.73	0.41	11～	0	—	—	3	3.07	0.34
12～	0	—	—	8	3.35	0.40	1	3.30	0.00	12～	0	—	—	0	—	—
13～	3	3.27	0.09	3	3.10	0.00	0	—	—	13～	0	—	—	0	—	—
14～	13	3.17	0.23	4	3.05	0.26	2	3.10	0.30	14～	0	—	—	0	—	—
15～	11	3.15	0.27	7	3.04	0.32	3	3.53	0.19	15～	0	—	—	0	—	—
16～	6	3.27	0.25	0	—	—	0	—	—	16～	0	—	—	0	—	—
To.	33			28			10			To.	2			6		

No. 8 Notch of flukes to posterior emargination of dorsal fin

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10～	0	—	—	1	34.80	0.00	8	34.37	0.93	10～	2	35.50	1.00	11	36.05	1.83
11～	0	—	—	6	33.50	1.63	11	33.41	1.73	11～	0	—	—	11	35.59	2.61
12～	0	—	—	8	33.13	3.03	14	33.71	1.57	12～	0	—	—	0	—	—
13～	9	32.06	2.37	4	31.75	1.78	10	32.00	0.81	13～	0	—	—	0	—	—
14～	17	32.62	2.11	5	33.70	2.64	5	32.30	2.48	14～	0	—	—	0	—	—
15～	16	31.63	1.08	8	30.75	1.56	9	33.39	1.73	15～	0	—	—	0	—	—
16～	7	31.07	1.68	1	28.50	0.00	2	31.00	0.50	16～	0	—	—	0	—	—
To.	49			33			59			To.	2			22		

Table III (cont.)

No. 9 Width of flukes at insertion

B.L. (m)	Male: Antarctic n	x̄	σ	Bonin n	x̄	σ	Japanese coastal n	x̄	σ	B.L. (m)	Female: Bonin n	x̄	σ	Japanese coastal n	x̄	σ
10～	0	—	—	1	8.20	0.00	8	7.37	0.25	10～	2	7.80	0.50	10	7.10	0.85
11～	0	—	—	6	7.05	0.48	14	7.25	0.42	11～	0	—	—	12	7.14	0.72
12～	0	—	—	9	7.25	0.28	15	7.17	0.60	12～	0	—	—	0	—	—
13～	0	—	—	3	7.80	0.71	11	7.09	0.60	13～	0	—	—	0	—	—
14～	0	—	—	5	7.30	0.55	5	6.60	0.97	14～	0	—	—	0	—	—
15～	0	—	—	7	7.08	0.37	8	7.18	1.17	15～	0	—	—	0	—	—
16～	0	—	—	1	8.80	0.00	2	6.70	0.00	16～	0	—	—	0	—	—
To.	0			32			63			To.	2			22		

No. 10 Notch of flukes to centre of anus

B.L. (m)	Male: Antarctic n	x̄	σ	Bonin n	x̄	σ	Japanese coastal n	x̄	σ	B.L. (m)	Female: Bonin n	x̄	σ	Japanese coastal n	x̄	σ
10～	0	—	—	1	30.90	0.00	7	31.50	1.85	10～	2	34.00	0.75	10	32.20	2.69
11～	0	—	—	6	30.00	1.80	14	30.36	2.00	11～	0	—	—	10	31.40	1.14
12～	0	—	—	9	28.40	1.34	15	29.96	1.55	12～	0	—	—	0	—	—
13～	9	29.60	1.37	4	29.75	1.30	10	29.30	2.48	13～	0	—	—	0	—	—
14～	17	28.50	1.19	5	28.10	0.80	5	28.30	1.72	14～	0	—	—	0	—	—
15～	17	29.07	1.99	8	27.50	1.42	9	28.17	1.15	15～	0	—	—	0	—	—
16～	6	28.00	1.39	1	27.40	0.00	2	29.95	0.05	16～	0	—	—	0	—	—
To.	49			34			62			To.	2			20		

No. 11 Notch of flukes to umbilicus

B.L. (m)	Male: Antarctic n	x̄	σ	Bonin n	x̄	σ	Japanese coastal n	x̄	σ	B.L. (m)	Female: Bonin n	x̄	σ	Japanese coastal n	x̄	σ
10～	0	—	—	1	50.30	0.00	8	50.12	2.00	10～	2	53.00	0.75	10	51.10	4.72
11～	0	—	—	6	48.67	1.57	14	49.53	2.19	11～	0	—	—	11	52.05	3.15
12～	0	—	—	9	46.39	1.85	15	50.03	1.78	12～	0	—	—	0	—	—
13～	9	47.72	1.47	4	47.75	1.64	10	49.10	2.58	13～	0	—	—	0	—	—
14～	16	46.50	1.50	5	46.30	0.98	4	48.75	2.38	14～	0	—	—	0	—	—
15～	17	46.32	1.33	8	43.88	2.12	9	46.61	0.99	15～	0	—	—	0	—	—
16～	7	45.21	1.28	1	45.20	0.00	2	47.00	0.50	16～	0	—	—	0	—	—
To.	49			34			62			To.	2			21		

Table III (cont.)

No. 13 Centre of anus to centre of reproductive aperture

Male										Female					
B.L. (m)	Antarctic			Bonin			Japanese coastal			B.L. (m)	Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	10.30	0.00	7	11.07	1.76	10～	1	1.80	0.00	10	2.50	1.10
11～	0	—	—	6	10.33	1.09	13	11.58	1.07	11～	0	—	—	11	2.50	1.35
12～	0	—	—	8	10.63	1.27	14	11.79	1.22	12～	0	—	—	0	—	—
13～	9	11.39	0.74	4	9.25	1.64	10	11.60	1.30	13～	0	—	—	0	—	—
14～	17	11.09	1.33	5	9.90	0.80	1	12.50	0.00	14～	0	—	—	0	—	—
15～	17	10.85	3.15	8	8.50	2.12	9	11.06	1.17	15～	0	—	—	0	—	—
16～	7	10.64	0.83	1	10.90	0.00	2	10.00	0.50	16～	0	—	—	0	—	—
To.	50			33			56			To.	1			21		

No. 14 Vertical height of dorsal fin

Male										Female					
B.L. (m)	Antarctic			Bonin			Japanese coastal			B.L. (m)	Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	1.90	0.00	7	1.94	0.35	10～	2	2.10	0.10	6	2.07	0.22
11～	0	—	—	6	1.83	0.18	13	2.09	0.43	11～	0	—	—	7	2.23	0.29
12～	0	—	—	7	1.89	0.18	12	1.82	0.49	12～	0	—	—	0	—	—
13～	3	2.07	0.25	4	2.25	0.67	10	2.04	0.50	13～	0	—	—	0	—	—
14～	6	1.97	0.27	5	2.08	0.32	5	2.48	1.00	14～	0	—	—	0	—	—
15～	9	2.04	0.42	8	2.12	0.42	7	2.17	0.31	15～	0	—	—	0	—	—
16～	5	2.04	0.21	1	2.50	0.00	2	3.10	1.30	16～	0	—	—	0	—	—
To.	23			32			56			To.	2			13		

No. 15 Base length of dorsal fin

Male										Female					
B.L. (m)	Antarctic			Bonin			Japanese coastal			B.L. (m)	Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	9.20	0.00	8	8.75	1.39	10～	2	8.50	3.00	7	8.64	1.25
11～	0	—	—	6	9.00	1.39	13	9.19	1.81	11～	0	—	—	8	8.50	1.00
12～	0	—	—	8	8.00	1.23	12	8.67	1.87	12～	0	—	—	0	—	—
13～	4	9.25	1.64	4	8.50	1.23	10	9.60	1.92	13～	0	—	—	0	—	—
14～	8	8.75	1.72	7	9.60	2.04	5	7.90	1.62	14～	0	—	—	0	—	—
15～	12	8.92	1.11	8	7.88	1.11	9	7.83	1.83	15～	0	—	—	0	—	—
16～	5	8.90	1.02	1	9.30	0.00	2	9.00	0.50	16～	0	—	—	0	—	—
To.	29			35			59			To.	2			15		

Table III (cont.)

No. 16 Axilla to tip of flipper

B.L. (m)	Male: Antarctic n	x̄	σ	Bonin n	x̄	σ	Japanese coastal n	x̄	σ	B.L. (m)	Female: Bonin n	x̄	σ	Japanese coastal n	x̄	σ
10～	0	—	—	1	6.90	0.00	3	6.47	0.47	10～	2	6.80	0.50	3	6.63	0.47
11～	0	—	—	6	6.39	0.67	8	6.74	0.47	11～	0	—	—	3	6.97	0.47
12～	0	—	—	7	6.80	0.83	8	7.05	0.62	12～	0	—	—	0	—	—
13～	9	6.63	1.11	4	6.43	0.13	5	6.60	0.25	13～	0	—	—	0	—	—
14～	16	6.73	0.92	5	6.60	0.40	4	7.68	1.14	14～	0	—	—	0	—	—
15～	15	6.94	1.12	8	6.30	0.25	8	6.58	0.75	15～	0	—	—	0	—	—
16～	6	8.13	1.41	0	—	—	2	7.55	0.75	16～	0	—	—	0	—	—
To.	46			31			38			To.	2			6		

No. 17 Flipper, tip to anterior end of lower border

B.L. (m)	Male: Antarctic n	x̄	σ	Bonin n	x̄	σ	Japanese coastal n	x̄	σ	B.L. (m)	Female: Bonin n	x̄	σ	Japanese coastal n	x̄	σ
10～	0	—	—	1	9.90	0.00	3	8.45	0.23	10～	2	8.85	0.75	3	9.47	0.08
11～	0	—	—	6	8.97	0.75	9	9.36	0.60	11～	0	—	—	3	9.47	0.08
12～	0	—	—	7	9.23	0.68	8	9.36	0.77	12～	0	—	—	0	—	—
13～	9	9.52	0.35	4	9.05	0.56	5	9.40	0.49	13～	0	—	—	0	—	—
14～	17	9.30	1.02	5	9.00	0.51	4	10.30	1.97	14～	0	—	—	0	—	—
15～	17	8.89	0.81	8	8.49	0.43	8	9.37	0.96	15～	0	—	—	0	—	—
16～	6	8.71	1.95	0	—	—	2	10.05	1.25	16～	0	—	—	0	—	—
To.	49			31			39			To.	2			6		

No. 18 Length of flipper along curve of lower border

B.L. (m)	Male: Antarctic n	x̄	σ	Bonin n	x̄	σ	Japanese coastal n	x̄	σ	B.L. (m)	Female: Bonin n	x̄	σ	Japanese coastal n	x̄	σ
10～	0	—	—	1	10.70	0.00	0	—	—	10～	2	9.10	0.50	0	—	—
11～	0	—	—	5	9.20	0.86	0	—	—	11～	0	—	—	0	—	—
12～	0	—	—	3	9.46	0.63	0	—	—	12～	0	—	—	0	—	—
13～	3	9.97	0.63	3	9.13	0.47	0	—	—	13～	0	—	—	0	—	—
14～	6	9.63	0.24	4	9.17	0.55	0	—	—	14～	0	—	—	0	—	—
15～	9	9.36	0.69	7	8.75	0.44	0	—	—	15～	0	—	—	0	—	—
16～	4	8.67	0.96	0	—	—	0	—	—	16～	0	—	—	0	—	—
To.	22			23			0			To.	2			0		

Table III (cont.)

No. 19 Greatest width of flipper

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10~	0	—	—	1	5.10	0.00	3	4.73	0.34	10~	2	4.60	0.20	3	4.67	0.03
11~	0	—	—	6	4.53	0.41	7	4.71	0.28	11~	0	—	—	3	4.73	0.25
12~	0	—	—	7	4.57	0.53	7	4.49	0.14	12~	0	—	—	0	—	—
13~	9	4.78	0.15	4	4.55	0.30	4	4.65	0.17	13~	0	—	—	0	—	—
14~	15	4.56	0.29	5	4.56	0.15	2	4.70	0.30	14~	0	—	—	0	—	—
15~	16	4.63	0.24	7	4.40	0.15	6	4.57	0.29	15~	0	—	—	0	—	—
16~	6	4.60	0.23	0	—	—	1	4.30	0.00	16~	0	—	—	0	—	—
To.	46			30			30			To.	2			6		

No. 20 Length of severed head, from condyle to tip

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10~	0	—	—	1	30.40	0.00	7	29.95	1.25	10~	1	25.60	0.00	13	27.31	1.49
11~	0	—	—	6	30.22	1.31	12	31.22	1.15	11~	0	—	—	11	27.95	1.35
12~	0	—	—	8	32.16	1.90	13	32.03	1.40	12~	0	—	—	0	—	—
13~	3	35.30	0.41	4	32.93	2.25	10	32.40	1.22	13~	0	—	—	0	—	—
14~	5	35.80	1.23	5	34.80	0.95	4	33.30	0.79	14~	0	—	—	0	—	—
15~	9	35.08	1.78	8	36.24	0.99	3	35.30	0.71	15~	0	—	—	0	—	—
16~	4	37.17	1.82	1	38.90	0.00	2	35.55	1.75	16~	0	—	—	0	—	—
To.	21			33			51			To.	1			24		

No. 21 Greatest width of skull

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10~	0	—	—	1	12.60	0.00	4	12.67	0.90	10~	2	11.35	0.25	13	12.38	0.68
11~	0	—	—	6	12.96	0.80	11	12.85	0.97	11~	0	—	—	7	12.87	0.57
12~	0	—	—	9	13.02	0.48	13	13.03	0.85	12~	0	—	—	0	—	—
13~	8	13.30	0.56	4	13.30	0.94	8	13.55	0.75	13~	0	—	—	0	—	—
14~	16	13.46	0.77	5	13.90	0.49	3	13.47	0.85	14~	0	—	—	0	—	—
15~	17	13.15	0.89	8	13.61	0.71	5	13.50	0.40	15~	0	—	—	0	—	—
16~	6	13.71	0.61	1	13.00	0.00	2	14.05	0.13	16~	0	—	—	0	—	—
To.	47			34			46			To.	2			20		

Table III (cont.)

No. 22 Length of skull, from condyle to tip

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10~	0	—	—	1	26.20	0.00	5	27.10	1.47	10~	2	24.00	0.50	13	24.27	1.25
11~	0	—	—	6	26.17	0.89	11	27.50	1.71	11~	0	—	—	8	25.37	0.93
12~	0	—	—	9	27.61	1.73	13	27.42	1.86	12~	0	—	—	0	—	—
13~	9	29.06	1.50	4	27.25	1.48	9	27.61	1.60	13~	0	—	—	0	—	—
14~	16	29.81	1.83	5	28.30	1.47	5	29.00	1.53	14~	0	—	—	0	—	—
15~	17	30.38	1.53	8	30.50	1.60	6	30.00	0.96	15~	0	—	—	0	—	—
16~	7	30.79	1.03	1	30.40	0.00	3	30.17	0.47	16~	0	—	—	0	—	—
To.	49			34			52			To.	2			21		

No. 23 Height of skull

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10~	0	—	—	1	10.20	0.00	2	9.55	0.25	10~	2	9.35	0.25	11	9.52	0.40
11~	0	—	—	4	10.17	0.42	7	10.23	0.53	11~	0	—	—	7	9.80	0.54
12~	0	—	—	9	10.63	0.85	10	10.25	0.11	12~	0	—	—	0	—	—
13~	9	9.74	0.65	3	10.47	0.24	9	10.19	0.94	13~	0	—	—	0	—	—
14~	14	9.45	0.40	5	10.00	0.51	2	10.30	1.00	14~	0	—	—	0	—	—
15~	15	9.73	0.51	7	11.08	0.82	3	10.43	0.48	15~	0	—	—	0	—	—
16~	7	9.23	0.63	1	10.90	0.00	2	10.80	0.50	16~	0	—	—	0	—	—
To.	45			30			35			To.	2			18		

No. 24 Tail flukes, tip to notch

B.L. (m)	Male: Antarctic n	$\bar{x}$	σ	Male: Bonin n	$\bar{x}$	σ	Male: Japanese coastal n	$\bar{x}$	σ	B.L. (m)	Female: Bonin n	$\bar{x}$	σ	Female: Japanese coastal n	$\bar{x}$	σ
10~	0	—	—	1	14.60	0.00	8	14.17	0.82	10~	2	13.60	0.00	10	13.85	0.99
11~	0	—	—	6	13.21	0.57	13	14.14	1.28	11~	0	—	—	11	14.07	0.89
12~	0	—	—	9	14.08	0.86	14	13.84	0.98	12~	0	—	—	0	—	—
13~	3	13.46	1.18	4	14.43	0.22	10	13.85	1.24	13~	0	—	—	0	—	—
14~	8	13.67	1.09	5	12.80	1.55	4	13.05	1.15	14~	0	—	—	0	—	—
15~	6	13.13	0.38	6	13.88	1.10	8	13.49	1.52	15~	0	—	—	0	—	—
16~	4	12.93	0.22	1	14.20	0.00	2	13.05	0.75	16~	0	—	—	0	—	—
To.	21			32			59			To.	2			21		

Table III (cont.)

No. 25 Tail flukes, total spread

B.L. (m)	Male									B.L. (m)	Female					
	Antarctic			Bonin			Japanese coastal				Bonin			Japanese coastal		
	n	$\bar{x}$	σ	n	$\bar{x}$	σ	n	$\bar{x}$	σ		n	$\bar{x}$	σ	n	$\bar{x}$	σ
10～	0	—	—	1	27.70	0.00	0	—	—	10～	2	27.75	0.25	0	—	—
11～	0	—	—	4	28.75	1.30	0	—	—	11～	0	—	—	0	—	—
12～	0	—	—	5	27.30	1.72	0	—	—	12～	0	—	—	0	—	—
13～	3	26.50	2.11	4	29.00	0.87	0	—	—	13～	0	—	—	0	—	—
14～	2	26.50	1.00	4	24.25	2.86	0	—	—	14～	0	—	—	0	—	—
15～	6	23.83	1.08	3	26.50	0.82	0	—	—	15～	0	—	—	0	—	—
16～	3	26.50	0.82	0	—	—	0	—	—	16～	0	—	—	0	—	—
To.	14			21			0			To.	2			0		

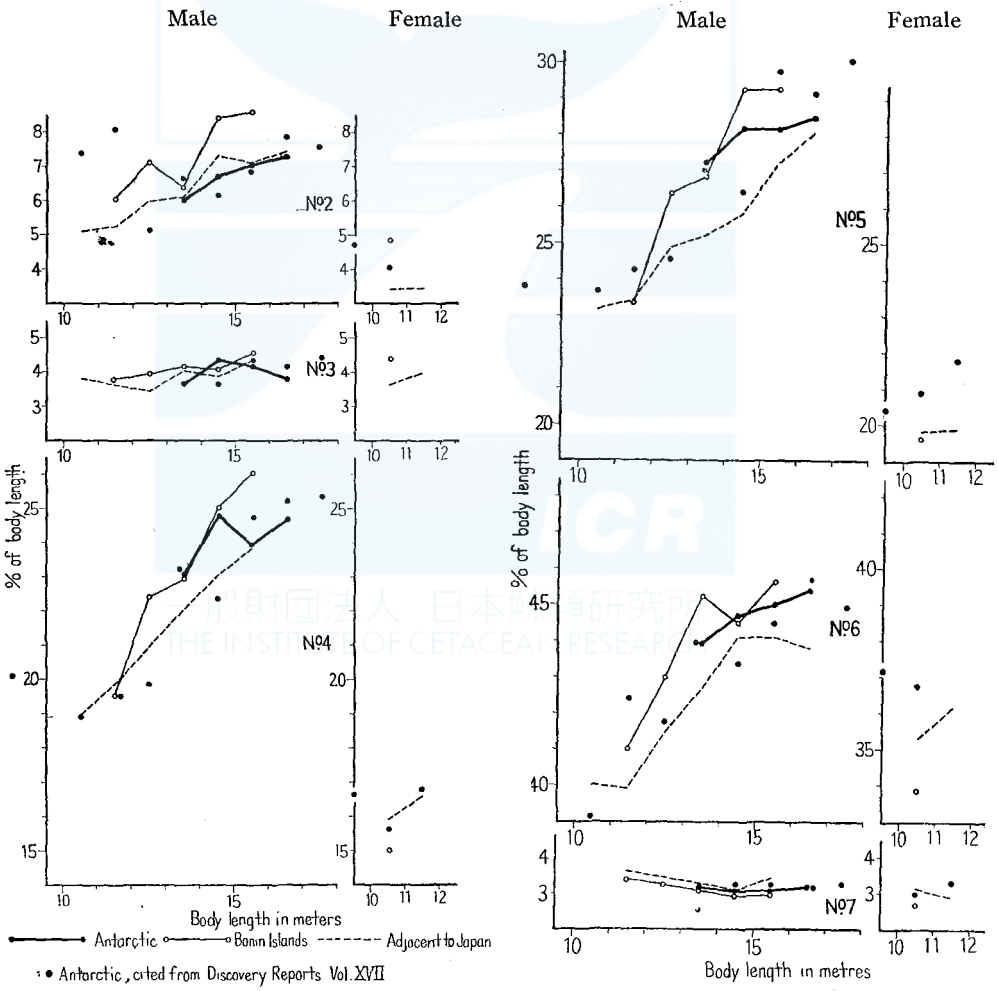


Fig. 1 Comparison of the body proportions between the Antarctic, Bonin Islands and Japanese coastal Sperm whales

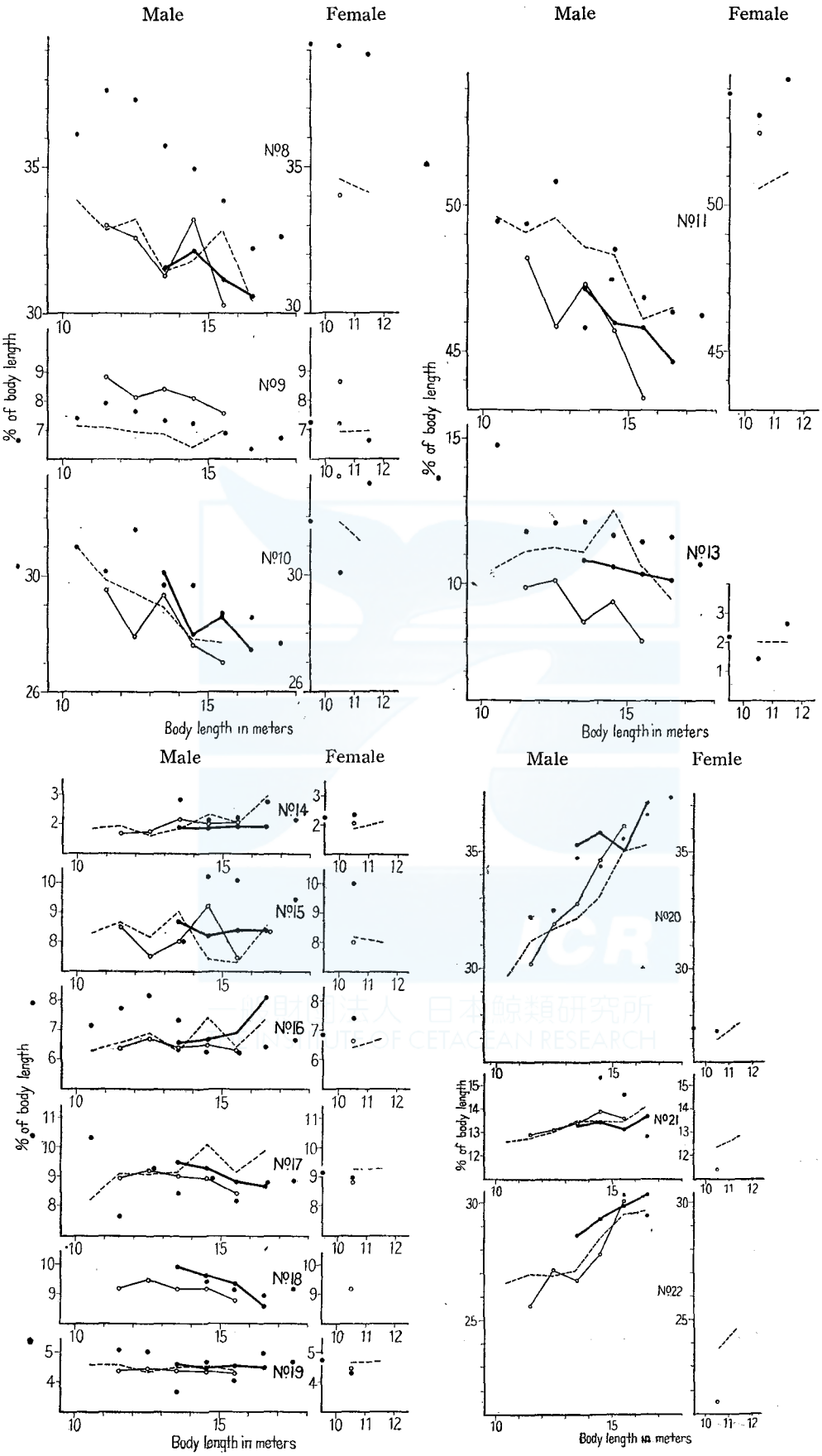
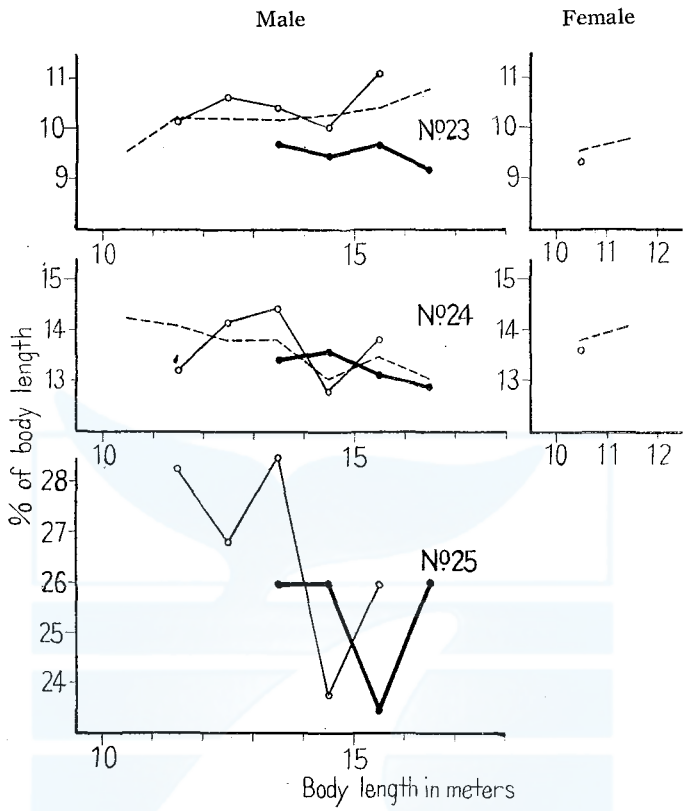

Male
Female
Male
Female
№8
№9
№10
№11
№13
% of body length
Body length in meters
Male
Female
Male
Femle
№14
№15
№16
№17
№18
№19
№20
№21
№22
% of body length
Body length in meters

Fig. 1 (cont.)

Fig. 1. (cont.)



Comparisons according to area are shown in fig. 1. From this figure, no significant difference is noted in any items both in males and females except for no. 8, "Notch of flukes to posterior emargination of dorsal fin." This difference in no. 8, is deemed to be attributed to the obscurity in definition of this measurement and not to be available for comparison.

As regards the differences in males and females, Matthews states, "The curve for the females is above that for the males in the measurement nos. 7, 8, 10 and 11, indicating that for these measurements the values in the female are relatively greater than in the male. In the curves for the measurements, nos. 4, 5, 6 and 20, relating to the head and anterior end of the body, those of the females are below those of the males, indicating that for these measurements the values for the female are comparatively smaller than those from the males. Similarly the curves show that the values for measurements nos. 9, width of flukes at insertion and 13, the genito-anal distance, are comparatively smaller in females than males."

Sexual differences in this study are seen in the following items.

In nos. 2, "Projection of snout beyond tip of lower jaw," 4, "Tip of snout to angle of gape," 5, "Tip of snout to centre of eye," 6, "Tip of snout to tip of flipper," 13, "Centre of anus to centre of reproductive aperture," 20, "Length of severed head, from condyle to tip" and 22, "Length of skull, from condyle to tip of premaxilla," males are bigger than females, but in nos. 8, "Notch of flukes to posterior emargination of dorsal fin," 10, "Notch of flukes to centre of anus" and 11, "Notch of flukes to umbilicus" males smaller. That is to say, males have bigger head part and smaller caudal region than in females. Projection of snout developed more remarkably in males, and the position of the reproductive aperture also shows sexual difference as in balaenopterid whales. As regards the dorsal fin, it is noted to situate more anteriorly in females. These are consistent with the Matthews opinion, however, in measurement nos. 7, "Centre of eye to centre of ear," and 9, "Width of flukes at insertion" the differences in sex have not been concluded in our study up to now.

In other points, i.e. nos. 14, "Vertical height of dorsal fin," 15, "Base length of dorsal fin," 16, "Axilla to tip of flipper," 17, "Flipper, tip to anterior end of lower border," 18, "Length of flipper along curve of lower border," 19, "Greatest width of flipper," 21, "Greatest width of skull," 23, "Height of skull" and 24, "Tail flukes, tip

Table IV Correlation between body length and the dimensions of various parts of body

a. Males

No. 2 Projection of snout beyond tip of lower jaw

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
3.1~	1	1						2
3.6~								
4.1~		2		2	1	1		6
4.6~	2	2	3	3				10
5.1~	1	7	4	5	1			18
5.6~	2	3	3	2	3	1	1	15
6.1~	1		2	2	4	5	1	15
6.6~		2	3	1		5	2	13
7.1~	1	2	6	4	6	7	1	27
7.6~				1	5	4	2	12
8.1~			1	1	4	5	3	14
8.6~			1			2		3
9.1~					1	2		3
9.6~					1	1		2
Total	8	19	23	21	26	33	10	140

No 3 Tip of snout to blow-hole

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
1.6~					1			1
2.1~		1	1				1	3
2.6~		2	4			1		7
3.1~	2	4	8	2	4	4	1	25
3.6~	3	6	5	6	6	8	4	38
4.1~	3	5	3	6	4	6	3	30
4.6~			2		7	7	1	17
5.1~		1	1	1	2	5		10
5.6~					1	1		2
Total	8	19	24	15	25	32	10	133

Remarks x: body length in metres
y: % of various parts against body length

Table IV (cont.)

a. Males

No. 4 Tip of snout to angle of gape

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
14.0~	1							1
15.0~								
16.0~								
17.0~								
18.0~	2	1	1					4
19.0~	2	8		1	1			12
20.0~	2	3	5	2	1			13
21.0~	2	6	9	2	1	1		21
22.0~			1	5	1	2		9
23.0~			4	5	6	4	1	20
24.0~			2	5	6	10	2	25
25.0~			1		7	8	4	20
26.0~				2	1	4	3	10
27.0~					1	2		3
28.0~						1		1
29.0~					1			1
Total	9	18	23	22	26	32	10	140

No. 5 Tip of snout to centre of eye

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
19.0~	1							1
20.0~	1							1
21.0~	1	4	1					6
22.0~	1	6	1					8
23.0~	4	3	4	3				14
24.0~	1	4	6	4	2	1		18
25.0~		3	4	3	1	1	1	13
26.0~			2	7	6	5	1	21
27.0~			3	2	6	4	1	16
28.0~			2	2	5	16	4	29
29.0~			1	2	3	4	2	12
30.0~					2	2	1	5
31.0~					1	1		2
32.0~					1			1
Total	9	20	24	23	27	34	10	147

No. 6 Tip of snout to tip of flipper

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
36.0~		1						1
37.0~		2						2
38.0~	1	1	2					4
39.0~	3	4	2					9
40.0~	3	5	3	3				14
41.0~	2	4	4	3	2	3	1	19
42.0~		3	6	4	2	1	1	17
43.0~			2	3	5	7		17
44.0~			3	3	6	5	2	19
45.0~			1	6	6	8	2	23
46.0~				1	5	7	2	15
47.0~						3	1	4
Total	9	20	23	23	26	34	9	144

No. 7 Centre of eye to centre of ear

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
2.5~		1				2		3
2.7~			1		5	3	1	10
2.9~	1		1		3	4		9
3.1~	1	1	2	5	5	1	2	17
3.3~		2	3	1	5	10	2	23
3.5~		1	1		1		1	4
3.7~		1				1		2
3.9~								
4.1~		2	1					3
Total	2	8	9	6	19	21	6	71

No. 8 Notch of flukes to posterior emargination of dorsal fin

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
27.0~				1	1	1		3
28.0~						2	2	4
29.0~				2		2		4
30.0~			1	2	4	5	4	16
31.0~		4	6	7	7	15	3	42
32.0~			4	5	5	4		18
33.0~	4	6	3	2	4	2		21
34.0~	2	3	3	4	1	2	1	16
35.0~	3	3	3		1			10
36.0~			1		3			4
37.0~		1						1
38.0~					1			1
39.0~								
40.0~			1					1
Total	9	17	22	23	27	33	10	141

No. 9 Width of flukes at insertion

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
4.1~						1		1
4.6~								
5.1~					1			1
5.6~			1	1	2			4
6.1~	2	3	2	1		1	2	11
6.5~		6	8	7	2	3		26
7.1~	4	9	10	2	3	9		37
7.6~	2	2	2		1			7
8.1~	1		1	3	1			6
8.6~						1	1	2
Total	9	20	24	14	10	15	3	95

Table IV (cont.)

a. Males

No. 10 Notch of flukes to centre of anus

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
25.0~					2	2	1	5
26.0~		1		1	1	4		7
27.0~		2	4	4	6	7	3	26
28.0~		2	2	5	9	12	1	31
29.0~	1	5	9	6	7	5	4	37
30.0~	3	1	5	3	2	3		17
31.0~	2	6	2	2		1		13
32.0~	1	2	1	1				5
33.0~			1					1
34.0~		1						1
35.0~	1			1				2
Total	8	20	24	23	27	34	9	145

No. 11 Notch of flukes to umbilicus

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
40.0~						1		1
41.0~						1		1
42.0~					1	1	1	3
43.0~			2			2		4
44.0~				1	2	3	1	7
45.0~	1		1	2	4	7	4	19
46.0~		1	3	3	7	11	3	28
47.0~		4	3	5	7	5	1	25
48.0~		3	3	5	2	3		16
49.0~	2	3	5	3				13
50.0~	3	3	3	1	1			11
51.0~	2	2	2	1	1			8
52.0~	1	2	1	1				5
53.0~		1	1	1				3
54.0~		1						1
Total	9	20	24	23	25	34	10	145

No. 13 Centre of anus to centre of reproductive aperture

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
6.0~				1		2		3
7.0~	1				1	2		4
8.0~			2		1	4		7
9.0~		3	2	2	3	2	3	15
10.0~	3	7	3	7	7	11	4	42
11.0~	2	4	6	8	5	8	3	36
12.0~	1	3	8	4	6	4		26
13.0~	1	2	1			1		5
14.0~				1				1
Total	8	19	22	23	23	34	10	139

No. 14 Vertical height of dorsal fin

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
1.1~			3	1				4
1.3~	1	2	1					4
1.5~		3	2	1	4	4	1	15
1.7~	3	5	4	5	4	4	1	26
1.9~	2	2	5	4	1	5	1	20
2.1~	1	2	2	2	2	5	3	17
2.3~		1	1	2	3	2		9
2.5~	1	4				2	1	8
2.7~			1					1
2.9~						2		2
3.1~				1				1
3.3~				1				1
3.5~					1			1
3.7~					1			1
3.9~								
4.1~								
4.3~							1	1
Total	8	19	19	17	16	24	8	111

No. 15 Base length of dorsal fin

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
5.0~			2		3	2		7
6.0~	1	2	2	3	1	3		12
7.0~	1	3	2	2	3	8	1	20
8.0~	3	5	10	2	5	6	3	34
9.0~	3	3	1	4	3	8	3	25
10.0~		4		4	1		1	10
11.0~	1		3	2	4	2		12
12.0~		2		1				3
Total	9	19	20	18	20	29	8	123

No. 16 Axilla to tip of flipper

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
4.6~				1	1			2
5.1~			1		1	1		3
5.6~	1	3		1	2	4		11
6.1~		5	4	7	5	14	1	36
6.6~	3	1	3	8	7	6	2	30
7.1~		5	4		4	2	1	16
7.6~			2		2	1		5
8.1~			1		1	1	1	4
8.6~					2	1	1	4
9.1~				1				1
9.6~						1	2	3
Total	4	14	15	18	25	31	8	115

Table IV (cont.)

a. Males

No. 17 Flipper, tip to anterior end of lower border

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
6.6~						1	2	3
7.1~					3	2	1	6
7.6~		1				2		3
8.1~	2	3	2	1	1	6		15
8.6~	1	1	5	2	5	12	1	27
9.1~		6	3	10	8	7		34
9.6~	1	2	2	3	4	1	2	15
10.1~		2	2	2	2	1		9
10.6~			1			1		2
11.1~							1	1
11.6~					2		1	3
12.1~					1			1
Total	4	15	15	18	26	33	8	119

No. 18 Length of flipper, along curve of lower border

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
7.6~		1					1	2
8.1~					1	2	2	5
8.6~		1	1	2		6		10
9.1~		1	1	1	4	4		11
9.6~		1		2	5	3		11
10.1~		1	1				1	3
10 6~	1			1		1		3
Total	1	5	3	6	10	16	4	45

No. 19 Greatest width of flipper

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
3.3~			1					1
3.5~								
3.7~		1						1
3.9~						1		1
4.1~		2	1	1	4	3	1	12
4.3~	1		3	2	6	8	2	22
4.5~	1	4	5	5	4	10	2	31
4.7~		2	3	6	5	3	1	20
4.9~		4		3	3	4	1	15
5.1~	2		1					3
Total	4	13	14	17	22	29	7	106

No. 20 Length of severed head, from condyle to tip

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
27.0~		1						1
28.0~	2		1					3
29.0~	3	5	3	1				12
30.0~	1	1	2	1				5
31.0~	1	9	7	5				22
32.0~	1	1	4	1	2	1		10
33.0~		1	2	3	2	2	1	11
34.0~			1	3	5	5	1	15
35.0~			1	3	3	3		10
36.0~					1	7		8
37.0~					1		3	4
38.0~						2	1	3
39.0~							1	1
Total	8	18	21	17	14	20	7	105

No 21. Greatest width of skull

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
11.1~		1				1		2
11.6~	2	1	3	1		1		8
12.1~		4	3	1	1	3		12
12.6~	1	6	4	5	6	3	2	27
13.1~	1	2	6	4	8	11	2	34
13.6~	1	1	5	5	1	7	1	21
14.1~		1	1	3	6	1	4	16
14.6~				1	1	3		5
15.1~		1			1			2
Total	5	17	22	20	24	30	9	127

No 22. Length of skull, from condyle to tip

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
24.0~	2	2	3					7
25.0~		3	3	3	1			10
26.0~	2	4	2	4	2			14
27.0~	1	5	3	3	1	2		15
28.0~			6	4	7	5		22
29.0~		2	4	5	6	5	3	25
30.0~		1	1	2	4	7	5	20
31.0~				1	3	9	2	15
32.0~	1				1	2	1	5
33.0~					1	1		2
Total	6	17	22	22	26	31	11	135

Table IV (cont.)

a. Males

No. 23 Height of skull

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
8.1~				1			2	3
8.6~				2	2	1		5
9.1~	1	1	1	2	9	5	2	21
9.6~	1	3	4	5	6	6	3	28
10.1~	1	5	8	5	2	6	1	28
10.6~		1	3	4	1	4	1	14
11.1~		1	2	2	1	2	1	9
11.6~						1		1
12.1~			1					1
Total	3	11	19	21	21	25	10	110

No. 24 Tail flukes, tip to notch

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
9.6~					1	1		2
10.1~		1						1
10.6~								0
11.1~				1				1
11.6~		1	1	1	1		1	5
12.1~		1	1		2		1	5
12.6~	1	4	1	1	3	5	1	16
13.1~	1		4	1	2	6	1	15
13.6~	2	3	7	3	5	2	2	24
14.1~		3	3	7		2	1	16
14.6~	4	2	3	2	2	3		16
15.1~	1	1	2					4
15.6~		2	1		1	1		5
16.1~				1				1
16.6~		1						1
Total	9	19	23	17	17	20	7	112

No. 25 Tail flukes, total spread

y \ x	10~	11~	12~	13~	14~	15~	16~	To.
20.0~					1			1
21.0~						1		1
22.0~					1			1
23.0~				1		2		3
24.0~			1			2		3
25.0~					1	2	1	4
26.0~			1		1	1	1	4
27.0~	1	2	1	1	2	1	1	9
28.0~			1	4				5
29.0~		1	1					2
30.0~		1		1				2
Total	1	4	5	7	6	9	3	35

b. Females

No. 2 Projection of snout beyond tip of lower jaw

y \ x	10~	11~	Total
2.6~	2	4	6
3.1~	5	2	7
3.6~	2	3	5
4.1~	3	2	5
Total	12	11	23

No. 3 Tip of snout to blow-hole

y \ x	10~	11~	Total
3.1~	5	2	7
3.6~	4	5	9
4.1~		3	3
4.6~	1	1	2
5.1~	1		1
Total	11	11	22

No. 4 Tip of snout to angle of gape

y \ x	10~	11~	Total
12.0~		1	1
13.0~			
14.0~	2		2
15.0~	2	1	3
16.0~	6	1	7
17.0~	1	5	6
18.0~	1	2	3
19.0~		1	1
Total	12	11	23

Table IV (cont.)

b. Females

No. 5 Tip of snout to centre of eye

y \ x	10～	11～	Totai
15.1～		1	1
15.6～			
16.1～			
16.6～			
17.1～			
17.6～			
18.1～	1	1	2
18.6～	1	1	2
19.1～	4		4
19.6～	3	3	6
20.1～	3	1	4
20.6～		1	1
21.1～		2	2
21.6～	1	1	2
22.1～		1	1
Total	13	12	25

No. 6 Tip of snout to tip of flipper

y \ x	10～	11～	Total
32.6～		1	1
33.1～			
33.6～	2		2
34.1～	2	1	3
34.6～	2	1	3
35.1～	3		3
35.6～	1	1	2
36.1～	1	2	3
36.6～			
37.1～		1	1
37.6～	1		1
38.1～		2	2
38.6～			
39.1～		1	1
Total	12	10	22

No. 7 Centre of eye to centre of ear

y \ x	10～	11～	Total
2.5～		1	1
2.7～	4		4
2.9～			
3.1～		1	1
3.3～		1	1
3.5～			
3.7～			
3.9～			
4.1～	1		1
Total	5	3	8

No. 8 Notch of flukes to posterior emargination of dorsal fin

y \ x	10～	11～	Total
31.0～		2	2
32.0～			
33.0～	2	1	3
34.0～	3	1	4
35.0～	2	2	4
36.0～	1	2	3
37.0～	3	1	4
38.0～	2		2
39.0～		2	2
Total	13	11	24

No. 9 Width of flukes at insertion

y \ x	10～	11～	Total
5.1～	1		1
5.6～			
6.1～		2	2
6.6～	4	5	9
7.1～	4	3	7
7.6～	1		1
8.1～	1	1	2
8.6～	1	1	2
Ttoal	12	12	24

No. 10 Notch of flukes to centre of anus

y \ x	10～	11～	Total
28.0～	2		2
29.0～	1	2	3
30.0～		1	1
31.0～	2	3	5
32.0～	2	4	6
33.0～	1		1
34.0～	1		1
35.0～	2		2
36.0～	1		1
Total	12	10	22

Table IV (cont.)

b. Females

No. 11 Notch of flukes to umbilicus

y \ x	10~	11~	Totrl
42.0~	1		1
43.0~	1	1	2
44.0~			
45.0~			
46.0~			
47.0~			
48.9~	1		1
49.0~		1	1
50.0~	1		1
51.0~	1	1	2
52.0~	3	3	6
53.0~		4	4
54.0~	1		1
55.0~	1		1
56.0~	2	1	3
Total	12	11	23

No. 13 Centre of anus to centre of reproductive aperture

y \ x	10~	11~	Total
0.0~		1	1
1.0~	4	4	8
2.0~	6	2	8
3.0~		3	3
4.0~			
5.0~	1	1	2
Totol	11	11	22

No. 14 Vertical height of dorsal fin

y \ x	10~	11~	Total
1.7~	2	1	3
1.9~	2	1	3
2.1~	3	3	6
2.3~	1	1	2
2.5~			
2.7~		1	1
Total	8	7	15

No. 15 Base length of dorsal fin

y \ x	10~	11~	Total
5.0~	1		1
6.0~	1		1
7.0~	1	3	4
8.0~	2	3	5
9.0~	2	1	3
10.0~	1	1	2
11.0~	1		1
Total	9	8	17

No. 16 Axilla to tip of flipper

y \ x	10~	11~	Total
6.1~	3	1	4
6.6~			
7.1~	2	2	4
Total	5	3	8

No. 17 Flipper, tip to anterior end of lower border

y \ x	10~	11~	Total
8.1~	1		1
8.6~			
9.1~	2	2	4
9.6~	2	1	3
Total	5	3	8

No. 18 Length of flipper along curve of lower border

y \ x	10~	Total
8.6~	1	1
9.1~		
9.6~	1	1
Total	2	2

Table IV (cont.)

b. Females

No. 19 Greatest width of flipper

y \ x	10~	11~	Total
4.3~	1	1	2
4.5~	2		2
4.7~	2	1	3
4.9~		1	1
Total	5	3	8

No. 20 Length of severed head, from condyle to tip

y \ x	10~	11~	Total
24.6~	2		2
25.1~			
25.6~	2	2	4
26.1~	1	1	2
26.6~	3	1	4
27.1~	2	1	3
27.6~	1		1
28.1~		2	2
28.6~	1	2	3
29.1~	1	1	2
29.6~	1	1	2
Total	14	11	25

No. 21 Greatest width of skull

y \ x	10~	11~	Total
11.1~	3		3
11.6~	3	1	4
12.1~	4	1	5
12.6~	2	1	3
13.1~	3	4	7
Total	15	7	22

No. 22 Length of skull, from condyle to tip

y \ x	10~	11~	Total
21.0~	1		1
22.0~	1		1
23.0~	4	1	5
24.0~	4	2	6
25.0~	5	3	8
26.0~		2	2
Total	15	8	23

No. 23 Height of skull

y \ x	10~	11~	Total
8.6~	2		2
9.1~	4	3	7
9.6~	6	2	8
10.1~	1	1	2
10.6~		1	1
Total	13	7	20

No. 24 Tail flukes, tip to notch

y \ x	10~	11~	Total
12.1~		1	1
12.6~	2		2
13.1~	2	1	3
13.6~	6	4	10
14.1~		3	3
14.6~	1		1
15.1~		1	1
15.6~		1	1
16.1~	1		1
Total	12	11	23

No. 25 Tail flukes, total spread

y \ x	10~	Total
25.0~		0
26.0~		0
27.0~	2	2
Total	2	2

to notch," no significant difference is noted. The variations of proportion with increasing total length are summarized from those on the Antarctic, Bonin Island and the Adjacent waters of Japan into table

IV. As already shown in table II, body lengths of whales examined range from 10 to 17 metres. It is not seen from table IV that in this range of body length the curves of proportion of the various parts show the complexity which is noted in the balaenopterid whales at about the body length at which physical maturity is attained (Fujino, 1954). Therefore, it is not able from these curves to assume the body length at which physical maturity is attained in males. In females, number of data is too scanty to discuss on this point. Regression lines are given on nos. 5, 6, 20 and 22 representing the head region and nos. 10 and 11 which represent the caudal part of the body by the formulae I to VI.

Formula I. No. 5: Tip of snout to centre of eye... $y=0.07x^{1.53}$

„ II. No. 6: Tip of snout to tip of flipper..... $y=0.19x^{1.31}$

„ III. No. 20: Length of severed head, from condyle to tip of snout.. $y=0.11x^{1.43}$

„ IV. No. 22: Length of skull, from condyle to tip of premaxilla.. $y=0.12x^{1.34}$

„ V. No. 10: Notch of tail flukes to

Table V Standard length of various part of the sperm whale body

measure-ment number	Body length in metres						
	10.5	11.5	12.5	13.5	14.5	15.5	16.5
5	2.41 (23.0)	2.77 (24.1)	3.15 (25.2)	3.54 (26.2)	3.96 (27.3)	4.37 (28.2)	4.81 (29.2)
6	4.19 (39.9)	4.72 (41.0)	5.26 (42.1)	5.82 (43.1)	6.39 (44.1)	6.98 (45.0)	7.57 (45.9)
10	3.26 (31.0)	3.50 (30.4)	3.73 (29.8)	3.95 (29.3)	4.17 (28.8)	4.39 (28.3)	4.60 (27.9)
11	5.45 (51.9)	5.79 (50.3)	6.13 (49.0)	6.45 (47.8)	6.76 (46.6)	7.08 (45.7)	7.38 (44.7)
20	3.13 (29.8)	3.57 (31.0)	4.02 (32.2)	4.49 (33.3)	4.97 (34.3)	5.47 (35.3)	5.98 (36.2)
22	2.75 (26.2)	3.10 (27.0)	3.47 (27.8)	3.85 (28.5)	4.23 (29.2)	4.63 (29.9)	5.03 (30.5)

upper figures: length in metres.
lower figures: % of body length.

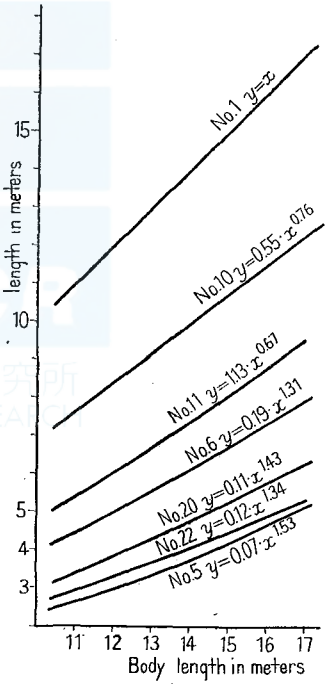


Fig. II Standard dimensions of various parts of body of the sperm whales

centre of anus.....$y=0.55x^{0.76}$

„ VI. No. 11: Notch of flukes to umbilicus..$y=1.13x^{0.67}$

Standard length of various parts calculated from these formulae are shown in Table V as the percentage against body length. These are drawn in Fig. II also.

Summary

1) As regards the body proportions of the sperm whales taken from the Antarctic, Bonin Islands and the Adjacent waters of Japan, no difference according to area is noted.

2) Differences in males and females are seen in the following points:

a) Males have bigger head and smaller caudal part than in females.

b) Males have more posteriorly situated dorsal fin than in females.

c) As regards nos. 2, "Projection of snout beyond tip of lower jaw" and 13, "Centre of anus to centre of reproductive aperture," males bigger than in females.

3) Standard length of various parts of body on male sperm whales may be given by the following equations.

No. 5: Tip of snout to centre of eye.....$y=0.07x^{1.53}$

No. 6: Tip of snout to tip of flipper.....$y=0.19x^{1.31}$

No. 10: Notch of tail flukes to centre of anus...$y=0.55x^{0.76}$

No. 11: Notch of flukes to umbilicus.....$y=1.13x^{0.67}$

No. 20: Length of severed head, from condyle to tip of snout.....$y=0.11x^{1.43}$

No. 22: Length of skull, from condyle to tip of premaxilla.....$y=0.12x^{1.34}$

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Appendix

Measurement of Body Proportions of the Sperm Whales.

(upper figures: actual length in meters)
(lower figures: % against body length)

Measurement No. 1 Total length, from tip of snout to notch of tail flukes (upper figures in meters, lower figures in feet)
No. 2 Projection of snout bejond tip of lower jaw.
No. 3 Tip of snout to blow-hole.
No. 4 Tip of snout to angle of gape.
No. 5 Tip of snout to centre of eye.
No. 6 Tip of snout to tip of flipper.
No. 7 Centre of eye to center of ear.
No. 8 Notch of flukes to posterior emargination of dorsal fin.
No. 9 Width of flukes at insertion.
No. 10 Notch of flukes to centre of anus.
No. 11 Notch of flukes to umbilicus.
No. 13 Centre of anus to centre of reproductive aperture.
No. 14 Vertical height of dorsal fin.
No. 15 Base length of dorsal fin.
No. 16 Axilla to tip of flipper.
No. 17 Flipper, tip to anterior end of lower border.
No. 18 Length of flipper along curve of lower border.
No. 19 Greatest width of flipper.
No. 20 Length of severed head from condyle to tip.
No. 21 Greatest width of skull.
No. 22 Length of skull, from condyle to tip of premaxilla.
No. 23 Height of skull.
No. 24 Tail flukes, tip to notch.
No. 25 Tail flukes, total spread.

I. Antarctic, males, 1950.

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
H* 155	Dec. 5	13.05	0.76	—	2.75	3.40	5.50	—	4.35	—	4.25	6.50	1.45	—	—	0.84	1.24	—	0.62	—	1.80	3.60	1.30	—	—
		43	**5.8**	—	**21.1**	**26.1**	**42.1**	—	**33.3**	—	**32.6**	**49.8**	**11.1**	—	—	**6.4**	**9.5**	—	**4.8**	—	**13.8**	**27.6**	**10.0**	—	—
H 195	Dec. 11	13.15	0.78	—	3.15	3.77	5.90	—	4.50	—	3.80	6.30	1.50	—	—	0.82	1.20	—	0.60	—	1.90	4.00	1.26	—	—
		43	**5.9**	—	**24.0**	**28.7**	**44.9**	—	**34.2**	—	**28.9**	**47.9**	**11.4**	—	—	**6.2**	**9.1**	—	**4.6**	—	**14.4**	**30.4**	**9.6**	—	—
H 192	Dec. 11	13.20	0.56	—	2.90	3.45	5.65	—	4.50	—	3.90	6.45	1.50	—	—	0.83	1.25	—	0.64	—	1.70	4.10	1.40	—	—
		43	**4.2**	—	**22.0**	**26.1**	**42.8**	—	**34.1**	—	**29.5**	**48.9**	**11.4**	—	—	**6.3**	**9.5**	—	**4.8**	—	**12.9**	**31.1**	**10.6**	—	—
H 111	Dec. 2	13.32	0.70	—	3.20	3.55	5.95	—	3.65	—	3.80	6.55	1.60	—	—	0.88	1.36	—	0.64	—	1.70	3.85	1.40	—	—
		44	**5.3**	—	**24.0**	**26.7**	**44.7**	—	**27.4**	—	**28.5**	**49.2**	**12.0**	—	—	**6.6**	**10.2**	—	**4.8**	—	**12.8**	**28.9**	**10.5**	—	—
H 152	Dec. 5	13.40	0.98	—	3.12	3.90	6.10	—	4.00	—	3.70	6.00	1.45	—	—	0.91	1.29	—	0.61	—	1.80	3.80	1.30	—	—
		44	**7.3**	—	**23.3**	**29.1**	**45.5**	—	**29.9**	—	**27.6**	**49.8**	**10.8**	—	—	**6.8**	**9.6**	—	**4.6**	—	**13.4**	**28.4**	**9.7**	—	—
N** 103	Dec. 10	13.80	1.00	0.50	3.29	3.65	5.98	0.43	4.30	1.00	4.22	6.53	1.44	0.25	1.40	1.28	1.32	1.47	0.62	4.78	1.75	3.89	1.23	1.66	3.17
		45	**7.2**	**3.6**	**23.8**	**26.5**	**43.4**	**3.1**	**31.2**	**7.2**	**30.6**	**47.3**	**10.4**	**1.8**	**10.1**	**9.2**	**9.6**	**10.7**	**4.5**	**34.6**	**12.7**	**28.2**	**8.9**	**12.0**	**23.0**
H 104	Dec. 2	13.95	0.70	—	3.00	3.65	5.90	—	4.55	—	4.20	6.75	1.65	—	0.90	0.70	1.30	—	0.68	—	1.80	4.30	1.30	—	—
		46	**5.0**	—	**21.5**	**26.2**	**42.3**	—	**32.6**	—	**30.1**	**48.0**	**11.8**	—	**6.5**	**5.0**	**9.3**	—	**4.9**	—	**12.9**	**30.8**	**9.3**	—	—
N 119	Dec. 12	13.95	1.11	0.46	3.67	3.95	6.33	0.46	4.75	1.13	4.11	6.63	1.69	0.34	1.25	0.97	1.29	1.30	0.66	4.95	—	3.70	1.42	1.97	3.79
		46	**8.0**	**3.3**	**26.3**	**28.3**	**45.4**	**3.3**	**34.1**	**8.1**	**29.5**	**47.5**	**12.1**	**2.4**	**9.0**	**7.0**	**9.3**	**9.3**	**4.8**	**35.5**	—	**26.5**	**10.2**	**14.1**	**27.2**
N 102	Dec. 10	13.96	0.87	0.52	3.35	3.72	6.14	0.44	4.24	1.00	4.08	6.48	1.42	0.28	1.42	0.92	1.30	1.40	0.68	4.98	1.90	4.09	1.25	1.97	3.98
		46	**6.2**	**3.7**	**24.0**	**26.6**	**44.0**	**3.1**	**30.4**	**7.2**	**29.2**	**46.3**	**10.2**	**2.0**	**10.2**	**6.6**	**9.3**	**10.0**	**4.9**	**35.7**	**13.6**	**29.3**	**9.0**	**14.1**	**28.5**
H 21	Nov. 24	14.00	1.00	0.55	3.80	4.15	6.40	—	4.50	—	4.00	6.40	1.30	—	—	1.00	1.30	—	0.60	5.30	1.85	4.45	1.45	—	—
		46	**7.1**	**3.9**	**27.1**	**29.6**	**45.7**	—	**32.1**	—	**28.6**	**45.7**	**9.3**	—	—	**7.1**	**9.3**	—	**4.3**	**37.9**	**13.2**	**31.8**	**10.4**	—	—
N 9	Nov. 27	14.11	1.00	0.75	3.00	4.30	—	0.46	4.55	1.15	4.24	6.75	1.75	0.30	1.20	0.70	1.00	1.38	—	—	1.90	4.20	1.30	—	—
		46	**7.1**	**5.3**	**20.3**	**30.5**	—	**3.3**	**32.2**	**8.2**	**30.0**	**47.8**	**12.4**	**2.1**	**8.5**	**4.9**	**7.1**	**9.8**	—	—	**13.5**	**29.8**	**9.2**	—	—
H 204	Dec. 17	14.15	1.00	0.50	3.40	3.80	6.25	0.45	5.15	—	4.20	6.70	1.65	—	—	0.98	1.48	—	0.68	—	1.85	4.00	1.35	—	—
		46	**7.8**	**3.5**	**24.0**	**26.9**	**44.2**	**3.2**	**36.4**	—	**29.7**	**47.4**	**11.7**	—	—	**6.9**	**10.5**	—	**4.8**	—	**13.1**	**28.3**	**9.5**	—	—
N 113	Dec. 12	14.33	1.03	0.55	3.52	3.93	6.50	0.43	4.50	1.03	4.08	—	1.08	0.35	1.60	1.00	1.35	1.38	0.68	4.98	1.92	4.10	1.26	1.77	—
		47	**7.2**	**3.8**	**24.5**	**27.4**	**45.3**	**3.0**	**31.4**	**7.2**	**28.5**	—	**7.5**	**2.4**	**11.2**	**7.0**	**9.4**	**9.6**	**4.7**	**34.7**	**13.4**	**28.6**	**8.8**	**12.3**	—
H 208	Dec. 19	14.35	1.20	0.48	3.35	3.80	6.20	0.40	5.30	1.15	3.75	6.40	1.60	—	—	1.00	1.42	—	0.67	—	1.85	3.75	1.30	1.95	—
		47	**8.4**	**3.3**	**23.3**	**26.5**	**43.2**	**2.8**	**36.9**	**8.0**	**26.1**	**44.6**	**11.2**	—	—	**7.0**	**9.9**	—	**4.7**	—	**12.9**	**26.1**	**9.1**	**13.6**	—
H 213	Dec. 19	14.40	1.16	0.70	3.71	4.10	6.56	0.40	4.42	—	3.90	6.70	1.80	—	—	0.77	1.25	—	0.60	—	2.05	4.30	1.35	—	—
		47	**8.1**	**4.9**	**25.8**	**28.5**	**45.6**	**2.8**	**30.7**	—	**27.1**	**46.5**	**12.5**	—	—	**5.3**	**8.7**	—	**4.2**	—	**14.2**	**29.9**	**9.4**	—	—

* H: Hashidate-maru fleet ** N: Nisshiin-maru fleet

I. Antarctic, males, 1950 (cont.)

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
H 203	Dec. 17	14.55	0.85	0.65	3.35	3.85	6.20	0.45	5.20	—	4.10	6.80	1.65	—	—	1.00	1.33	—	0.67	—	1.85	4.10	1.40	—	—
		48	**5.8**	**4.5**	**23.0**	**26.5**	**42.6**	**3.1**	**35.7**	—	**28.2**	**46.7**	**11.3**	—	—	**6.9**	**9.1**	—	**4.6**	—	**12.7**	**28.2**	**9.6**	—	—
N 112	Dec. 11	14.63	1.15	0.71	3.92	4.50	6.86	0.48	4.55	1.16	4.30	6.80	1.52	0.25	1.20	0.99	1.31	1.33	0.73	5.00	2.06	4.48	1.40	2.00	3.96
		48	**7.8**	**4.8**	**26.8**	**30.7**	**46.8**	**3.3**	**31.1**	**7.9**	**29.4**	**46.4**	**10.4**	**1.7**	**8.2**	**6.8**	**8.9**	**9.1**	**5.0**	**34.1**	**14.1**	**30.5**	**9.5**	**13.6**	**27.0**
H 202	Dec. 17	14.65	0.80	0.75	3.35	3.95	6.50	—	4.50	—	4.30	6.90	1.50	—	—	0.95	1.40	—	0.62	—	1.90	4.30	1.30	—	—
		48	**5.5**	**5.1**	**22.9**	**26.9**	**44.4**	—	**30.7**	—	**29.4**	**47.1**	**10.2**	—	—	**6.5**	**9.6**	—	**4.2**	—	**12.9**	**29.4**	**8.9**	—	—
N 166	Dec. 19	14.66	0.64	0.71	2.90	4.56	6.80	0.51	4.58	0.95	4.13	6.70	1.67	0.23	1.30	1.00	1.34	1.38	0.62	—	2.26	4.30	1.46	2.04	3.70
		48	**4.4**	**4.8**	**19.8**	**31.1**	**46.8**	**3.5**	**31.2**	**6.5**	**28.2**	**45.7**	**11.4**	**1.6**	**8.9**	**6.8**	**9.1**	**9.4**	**4.2**	—	**15.4**	**29.3**	**9.9**	**15.9**	**25.2**
H 81	Nov. 30	14.70	0.95	—	3.75	4.15	6.60	0.45	4.55	1.10	4.35	7.10	1.50	—	1.05	1.10	1.53	—	—	—	1.95	4.80	1.40	1.90	—
		48	**6.5**	—	**25.5**	**28.2**	**44.9**	**3.1**	**31.0**	**7.5**	**29.6**	**48.3**	**10.2**	—	**7.1**	**7.5**	**10.4**	—	—	—	**13.3**	**32.7**	**9.5**	**12.9**	—
H 37	Nov. 27	14.80	0.95	0.60	3.83	4.30	6.10	—	4.60	—	4.20	6.90	1.60	—	—	0.73	1.08	—	0.65	—	1.95	4.60	—	—	—
		49	**6.4**	**4.1**	**25.9**	**29.1**	**41.2**	—	**31.1**	—	**28.4**	**46.6**	**10.8**	—	—	**4.9**	**7.3**	—	**4.4**	—	**13.2**	**31.1**	—	—	—
H 205	Dec. 19	14.82	0.90	0.65	3.50	3.95	6.25	0.45	5.45	1.08	4.25	7.10	1.85	—	—	1.06	1.33	—	0.70	—	1.90	4.10	1.40	2.18	—
		49	**6.1**	**4.4**	**23.6**	**26.7**	**42.2**	**3.0**	**36.8**	**7.3**	**28.7**	**47.9**	**12.5**	—	—	**7.2**	**9.0**	—	**4.7**	—	**12.8**	**27.7**	**9.4**	**14.7**	—
H 3	Nov. 23	14.90	1.15	0.70	3.80	4.30	6.90	—	4.70	—	4.15	7.20	1.65	—	—	0.84	1.35	—	0.63	5.35	1.90	4.20	1.45	—	—
		49	**7.7**	**4.7**	**25.5**	**28.9**	**46.3**	—	**31.5**	—	**27.9**	**48.3**	**11.1**	—	—	**5.6**	**9.1**	—	**4.2**	**35.9**	**12.8**	**28.2**	**9.7**	—	—
H 79	Nov. 30	14.90	0.90	0.85	3.50	4.10	6.65	0.45	4.90	—	4.20	7.00	1.80	—	0.80	1.30	1.75	—	0.65	—	1.90	5.05	—	—	—
		49	**6.0**	**5.7**	**23.5**	**27.5**	**44.6**	**3.0**	**32.9**	—	**28.2**	**47.0**	**12.1**	—	**5.4**	**8.7**	**11.7**	—	**4.4**	—	**12.8**	**33.9**	—	—	—
N 65	Dec. 3	14.94	0.90	0.50	3.74	4.06	6.95	0.47	4.60	0.93	4.33	6.80	1.47	0.28	1.56	1.20	1.38	1.45	0.73	—	—	—	—	2.00	—
		49	**6.0**	**3.4**	**25.0**	**27.2**	**46.5**	**3.1**	**30.8**	**6.2**	**29.0**	**45.1**	**9.8**	**1.9**	**10.5**	**8.0**	**9.2**	**9.7**	**4.9**	—	—	—	—	**13.4**	—
N 125	Dec. 13	14.97	1.07	0.55	3.74	4.17	6.65	0.50	4.63	1.28	3.82	6.45	1.78	0.26	1.37	0.94	1.39	1.48	0.66	5.42	2.18	4.68	1.43	1.90	—
		49	**7.2**	**3.7**	**25.2**	**28.1**	**44.9**	**3.4**	**31.2**	**8.6**	**25.8**	**43.5**	**12.0**	**1.8**	**9.2**	**6.3**	**9.4**	**9.9**	**4.5**	**36.5**	**14.7**	**31.6**	**9.6**	**12.8**	—
N 74	Dec. 3	15.04	1.03	0.62	3.37	4.55	7.00	0.51	4.88	1.12	4.05	6.63	1.54	0.31	1.40	1.01	1.36	1.39	0.67	5.76	2.20	4.90	1.49	1.91	3.20
		49	**6.7**	**4.1**	**22.4**	**30.3**	**46.6**	**3.4**	**32.5**	**7.5**	**27.0**	**44.1**	**10.2**	**2.1**	**9.3**	**6.7**	**9.0**	**9.3**	**4.5**	**38.3**	**14.8**	**32.6**	**9.9**	**12.7**	**21.3**
N 121	Dec. 12	15.18	1.05	0.80	3.79	4.28	6.74	0.50	5.07	1.14	4.30	6.95	1.60	0.27	1.16	0.94	1.31	1.33	0.72	5.48	2.04	4.39	1.64	1.91	3.54
		50	**6.9**	**5.2**	**25.0**	**28.2**	**44.4**	**3.3**	**33.4**	**7.5**	**28.3**	**45.8**	**10.5**	**1.8**	**7.6**	**6.2**	**8.6**	**8.7**	**4.7**	**36.1**	**13.4**	**28.9**	**10.8**	**12.6**	**23.3**
H 53	Nov. 27	15.20	0.92	0.55	3.60	3.96	6.30	—	—	—	4.40	7.05	1.70	—	—	0.84	1.30	—	0.65	—	1.82	4.20	1.51	—	—
		50	**6.1**	**3.6**	**23.7**	**26.1**	**41.4**	—	—	—	**28.9**	**46.4**	**11.2**	—	—	**5.5**	**8.6**	—	**4.3**	—	**12.0**	**27.6**	**9.9**	—	—

I. Antarctic, males, 1950 (cont.)

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
N	Nov. 27	15.24	—	0.50	3.34	4.23	6.90	0.52	4.80	1.10	4.60	7.00	1.40	0.30	1.40	1.03	1.44	1.50	0.75	5.20	2.00	4.50	1.42	—	—
10		**50**	—	**3.3**	**21.9**	**27.8**	**45.3**	**3.4**	**31.5**	**7.2**	**30.2**	**45.9**	**9.2**	**1.9**	**9.2**	**6.7**	**9.5**	**9.9**	**4.9**	**34.1**	**13.1**	**29.5**	**9.3**	—	—
H	Nov. 24	15.25	0.95	0.90	3.70	4.30	6.85	—	4.75	—	4.35	7.15	1.75	—	—	1.15	1.50	—	—	—	2.00	4.75	—	—	—
4		**50**	**6.2**	**5.9**	**24.3**	**28.2**	**44.9**	—	**31.1**	—	**28.5**	**46.9**	**11.5**	—	—	**7.5**	**9.8**	—	—	—	**13.1**	**31.1**	—	—	—
H	Nov. 28	15.30	1.25	0.70	3.90	4.30	7.15	—	4.56	—	4.35	7.10	1.30	—	1.14	0.90	1.40	—	0.69	—	2.25	4.70	1.50	—	—
63		**50**	**8.2**	**4.6**	**25.5**	**28.1**	**46.7**	—	**29.0**	—	**28.4**	**46.4**	**8.5**	—	**7.5**	**5.9**	**9.2**	—	**4.5**	—	**14.7**	**30.7**	**9.8**	—	—
H	Nov. 30	15.45	1.35	—	4.15	4.45	7.30	0.46	4.65	—	3.90	6.70	1.60	—	—	0.96	1.45	—	0.67	—	2.10	4.85	1.45	—	—
97		**51**	**8.7**	—	**26.9**	**28.8**	**47.2**	**3.0**	**30.1**	—	**25.2**	**43.4**	**10.4**	—	—	**6.2**	**9.4**	—	**4.3**	—	**13.6**	**31.4**	**9.4**	—	—
H	Dec. 3	15.45	1.20	0.75	4.00	4.40	7.05	0.40	4.60	—	4.40	7.15	1.90	—	1.50	—	1.40	—	0.76	—	1.90	4.50	—	—	—
117		**51**	**7.8**	**4.9**	**25.8**	**28.5**	**45.6**	**2.6**	**29.7**	—	**28.5**	**46.2**	**12.3**	—	**9.7**	—	**9.1**	—	**4.9**	—	**12.3**	**29.1**	—	—	—
H	Nov. 27	15.50	0.70	0.65	3.80	4.40	7.00	—	5.05	—	4.60	7.30	1.60	—	—	0.96	1.28	—	0.66	—	2.00	4.65	1.55	—	—
36		**51**	**4.5**	**4.2**	**24.5**	**28.4**	**45.2**	—	**32.6**	—	**29.7**	**47.1**	**10.3**	—	—	**6.2**	**8.3**	—	**4.3**	—	**12.9**	**30.0**	**10.0**	—	—
N	Nov. 30	15.57	1.15	0.57	3.77	4.43	7.06	0.50	5.08	1.18	4.30	6.98	1.62	0.38	1.25	1.40	1.10	1.34	0.73	5.38	2.06	4.49	1.50	2.09	3.87
36		**51**	**7.4**	**3.7**	**24.2**	**28.5**	**45.3**	**3.2**	**32.6**	**7.6**	**27.6**	**44.8**	**10.4**	**2.4**	**8.0**	**9.0**	**7.1**	**8.6**	**4.7**	**34.6**	**13.2**	**28.8**	**9.6**	**13.4**	**24.8**
N	Dec. 17	15.60	1.18	0.60	4.10	4.47	7.15	0.45	4.98	1.08	4.50	7.21	1.70	0.25	1.74	1.12	1.63	1.69	0.72	5.02	1.80	4.78	1.38	1.96	3.80
159		**51**	**7.6**	**3.8**	**26.3**	**28.7**	**45.8**	**2.9**	**31.9**	**6.9**	**28.8**	**46.2**	**10.9**	**1.6**	**11.5**	**7.2**	**10.4**	**10.8**	**4.6**	**32.2**	**11.5**	**30,6**	**8.8**	**12.6**	**24.4**
N	Dec. 2	15.62	1.10	0.60	3.80	4.31	6.90	0.43	5.37	1.11	4.88	7.58	1.62	0.26	1.37	1.51	1.06	1.26	0.74	5.20	2.10	4.80	1.48	2.04	4.02
62		**51**	**7.0**	**3.8**	**24.3**	**27.6**	**44.1**	**2.7**	**34.4**	**7.1**	**31.2**	**48.5**	**10.4**	**1.7**	**8.8**	**9.7**	**6.8**	**8.1**	**4.7**	**33.3**	**13.4**	**30.7**	**9.5**	**13.1**	**25.7**
H	Nov. 29	15.85	0.95	0.75	4.05	4.50	7.20	—	4.75	—	4.45	7.45	1.85	—	—	1.00	1.40	—	0.71	5.80	2.20	5.30	1.60	—	—
64		**52**	**6.0**	**4.7**	**25.6**	**28.4**	**45.4**	—	**30.0**	—	**28.1**	**47.0**	**11.7**	—	—	**6.3**	**8.8**	—	**4.5**	**36.6**	**13.9**	**33.4**	**10.1**	—	—
H	Dec. 12	15.85	1.15	0.55	3.95	4.55	7.20	—	5.00	—	4.50	7.25	1.90	—	1.20	—	1.38	—	0.70	—	2.05	4.85	1.60	—	—
200		**52**	**7.3**	**3.5**	**24.9**	**28.7**	**45.4**	—	**31.5**	—	**28.4**	**45.7**	**12.0**	—	**7.6**		**8.7**	—	**4.4**	—	**12.9**	**30.6**	**10.1**	—	—
N	Nov. 27	15.87	1.26	0.63	3.80	4.75	6.65	0.47	5.05	1.08	4.53	7.70	1.70	0.47	1.50	1.24	1.45	1.48	0.67	—	2.15	5.05	1.60	2.17	—
11		**52**	**7.9**	**4.0**	**24.0**	**29.9**	**41.9**	**3.0**	**31.8**	**6.8**	**28.5**	**48.5**	**10.7**	**3.0**	**9.5**	**7.8**	**9.1**	**9.3**	**4.2**	—	**13.5**	**31.8**	**10.1**	**13.7**	—
N	Dec. 18	15.87	1.12	0.53	—	3.87	6.92	0.52	4.98	0.98	4.80	7.58	1.78	0.26	1.44	1.05	1.39	1.46	0.70	5.34	2.08	4.56	1.47	—	—
160		**52**	**7.1**	**3.3**	—	**24.4**	**43.6**	**3.3**	**31.4**	**6.2**	**30.2**	**47.8**	**11.2**	**1.6**	**9.1**	**6.6**	**8.8**	**9.2**	**4.4**	**33.6**	**13.1**	**28.7**	**9.3**	—	—
N	Dec. 3	15.89	1.20	0.65	3.64	4.57	7.27	0.53	5.07	1.30	4.71	7.45	1.89	0.32	1.37	0.98	1.47	1.57	0.77	5.65	1.97	4.92	1.47	—	3.76
75		**52**	**7.5**	**4.1**	**22.9**	**28.8**	**45.8**	**3.3**	**31.9**	**8.2**	**29.6**	**46.9**	**11.9**	**2.0**	**8.7**	**6.2**	**9.3**	**9.9**	**4.9**	**35.7**	**12.4**	**31.1**	**9.3**	—	**23.7**

I. Antarctic, males, 1950 (cont.)

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
N 7	Nov. 27	16.00	1.31	0.70	3.91	5.00	7.55	0.54	4.86	1.16	4.45	7.20	1.80	0.30	1.37	1.57	1.17	1.34	0.76	6.30	2.30	5.10	1.60	2.08	4.12
		53	**8.1**	**4.4**	**24.2**	**31.0**	**46.8**	**3.4**	**30.3**	**7.2**	**27.8**	**45.0**	**11.2**	**1.9**	**8.3**	**9.8**	**7.3**	**8.3**	**4.7**	**39.3**	**14.3**	**31.8**	**10.0**	**13.0**	**25.7**
N 6	Nov. 26	16.15	1.35	0.40	4.10	4.80	7.60	0.53	5.15	1.16	4.40	7.20	1.70	0.35	1.26	1.56	1.09	1.28	0.71	—	2.30	4.80	1.50	2.25	4.36
		53	**8.4**	**2.5**	**25.1**	**29.7**	**47.1**	**3.3**	**31.9**	**7.2**	**27.2**	**44.6**	**10.5**	**2.2**	**7.8**	**9.7**	**6.7**	**7.9**	**4.4**	—	**14.3**	**29.7**	**9.3**	**13.9**	**27.0**
N 35	Nov. 30	16.15	1.11	0.52	4.10	4.60	7.20	0.50	4.91	1.15	4.78	7.48	1.55	0.34	1.68	1.43	1.06	1.32	0.68	6.00	2.30	5.05	1.36	—	—
		53	**6.9**	**3.2**	**25.8**	**28.5**	**44.6**	**3.1**	**30.4**	**7.1**	**29.6**	**46.2**	**9.6**	**2.1**	**10.4**	**8.9**	**6.6**	**8.2**	**4.2**	**37.2**	**14.2**	**31.3**	**8.4**	—	—
H 1	Nov. 23	16.20	1.30	0.70	4.35	4.65	7.30	—	5.60	—	4.20	6.95	1.75	—	—	1.21	1.94	—	0.73	6.09	—	5.20	1.38	—	—
		53	**8.0**	**4.3**	**26.9**	**28.7**	**45.1**	—	**34.6**	—	**25.9**	**42.9**	**10.8**	—	—	**7.5**	**12.0**	—	**4.5**	**37.6**	—	**32.1**	**8.5**	—	—
H 136	Dec. 4	16.20	1.20	0.70	4.25	4.70	7.50	0.45	4.55	—	—	7.40	1.80	—	—	1.05	1.55	—	0.80	—	2.05	5.00	1.60	—	—
		53	**7.4**	**4.3**	**26.2**	**29.0**	**46.3**	**2.8**	**28.1**	—	—	**45.7**	**11.1**	—	—	**6.5**	**9.6**	—	**4.9**	—	**12.7**	**30.9**	**9.9**	—	—
N 5	Nov. 26	16.30	1.02	0.59	3.83	4.52	6.83	0.53	5.00	—	4.70	7.50	1.50	0.26	1.55	—	—	—	—	—	2.15	4.90	1.50	1.90	—
		54	**6.2**	**3.6**	**23.5**	**27.7**	**41.8**	**3.2**	**30.6**	—	**28.8**	**45.9**	**9.1**	**1.6**	**9.5**	—	—	—	—	—	**13.1**	**30.0**	**9.1**	**11.6**	—
N 76	Dec. 4	16.60	0.97	0.60	4.08	4.17	—	0.60	5.16	1.30	4.86	7.75	1.87	0.36	1.48	1.10	1.60	1.73	0.77	5.67	2.20	4.95	1.58	2.24	4.32
		54	**5.8**	**3.6**	**24.6**	**25.1**	—	**3.6**	**31.1**	**7.8**	**29.3**	**46.7**	**11.3**	**2.2**	**8.9**	**6.6**	**9.6**	**10.4**	**4.6**	**34.2**	**13.3**	**29.8**	**9.8**	**13.5**	**26.0**

II. Bonin Islands, Males, 1950

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
29	Apr. 22	10.87	0.78	0.46	2.05	2.53	4.29	0.32	3.80	0.89	3.37	5.48	1.12	0.21	1.00	0.75	1.03	1.16	0.55	3.32	1.37	2.85	1.11	1.59	3.02
		36	**7.2**	**4.2**	**18.9**	**23.3**	**39.5**	**2.9**	**35.0**	**8.2**	**31.0**	**50.4**	**10.3**	**1.9**	**9.2**	**6.9**	**9.9**	**10.7**	**5.1**	**30.5**	**12.6**	**26.2**	**10.2**	**14.6**	**27.8**
30	〃 23	11.00	0.59	0.42	—	2.33	4.42	0.24	3.87	0.83	3.42	5.35	1.01	0.17	0.90	0.65	0.84	0.88	0.42	3.50	1.33	2.69	1.10	1.28	—
		36	**5.4**	**3.8**	—	**21.2**	**40.2**	**2.2**	**35.2**	**7.5**	**31.1**	**48.6**	**9.2**	**1.5**	**8.2**	**5.9**	**7.6**	**8.0**	**3.8**	**31.8**	**12.1**	**24.5**	**10.0**	**11.6**	—
31	〃 23	11.04	0.79	0.39	2.17	2.52	4.46	0.36	3.85	0.70	2.95	5.08	1.18	0.20	1.00	0.65	0.90	0.99	0.51	3.06	1.36	2.73	1.12	1.58	3.22
		36	**7.2**	**3.5**	**19.7**	**22.8**	**40.4**	**3.3**	**34.9**	**6.3**	**26.7**	**46.0**	**10.7**	**1.8**	**9.1**	**5.9**	**8.2**	**9.0**	**4.6**	**27.7**	**12.3**	**24.7**	**10.1**	**14.3**	**29.2**
42	〃 23	11.04	0.64	0.50	2.23	2.48	4.54	0.40	3.85	0.85	3.32	5.48	1.21	0.21	1.12	0.68	0.99	1.05	0.55	3.46	1.59	2.88	1.11	1.60	3.15
		37	**5.8**	**4.5**	**20.2**	**22.5**	**41.1**	**3.6**	**34.9**	**7.7**	**30.1**	**49.6**	**11.0**	**1.9**	**10.1**	**6.2**	**9.0**	**9.5**	**5.0**	**31.3**	**14.4**	**26.1**	**10.1**	**14.5**	**28.5**
22	〃 19	11.52	0.65	0.29	2.47	2.92	4.90	0.47	3.67	0.75	3.40	5.72	1.41	0.18	1.00	0.71	1.06	1.10	0.52	3.45	1.61	3.13	—	1.16	3.21
		38	**5.6**	**2.5**	**21.4**	**25.3**	**42.5**	**4.1**	**31.9**	**6.5**	**29.5**	**49.7**	**12.2**	**1.5**	**8.7**	**6.2**	**9.2**	**9.5**	**4.5**	**29.9**	**14.0**	**27.2**	—	**10.1**	**27.9**
21	〃 19	11.52	0.63	0.49	2.26	2.65	4.58	0.39	3.83	0.81	3.64	5.54	1.09	0.17	0.70	0.87	1.13	1.20	0.54	3.50	1.44	3.08	—	1.78	3.56
		38	**5.5**	**4.3**	**19.6**	**23.0**	**39.8**	**3.4**	**33.2**	**7.0**	**31.6**	**48.1**	**9.5**	**1.5**	**6.1**	**7.6**	**9.8**	**10.4**	**4.7**	**90.4**	**12.5**	**26.7**	—	**15.5**	**30.9**
274	June 3	11.95	0.80	0.50	2.50	3.00	5.10	—	4.10	0.80	3.75	6.10	1.50	0.23	1.30	0.90	1.15	—	0.50	3.75	1.50	3.09	1.27	1.55	—
		39	**6.7**	**4.2**	**20.9**	**25.1**	**42.7**	—	**34.3**	**6.7**	**31.4**	**51.0**	**12.6**	**1.9**	**10.9**	**7.5**	**9.6**	—	**4.2**	**31.4**	**12.6**	**25.9**	**10.6**	**13.0**	—
32	〃 24	12.00	0.73	0.57	2.61	3.02	5.53	0.32	4.85	0.90	3.47	5.56	1.38	0.20	1.00	0.62	1.05	1.22	0.57	3.92	1.60	3.40	1.11	1.60	3.17
		39	**6.1**	**4.7**	**21.7**	**25.2**	**46.1**	**2.7**	**40.4**	**7.5**	**28.9**	**46.3**	**11.5**	**1.7**	**8.3**	**5.2**	**8.7**	**10.2**	**4.7**	**32.7**	**13.3**	**28.3**	**9.2**	**13.3**	**26.4**
33	〃 24	12.30	0.88	0.30	2.83	3.07	5.92	0.37	4.15	0.87	3.56	5.78	1.13	0.19	1.01	0.90	1.06	1.10	0.60	3.92	1.63	3.39	1.34	1.80	3.65
		40	**7.2**	**2.4**	**23.0**	**25.0**	**48.1**	**3.0**	**33.7**	**7.1**	**28.9**	**47.0**	**9.2**	**1.5**	**8.2**	**7.3**	**8.6**	**8.9**	**4.9**	**31.9**	**13.3**	**27.6**	**10.9**	**14.6**	**29.7**
149	May 17	12.39	1.09	0.53	2.60	2.90	5.15	0.52	3.82	0.90	3.65	5.70	1.05	0.24	1.15	0.76	1.18	—	0.59	3.54	1.56	3.15	1.29	1.72	—
		41	**8.8**	**4.3**	**21.0**	**23.4**	**41.6**	**4.2**	**30.8**	**7.3**	**29.4**	**46.0**	**8.5**	**1.9**	**9.3**	**6.1**	**9.5**	—	**4.8**	**28.6**	**12.6**	**25.4**	**10.4**	**13.9**	—
117	〃 9	12.45	0.63	0.34	3.06	3.36	5.34	—	3.90	0.92	3.65	5.85	1.39	0.23	0.73	0.94	1.13	—	0.42	3.92	1.52	3.79	1.30	1.89	3.63
		41	**5.1**	**2.7**	**24.6**	**27.0**	**42.9**	—	**31.3**	**7.4**	**29.3**	**47.0**	**11.2**	**1.8**	**5.9**	**7.6**	**9.1**	—	**3.4**	**31.5**	**12.2**	**30.4**	**10.4**	**15.2**	**29.2**
146	〃 17	12.50	—	0.49	2.86	3.20	5.29	0.40	4.20	0.88	3.79	5.37	—	—	1.05	—	—	—	—	—	1.55	3.00	1.24	1.53	3.06
		41	—	**3.9**	**22.9**	**25.6**	**42.3**	**3.2**	**33.6**	**7.0**	**30.3**	**43.0**	—	—	**8.4**	—	—	—	—	—	**12.4**	**24.0**	**9.9**	**12.2**	**24.5**
218	〃 26	12.70	0.90	0.60	3.25	3.60	5.70	0.45	—	0.90	3.60	6.30	1.60	0.26	0.78	1.00	1.35	—	0.65	4.47	1.75	3.55	1.55	1.80	—
		42	**7.1**	**4.7**	**25.6**	**28.3**	**44.9**	**3.5**	—	**7.1**	**28.3**	**49.6**	**12.6**	**2.0**	**6.1**	**7.9**	**10.6**	—	**5.1**	**35.2**	**13.8**	**28.0**	**12.2**	**14.2**	—
219	〃 26	12.70	0.90	0.65	3.15	3.75	5.60	0.43	4.05	1.00	4.01	6.00	1.14	0.27	1.10	—	—	—	—	4.36	1.71	3.60	1.45	1.80	—
		42	**7.1**	**5.1**	**24.8**	**29.5**	**44.1**	**3.4**	**31.9**	**7.9**	**31.6**	**47.2**	**9.0**	**2.1**	**8.7**	—	—	—	—	**34.3**	**13.5**	**28.3**	**11.4**	**14.2**	—
118	〃 11	12.73	0.83	0.50	2.73	3.63	5.45	0.43	4.06	0.94	3.54	5.82	1.51	—	—	0.77	1.10	—	0.55	3.92	1.69	3.61	1.46	1.86	—
		42	**6.5**	**3.9**	**21.4**	**28.5**	**42.8**	**3.4**	**31.9**	**7.4**	**27.8**	**45.7**	**11.9**	—	—	**6.0**	**8.6**	—	**4.3**	**30.8**	**13.3**	**28.4**	**11.5**	**14.6**	—
34	Apr. 24	12.95	1.03	0.43	2.85	3.24	5.55	0.41	4.05	1.00	3.56	5.69	1.38	0.22	1.10	0.86	1.15	1.18	0.58	4.20	1.63	3.42	1.32	1.80	3.55
		42	**8.0**	**3.3**	**22.0**	**25.0**	**42.9**	**3.2**	**31.3**	**7.7**	**27.5**	**43.9**	**10.7**	**1.7**	**8.5**	**6.6**	**8.9**	**9.1**	**4.5**	**32.4**	**12.6**	**26.4**	**10.2**	**13.9**	**27.4**

II. Bonin Islands, Males, 1950 (cont.)

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
116	May 9	13.05	1.09	—	2.98	3.35	5.57	0.41	4.06	1.08	4.13	6.56	0.89	0.45	0.79	0.92	1.30	—	0.56	3.85	1.53	3.32	1.38	1.86	3.73
		43	**8.4**	—	**22.8**	**25.7**	**42.7**	**3.1**	**31.1**	**8.3**	**31.6**	**50.2**	**6.8**	**3.4**	**6.1**	**7.0**	**10.0**	—	**4.3**	**29.5**	**11.7**	**25.4**	**10.6**	**14.3**	**28.6**
52	〃 5	13.08	0.98	0.60	3.25	3.65	5.93	0.40	3.85	—	3.92	6.23	1.40	0.26	1.13	0.79	1.20	1.26	0.60	4.62	1.82	3.48	1.38	1.94	4.00
		43	**7.5**	**4.6**	**24.8**	**27.9**	**45.3**	**3.1**	**29.4**	—	**30.0**	**47.6**	**10.7**	**2.0**	**8.6**	**6.0**	**9.2**	**9.6**	**4.6**	**35.3**	**13.9**	**26.6**	**10.6**	**14.8**	**30.6**
38	Apr. 26	13.32	—	0.46	3.48	3.93	6.10	—	4.16	0.90	3.82	6.23	1.25	0.23	1.24	0.87	1.13	1.16	0.56	4.66	1.90	3.88	1.39	1.90	3.80
		44	—	**3.5**	**26.1**	**29.5**	**45.8**	—	**31.2**	**6.8**	**28.7**	**46.8**	**9.4**	**1.7**	**9.3**	**6.5**	**8.5**	**8.7**	**4.2**	**35.0**	**14.3**	**29.1**	**10.4**	**14.3**	**28.5**
37	〃 24	13.84	0.75	0.55	2.88	3.32	5.73	0.43	4.70	1.15	3.94	6.45	1.44	0.24	1.36	0.94	1.18	1.20	0.68	4.40	1.85	3.75	1.45	1.95	3.90
		45	**5.4**	**4.0**	**20.8**	**24.0**	**41.4**	**3.1**	**34.0**	**8.3**	**28.5**	**46.6**	**10.4**	**1.7**	**9.8**	**6.8**	**8.5**	**8.7**	**4.9**	**31.8**	**13.4**	**27.1**	**10.5**	**14.1**	**28.2**
120	May 11	14.00	1.04	0.65	3.42	4.15	6.15	—	4.67	1.42	4.08	6.65	1.52	0.25	1.20	0.95	1.27	1.29	0.62	5.04	2.02	4.10	1.42	1.96	—
		46	**7.4**	**4.6**	**24.4**	**29.6**	**43.9**	—	**33.4**	**10.1**	**29.1**	**47.5**	**10.9**	**1.8**	**8.6**	**6.8**	**9.1**	**9.2**	**4.4**	**36.0**	**14.4**	**29.3**	**10.1**	**14.0**	—
25	Apr. 21	14.02	1.35	0.49	3.40	3.88	6.15	0.38	4.69	1.05	3.92	6.54	1.50	0.29	1.09	0.85	1.13	1.18	0.61	4.70	1.85	3.53	1.37	1.94	3.90
		46	**9.6**	**3.5**	**24.3**	**27.7**	**43.9**	**2.7**	**33.5**	**7.5**	**28.0**	**46.6**	**10.7**	**2.1**	**7.8**	**6.1**	**8.1**	**8.4**	**4.4**	**33.5**	**13.2**	**25.2**	**9.8**	**13.8**	**27.8**
28	〃 22	14.06	1.17	0.63	3.32	3.85	6.11	0.48	5.47	1.01	3.92	6.53	1.33	0.23	1.68	1.00	1.35	1.40	0.65	4.81	1.99	3.99	1.33	1.83	3.75
		46	**8.3**	**4.5**	**23.6**	**27.4**	**43.5**	**3.4**	**38.9**	**7.2**	**27.9**	**46.4**	**9.5**	**1.6**	**11.9**	**7.1**	**9.6**	**10.0**	**4.6**	**34.2**	**14.2**	**28.4**	**9.5**	**13.0**	**26.7**
26	〃 22	14.85	1.36	—	4.33	4.92	6.87	0.40	4.60	1.00	4.12	6.62	1.20	0.34	1.10	0.92	1.33	1.36	0.72	5.35	1.96	4.26	1.49	1.45	3.03
		49	**9.2**	—	**29.2**	**33.1**	**46.3**	**2.6**	**31.0**	**6.7**	**27.7**	**44.6**	**8.1**	**2.3**	**7.4**	**6.2**	**9.0**	**9.2**	**4.8**	**36.0**	**13.2**	**28.7**	**10.0**	**9.8**	**20.4**
40	〃 28	14.90	1.28	0.50	3.86	4.25	6.74	0.48	4.83	1.00	4.12	6.85	1.61	0.35	1.35	0.93	1.30	—	0.68	5.16	2.10	4.38	1.63	2.05	4.10
		49	**8.6**	**3.4**	**25.9**	**28.5**	**45.2**	**3.2**	**32.4**	**6.7**	**27.6**	**46.0**	**10.8**	**2.3**	**9.1**	**6.2**	**8.7**	—	**4.6**	**34.6**	**14.1**	**29.4**	**10.9**	**13.8**	**27.5**
41	〃 28	15.15	1.23	0.82	3.98	4.55	7.04	0.42	4.55	1.08	4.26	6.95	1.86	0.29	1.43	0.92	1.30	1.33	0.67	5.52	2.10	4.75	1.78	2.12	—
		50	**8.1**	**5.4**	**26.3**	**30.0**	**46.5**	**2.8**	**30.0**	**7.1**	**28.1**	**45.9**	**12.3**	**1.9**	**9.4**	**6.1**	**8.6**	**8.8**	**4.4**	**36.4**	**13.9**	**31.4**	**11.7**	**14.0**	—
119	May 11	15.15	1.22	0.55	3.89	4.26	6.72	—	4.30	1.27	3.88	6.29	1.33	0.45	1.50	0.99	1.21	1.30	0.68	5.50	2.00	4.77	1.80	1.96	—
		50	**8.1**	**3.6**	**25.7**	**28.1**	**44.4**	—	**28.4**	**8.4**	**25.6**	**41.5**	**8.8**	**3.0**	**9.9**	**6.6**	**8.0**	**8.6**	**4.5**	**36.3**	**13.2**	**31.5**	**11.9**	**12.9**	—
23	Apr. 19	15.18	1.17	—	4.25	4.58	7.04	0.45	4.27	1.14	3.95	6.45	1.37	0.31	0.93	0.95	1.22	1.34	—	5.80	2.26	4.74	—	1.94	3.83
		50	**7.7**	—	**28.0**	**30.2**	**46.4**	**2.9**	**28.1**	**7.5**	**26.0**	**42.5**	**9.0**	**2.0**	**6.1**	**6.3**	**8.0**	**8.8**	—	**38.2**	**14.9**	**31.2**	—	**12.8**	**25.2**
24	〃 20	15.19	1.33	0.61	3.75	4.38	7.14	0.50	4.76	1.03	4.06	6.78	1.10	0.32	1.16	0.97	1.37	1.42	0.66	5.55	2.09	4.10	1.53	2.09	—
		50	**8.8**	**4.0**	**24.7**	**28.8**	**47.0**	**3.3**	**31.3**	**6.8**	**26.7**	**44.6**	**7.2**	**2.1**	**7.6**	**6.4**	**9.0**	**9.3**	**4.4**	**36.5**	**13.8**	**27.0**	**10.1**	**13.8**	—
148	May 17	15.20	1.43	0.72	4.23	4.33	6.55	0.50	4.62	—	4.50	6.10	1.05	0.25	1.25	1.05	1.45	—	0.62	5.26	2.15	4.80	1.65	—	—
		50	**9.4**	**4.7**	**27.8**	**28.5**	**43.1**	**3.3**	**30.4**	—	**29.6**	**40.1**	**6.9**	**1.6**	**8.2**	**6.9**	**9.5**	—	**4.1**	**34.6**	**14.1**	**31.6**	**10.9**	—	—
36	Apr. 24	15.24	1.41	0.71	3.98	4.49	7.04	0.40	4.95	1.10	4.41	6.98	1.31	0.36	1.03	0.95	1.24	1.49	0.64	5.45	2.00	4.40	1.65	—	—
		50	**9.3**	**4.7**	**26.1**	**29.5**	**46.2**	**2.6**	**32.5**	**7.2**	**28.9**	**45.8**	**8.6**	**2.4**	**6.8**	**6.2**	**8.1**	**9.8**	**4.2**	**37.8**	**13.1**	**28.9**	**10.8**	—	—
35	〃 24	15.40	1.47	0.55	4.32	4.83	7.35	0.46	4.77	1.00	4.20	7.16	1.03	0.32	1.12	0.91	1.31	1.36	0.66	5.67	2.05	5.00	1.90	2.02	4.00
		51	**9.5**	**3.6**	**28.1**	**31.4**	**47.7**	**3.0**	**31.0**	**6.5**	**27.3**	**46.5**	**6.7**	**2.1**	**7.3**	**5.9**	**8.5**	**8.8**	**4.3**	**36.8**	**13.3**	**32.5**	**12.3**	**13.1**	**26.0**

II. Bonin Islands, Males, 1950 (cont.)

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
27	〃 22	15.74	1.18	0.82	4.02	4.33	6.78	0.44	4.88	1.15	4.08	6.83	1.15	0.25	1.22	0.98	1.30	1.33	0.70	5.51	1.96	4.50	1.62	2.49	4.27
		52	**7.5**	**5.2**	**25.5**	**27.5**	**43.1**	**2.8**	**31.0**	**7.3**	**25.9**	**43.5**	**7.3**	**1.6**	**2.8**	**6.2**	**8.3**	**8.4**	**4.4**	**35.0**	**12.5**	**25.6**	**10.5**	**15.8**	**27.1**
147	May 17	16.20	1.37	0.78	4.24	4.67	7.25	—	4.62	1.10	4.44	7.32	1.76	0.40	1.50	—	—	—	—	6.30	2.11	4.92	1.77	2.30	—
		53	**8.5**	**4.8**	**26.2**	**28.8**	**44.8**	—	**28.5**	**6.8**	**27.4**	**45.2**	**10.9**	**2.5**	**9.3**	—	—	—	—	**38.9**	**13.0**	**30.4**	**10.9**	**14.2**	—

III. Bonin Islands, Females, 1950

Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
43	Apr. 29	10.75	0.52	0.42	1.58	2.08	3.75	0.30	3.75	1.00	3.78	5.83	—	0.24	1.25	0.78	1.04	1.05	0.52	2.75	1.22	2.55	0.98	1.50	2.90
		35	**4.8**	**3.9**	**14.7**	**19.3**	**34.9**	**2.8**	**34.9**	**9.3**	**35.2**	**54.2**	—	**2.2**	**11.6**	**7.3**	**9.7**	**9.8**	**4.8**	**25.6**	**11.3**	**23.7**	**9.1**	**14.0**	**27.0**
39	〃 26	10.94	0.45	0.55	1.75	2.25	3.65	0.29	3.95	0.90	3.50	5.55	0.20	0.22	0.62	0.70	0.90	0.94	0.47	2.79	1.28	2.43	1.04	1.50	3.00
		36	**4.1**	**5.0**	**16.0**	**20.6**	**33.4**	**2.7**	**36.1**	**8.2**	**32.0**	**50.7**	**1.8**	**2.0**	**5.7**	**6.4**	**8.2**	**8.6**	**4.3**	**25.5**	**11.7**	**22.2**	**9.5**	**13.7**	**27.4**

IV. Japanese coastal, males, 1950 & 1951

Area[1], Company[2], Serial No.	Date, Killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
HT220	Aug. 14 1950	10.68	—	—	2.16	2.38	4.43	—	3.71	0.82	3.43	5.49	1.26	0.23	0.67	0.74	0.93	—	0.54	3.14	—	—	—	1.57	—
		35	—	—	**20.2**	**22.3**	**41.5**	—	**34.7**	**7.7**	**32.1**	**51.4**	**11.8**	**2.2**	**6.3**	**6.9**	**8.7**	—	**5.1**	**29.4**	—	—	—	**14.7**	—
HT190	〃 11	10.70	0.58	0.45	2.08	2.20	4.10	—	3.75	0.77	—	5.25	1.30	0.20	1.00	—	—	—	—	3.10	—	—	—	1.43	—
	〃	**35**	**5.4**	**4.2**	**19.4**	**20.6**	**38.3**	—	**35.0**	**7.2**	—	**49.1**	**12.1**	**1.9**	**9.3**	—	—	—	—	**29.0**	—	—	—	**13.4**	—
HT198	〃 〃	10.70	0.63	0.42	2.29	2.66	4.29	—	3.75	0.80	3.43	5.29	1.14	0.18	0.98	—	—	—	—	3.44	1.45	2.96	1.03	1.48	—
	〃	**35**	**5.9**	**3.9**	**21.4**	**24.9**	**40.1**	—	**35.0**	**7.5**	**32.1**	**49.4**	**10.7**	**1.7**	**9.1**	—	—	—	—	**32.2**	**13.6**	**27.7**	**9.6**	**13.8**	—
HT199	〃 〃	10.70	0.66	0.33	2.27	2.50	4.30	—	3.56	0.82	3.80	4.84	0.85	0.28	1.20	—	—	—	—	3.35	1.41	2.80	—	1.66	—
	〃	**35**	**6.2**	**3.1**	**21.2**	**23.4**	**40.2**	—	**33.3**	**7.7**	**35.5**	**45.2**	**7.9**	**2.6**	**11.2**	—	—	—	—	**31.3**	**13.2**	**26.2**	—	**15.5**	—
SKi 18	July 4 1951	10.72	0.60	0.40	2.10	2.50	4.20	0.33	3.80	0.80	3.20	5.40	1.40	—	0.95	0.64	0.90	—	0.46	—	—	3.45	—	1.60	—
		35	**5.6**	**3.7**	**19.6**	**23.3**	**39.2**	**3.1**	**35.4**	**7.5**	**29.8**	**50.4**	**13.1**	—	**8.9**	**6.0**	**8.4**	—	**4.3**	—	—	**32.2**	—	**14.9**	—
HT197	Sept. 25	10.75	0.38	0.35	1.60	2.05	4.45	—	3.60	0.70	3.30	5.60	—	0.19	0.90	—	—	—	—	3.10	1.25	2.60	—	1.40	—
	〃	**35**	**3.5**	**3.3**	**14.9**	**19.1**	**41.4**	—	**33.5**	**6.5**	**30.7**	**52.1**	—	**1.8**	**8.4**	—	—	—	—	**28.8**	**11.6**	**24.2**	—	**13.0**	—
HT197	Aug. 11	10.75	0.50	0.41	2.18	2.57	4.32	—	3.64	0.79	3.26	5.33	1.16	0.18	0.95	0.75	0.91	—	0.49	3.16	—	—	—	1.60	—
	〃	**35**	**4.7**	**3.8**	**20.3**	**23.9**	**40.2**	—	**33.9**	**7.3**	**30.3**	**49.6**	**10.8**	**1.7**	**8.8**	**7.0**	**8.5**	—	**4.6**	**29.4**	—	—	—	**14.9**	—
HT171	〃 8	10.80	0.53	0.46	1.95	2.30	4.25	—	3.60	0.69	3.30	5.60	1.20	0.15	0.82	—	—	—	—	3.20	1.30	2.65	1.00	1.48	—
	〃	**35**	**4.9**	**4.3**	**18.1**	**21.3**	**39.4**	—	**33.3**	**6.4**	**30.6**	**51.9**	**11.1**	**1.4**	**7.6**	—	—	—	—	**29.6**	**12.0**	**24.5**	**9.3**	**13.7**	—
HT200	Aug. 11	11.00	0.52	0.42	2.18	2.45	4.00	—	3.70	0.79	3.60	5.77	1.20	—	—	—	—	—	—	3.44	1.43	3.00	1.00	—	—
	〃	**36**	**4.7**	**3.8**	**19.8**	**22.3**	**36.4**	—	**33.6**	**7.2**	**32.7**	**52.5**	**10.9**	—	—	—	—	—	—	**31.3**	**13.0**	**27.3**	**9.1**	—	—
HT161	〃 3	11.10	0.55	0.47	2.10	2.40	4.20	0.45	3.80	0.75	3.45	5.55	1.40	0.20	0.80	0.75	1.00	—	0.50	3.25	1.25	2.80	1.15	1.35	—
	〃	**36**	**5.0**	**4.2**	**18.9**	**21.6**	**37.8**	**4.1**	**34.2**	**6.8**	**31.1**	**50.0**	**12.6**	**1.8**	**7.2**	**6.8**	**9.0**	—	**4.5**	**29.3**	**11.3**	**25.2**	**10.4**	**12.2**	—
HT177	〃 8	11.20	0.47	—	2.30	2.70	4.60	—	3.95	0.74	3.60	6.00	1.20	0.14	1.00	—	—	—	—	3.55	1.50	3.25	1.15	1.54	—
	〃	**37**	**4.2**	—	**20.5**	**24.1**	**41.1**	—	**35.3**	**6.6**	**32.1**	**53.6**	**10.7**	**1.3**	**8.9**	—	—	—	—	**31.7**	**13.4**	**29.0**	**10.3**	**13.8**	—
HT249	〃 24	11.28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.55	1.50	3.10	1.12	—	—
	〃	**37**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**31.5**	**13.3**	**27.5**	**9.9**	—	—
HT144	July 29	11.30	0.85	0.38	2.48	2.90	4.80	0.42	3.82	0.75	3.20	5.45	1.50	0.19	1.00	0.80	1.04	—	0.55	3.84	1.45	3.00	1.25	1.54	—
	〃	**37**	**7.5**	**3.4**	**21.9**	**25.7**	**42.5**	**3.7**	**33.8**	**6.6**	**28.3**	**48.2**	**13.3**	**1.7**	**8.9**	**7.1**	**9.2**	—	**4.9**	**34.0**	**12.8**	**26.6**	**11.1**	**13.6**	—
HN214	Aug. 3	11.30	—	0.30	—	2.82	4.70	0.35	—	0.83	3.85	6.15	1.30	0,28	1.00	0.84	1.18	—	0.57	—	1.60	3.28	—	1.88	—
	〃	**37**	—	**2.7**	—	**25.0**	**41.6**	**3.1**	—	**7.3**	**34.1**	**54.4**	**11.5**	**2.5**	**8.9**	**7.4**	**10.4**	—	**5.0**	—	**14.2**	**29.0**	—	**16.6**	—
HT175	Aug. 8	11.30	0.61	0.38	2.25	2.60	4.40	—	3.80	0.74	3.50	5.90	1.50	0.27	1.21	—	—	—	—	3.35	—	—	—	1.62	—
	〃	**37**	**5.4**	**3.4**	**19.9**	**23.0**	**38.9**	—	**33.6**	**6.5**	**31.0**	**52.2**	**13.3**	**2.4**	**10.7**	—	—	—	—	**29.6**	—	—	—	**14.3**	—
HT359	Sespt 26	11.50	0.53	0.47	2.30	2.70	4.70	—	4.30	0.82	3.45	5.90	—	0.15	0.80	—	—	—	—	3.60	—	—	—	1.82	—
	〃	**38**	**4.6**	**4.1**	**20.0**	**23.5**	**40.9**	—	**37.4**	**7.1**	**30.0**	**51.3**	—	**1.3**	**7.0**	—	—	—	—	**31.3**	—	—	—	**15.8**	—

IV. Japanese coastal, males, 1950 & 1951 (cont.)

Area[1], Company[2], Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
HT206	Aug. 13	11.59	0.51	0.43	2.46	2.82	4.55	—	—	0.87	3.44	5.79	1.25	0.30	1.20	—	1.07	—	—	3.64	1.50	3.17	1.22	1.82	—
	1951	**38**	**4.4**	**3.7**	**21.2**	**24.3**	**39.3**	—	—	**7.5**	**29.7**	**50.0**	**10.8**	**2.6**	**10.4**	—	**9.2**	—	—	**31.4**	**12.9**	**27.4**	**10.5**	**15.7**	—
TH214	Aug. 14	11.59	0.63	0.45	2.22	2.62	4.36	—	3.60	0.80	3.40	5.50	1.30	0.24	0.90	0.75	1.05	—	0.53	3.65	—	—	—	1.55	—
	1950	**38**	**5.4**	**3.9**	**19.2**	**22.6**	**37.6**	—	**31.1**	**6.9**	**29.3**	**47.5**	**11.2**	**2.1**	**7.8**	**6.5**	**9.1**	—	**4.6**	**31.5**	—	—	—	**13.4**	—
HT132	June 23	11.63	0.38	0.40	2.30	2.65	4.70	—	3.70	0.82	3.30	5.70	1.35	0.24	0.73	0.73	1.20	—	0.52	—	1.40	3.20	—	1.75	—
	1951	**38**	**3.3**	**3.4**	**19.8**	**22.8**	**40.4**	—	**31.8**	**7.1**	**28.4**	**49.0**	**11.6**	**2.1**	**6.3**	**6.3**	**10.3**	—	**4.5**	—	**12.0**	**27.5**	—	**15.0**	—
HT133	June 23	11.89	0.65	0.40	2.30	2.55	4.65	—	4.00	0.73	3.30	5.60	1.20	0.20	1.15	0.75	1.00	—	0.50	—	1.55	3.20	—	1.50	—
	1951	**39**	**5.5**	**3.4**	**19.3**	**21.4**	**39.1**	—	**33.6**	**6.1**	**27.8**	**47.1**	**10.1**	**1.7**	**9.7**	**6.3**	**8.4**	—	**4.2**	—	**13.0**	**26.9**	—	**12.6**	—
ST 26	July 27	11.89	0.80	0.36	2.55	2.80	4.70	—	3.75	0.85	3.70	5.80	1.30	0.30	1.50	0.86	1.07	—	—	—	1.50	2.90	—	1.50	—
	1951	**39**	**6.7**	**3.0**	**21.4**	**23.5**	**39.5**	—	**31.5**	**7.1**	**31.1**	**48.8**	**10.9**	**2.5**	**12.6**	**7.2**	**9.0**	—	—	—	**12.6**	**24.4**	—	**12.6**	—
HT207	Aug. 13	11.89	0.69	0.48	2.57	2.88	4.96	—	—	0.90	3.32	5.62	1.45	0.30	1.13	—	—	—	—	3.57	—	—	—	1.55	—
	1950	**39**	**5.8**	**4.0**	**21.6**	**24.2**	**41.7**	—	—	**7.6**	**27.9**	**47.3**	**12.2**	**2.5**	**9.5**	—	—	—	—	**30.0**	—	—	—	**13.0**	—
HT213	〃 14	11.89	0.62	0.60	2.53	2.79	4.95	—	3.95	0.89	3.50	5.85	1.25	0.20	1.45	0.77	1.09	—	0.58	3.85	—	—	—	1.82	—
	1950	**39**	**5.2**	**5.0**	**21.3**	**23.5**	**41.6**	—	**33.2**	**7.5**	**29.4**	**49.2**	**10.5**	**1.7**	**12.2**	**6.5**	**9.2**	—	**4.9**	**32.4**	—	—	—	**15.3**	—
HT248	〃 24	11.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.75	1.82	3.63	1.25	—	—
	1950	**39**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**31.5**	**15.3**	**30.5**	**10.5**	—	—
HT126	June 20	12.19	0.70	0.50	2.45	2.60	4.75	—	3.85	0.88	4.10	6.30	1.30	0.35	0.85	—	—	—	—	—	1.45	3.15	—	1.85	—
	1951	**40**	**5.7**	**4.1**	**20.1**	**21.3**	**39.0**	—	**31.6**	**7.2**	**33.6**	**51.7**	**10.7**	**2.9**	**7.0**	—	—	—	—	—	**11.9**	**25.8**	—	**15.2**	—
HT 74	June 22	12.19	0.80	0.45	—	2.95	5.50	0.40	4.10	0.85	3.50	5.70	—	0.35	1.35	1.05	1.20	—	0.56	—	1.70	3.40	—	1.70	—
	1951	**40**	**6.6**	**3.7**	—	**24.2**	**45.1**	**3.3**	**33.6**	**7.0**	**28.7**	**46.7**	—	**2.9**	**11.1**	**8.6**	**9.8**	—	**4.6**	—	**13.9**	**27.9**	—	**13.9**	—
HT183	Aug. 9	12.20	0.90	0.33	2.90	3.35	5.25	—	4.20	0.90	3.75	6.50	1.35	0.15	1.45	—	—	—	—	3.80	1.71	3.57	1.26	—	—
	1950	**40**	**7.4**	**2.7**	**23.8**	**27.5**	**43.0**	—	**34.4**	**7.4**	**30.7**	**53.3**	**11.1**	**1.2**	**11.9**	—	—	—	—	**31.1**	**14.0**	**29.3**	**10.3**	—	—
HT193	〃 11	12.20	0.88	0.36	2.89	3.38	5.28	—	4.25	0.89	3.72	6.45	1.40	0.17	1.38	0.86	1.02	—	0.56	3.86	1.70	3.55	1.30	1.98	—
	1950	**40**	**7.2**	**3.0**	**23.7**	**27.7**	**43.3**	—	**34.8**	**7.3**	**30.5**	**52.9**	**11.5**	**1.4**	**11.3**	**7.0**	**8.4**	—	**4.6**	**31.6**	**13.9**	**29.1**	**10.7**	**16.2**	—
HT204	〃 13	12.20	0.60	0.39	2.50	2.90	5.00	—	4.00	0.79	3.60	6.20	1.70	0.15	1.05	0.91	1.28	—	0.60	3.60	1.49	2.94	1.21	1.61	—
	1950	**40**	**4.9**	**3.2**	**20.5**	**23.8**	**41.0**	—	**32.8**	**6.5**	**29.5**	**50.8**	**13.9**	**1.2**	**8.6**	**7.5**	**10.5**	—	**4.9**	**29.5**	**12.2**	**24.1**	**9.9**	**13.2**	—
HT212	〃 14	12.20	0.60	0.45	2.65	3.05	5.20	—	4.10	0.83	3.40	5.90	1.50	0.19	0.72	0.85	1.24	—	0.54	4.00	—	—	—	1.66	—
	1950	**40**	**4.9**	**3.7**	**21.7**	**25.0**	**42.6**	—	**33.6**	**6.8**	**27.9**	**48.4**	**12.3**	**1.6**	**5.9**	**7.0**	**10.2**	—	**4.4**	**32.8**	—	—	—	**13.6**	—
HT235	〃 19	12.20	0.80	0.40	2.50	2.85	4.75	—	4.37	0.98	3.72	6.07	1.45	0.24	1.00	0.75	1.14	—	0.55	3.65	1.45	3.25	1.25	—	—
	1950	**40**	**6.6**	**3.3**	**20.5**	**23.4**	**38.9**	—	**35.8**	**8.0**	**30.5**	**49.8**	**11.9**	**2.0**	**8.2**	**6.1**	**9.3**	—	**4.5**	**29.9**	**11.9**	**26.6**	**10.2**	—	—
HT208	〃 13	12.51	0.68	0.35	2.69	2.85	5.18	—	4.40	0.92	4.00	6.15	1.10	0.24	1.00	0.90	1.22	—	0.54	3.75	1.46	3.22	1.29	1.60	—
	1950	**41**	**5.4**	**2.8**	**21.5**	**22.8**	**41.4**	—	**35.2**	**7.4**	**32.0**	**49.2**	**8.8**	**1.9**	**8.0**	**7.2**	**9.8**	—	**4.3**	**30.0**	**11.7**	**25.7**	**10.3**	**12.8**	—

IV Japanese coastal, males, 1950 & 1951 (cont.)

Area[1], Company[2], Serial No.	Date, killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
TH209	〃 13	12.51	0.90	0.39	2.62	2.93	—	—	4.60	0.74	3.70	6.10	1.50	0.22	0.78	—	—	—	—	3.77	1.62	3.10	12.3	1.50	—
	1950	**41**	**7.2**	**3.2**	**20.9**	**23.4**	—	—	**36.8**	**5.9**	**29.6**	**48.8**	**12.0**	**1.8**	**6.2**	—	—	—	—	**30.1**	**13.0**	**24.8**	**9.8**	**12.0**	—
HT227	〃 17	12.51	0.75	0.50	2.70	3.25	5.10	—	4.05	0.87	3.78	6.48	1.55	0.15	0.90	0.80	1.05	—	0.56	3.95	1.75	3.45	1.35	1.73	—
	1950	**41**	**6.0**	**4.0**	**21.6**	**26.0**	**40.8**	—	**32.4**	**7.0**	**30.2**	**51.8**	**12.4**	**1.2**	**7.2**	**6.4**	**8.5**	—	**4.5**	**31.6**	**14.0**	**27.6**	**10.8**	**13.8**	—
HT223	〃 16	12.81	0.65	0.55	2.80	3.40	5.40	—	—	1.05	3.90	6.35	1.55	0.29	1.10	0.88	1.14	—	0.54	4.30	1.80	3.80	1.35	1.90	—
	1950	**42**	**5.1**	**4.3**	**21.9**	**26.5**	**42.2**	—	—	**8.2**	**30.4**	**49.6**	**12.1**	**2.3**	**8.6**	**6.9**	**8.9**	—	**4.2**	**33.6**	**14.1**	**29.7**	**10.5**	**14.8**	—
HT228	〃 17	12.81	0.90	0.45	2.95	3.10	5.35	—	4.12	0.90	3.72	6.42	1.30	—	—	—	—	—	—	4.05	1.70	3.73	1.25	1.70	—
	1950	**42**	**7.0**	**3.5**	**23.0**	**24.2**	**41.8**	—	**32.2**	**7.0**	**29.0**	**50.1**	**10.1**	—	—	—	—	—	--	**31.6**	**13.3**	**29.1**	**9.8**	**13.3**	—
HT229	〃 17	12.81	0.70	0.45	2.65	3.15	5.10	—	4.50	0.86	3.73	6.38	1.60	—	—	—	—	—	—	4.10	1.65	3.65	1.30	1.69	—
	1950	**42**	**5.5**	**3.5**	**20.7**	**24.6**	**39.8**	—	**35.1**	**6.7**	**29.1**	**49.8**	**12.5**	—	—	—	—	—	—	**32.0**	**12.9**	**28.5**	**10.1**	**13.2**	—
HT231	〃 17	12.81	0.75	0.41	2.80	3.30	5.30	—	4.20	0.82	3.50	6.25	1.65	—	—	—	—	—	—	4.35	—	—	—	1.77	—
	1950	**42**	**5.9**	**3.2**	**21.9**	**25.8**	**41.4**	—	**32.8**	**6.4**	**27.3**	**48.8**	**12.9**	—	—	—	—	—	—	**34.0**	—	—	—	**13.8**	—
HT418	Oct. 12	12.85	0.61	0.39	2.73	3.51	5.20	—	4.00	0.90	3.82	6.50	1.43	0.25	1.10	—	—	—	—	4.12	1.70	3.60	—	1.77	—
	1950	**42**	**4.7**	**3.0**	**21.2**	**27.3**	**40.5**	—	**31.1**	**7.0**	**29.7**	**50.6**	**11.1**	**1.9**	**8.6**	—	—	—	—	**32.1**	**13.2**	**28.0**	—	**13.8**	—
HT205	Aug. 13	13.12	0.63	0.57	2.90	3.20	5.30	—	4.01	0.81	3.86	6.36	1.40	0.30	1.48	—	—	—	—	4.20	1.63	3.81	1.45	1.77	—
	1950	**43**	**4.8**	**4.3**	**22.1**	**24.4**	**40.4**	—	**30.6**	**6.2**	**29.4**	**48.5**	**10.7**	**2.3**	**11.3**	—	—	—	—	**32.0**	**12.4**	**29.0**	**11.1**	**13.5**	—
HT123	June 14	13.21	0.95	0.60	2.90	3.35	6.00	—	—	1.10	3.85	6.80	1.85	0.29	1.41	—	—	—	—	—	—	—	—	2.15	—
	1951	**43**	**7.2**	**4.5**	**22.0**	**25.4**	**45.4**	—	—	**8.3**	**29.1**	**51.5**	**14.0**	**2.2**	**10.7**	—	—	—	—	—	—	—	—	**16.3**	—
HT181	Aug. 9	13.25	0.73	0.55	2.75	3.15	5.40	—	4.45	0.93	3.96	6.56	1.60	0.16	1.00	—	—	—	—	4.10	1.70	3.40	1.45	1.86	—
	1951	**43**	**5.5**	**4.2**	**20.8**	**23.8**	**40.8**	—	**33.6**	**7.0**	**29.9**	**49.5**	**12.1**	**1.2**	**7.5**	—	—	—	—	**30.9**	**12.8**	**25.7**	**10.9**	**14.0**	—
HT180	〃 9	13.40	0.60	0.55	2.65	3.20	5.40	—	4.20	1.00	3.86	6.06	1.60	0.16	1.00	0.82	1.15	—	0.62	4.45	1.85	3.75	1.45	1.92	—
	1950	**44**	**4.5**	**4.1**	**19.8**	**23.9**	**40.3**	—	**31.3**	**7.5**	**28.8**	**45.2**	**11.9**	**1.2**	**7.5**	**6.1**	**8.6**	—	**4.6**	**33.2**	**13.8**	**28.0**	**10.8**	**14.3**	—
HT182	〃 9	13.40	0.65	—	2.95	3.45	5.60	—	4.35	0.90	4.15	7.00	1.55	0.27	1.66	—	—	—	—	4.20	1.75	3.95	1.30	1.95	—
	1951	**44**	**4.9**	—	**22.0**	**25.7**	**41.8**	—	**32.5**	**6.7**	**31.0**	**52.2**	**11.6**	**2.0**	**12.4**	—	—	—	—	**31.3**	**13.1**	**29.5**	**9.7**	**14.6**	—
HN297	〃 27	13.40	0.88	0.58	3.25	3.70	6.12	—	4.40	0.91	3.70	7.15	1.21	0.20	0.89	0.87	1.23	—	0.59	4.65	1.95	3.90	1.50	—	—
	1951	**44**	**6.6**	**4.3**	**24.3**	**27.6**	**45.7**	—	**32.8**	**6.8**	**27.6**	**53.4**	**9.0**	**1.5**	**6.6**	**6.5**	**9.2**	—	**4.4**	**34.7**	**14.6**	**29.1**	**11.2**	—	—
HT202	Aug. 13	13.42	0.69	0.52	3.10	3.30	5.80	—	4.20	0.91	3.65	6.40	1.55	0.24	1.30	0.94	1.28	—	0.64	4.42	1.92	3.45	1.37	1.86	—
	1950	**44**	**5.1**	**3.9**	**23.1**	**24.6**	**43.2**	—	**31.3**	**6.8**	**27.2**	**47.7**	**11.6**	**1.8**	**9.7**	**7.0**	**9.5**	—	**4.8**	**32.9**	**14.3**	**25.7**	**10.2**	**13.9**	—
HT211	〃 14	13.42	0.72	0.53	3.15	3.33	5.75	—	4.22	0.90	3.67	6.44	1.63	0.23	1.25	0.93	1.25	—	0.65	4.48	—	—	—	1.85	—
	1950	**44**	**5.4**	**3.9**	**23.5**	**24.8**	**42.8**	—	**31.4**	**6.7**	**27.3**	**48.0**	**12.1**	**1.7**	**9.3**	**6.9**	**9.3**	—	**4.8**	**33.4**	—	—	—	**13.8**	—
HT230	〃 17	13.42	—	—	—	—	—	—	4.33	0.81	—	—	—	—	—	—	—	—	—	4.22	—	—	—	1.50	—
	1950	**44**	—	—	—	—	—	—	**32.3**	**6.0**	—	—	—	—	—	—	—	—	—	**31.4**	—	—	—	**11.2**	—

IV. Japanese coastal, males, 1950 & 1951 (cont.)

Area[1]), Company[2]), Serlal No.	Date, Killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	22	22	23	23	25
HT251	〃 26	13.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.21	1.83	3.51	1.31	—	—
	1950	**44**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**31.4**	**13.6**	**26.2**	**9.8**	—	—
HT203	July 30	13.70	—	0.61	—	3.61	6.18	—	4.60	1.04	4.07	6.66	1.75	0.47	0.75	0.98	1.50	—	—	—	—	4.10	1.25	2.07	—
	1950	**45**	—	**4.5**	—	**26.3**	**45.1**	—	**33.6**	**7.6**	**29.7**	**48.6**	**12.8**	**3.4**	**5.5**	**7.2**	**10.9**	—	—	—	—	**29.9**	**9.1**	**15.1**	—
HT203	Aug. 13	13.73	0.86	0.49	3.20	3.70	6.60	—	4.40	0.96	3.70	6.60	1.10	0.31	—	—	—	—	—	4.60	1.83	3.70	1.28	1.79	—
	1950	**45**	**6.3**	**3.6**	**23.3**	**26.9**	**48.1**	—	**32.0**	**7.0**	**26.9**	**48.1**	**8.0**	**2.3**	—	—	—	—	—	**33.5**	**13.3**	**26.9**	**9.3**	**13.0**	—
HN300	Aug. 27	14.05	1.07	0.50	3.37	3.57	6.40	—	4.60	1.00	4.15	7.05	1.75	0.21	1.15	1.08	1.40	—	0.69	4.60	2.03	3.95	1.60	1.90	—
	1950	**46**	**7.6**	**3.6**	**24.0**	**25.4**	**45.5**	—	**32.7**	**7.1**	**29.5**	**50.2**	**12.5**	**1.5**	**8.2**	**7.7**	**10.0**	—	**4.9**	**32.7**	**14.4**	**28.1**	**11.4**	**13.5**	—
HT350	Sept. 24	14.25	1.07	0.65	3.35	3.70	6.30	—	4.80	0.80	3.65	6.70	—	0.53	0.90	1.20	1.70	—	—	4.90	—	4.35	—	1.70	—
	1950	**47**	**7.5**	**4.6**	**23.5**	**26.0**	**44.2**	—	**33.7**	**5.6**	**25.6**	**47.0**	—	**3.7**	**6.3**	**8.4**	**11.9**	—	—	**34.4**	—	**30.5**	—	**11.9**	—
HT351	〃 24	14.50	1.10	0.68	3.55	3.80	6.25	—	4.95	0.75	4.10	6.55	—	0.50	0.78	1.28	1.76	—	—	4.90	—	4.40	—	1.78	—
	〃	**48**	**7.6**	**4.7**	**24.5**	**26.2**	**43.1**	—	**34.1**	**5.2**	**28.3**	**45.2**	—	**3.4**	**5.4**	**8.8**	**12.1**	—	—	**33.8**	—	**30.3**	—	**12.3**	—
HN 68	June 18	14.67	—	0.50	—	4.00	6.70	0.50	4.00	1.15	4.00	—	—	2.25	1.00	0.85	1.10	—	0.65	—	2.00	4.40	—	—	—
	1951	**48**	—	**3.4**	—	**27.3**	**45.7**	**3.4**	**27.3**	**7.8**	**27.3**	—	—	**1.5**	**6.8**	**5.8**	**7.5**	—	**4.4**	—	**13.6**	**30.0**	—	—	—
HT158	Aug. 3	14.90	0.90	0.58	3.20	3.70	6.20	0.42	5.00	0.90	4.50	7.60	—	0.22	1.40	—	—	—	—	4.80	1.80	4.00	1.40	2.20	—
	1950	**49**	**6.0**	**3.9**	**21.5**	**24.8**	**41.6**	**2.8**	**33.6**	**6.0**	**30.2**	**51.0**	—	**1.5**	**9.4**	—	—	—	—	**32.2**	**12.1**	**26.8**	**9.4**	**14.8**	—
HT122	June 14	15.05	1.00	0.80	3.90	4.50	7.00	—	4.15	1.10	4.10	7.00	1.80	0.38	1.24	0.90	1.30	—	0.69	—	—	—	—	2.20	—
	1951	**49**	**6.6**	**5.3**	**25.9**	**29.9**	**46.5**	—	**27.6**	**7.3**	**27.2**	**46.5**	**12.0**	**2.5**	**8.2**	**6.0**	**8.6**	—	**4.6**	—	—	—	—	**14.6**	—
HT 49	June 30	15.30	0.97	0.65	3.60	4.00	6.40	—	5.30	1.05	4.25	7.30	1.75	—	0.85	1.30	1.63	—	—	—	—	—	—	2.21	—
	1950	**50**	**6.3**	**4.2**	**23.5**	**26.1**	**41.8**	—	**34.6**	**6.9**	**27.8**	**47.7**	**11.4**	—	**5.6**	**8.5**	**10.7**	—	—	—	—	—	—	**14.4**	—
HT248	July 30	15.32	1.10	0.52	3.80	4.17	7.25	0.58	5.00	1.09	4.25	6.90	1.75	—	0.90	0.98	1.15	—	0.70	—	—	—	—	2.20	—
	1950	**50**	**7.2**	**3.4**	**24.8**	**27.2**	**47.3**	**3.8**	**32.6**	**7.1**	**27.7**	**45.0**	**11.4**	—	**5.9**	**6.4**	**7.5**	—	**4.6**	—	—	—	—	**14.4**	—
HT243	Aug. 22	15.56	0.95	0.65	4.03	4.51	6.85	—	4.90	—	4.10	7.10	1.95	0.28	1.00	1.08	1.40	—	0.72	5.67	2.12	4.85	1.68	2.08	—
	1950	**51**	**6.1**	**4.2**	**25.9**	**29.0**	**44.0**	—	**31.5**	—	**26.4**	**45.6**	**12.5**	**1.8**	**6.4**	**6.9**	**9.0**	—	**4.6**	**36.4**	**13.6**	**31.2**	**10.8**	**13.4**	—
HT155	Aug. 1	15.60	0.95	0.74	3.70	4.10	6.80	0.52	4.80	0.70	4.40	7.20	1.70	0.34	0.85	1.05	1.41	—	0.72	5.40	2.10	4.70	1.70	2.10	—
	1950	**51**	**6.1**	**4.7**	**23.7**	**26.3**	**43.6**	**3.3**	**30.8**	**4.5**	**28.2**	**46.2**	**10.9**	**2.2**	**5.4**	**6.7**	**9.0**	—	**4.6**	**34.6**	**13.5**	**30.1**	**10.9**	**13.5**	—
HT186	Aug. 11	15.65	1.07	0.77	3.80	4.40	6.80	—	4.90	1.15	4.55	7.55	1.60	0.27	1.38	1.00	1.40	—	0.76	5.48	2.19	4.45	1.57	2.28	—
	1950	**51**	**6.8**	**4.9**	**24.3**	**28.1**	**43.5**	—	**31.3**	**7.3**	**29.1**	**48.2**	**10.2**	**1.7**	**8.8**	**6.4**	**8.9**	—	**4.9**	**35.0**	**14.0**	**28.4**	**10.0**	**14.6**	—
HN 50	May 17	15.65	1.30	0.80	3.80	4.10	6.90	0.50	4.90	1.40	4.32	7.20	1.78	0.31	1.15	—	—	—	—	—	2.00	4.60	—	—	—
	1951	**51**	**8.3**	**5.1**	**24.3**	**26.2**	**44.1**	**3.2**	**31.3**	**8.9**	**27.6**	**46.0**	**11.4**	**2.0**	**7.3**	—	—	—	—	—	**12.8**	**29.4**	—	—	—
HN 69	June 18	15.85	1.30	0.70	—	4.10	6.90	—	5.00	1.10	4.80	7.20	1.40	0.35	1.20	0.90	1.20	—	—	—	2.20	4.70	—	—	—
	1951	**52**	**8.2**	**4.4**	—	**25.9**	**43.5**	—	**31.5**	**6.9**	**30.3**	**45.4**	**8.8**	**2.2**	**7.6**	**5.7**	**7.6**	—	—	—	**13.9**	**29.7**	—	—	—

IV. Japanese coastal, males, 1950 & 1951 (cont.)

Area[1], Company[2], Serial No.	Date, Killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
HT125	June 20	15.90	1.15	0.45	3.75	4.20	6.80	—	5.09	1.15	4.55	7.60	1.70	0.42	1.50	1.00	1.35	—	0.62	—	—	4.80	—	2.15	—
	1951	**52**	**7.2**	**2.8**	**23.6**	**26.4**	**42.8**	—	**32.0**	**7.2**	**28.6**	**47.8**	**10.7**	**2.6**	**9.4**	**6.3**	**8.5**	—	**3.9**	—	—	**30.2**	—	**13.5**	—
HT163	Aug. 5	16.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.30	4.90	1.90	—	—
	1950	**52**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**14.4**	**30.6**	**11.9**	—	—
HT226	〃 17	16.17	1.24	0.65	4.12	4.85	7.35	—	5.05	1.05	4.75	7.55	1.65	0.29	1.55	1.10	1.40	—	0.69	6.05	2.23	4.95	1.70	2.00	—
	〃	**53**	**7.7**	**4.0**	**25.5**	**30.0**	**45.5**	—	**31.2**	**6.5**	**29.4**	**46.7**	**10.2**	**1.8**	**9.6**	**6.8**	**8.7**	—	**4.3**	**37.4**	**13.8**	**30.6**	**10.5**	**12.4**	—
HT414	Oct. 11	16.95	1.14	0.67	4.35	4.45	7.15	—	5.10	1.10	5.00	8.05	1.60	0.75	1.40	1.43	1.88	—	—	5.72	—	5.00	—	2.35	—
	〃	**56**	**6.7**	**4.0**	**25.7**	**26.3**	**42.2**	—	**30.1**	**6.5**	**29.5**	**47.5**	**9.4**	**4.4**	**8.3**	**8.4**	**11.1**	—	—	**33.7**	—	**29.5**	—	**13.9**	—

Remaks 1) H: Pacific coast of Hokkaido
S: Sanrika area
2) T: Taiyo gyogyo Co. K: Kyokuyo hogei Co.
N: Nihon suisan Co. Ki: Kinkai hogei Co.

V. Japanese coastal, females, 1950 & 1951

Area[1], Company[2], Serial No.	Date, Killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
HT172	Aug. 8	10.60	0.40	0.37	1.75	2.10	3.75	0.30	3.80	0.72	3.30	5.40	0.30	—	—	—	—	—	—	2.90	1.25	2.50	0.95	1.47	—
	1950	**35**	**3.8**	**3.5**	**16.5**	**19.8**	**35.4**	**2.8**	**35.8**	**6.8**	**31.1**	**50.9**	**2.8**	—	—	—	—	—	—	**27.4**	**11.8**	**23.6**	**9.0**	**13.9**	—
HT179	〃 9	10.60	0.37	0.53	2.00	2.30	3.70	—	3.95	0.72	3.30	5.90	0.30	—	—	—	—	—	—	3.15	1.40	2.75	1.05	1.47	—
	1950	**35**	**3.5**	**5.0**	**18.9**	**21.7**	**34.9**	—	**37.3**	**6.8**	**31.1**	**55.7**	**2.8**	—	—	—	—	—	—	**29.7**	**13.2**	**25.9**	**9.9**	**13.9**	—
HT234	〃 19	10.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.80	1.30	2.57	1.05	—	—
	1950	**35**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**26.2**	**12.2**	**24.1**	**9.8**	—	—
HT236	〃 19	10.68	—	—	—	—	—	—	4.15	—	—	—	—	—	—	—	—	—	—	2.86	1.39	2.75	1.05	—	—
	1950	**35**	—	—	—	—	—	—	**38.9**	—	—	—	—	—	—	—	—	—	—	**26.8**	**13.0**	**25.7**	**9.8**	—	—
HT237	〃 19	10.68	0.35	0.40	1.75	1.95	3.90	—	4.02	0.55	3.80	5.20	0.25	0.23	1.00	—	—	—	—	2.75	1.40	2.65	1.05	1.35	—
	1950	**35**	**3.3**	**3.7**	**16.4**	**18.3**	**36.5**	—	**37.6**	**5.5**	**35.6**	**48.7**	**2.3**	**2.2**	**9.4**	—	—	—	—	**25.7**	**13.1**	**24.8**	**9.8**	**12.6**	—
HT238	〃 19	10.68	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.20	2.75	1.00	—	—
	1950	**35**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**11.2**	**25.7**	**9.4**	—	—
HT239	〃 19	10.68	0.45	0.35	1.75	2.00	3.60	—	3.96	0.73	3.95	4.50	0.20	—	—	—	—	—	—	2.65	1.33	2.42	1.08	1.50	—
	1050	**35**	**4.2**	**3.3**	**16.4**	**18.7**	**33.7**	—	**37.1**	**6.8**	**37.0**	**42.1**	**1.9**	—	—	—	—	—	—	**24.8**	**12.5**	**22.7**	**10.1**	**14.0**	—
HT170	〃 8	10.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.85	1.33	2.48	—	—	—
	1950	**35**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**26.6**	**12.4**	**23.2**	—	—	—
HT176	〃 8	10.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2.85	1.23	2.50	0.95	—	—
	1950	**35**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**26.6**	**11.5**	**23.4**	**8.9**	—	—
HT146	July 30	10.72	0.32	0.40	1.70	2.10	3.80	0.45	—	0.95	3.70	4.65	0.30	0.26	0.95	0.77	0.98	—	0.50	2.95	—	—	—	1.58	—
	1950	**35**	**3.0**	**3.7**	**15.9**	**19.6**	**35.4**	**4.2**	—	**8.9**	**34.5**	**43.4**	**2.8**	**2.4**	**8.9**	**7.2**	**9.1**	—	**4.7**	**27.5**	—	—	—	**14.7**	—
HT168	Aug. 8	10.80	0.35	—	1.70	2.15	3.80	—	3.80	0.71	3.20	5.70	0.20	0.19	1.00	—	—	—	—	3.15	1.35	2.70	1.00	1.45	—
	1950	**35**	**3.2**	—	**15.7**	**19.9**	**35.2**	—	**35.2**	**6.6**	**29.6**	**52.8**	**1.9**	**1.8**	**9.3**	—	—	—	—	**29.2**	**12.5**	**25.0**	**9.3**	**13.4**	—
HN285	〃 23	10.80	0.38	0.38	1.83	2.17	4.10	—	4.20	0.85	3.50	6.10	0.60	0.23	1.15	0.70	1.04	—	0.49	3.00	1.40	2.65	1.04	1.45	—
	1950	**35**	**3.5**	**3.5**	**16.9**	**20.1**	**38.0**	—	**38.9**	**7.9**	**32.4**	**56.0**	**5.6**	**2.1**	**10.6**	**6.5**	**9.6**	—	**4.5**	**27.8**	**13.0**	**24.5**	**9.6**	**13.4**	—
HT109	June 3	10.87	0.37	0.41	1.85	2.10	3.75	—	3.70	0.79	3.10	5.70	0.30	0.18	0.95	—	—	—	—	—	—	—	—	1.50	—
	1951	**36**	**3.4**	**3.8**	**17.0**	**19.3**	**34.5**	—	**34.0**	**7.3**	**28.5**	**52.4**	**2.8**	**1.7**	**8.7**	—	—	—	—	—	—	—	—	**13.8**	—
HK 50	Aug. 19	10.90	0.45	0.35	1.60	2.10	3.90	0.30	3.70	0.80	3.60	6.10	0.20	—	0.65	0.70	1.00	—	0.50	—	—	—	—	1.40	—
	1950	**36**	**4.1**	**3.2**	**14.7**	**19.3**	**35.8**	**2.8**	**33.9**	**9.3**	**33.0**	**56.0**	**1.8**	—	**6.0**	**6.4**	**9.2**	—	**4.6**	—	—	—	—	**12.8**	—
HT108	June 3	10.97	0.30	0.37	1.87	2.21	3.80	—	3.63	0.78	3.10	5.80	0.25	0.22	0.86	—	—	—	—	—	—	—	—	1.80	—
	1951	**36**	**2.7**	**3.4**	**17.0**	**20.1**	**34.6**	—	**33.1**	**7.1**	**28.3**	**52.9**	**2.3**	**2.0**	**7.8**	—	—	—	—	—	—	—	—	**16.4**	—
HT233	Aug. 19	10.98	—	—	—	—	—	—	3.80	—	—	—	—	—	—	—	—	—	—	3.15	1.48	2.78	—	—	—
	1950	**36**	—	—	—	—	—	—	**34.6**	—	—	—	—	—	—	—	—	—	—	**28.7**	**13.5**	**25.3**	—	—	—

V. Japanese coastal, females, 1950 & 1951 (cont.)

Area[1]), Company[2]), Serial No.	Date, Killed	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	19	20	21	22	23	24	25
HT242	〃 21	10.98	—	—	—	2.10	—	—	—	—	—	—	—	—	—	—	—	—	—	2.75	1.28	2.40	1.00	—	—
	1950	**36**	—	—	—	**19.1**	—	—	—	—	—	—	—	—	—	—	—	—	—	**25.0**	**11.7**	**21.9**	**9.1**	—	—
HT147	July 30	11.00	0.30	0.35	1.35	1.70	3.75	—	4.33	0.80	3.60	4.75	0.35	0.24	1.00	0.80	1.02	—	0.52	2.90	—	—	—	1.48	—
	1950	**36**	**2.7**	**3.2**	**12.3**	**15.5**	**34.1**	—	**39.4**	**7.3**	**32.7**	**43.2**	**3.2**	**2.2**	**9.1**	**7.3**	**9.3**	—	**4.7**	**26.4**	—	—	—	**13.5**	—
HT169	Aug. 8	11.00	0.37	—	—	2.20	4.00	—	4.00	0.96	3.60	5.90	0.30	—	—	—	—	—	—	3.15	1.30	2.80	1.05	1.60	—
	〃	**36**	**3.4**	—	—	**20.0**	**36.4**	—	**36.4**	8.7	**32.7**	**53.6**	**2.7**	—	—	—	—	—	—	**28.6**	**11.8**	**25.5**	**9.5**	**14.5**	—
HT187	〃 11	11.00	0.41	0.51	2.00	2.17	3.60	—	4.10	0.73	3.22	5.72	0.15	0.21	0.85	—	—	—	—	3.10	1.45	2.85	1.05	1.53	—
	〃	**36**	**3.7**	**4.6**	**18.2**	**19.7**	**32.7**	—	**37.3**	**6.6**	**29.3**	**52.0**	**1.4**	**1.9**	**7.7**	—	—	—	—	**28.2**	**13.2**	**25.9**	**9.5**	**13.9**	—
HT188	〃 11	11.00	0.48	0.41	2.17	2.28	4.23	—	3.50	0.70	3.32	5.75	0.10	0.23	0.85	—	—	—	—	3.28	1.46	2.92	1.06	1.52	—
	〃	**36**	**4.4**	**3.7**	**19.7**	**20.7**	**38.5**	—	**31.8**	**6.4**	**30.2**	**52.3**	**0.9**	**2.1**	**7.7**	—	—	—	—	**29.8**	**13.3**	**26.5**	**9.6**	**13.8**	—
HT191	〃 11	11.00	0.47	0.36	1.83	2.23	—	—	3.70	0.74	3.53	5.81	0.31	—	—	0.68	1.03	—	0.55	3.25	1.44	2.90	1.10	1.57	—
	〃	**36**	**4.3**	**3.3**	**16.6**	**20.3**	—	—	**33.6**	**6.7**	**32.1**	**52.8**	**2.8**	—	—	**6.2**	**9.4**	—	**5.0**	**29.5**	**13.1**	**26.4**	**10.0**	**14.3**	—
HT189	〃 11	11.30	0.38	0.45	1.93	2.10	3.91	—	3.55	0.70	3.39	5.85	0.20	0.24	1.13	—	—	—	—	2.92	—	—	—	1.56	—
	〃	**37**	**3.4**	**4.0**	**17.1**	**18.6**	**34.6**	—	**34.1**	**6.2**	**30.0**	**51.8**	**1.8**	**2.1**	**10.0**	—	—	—	—	**25.8**	—	—	—	**13.8**	—
HN290	Aug. 25	11.30	0.42	0.46	1.93	2.38	4.43	0.38	3.85	0.95	—	6.00	0.65	0.32	1.00	—	—	—	—	3.18	1.50	2.90	—	—	—
	〃	**37**	**3.7**	**4.1**	**17.1**	**21.1**	**39.2**	**3.4**	**34.1**	**8.4**	—	**53.1**	**5.8**	**2.8**	**8.9**	—	—	—	—	**28.1**	**13.3**	**25.7**	—	—	—
HT167	〃 8	11.40	0.32	0.45	1.95	2.10	4.25	0.38	4.50	0.80	3.60	5.60	0.20	—	—	—	—	—	—	3.10	1.45	2.75	1.15	1.78	—
	〃	**37**	**2.8**	**3.9**	**17.1**	**18.4**	**37.3**	**3.3**	**39.5**	**7.0**	**31.6**	**49.1**	**1.8**	—	—	—	—	—	—	**27.2**	**12.7**	**24.1**	**10.1**	**15.6**	—
HT135	June 23	11.40	0.45	0.45	1.80	2.25	4.10	—	4.15	0.77	3.55	6.10	0.45	0.27	0.91	—	—	—	—	—	—	—	—	1.55	—
	〃	**37**	**3.9**	**3.9**	**15.8**	**19.7**	**36.0**	—	**36.4**	**6.8**	**31.1**	**53.5**	**3.9**	**2.4**	**8.0**	—	—	—	—	—	—	—	—	**13.6**	—
HT174	Aug. 8	11.60	0.32	0.48	2.05	2.45	4.20	—	4.25	0.80	3.75	6.55	0.20	0.20	1.00	—	—	—	—	3.10	—	—	—	1.75	—
	〃	**38**	**2.8**	**4.1**	**17.7**	**21.1**	**36.2**	—	**36.6**	**6.9**	**32.3**	**56.5**	**1.7**	**1.7**	**8.6**	—	—	—	—	**26.7**	—	—	—	**15.1**	—
HT195	〃 11	11.60	0.33	0.44	2.07	2.55	—	—	—	0.86	—	—	—	—	—	—	—	—	—	2.97	1.40	2.75	1.25	1.64	—
	〃	**38**	**2.8**	**3.8**	**17.8**	**22.0**	—	—	—	**7.4**	—	—	—	—	—	—	—	—	—	**25.6**	**12.1**	**23.7**	**10.8**	**14.1**	—
HK 51	〃 19	11.70	—	0.48	2.20	2.60	4.50	0.30	4.15	0.85	3.45	6.05	0.35	—	0.95	0.86	1.13	—	0.52	—	—	—	—	1.46	—
	〃	**38**	—	**4.1**	**18.8**	**22.2**	**38.5**	**2.6**	**35.5**	**7.3**	**29.5**	**51.7**	**3.0**	—	**8.1**	**7.4**	**9.7**	—	**4.4**	—	—	—	—	**12.5**	—
HT250	〃 24	11.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.43	—	2.95	1.12	—	—
	〃	**39**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**28.8**	—	**24.8**	**9.4**	—	—