DUCK sp. *Anas* (?) sp.

STATUS: Extinct. First recorded in 1828 and possibly present through about 1844.

OBSERVATIONS: "A species of Duck*, with no conspicuous plumage, [was found] living in small flocks on Moller [=Laysan] and Lisiansky, but not breeding" by Isenbeck in April 1828 (Rothschild, 1893-1900:v). A newspeper account of the wreck of the *Holder Borden* in 1844 (Ward, 1967:34) stated that " . . . wild ducks . . . are plentiful . . . . [and] . . . were readily temed." The account also implied that these ducks were eaten by members of the crew. Another account (Ward, 1967:42) stated that "The ducks seemed peculiarly inclined to renounce their wild and roving propensities and adopt the domestic habits of civilized life. A flock of 40 had attached themselves to the settlement."

Although it is possible that the ducks were some other species, this does not seem too likely. Jabes Pell, Captain of the vessel and evidently the primary source for the accounts of the shipwreck (Ward, 1967:38), was from New England and should have been able to distinguish ducks from curlews, the only other species occurring on Lisianski that is likely to have exhibited the habits ascribed to the ducks. We think it likely that the last of the endemic ducks on Lisianski were killed for food between 1844 and 1846 by the shipwrecked crews of the *Holder Borden* or *Konohasset*.

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* This duck, which Warner (1963:6) and others thought might be the same as the endemic Laysan Teal (*Anas laysanensis*), could have been a distinct subspecies or species.

Climate

Climatic data for this area of the Pacific are available only from Midway Naval Station, 255 miles northwest of Lisianski. No significant difference is expected between the general weather conditions of the two islands. The Data used in this section are from a summary of the years 1953-1963 (NavSta Midway Forecast Handbook and Air Weather Service, [MATS] Climatic Center USAF).

Climate in this region of the Pacific is marine, influenced by marine tropical or marine Pacific air masses depending upon the season. During summer the Pacific High becomes dominant, with the ridge line extending across the Pacific north of Midway. This places the region under the influence of easterlies with marine tropical and trade winds prevailing. During the winter, especially from November through January, the Aleutian thaw moves southward over the North Pacific, displacing the Pacific High before it. The Midway region is then affected by either marine pacific or marine tropical air, depending upon the intensity of the Aleutian Low and, or the Pacific High.

Monthly maximum, minumum, and mean temperatures for a ten year period are shown in Figure V. The temperature variation shown is indicative of a marine environment. The mean annual range is 16°F. From December through April the means by between 66°F and 69°F, and during the remainder of the year between 70°F and 81°F, the warmest months being July, August and September, and the coolest January, February and April. An inexplicable departure from the normal curve occurs in maximum, minimum and mean figures for April. A 37 degree difference exists between the absolute high of 89°F and the absolute low of 52°F for this ten year period.

Mean monthly precipitation and the number of days with measurable precipitation are tabulated in Figure VI. Rain or drizzle most frequently occur from

December through May, and least frequently in June and July. The mean annual precipitation for the period is 42.59 inches, with a maximum of 5.07 inches occurring in January and August, and a minimum of 2.03 inches in November. A secondary maximum of 4.92 inches occurs in October. Combining amount of precipitation and days with measurable precipitation shows May and June to be the driest months of the year. During the remaining months measurable rain falls on from 10 to 17 days. No snow has been recorded. Thunderstorms have been recorded in all months except February, March and April but peak activity seems to occur during August, September and November. The annual average relative humidity is 76 per cent with a high monthly mean of 89 per cent and a low of 62 per cent.

During the periods for which data are available no tropical storm or typhoon has passed through the area, though storms of tropical character have passed within 500 miles, causing a noticeable increase in precipitation and winds, especially in September of 1957, 1958 and 1959, October and November 1962, and December 1964.

The maximum sustained wind recorded for Midway is 44 knots in January. Maximum winds are lowest in June, July and August, are high in September and December, and also low in October. Maximum winds occur generally from the east from July through October, and from the west the remainder of the year. Peak gusts of 77 and 67 knots have been recorded in December and January respectively, during the period when the Easterlies are not present. From May through August peaks range from 35 to 41 knots and in the remaining months from 42 to 55 knots. Gusts are generally from the west.

Surface wind speeds and directions are shown in Figure VII. The prevailing wind direction ten months of the year is the easterly, and during December and January westerly. The annual mean wind speed is 10 knots, with a range of 5 knots. No sustained winds over 40 knots have been recorded. generally range from northeast to

Winds of over four knots

southeast, while greatest mean wind speeds are recorded from south-southwest to west-northwest.

The mean tenths of total sky cover is fairly uniform throughout the year, ranging from a low of 5.3 in August to a high of 7.3 in March. The yearly mean is 6.2. The occurrence of fog and haze is negligible, but highest in January and March. Closed conditions with visibility less than one mile occur rarely (2 o/o) at Midway, but most often from December through April, when due to rain.

Figure V: The mode of the monthly means for a ten year period, 1953 - 63, and the range ~~of the modes~~ of the maximum and minimum modes of temperatures for Midway Atoll.

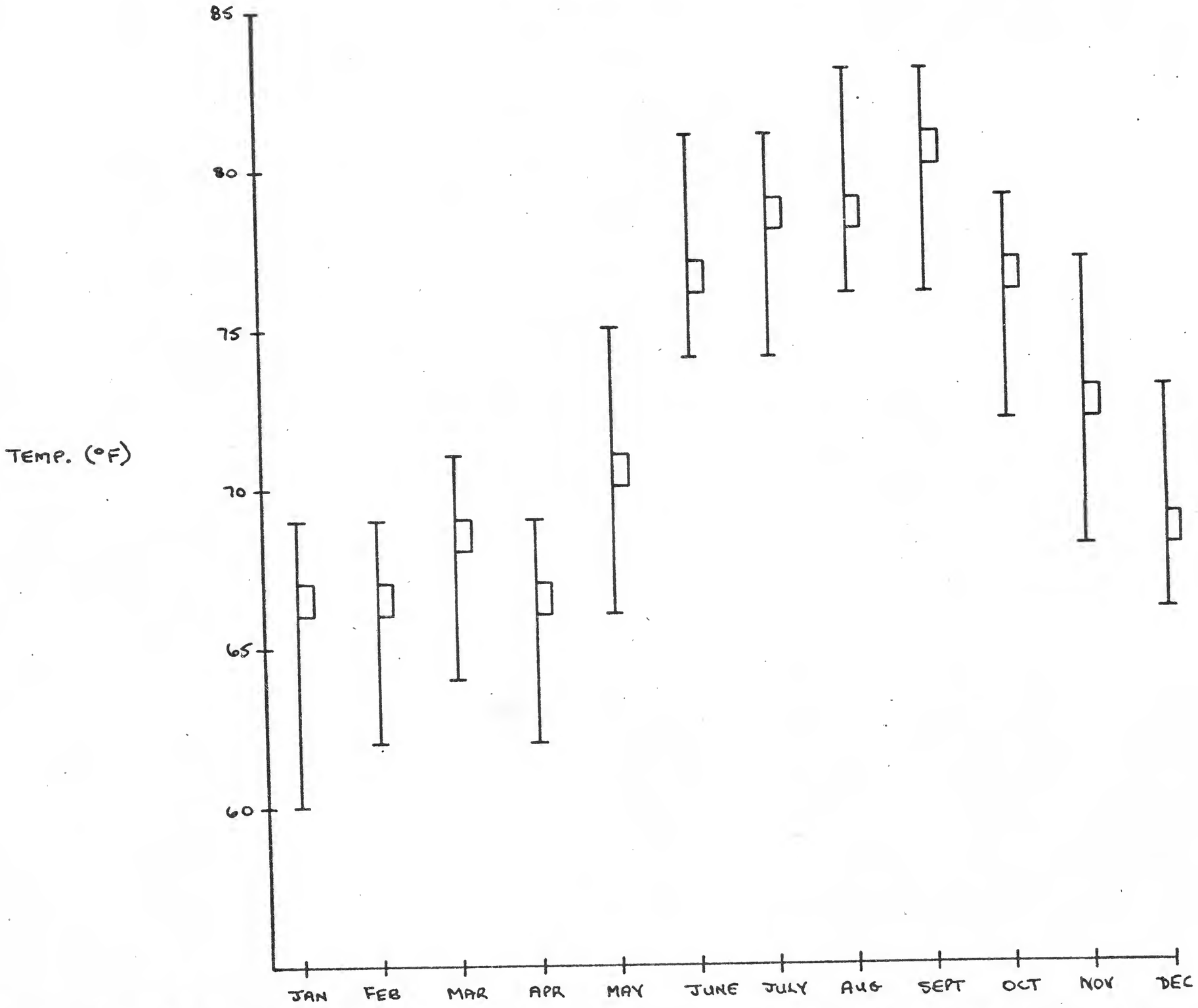


Figure VII: Mean monthly precipitation in inches (histogram) and mean number of days with measurable precipitation (line graph) for Midway Atoll, 1953-63.

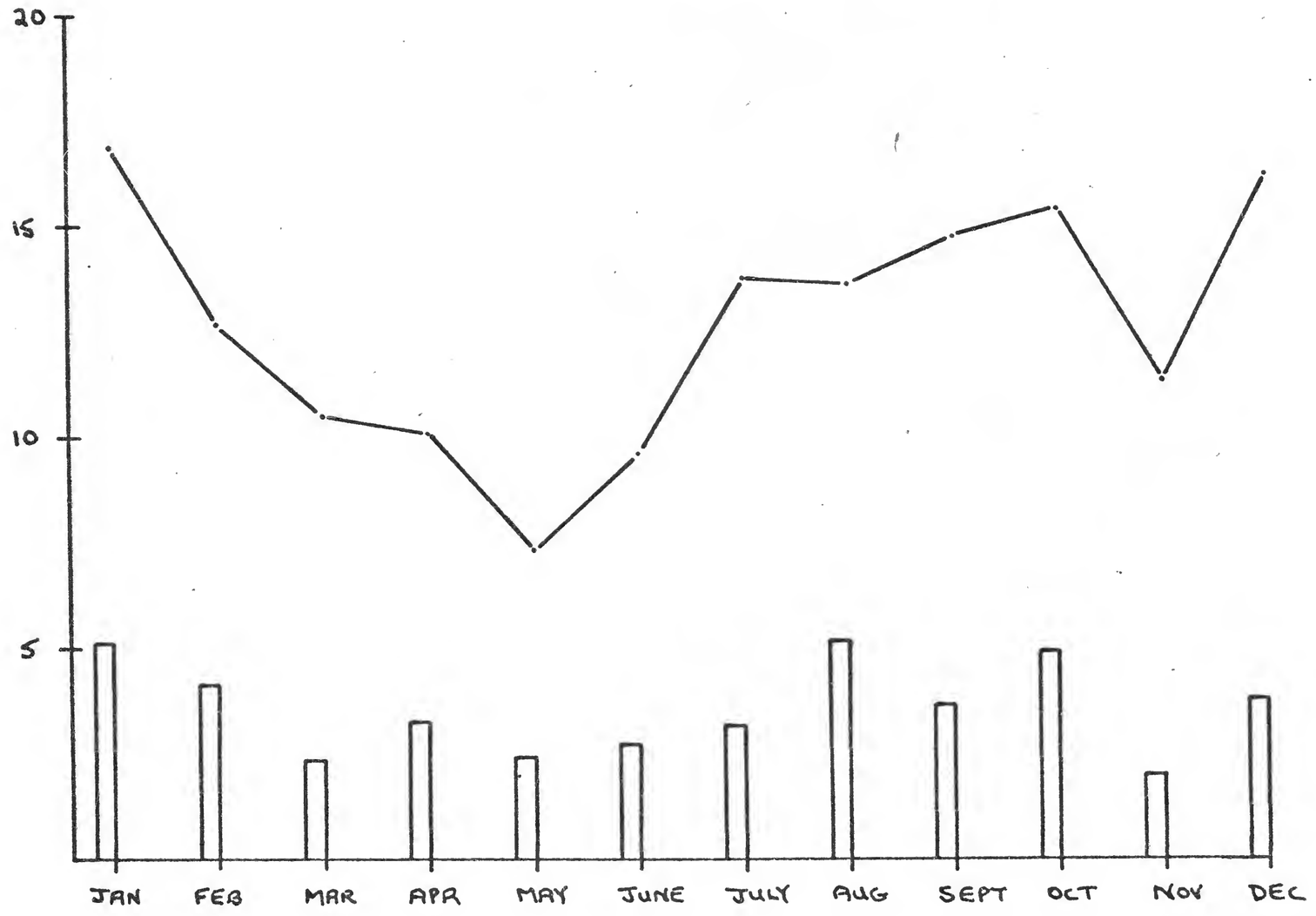
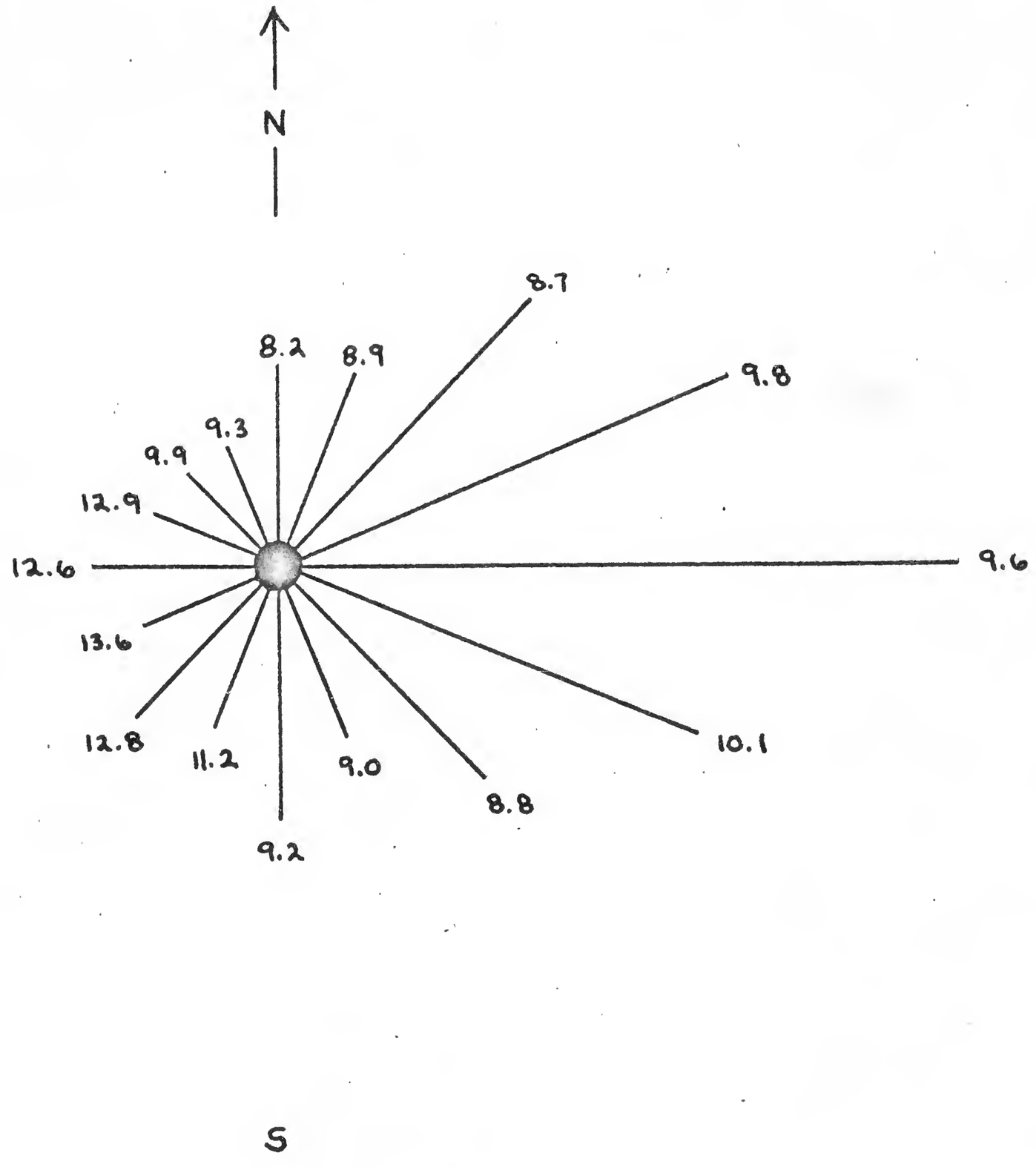


Figure VII : Wind direction and speed at Midway Atoll from 1953 - 63. Length of directional line indicates percent of observations from that direction, figure at end of the directional line is mean wind speed in knots.



(Check Wetmore's 1925 paper)

First Records of the Avifauna of Lisianski Island

When Seen	First Unequivocal Record of Occurrence	First Unequivocal Record of Breeding	First Published Record of Occurrence	First Published Record of Breeding	When and byWhom First Specimen Taken
March 1828	Black-footed Albatross	Black-footed Albatross	von Kittlitz (1834)	von Kittlitz (1834)	A.Wetmore, 17 May 1923
	Laysan Albatross	Laysan Albatross	von Kittlitz (1834)	von Kittlitz (1834)	H.C. Palmer, 3 July 1891
	Great Frigatebird	Great Frigatebird	von Kittlitz (1834)	von Kittlitz (1834)	A. Wetmore, 17 May 1923
	Red-footed Booby		von Kittlitz (1834)		A. Wetmore, 19 May 1923
June-Jyly 1891	Blue-faced Booby	Blue-faced Booby	Rothschild (1893)	Rothschild (1893)	(??Fisher, 20 May 1902)Wetmore, 17 May
	Brown Booby	Brown Booby	Rothschild (1893)	Rothschild (1893)	H.C.Palmer, 30 June 1891
		Red-footed Booby		Rothschild (1893)	
	Sooty Tern	Sooty Tern			U.S.Tres.Dept., 1904
	Gray-backed Tern		Rothschild (1893)		U.S.Treas.Dept., 1904
	Black Noddy	Black Noddy	Rothschild (1893)	Rothschild (1893)	A. Wetmore, 17, May 1923
	White Tern		Rothschild (1893)		U.S.Treas.Dept., 1904
	Golden Plover		Rothschild (1893)		NONE EVER COLLECTED
	Bristle-thighed Curlew		Rothschild (1893)		A. Wetmore, 19 May 1923
	Wandering Tattler		Rothschild (1893)		A. Wetmore, 16 May 1923
	Ruddy Turnstone		Rothschild (1893)		(POBSP), 22 Aug. 1964
Mentioned in publications by Munro, 1941 and not by Rothschild	Wedge-tailed Shearwater	Wedge-tailed Shearwater	Munter (1915)	Munro (1941)	A. Wetmore, 16 May 1923
	Bonin Petrel	Bonin Petrel	Munter (1915)	Munro (1941)	(3 July 1891 ~~A. Wetmore, 17 May 1923~~ H.C.Palmer
	Bulwer's Petrel	Bulwer's Petrel		Munro (1941)	A. Wetmore, 17 May 1923
	Christmas Shearwater			Munro (1941)	A. Wetmore, 17 May 1923
March 1915	Brown Noddy		Munter (1915)		A. Wetmore, 17 May 1923
		Gray-backed Tern		Munter (1915)	
16-19 May 1923 (Records by Wetmore, ms)		Brown Noddy		[~~None??~~] No - a rather ambiguous statement by Munro 1941 implies presence + breeding in 1941	
		Christmas Shearwater		[~~None??~~] Richardson(1957)	
	Red-tailed Tropicbird				U.S.Treas. Dept, 1904
26 March 1954 (Richardson, obs.)	~~Red-tailed Tropicbird~~ Sanderling	Red-tailed Tropicbird	Richardson (1957) ?? Clapp & Woodward(1968)	Richardson (1957)	R.B.Clapp (POBSP) 20 March 1968
14 February 1963 (POBSP)	Herring Gull		Clapp & Woodward(1968)		(POBSP) 14 Feb., 1963
11 March '63 (POBSP)	Hybrid LaysanxBlack-footed Albatross		[NONE]		(POBSP) 11 Mar. 1963
11 March 1964 (POBSP)	~~Bar-tailed Godwit~~		Clapp & Woodward(1968)		G.S.Wislocki (POBSP) 11 Mar., 1964
	Bar-tailed Godwit				
12-14 March 1965 (POBSP)	Peregrine Falcon		Clapp & Woodward(1968)		NONE EVER COLLECTED
	Black-bellied Plover		Clapp & Woodward(1968)		R.B.Clapp (POBSP) 13 Mar., 1965
	Glaucous-winged Gull		Clapp & Woodward(1968)		(POBSP) 12 Mar., 1965
4 September 1967 (POBSP)	Semipalmated Plover		[NONE]		C.A.Ely (POBSP) 4 Sept. 1967
	Mongolian Plover		[NONE]		R.B.Clapp (POBSP) 4 Sept. 1967
	Jouanin's Petrel		[NONE]		R.B.Clapp (POBSP) 4 Sept. 1967

ATF #6

October - November 1964

Howland, Baker, Phoenix and Line Islands

Field #	Species	Sex	Location	Date	Gonad	Weight	Remarks	Collector Number
40431	Pluvialis dominica	♂	At Sea, 08°17'N 173°27'W	Oct. 5, 1964	Testes 2 mm.	—	No fat-very thin, skull ossified, landed on ship	FCS 3102
40432	DESTROYED			—	—	—	—	—
40433	DESTROYED			—	—	—	—	—
40434	Sterna fuscata	—	Howland Island, Pacific Ocean	Oct. 9, 1964	—	151.2 gms.	Nestling	Anderson 17
40435	Sterna fuscata	—	Howland Island, Pacific Ocean	Oct. 9, 1964	—	160.9 gms.	Nestling	Woodward 14
40436	DESTROYED			—	—	—	—	—
40437	DESTROYED			—	—	—	—	—
40438	Sterna fuscata	—	Howland Island, Pacific Ocean	Oct. 9, 1964	—	138.0 gms.	Nestling	Merrill 119
40439	DESTROYED			—	—	—	—	—
40440	Sterna fuscata	♀	Howland Island, Pacific Ocean	Oct. 09, 1964	numerous 2 mm ova	148.8 gms.	Skeleton	FCS 3103
40441	Sterna fuscata	♂	" "	Oct. 09, 1964	Testis - left 9x4mm Right 6x4mm	181.4 gms.	Medium fat, Skeleton	Anderson #1
40442	Sterna fuscata	♂	" "	"	Testes: left 9x5mm Right - 5x4mm	170.4 gms.	Skeleton	Woodward 1
40443	Heteroscelus incanum	♀	" "	Oct. 10, 1964	Granular ovary 7mm	93.3 gms.		Anderson #2
40444	Heteroscelus incanum	♀	" "	"	Granular ovary 5mm	78.0 gms.		FCS 3105
40445	Pluvialis dominica	♂	" "	"	Testes: left 1x0.5mm Right - 0.6x0.4mm	92.6 gms.		Woodward 2
40446	Pluvialis dominica	♀	" "	"	Granular ovary 5.0mm.	99.2 gms.		FCS 3106
40447	Anous stolidus	♂	" "	Oct. 10, 1964	Testes 2 mm.	189.2 gms.		FCS 3104
40448	Fregata ariel	♀	" "	Oct. 11, 1964	Ovum 3 mm l. ovum 1 mm.	862.4 gms.	on nest, Skeleton, stomach saved	Woodward 4
40449	Fregata ariel	♀	" "	"	Ovary 16x6 mm	829.8 gms.	on nest, medium fat - Skeleton	Merrill 117
40450	Fregata ariel	♀	" "	Oct. 11, 1964	Ovary granular - 8mm	904.2 gms.	Skeleton, stomach saved	Anderson 5
40451	Fregata ariel		" "	Oct. 11, 1964	Ovu	834.2 gms.	Stomach saved	FCS 3107
40452	Fregata ariel	♀	" "	"	Ovary granular 8mm l. ovum 1mm	785.9 gms.	Stomach saved	Woodward 3
40453	Fregata ariel	♀	" "	"	Ovary 15x7 mm	876.6 gms.	Skeleton, stomach saved	Anderson 4
40454	Fregata ariel	♀	" "	"	l. ovum 4mm	833.5 gms.	Skeleton, stomach saved	FCS 3109
40455	Fregata ariel	♀	" "	"	Ovary granular - 10mm	733.5 gms.	Skeleton, on nest, stomach saved	3108
40456	Fregata ariel	♀	" "	Oct. 11, 1964	Ovary granular - 10mm	778.5 gms.	[illegible] stomach saved	FCS Woodward 5
40457	Fregata ariel	♀	Howland Island, Pacific Ocean	Oct. 11, 1964	Ovary 20x8mm	747.5 gms.	medium fat, on nest, [illegible] saved stomach	Merrill 116
40458	Sula dactylatra	♂	" "	"	Testes: left 4x19mm Right 3x14mm	1768 gms.	Skeleton, stomach saved	Anderson 7
40459	Sterna fuscata	♀	" "	"	Ovary 5mm	203.5 gms.	Skeleton	

Field #	Species	Sex	Location	Date	Gonads	Weight	Remarks	Collector Number
40460	Sterna fuscata	♀	Howland Island	11	Ovum 5mm.	180 gms		AHA 12
40461	Sterna fuscata	♀	Howland Island	Oct. 11, 1964	Ovum 2 mm ova minute	144 gms.	Skeleton	Anderson 8
40462	Sterna fuscata	♀	"		Ovary 15 mm	159 gms.		PWW 12
40463	Sterna fuscata	♀	"		l. ovum 1 mm.	148 gms.		AHA 13
40464			DESTROYED					---
40465	Sterna fuscata	♂	"		Testes R 8x5 mm L 10x5 mm	169. gms.		PWW 15
40466	Sterna fuscata	♀	Howland Island, Pacific Ocean	Oct. 11, 1964	Ovary 8 mm	197. gms.	Skeleton	Anderson 6
40467	Phaethon rubricauda	♂	Howland Island Pacific Ocean	Oct. 12, 1964	?	667 gms.	stomach saved	PWW 9
40468	DESTROYED				—	—	—	—
40469	DESTROYED				—	—	—	—
40470	Pluvialis dominica	♀	Howland Island, Pacific Ocean	Oct. 13, 1964	Ovary 5x4 mm	60.8 gms.	emaciated, stomach saved	CDH 20
40471	Heteroscelus incanum	♂	Baker Island, Pacific Ocean	Oct. 13, 1964	Testes 2mm	112.9 gms.	Stomach saved	FCS 3110
40472	Heteroscelus incanum	♀	" "	Oct. 13, 1964	Ovary 1.5mm	133.7 gms.	Heavy fat, stomach saved	Woodward 6
40473	Arenaria interpres	♂	" "		Testes 2mm.	89.0 gms.	Skeleton, stomach saved	FCS 3111
40474	DESTROYED				—	—	—	—
40475	Sula dactylatra	?	Baker Island, Pacific Ocean		?	1556.4 gms.	Stomach saved	FCS 3112
40476	Anous stolidus	♂	" "		Testes: left- 8x4mm Right 9x5mm l. ovum 3mm.	203 gms.	Skeleton, stomach saved	Anderson 9
40477	Anous stolidus	♀	" "		Ovary 10mm.	167 gms.	Skeleton, stomach saved	Woodward 7
40478	Anous stolidus	♂	" "		Testes: left 9x4mm Right 8x4 mm.	183 gms.	Skeleton, Stomach saved	Woodward 8
40479	Pluvialis dominica	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 18, 1964	Testes: Left 2x1 mm Right: 1x8 mm	107 gms.	Stomach saved	Woodward 17
40480	Heteroscelus incanum	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 18, 1964	Testes: Right 2x5 mm Left: 3x1 mm.	93 gms.	Stomach saved	Merrill 121
40481	Erolia acuminata	♀	" " "	"	Ovary 8 mm ova minute	67.5 gms.	Stomach saved	Woodward 16
40482	Sterna fuscata	♀	" " "	"	l. ovum 2 mm.	133.8 gms.	Stomach saved	Anderson 21
40483	Sterna fuscata	♂	" " "	"	Testes: R 3x2 mm. L 7x2 mm	145 gms.	Stomach saved	Anderson 23
40484	Sterna fuscata	♂	" " "	"	Testes: R 5x4 mm L 9x5 mm	151.9 gms.	Stomach saved	Anderson 24
40485	Sterna fuscata	♀	" " "	"	l. ovum 1.5 mm Ovary 12 mm	143.1 gms.	Stomach saved	Woodward 19
40486	Sterna fuscata	♀	" " "	"	l. ovum 2 mm.	145.7 gms.	Stomach saved	Anderson 25
40487	Sterna fuscata	♂	" " "	"	Testes: R 8x5 mm L 11x5 mm	152.1 gms.	Stomach saved	Woodward 18
40488	Sterna fuscata	♂	" " "	"	Testes R 3x2 mm L 3x2 mm	174.2 gms.	Stomach saved	AHA 22

Field #	Species	Sex	Location	Date	Gonads	Weight	Remarks	Collector No.
40489	Sterna fuscata	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 18, 1964	l. ovum 1mm. l. ovum 1 mm Ovary 15 mm	158 gms.	Stomach saved	Anderson 20
40490	Sterna fuscata	♀	" " "	"		147.8 gms.	Stomach saved	Woodward 18
40491	Sterna fuscata	♀	" " "	Oct. 18, 1964	l. ovum 2 mm. Testes: R 5x6mm L 7x11 mm	134.6 gms	Stomach saved	Anderson 19
40492	Sterna fuscata	♂	" " "	"	Testes: R 2x2 mm	149.3 gms.	Stomach saved	Merrill 123
40493	Anous stolidus	♂	" " "	Oct. 18, 1964	L 2x2 mm	154.4 gms.	Skeleton	Anderson #27
40494	Puffinus l'herminieri	♀	" " "	"	l. ovum 2 mm.	174.8 gms.	Skeleton	Anderson 26
40495	Sterna fuscata	♀	" " "	Oct. 18, 1964	l. ovum 2 mm	—	Skeleton	Anderson 28.
40496	Numenius tahitiensis	—	" " "	Oct. 18, 1964	—	—	Found dead + skeletonized	Hachman 26
40497	Sterna lunata	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 20, 1964	largest ova 3mm	120.0 gms.	Stomach saved	FCS 3113
40498	Sterna lunata	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 20, 1964	largest ova 1mm. Testes: R 6x4 L - 7x7.	102.5 gms.	Stomach saved	FCS 3115
40499	Sterna lunata	♂	" " "	"		129.8 gms.	Stomach saved, Skeleton (Stomach owed?) - prob. the unnumbered one packed in Drum #1	Woodward 22
40500	Sterna lunata	♀	" " "	Oct. 20, 1964	largest ova 1mm. Ovary 12mm	106.5 gms		FCS 3114
40501	Sterna lunata	♀	" " "	Oct. 20, 1964	l. ovum 3 mm. Testes: R 6x3	103.1 gms.	Stomach saved	Hachman 25
40502	Sterna lunata	♂	" " "	Oct. 20, 1964	L x 5x3	119.4 gms.	Stomach saved, Skeleton	Merrill 124
40503	Sterna lunata	♀	" " "	"	l. ovum 3mm.	112 gms.	Stomach saved, skeleton	Anderson 29
40504	Sterna lunata	♀	" " "	"	Ovary 13 mm l. ovum 1.5mm	115.8 gms	Stomach saved, skeleton	Woodward 21
40505	Sterna lunata	♀	" " "	"	l. ovum 3 mm	118.5 gms	Stomach saved, Skeleton	Anderson 30
40506	Sterna lunata	♀	" " "	Oct. 20, 1964	largest ova 3mm	119.7 gms	Stomach saved	FCS 3116
40507	Sula sula	♂	" " "	"	Testes 7mm.	700 gms	Stomach saved	FCS 3117
40508	Pluvialis dominica	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 5 mm	93 gms	Stomach saved	FCS 3118
40509	Procelsterna cerulea	—	" " "	Oct. 21, 1964	—	48 gms.	Skeleton	Anderson 32
40510	Procelsterna cerulea	♀	" " "	Oct. 21, 1964	Ovary 5mm ova minute	41.5 gms.	Stomach saved, skeleton	Woodward 24
40511	Procelsterna cerulea	♂	" " "	Oct. 21, 1964	Testes: R 5x4 Left 4x4	48.5 gms	Stomach saved, Skeleton	Woodward 25
40512	Procelsterna cerulea	♂	" " "	Oct. 21, 1964	Testes R - 7x6 L 9x6	51 gms.	Stomach saved, Skeleton	Woodward 23
40513	Procelsterna cerulea	♀	" " "	"	l. ovum 1.5 mm.	45.5 gms.	Stomach saved, Skeleton	Anderson 33
40514	Gygis alba	♀	" " "	"	l. ovum 1.5 mm	103.5 gms.	Stomach saved	AHA 31
40515	Gygis alba	♂	" " "	"	Testes 5x2mm.	92.0 gms.	Stomach saved	CPH. 28
40516	Gygis alba	♂	" " "	Oct. 20, 1964	Testes 4 mm.	101 gms.	Stomach saved	FCS 3120
40517	Gygis alba	♀	" " "	"	l. ova 2mm.	96 gms.	Stomach saved	FCS 3121

Field #s	Species	Sex	Location	Date	Gonads	Weight	Remarks	Collector No.
40518	Gygis alba	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes 3mm	109 gms.	Stomach saved	FCS 3123
40519	Heteroscelus incanum	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes 2mm. ova minute	84.7 gms.	Stomach saved	FCS 3119
40520	Sterna fuscata	♀	McKean Island, Phoenix Islands, Pacific Ocean	"	Ovary 10mm	143 gms.	Stomach saved	PWW 26
40521	Puffinus pacificus	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes 2mm.	443 gms.	Stomach saved	FCS 3135
40522	Nesofregatta albigularis	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes: R 6x6mm L. 8x6mm	67.2 gms.	Stomach saved, Skeleton	Woodward 27
40523	Bulweria bulwerii	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes: R 1.5mm L 2 mm ova minute	79.8 gms.	Stomach saved, Skeleton	Woodward 32
40524	Puffinus l'herminieri	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 7 mm ova minute	188 gms.	Stomach saved, Skeleton	Woodward 30
40525	Puffinus l'herminieri	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 7 mm ova minute	182 gms.	Stomach saved, Skeleton	Woodward 31
40526	Puffinus l'herminieri	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 6 mm.	173.8 gms.	Stomach saved, Skeleton	Woodward 28
40527	Puffinus l'herminieri	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes: R 1 mm. L 1.5 mm	174.6 gms.	Stomach saved, Skeleton	Woodward 29
40528	Erolia acuminata	♂	Gardner Island, Phoenix Islands, Pacific Ocean	Oct. 22, 1964	Testes 2 mm.	80.7 gms.		FCS 3124
40529	Erolia acuminata	♂	Gardner Island, Phoenix Islands, Pacific Ocean	Oct. 22, 1964	Testes 3 mm.	72.6 gms.	Stomach saved	FCS 3125
40530	Erolia acuminata	♂	Gardner Island, Pacific Ocean	Oct. 22, 1964	Testes 2mm	76.7 gms.	Stomach saved	FCS 3126
40531	Erolia acuminata	♂	Gardner Island, Phoenix Islands, Pacific Ocean	"	Testes 2 mm. ova minute	61.2 gms.	Stomach saved	FCS 3127
40532	Gygis alba	♀	" " "	Oct. 23, 1964	Ovary 8 mm	100.3 gms.	Stomach saved	Woodward 35
40533	Heteroscelus incanum	♀	" " "	Oct. 23, 1964	Ovary 3 x 1 mm	106.8 gms.	Stomach saved	Merrill 139
40534	Anous minutus	♂	" " "	"	Testes: R 4.5 x 3mm L 6 x 4 mm	93.4 gms.	Stomach saved	Woodward 33
40535	Anous stolidus	♂	" " "	"	R 5x2 L 7x3	155.5 gms.	Stomach saved	CDM 31
40536	Heteroscelus incanum	♂	Gardner Island, Phoenix Islands, Pacific Ocean	"	Testes: R 1 mm L - 2 mm	83 gms.	Stomach saved	Woodward 34
40537	Arenaria intrepes	♀	" " "	"	Ovary 1 x 1 mm	102.7 gms.	Stomach saved	Merrill 140
40538	Fregata minor	♀	" " "	"	1. ovum 4mm.	1167.5 gms.	Stomach saved	FCS 3128
40539	Phaethon lepturus	♀	" " "	"	1. ovum 2mm. ova miniscule	260.5 gms.		FCS 3129
40540	Heteroscelus incanum	♀	Sydney Island, Phoenix Islands, Pacific Ocean	Oct. 24, 1964	Ovary 10mm	99.2 gms.		Anderson 40
40541	Pluvialis dominica	♀	" " "	"	Ovary 5mm ova miniscule	120 gms.	Stomach saved	FCS 3130
40542	Pluvialis dominica	♀	" " "	"	Ovary 10mm	106 gms.		Anderson 41
40543	Erolia acuminata	♂	" " "	"	Testes 3mm	66 gms.	Stomach saved	FCS 3134
40544	Anous stolidus	♂	" " "	"	Testes 2mm	173 gms.	Stomach saved	FCS 3132
40545	Heteroscelus incanum	♀	" " "	"	Ovary 5mm	97.5 gms.	Stomach saved	FCS 3131
40546	Sterna fuscata	♂	Sydney Island, Phoenix Islands, Pacific Ocean	Oct. 24, 1964	Testes 8mm	109 gms.	Stomach saved	FCS 3133

Field #	Species	Sex	Location	Date	Gonads	Weight	Remarks	Collector no.
40547	Gygis alba	♀	Sydney Island, Phoenix Islands, Pacific Ocean		1. ovum 3 mm. Ovary 10 x 5 mm	105.7 gms.	Stomach saved	Morrill 141
40548	Foulehaio carunculata	♂	Tutuila Island, American Samoa	Oct. 29, 1964	Testes 1 mm	29.7 gms.	Skeleton, Stomach saved	Woodward 40
40549	Heteroscelus incanum		Phoenix Island, Pacific Ocean	Nov. 4, 1964	Testes 2 mm.	105.3 gms.	Stomach saved	FCS 3136
40550	Eudynamis taitensis	♂	Tutuila Island, American Samoa	Oct. 30, 1964	Testes 2 mm	135.3 gms.	Stomach saved	FCS 3137
40551	Pluvialis dominica	♀	Gardner Island, Phoenix Islands, Pacific Ocean	Oct. 23, 1964	ova minute Ovary 6 mm	122.0 gms.	Stomach saved	CDH 30
40552	Pluvialis dominica	♀	Gardner Island, Phoenix Islands, Pacific Ocean	Oct. 23, 1964	ova minute Ovary 9 mm	119.2 gms.	Stomach saved	CDH 29
40553	Foulehaio carunculata	♂	Tutuila Island, American Samoa	Oct. 30, 1964	Testes R 6x5 mm. L 8x5 mm	37 gms.	Skeleton, Stomach saved	Woodward 39
40554	Aplonis atrifuscus	♂	Tutuila Island, American Samoa	Oct. 30, 1964	Testes: R 6x5 mm L 8x5 mm	158.5 gms.	Skeleton, Stomach saved	Woodward 36
40555	Foulehaio carunculata	?	Tutuila Island, American Samoa	Oct. 30, 1964	—	25.5 gms.	Skeleton, Stomach saved	Woodward 41
40556	Aplonis atrifuscus	♂	Tutuila Island, American Samoa	Oct. 30, 1964	Testes: R 6x3 mm L 7x3 mm	147.5 gms.	Skeleton, Stomach saved	Woodward 37
40557	Aplonis atrifuscus	♂	Tutuila Island, American Samoa	Oct. 29, 1964	Testes: R 5x4 mm L 6x4 mm	132.3 gms.	Skeleton, Stomach saved	Woodward 38
40558	Tyto alba	♀	Tutuila Island, American Samoa	Oct. 15, 1964	Ovary 5 mm	—	~~[illegible]~~, Stomach saved	FCS 3138
40559	Sterna fuscata	♂	Phoenix Island, Pacific Ocean	Nov. 3, 1964	Testes 3 mm	151.3 gms.	Stomach saved	FCS 3163
40560	Sterna fuscata	♂	" " " "	"	Testes R 1.5 mm L 2.5 mm	144.4 gms.	Stomach saved	PWW 32
40561	Sterna fuscata	♂	" " " "	"	Testes R 1 mm L 1.5 mm	142.8 gms.	Stomach saved	PWW 48
40562	Sterna fuscata	♂	" " " "	"	Testes R 1 mm L 1.5 mm	160.0 gms.	Stomach saved	PWW 54
40563	Sterna fuscata	♀	" " " "	"	1. ovum 3 mm.	163.1 gms.	Stomach saved	AHA 63
40564	Sterna fuscata	♂	" " " "	"	Testes R 2 mm L 3 mm	163.5 gms.	Stomach saved	PWW 53
40565	Sterna fuscata	♀	" " " "	"	1. ovum 1.5 mm.	151.4 gms	Stomach saved	AHA 64
40566	Sterna fuscata	♂	" " " "	"	Testes R 5x3 mm L 7x5 mm	182.1 gms.	Stomach saved	AHA 60
40567	Sterna fuscata	♀	" " " "	"	1. ovum 2 mm.	153.0 gms.	Stomach saved	AHA 69
40568	Sterna fuscata	♀	" " " "	"	ova 1 mm Ovary 10 mm	145.9 gms.	Stomach saved	PWW 51
40569	Sterna fuscata	♀	" " " "	"	1. ovum 2 mm.	146.8 gms.	Stomach saved	AHA 61
40570	Sterna fuscata	♂	" " " "	Nov. 3, 1964	Testes R 3x2 mm L 5x3 mm	178.9 gms.	Stomach saved	AHA 62
40571	Sterna fuscata	♀	" " " "	"	Ovary 7 mm	159.8 gms.	Stomach saved	FCS 3162
40572	Pluvialis dominica	♂	Phoenix Island, Pacific Ocean	Nov. 4, 1964	Testes 2 mm	103.7 gms		FCS 3139
40573	Arenaria interpres	♂	" " " "	Nov. 4, 1964	Testes 2 mm	96.8 gms.		FCS 3140
40574	Puffinus nativitatus	♀	Phoenix Island, Pacific Ocean	Nov. 5, 1964	Ovary 8 mm.	310 gms.	(Skeleton?)	FCS 3143
40575	Puffinus nativitatus	♂	" " " "	"	Testes 2 mm	331 gms.	Skeleton	FCS 3145

Field #	Species	Sex	Location	Date	Gonads	Weight	Remarks	Collector no.
40576	Puffinus nativitatus	♀	Phoenix Island, Pacific Ocean	Nov. 5, 1964	l. ovum 3mm.	272 gms	Skeleton	AHA 50
40577	Puffinus nativitatus	♂	" " " "	"	Testes 2 mm	365 gms.	Skeleton	FCS 3144
40578	Puffinus pacificus	♀	Phoenix Island, Pacific Ocean	Nov. 5, 1964	Ovary 15mm. ova minute	353 gms	Skeleton	PWW 43
40579	Puffinus pacificus	♂	Phoenix Island, Pacific Ocean	Nov. 5, 1964	Testes: R: 15x10 mm L: 18x10mm	382 gms.	Skeleton	Woodward 44
40580	Puffinus pacificus	♀	" " " "	"	l. ovum 3mm.	325 gms.	Skeleton	AHA 45
40581	Puffinus pacificus	♂	" " " "	"	Testes R: 16x10 mm L: 15x10 mm	385 gms.	Skeleton	Woodward 42
40582	Puffinus pacificus	♂	Phoenix Island, Pacific Ocean	Nov. 5, 1964	Testes: L 14x11 mm R. 12x10mm	336 gms.	Skeleton	AHA 46
40583	Puffinus pacificus	—	" " " "	"	—	363 gms.	Alcoholic	FCS 3141
40584	Puffinus pacificus	—	" " " "	"	—	351 gms.	Alcoholic	FCS 3142
40585	Puffinus pacificus	—	" " " "	"	—	305 gms.	Alcoholic	AHA 48
40586	Puffinus pacificus	—	" " " "	"	—	319 gms.	Alcoholic	AHA 49
40587	Puffinus pacificus	—	" " " "	"	—	308 gms.	Alcoholic	AHA 47
40588	Sterna lunata	♂	" " " "	"	Testes L. 5x2.5 R. 2x2	127 gms.	Stomach saved	AHA 68
40589	Sterna lunata	♂		"	Testes R 5x3 mm L 6x3 mm	118.5 gms.	Stomach saved	AHA 65
40590	Sterna lunata	♀		"	l. ovum 1.5mm	106.5 gms.	Stomach saved	AHA 66
40591	Sterna lunata	♂		"	Testes R 4x2.5mm L 5x3 mm	119.5 gms.	Stomach saved	AHA 67
40592	Sterna lunata	♀		"	Ovary 8mm	103.5 gms.	Stomach saved	PWW 55
40593	Fregata ariel	♂	Phoenix Island, Pacific Ocean	Nov. 6, 1964	Testes 2mm.	297 gms.	Stomach saved	FCS 3148
40594	Fregata ariel	♂	" " " " "	Nov. 6, 1964	Testes 4mm.	728 gms.	Stomach saved	FCS 3147
40595	Fregata ariel	♀	" " " "	Nov. 6, 1964	Ovary 10mm.	868 gms.	Stomach saved	FCS 3146
40596	Sula dactylatra	—	Phoenix Island, Pacific Ocean	Nov. 6, 1964	—	1266.4 gms.	Alcoholic Specimen --- found sick; banded 737-48022	RWM 143
40597	Procelsterna cerulea	♀	" " "	"	l. ova 5mm.	56.7 gms.	Stomach saved	FCS 3149
40598	Red-footed Booby	♀	" " "	"	Ovary 17 mm. ova minute	1122 gms.	Stomach saved	Woodward 45
40599	Gygis alba	♂	" " "	"	Testes 2mm.	100.6 gms.	Stomach saved	FCS 3150
40600	Pluvialis dominica	♀	" " "	"	Ovary 5mm, ova minute	113.5 gms	Stomach saved	PWW 57
40601	Nesofregatta albigularis	♂	" " "	"	Testes L 7x7 R 4x4	70.5 gms.	Stomach saved Skeleton	AHA 73
40602	Nesofregatta albigularis	♂	" " "	"	Testes L 7x5mm R 6x4mm	66 gms.	Stomach Saved Skeleton	AHA 74
40603	Sula dactylatra	—	Phoenix Island, Pacific Ocean	Nov. 7, 1964	—	1699.5 gms	Alcoholic	CPH 33
40604	Sula dactylatra	—	" " " "	"	—	1780.0 gms.	Alcoholic	AHA 51
40605	Sula dactylatra	—	" " " "	"	—	1711.5 gms.	Alcoholic	AHA 52

Field #	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector No.
40606	Sula dactylatra	—	Phoenix Island, Pacific Ocean	Nov. 7, 1964	—	1454.9 gms.	Alco		AHA 53
40607	Fregata minor	♂	" "	"	—	909.9 gms.	Alco		AHA 54
40608	Fregata minor	♂	" "	"	—	840.1 gms.	Alco		AHA 55
40609	Fregata minor	♀	" "	"	—	1333.3 gms	Alco		AHA 56
40610	Fregata minor	♀	" "	"	—	1170.0 gms.	Alco		AHA 57
40611	Fregata ariel	♂	" "	"	Testes R 7x5 mm L 9x5 mm	620.3 gms	Skin	Stomach saved	PWW 59
40612	Anous stolidus	♂	Birnie Island, Phoenix Islands, Pacific Ocean	Nov. 8, 1964	Testes 4 mm	153.6 gms.	skin	Stomach saved	FCS 3151
40613	Anous stolidus	—	" " "	"	—	177.6 gms.	Alco.		RWM 145
40614	Anous stolidus	♂	" " "	"	Testes 2 mm.	191.9 gms.	skin	Stomach saved	FCS 3152
40615	Procelsterna cerulea	♂	" " "	"	Testes 3mm.	46.8 gms.	skin	Stomach saved	FCS 3153
40616	Gygis alba	♀	" " "	"	l. ova 1.5 mm.	99.2 gms	skin	Stomach saved	FCS 3154
40617	Heteroscelus incanum	♀	" " "	"	Ovary 6mm.	106.3 gms.	skin	Stomach saved	FCS 3155
40618	Pluvialis dominica	♀	" " "	"	Ovary 6mm.	082.3 gms.	skin	Stomach saved	FCS 3157
40619	Pluvialis dominica	♀	" " "	"	Ovary 7mm.	093.6 gms.	skin	Stomach saved	FCS 3156
40620	Numenius tahitiensis		" " "	"		435 gms.	Alco		RWM 151
40621	Sterna fuscata	♀	" " "	"	Ovary 12mm.	208 gms.	skin	Stomach saved	Woodward 46
40622	Fregata minor	♀	" " "	"	l. ova 3 mm	1276 gms	skin	Stomach saved	FCS 3158
40623	Heteroscelus incanum	♂	" " "	"	Testes 2mm x 1mm	87.3 gms.	skin	Stomach saved	CDH 34
40624	Anous minutus	♂	" " "	Nov. 9, 1964	Testes 2 mm	93.0 gms.	skin	Stomach saved	FCS 3160
40625	Anous minutus	♂	" " "	"	Testes 2mm.	102.6 gms.	skin	Stomach saved	FCS 3159
40626	Anous minutus	♀	" " "	"	Ovary 1.5mm	106.4 gms.	SKEL	Stomach saved	PWW 58
40627	Anous minutus	♂	" " "	"	L. 2mm R. 1mm	100 gms.	SKEL	Stomach saved	AHA 71
40628	Anous minutus	♂	" " "	"	R .8mm L 1.5mm	98.1 gms.	SKEL	Stomach saved	pww 56
40629	Anous minutus	♀	" " "	"	ova minute Ovary 9 mm	91.6 gms.	SKEL	Stomach saved	AHA 72
40630	Anous minutus	♀	" " "	"	ova minute Ovary 10 mm.	93.9 gms.	SKEL	Stomach saved	AHA 70
40631	Anous minutus	—	" " "	"	—	86.8 gms.	Alco		RWM 146
40632	Anous minutus	—	" " "	"	<	104.2 gms	Alco		RWM 147
40633	Anous minutus	—	" " "	"	—	104.1 gms.	Alco		RWM 148
40634	Anous minutus	—	" " "	"	—	109.1 gms.	Alco		RWM 149

Field #	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector + number
4 40635	Anous minutus	—	Birnie Island, Phoenix Islands, Pacific Ocean	Nov. 9, 1964	—	95.8 gms.	Alco		RWM 150
4 40636	Sterna fuscata	♂	Enderbury Island, Phoenix Islands, Pacific Ocean	Nov. 10, 1964	Testes R 3mm L 1.4mm Ovary 10mm ova minute	154 gms.	Skin	Stomach saved	PWW, 50
4 40637	Sterna fuscata	♀	Enderbury Island, Phoenix Islands, Pacific Ocean	Nov. 10, 1964		152 gms.	Skin	Stomach saved	PWW 49
4 40638	Fregata minor	♂	Enderbury Island, Phoenix Islands, Pacific Ocean	Nov 11, 1964	Testes: R 12x10mm L 15x9mm Ovary 15mm ova minute	906.3 gms	Skin	Stomach saved	Woodward
4 40639	Sula sula	♀	Enderbury Island, Phoenix Islands, Pacific Ocean	Nov. 11, 1964		848 gms.	Skin	Stomach saved	47 RWM 153
4 40640	Sula sula	♀	Enderbury Island, Phoenix Islands, Pacific Ocean	Nov. 11, 1964	Ovary 16x9mm l. ova 2mm. Testes 6mm	847 gms.	Skin	Stomach saved	FCS 3161
4 40641	Fregata minor	♂	Enderbury Island, Phoenix Island, Pacific Ocean	Nov. 11, 1964		824.5 gms.	Skin	Stomach saved	AHA 75
4 40642	Fregata minor	♀	Jarvis Island, Pacific Ocean	Nov. 16, 1964	Ovary 12mm.	1172.6 gms.	SKEL	Stomach saved	PWW 60
4 40643	Fregata minor	♀	" " " "	"	Ovary 14mm.	1158.7 gms.	SKEL	Stomach saved	AHA 76
4 40644	Fregata minor	♀	" " " "	"	Ovary 13mm.	1152.9 gms.	SKEL	Stomach saved	PWW 61
4 40645	Fregata minor	♂	" " " "	"	Testes 5mm	944.4 gms.	SKEL	Stomach saved	
4 40646	Fregata minor	♀	" " " "	"	Ovary 15mm	1121.2 gms.	SKEL	Stomach saved	
4 40647	Sterna fuscata	♂	Jarvis Island, Pacific Ocean	Nov. 17, 1964	Testes 13mm	188.5 gms	Skin	Stomach saved	FCS 3164
4 48	Sterna fuscata	♀	" " " "	"	l. ovum 2mm	204.5 gms	Skin	Stomach saved	FCS 3165
4 49	Sterna fuscata	♀	" " " "	Nov. 17, 1964	Ten ova of 2mm.	187.7 gms.	Skin	Stomach saved	FCS 3166
4 50	Sterna fuscata	♀	" " " "	"	l. ovum 3mm	170.7 gms.	Skin	Stomach saved	FCS 3167
4 51	Sterna fuscata	♀	" " " "	"	l. ovum 3mm	175.2 gms.	Skin	Stomach saved	FCS 3168
4 52	Sula sula	—	" " " "	Nov. 17, 1964	—	802 gms	Alco		RWM 161
4 53	Sula dactylatra	♀	" " " "	Nov. 17, 1964	ova minute Ovary 17mm	1620 gms.	SKEL	Stomach saved	RWM 155
4 54	Fregata ariel	♂	Jarvis Island, Pacific Ocean	Nov. 17, 1964	Testes 6mm	770 gms	Skin	Stomach saved	RWM 154
4 55	Sula dactylatra	♀	" " " "	Nov 17, 1964	l. ovum 2mm Ovary 15mm.	1704.7 gms	SKEL	Stomach saved	RWM 160
4 56	Sula sula	—	" " " "	Nov. 17, 1964	—	956.5 gms	Alco		RWM 156
4 57	Sula sula	—	" " " "	"	—	980.0 gms	Alco		RWM 157
4 58	Sula sula	—	" " " "	"	—	944.6 gms	Alco		RWM 158
4 59	Sula sula	—	" " " "	"	—	810.6 gms	Alco		RWM 159
4 61	Phaethon rubricauda	♂	Jarvis Island, Pacific Ocean	Nov. 18, 1964	Testes 12mm ova 3mm	608 gms.	Skin	Stomach saved	FCS 3169
4 60	Phaethon rubricauda	♀	" " " "	"	Ovary 8mm.	686.5 gms.	SKEL	Stomach saved, Oviduct enlarged	PWW 62
4 62	Phaethon rubricauda	—	" " " "	Nov. 18, 1964	—	644 gms.	Alco		RWM 162
4 63	Pluvialis dominica		" " " "	Nov. 19, 1964	Ovary 8mm	136.9 gms	Skin	Stomach saved	FCS 3170

Field Number	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector Number
4 40664	Nesofregatta albigularis	—	Motu Upua, Christmas Island, Line Islands, Pacific Ocean	Nov. 21, 1964	—	68.4 gms.	Alco		RWM 168
4 40665	Nesofregatta albigularis	—	Motu Upua, Christmas Island, Line Islands, Pacific Ocean	Nov. 21, 1964	—	73.8 gms	Alco		RWM 169
4 40666	Pterodroma alba	—	" " " "	"	—	317.4 gms	Alco		RWM 170
4 40667	Pterodroma alba	—	" " " "	"	—	290.0	Alco		RWM 171
4 40668	Pterodroma alba	—	" " " "	"	—	243.8	Alco		RWM 172
4 40669	Pterodroma alba	—	" " " "	"	—	269.0	Alco		RWM 193
4 40670	Pterodroma alba	♂	Motu Upua, Christmas Island, Pacific Ocean	Nov. 21, 1964	Testes: R 4x2 L 4x3	230.7 gms.	SKEL	Stomach saved	AHA 79
4 40671	Pterodroma alba	♂	Motu Upua, Christmas Island, Pacific Ocean	Nov. 21, 1964	Testes: R 4x2 L 4x3	235.8 gms.	SKEL	Stomach saved	AHA 78
4 40672	Pterodroma alba	♂	Motu Upua, Christmas Island, Pacific Ocean	Nov. 21, 1964	Testes: R 5x2 L 4x2	244.0 gms	SKEL	Stomach saved	CDH 37
4 40673	Pterodroma alba	♂	Motu Upua, Christmas Island, Pacific Ocean	Nov. 21, 1964	Testes: R 5x2 L 5x3	266.0 gms.	SKEL	Stomach saved	AHA 77
4 40674	Nesofregatta albigularis	♀	Motu Upua, Christmas Island, Pacific Ocean	Nov. 21, 1964	largest ovum 3 mm	60.4 gms	SKEL	Stomach saved	AHA 80
4 40675	Heteroscelus incanum	♀	Cook Island, Christmas Island, Line Islands, Pacific Ocean ✓	Nov. 23, 1964	Ovary 7 mm	139.7 gms.	Skin	Stomach saved	CDH 40
4 40676	Anous minutus	♂	Cook Island, Christmas Island, Line Islands, Pacific Ocean ✓	Nov. 22, 1964	Testes: R 2x1 L 3x1	90.5 gms.	Skin	Stomach saved	RWM 177
4 40677	Anous minutus	♂	" " " " ✓	"	Testes: R 1.5 x1 L 2.5 x1	106.5 gms.	Skin	Stomach saved	AHA 83
4 40678	Anous minutus	♀	" " " " ✓	"	l. ovum 1mm.	95 gms.	Skin	Stomach saved	AHA 82
4 40679	Anous minutus	♂	" " " " ✓	"	Testes: R 7x12.5 L 9.5x14.5	103.8 gms.	Skin	Stomach saved	RWM 175
4 40680	Anous minutus	—	" " " " ✓	"	none visible	56.1 gms.	Skin	Stomach saved, bird sick + emaciated	RWM 176
4 40681	Procelsterna cerulea	♀	" " " " ✓	"	l. ovum 15mm.	55.6 gms.	Skin	Stomach saved	CDH 38
4 40682	Procelsterna cerulea	♂	" " " " ✓	"	Testes: 1.5x 0.5mm	55.5 gms.	Skin	Stomach saved	AHA 85
4 40683	Procelsterna cerulea	♀	" " " " ✓	"	l. ovum 2 mm	51 gms	Skin	Stomach saved	AHA 86
4 40684	Procelsterna cerulea	♀	" " " " ✓	"	l. ovum 2mm	48.4 gms.	Skin	Stomach saved	FCS 3177
4 40685	Procelsterna cerulea	♀	" " " " ✓	"	Ovary 8mm. l. ovum 2mm.	45.5 gms.	Skin	Stomach saved	CDH 39
4 40686	Gygis alba	♀	" " " " ✓	"	Ovary 5mm	86.5 gms	Skin	Stomach saved	FCS 3172
4 40687	Gygis alba	♂	" " " " ✓	"	Testes: R 4x3 L 5x3	94.5 gms.	Skin	Stomach saved	RWM 178
4 40688	Gygis alba	♀	" " " " ✓	"	Ovary 5mm.	93.6 gms.	Skin	Stomach saved	FCS 3174
4 40689	Gygis alba	♂	" " " " ✓	"	Testes: less than 1 mm	98.8 gms.	Skin	Stomach saved	AHA 84
4 40690	Gygis alba	♀	" " " " ✓	"	l. ovum 1.5mm	108.3 gms.	Skin	Stomach saved	FCS 3173
4 40691	Crocethia alba	♀	" " " " ✓	Nov. 23, 1964	Ovary 4mm.	69.2 gms.	Skin	Stomach saved	FCS 3175
4 40692	Crocethia alba	♂	" " " " ✓	"	Testes 2mm	59.3 gms.	Skin	Stomach saved	FCS 3176

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector number
4·40693	Conopoderas aequinoctialis	♀	Christmas Island, Pacific Ocean	Nov. 22, 1964	Ovary 5 mm.	—	Skin	—	FCS 3171
4·40694	Phaethon lepturus	♂	Washington Island, Line Islands, Pacific Ocean	Nov. 26, 1964	Testes 10 mm.	—	Skin	Stomach saved	FCS 3178
4·40695	Heteroscelus incanum	♂	Palmyra Island, Line Islands, Pacific Ocean	Nov. 27, 1964	Testes R 1 mm L 1.5 x 8 mm	102.6 gms.	Skin	Stomach saved	PWW 63
4·40696	Mareca americana	♀	" " " "	"	ova minute Ovary 13 mm	706 gms	Skin	Stomach saved	AHA 90
4·40697	Mareca americana	♀	" " " " "	"	Ovary 13 mm.	777 gms	Skin	Stomach saved	FCS 3183
4·40698	Mareca penelope	♀	" " " " "	"	Ovary 11 mm	652.4 gms	Skin	Stomach saved	FCS 3182
4·40699	Spatula clypeata	♀	" " " " "	Nov. 28, 1964	—	521.2 gms	Skin	—	FCS 3181
4·40700	Larus atricilla	♂	" " " " "	Nov. 28, 1964	Testes 2 mm.	312.6 gms.	Skin	Stomach saved	FCS 3180
4·40701	Pluvialis dominica	♂	" " " " "	Nov. 28, 1964	Testes 1 mm	116.5 gms.	Skin	—	FCS 3179

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Field No.	Species	Sex	Location		Date	Gonads	Weight	Type of Specimen	Stomach Saved	Remarks	Collector and No.
5401	Puffinus pacificus	♂	19° 40' N	159° 23' W	May 11, 1965	R 18X22mm L 15X11mm	348 gms.	skin	yes		LNH 626
02	" "	♀	"	"	"	ovary 10X7 1.ova 1.5mm.	366 gms	"	"		LNH 625
03	" "	♂	"	"	"	R 17X12mm. L 13X11mm.	355 gms.	"	" marked as 5404		LNH 624
04	" "	♀	"	"	"	ovary 18X10mm 1. ovum 5mm.	348 gms.	"	"		LNH 627
05	" "	♀	"	"	"	ovary 13X10mm 1. ovum 3mm.	350 gms.	"	"		LNH 628
06	Puffinis pacificus	—	19° 40' N	159° 23' W	May 11, 1965	—	384 gms.	Alcoholic	—		LNH 620
07	" "	—	"	"	"	—	386 gms	"	—		629 LNH
08	" "	—	"	"	"	—	349 gms	"	—		622 LNH
09	" "	—	"	"	"	—	376 gms.	"	—		618 LNH
10	" "	—	"	"	"	—	—	"	—		616 LNH
11	" "	—	"	"	"	—	—	"	—		621 LNH
12	" "	—	"	"	"	—	356 gms.	"	—		615 LNH
13	" "	—	"	"	"	—	—	"	—		612 LNH
14	" "	—	"	"	"	—	342 gms.	"	—		614 LNH
15	" "	—	"	"	"	—	337 gms	"	—		613 LNH
16	" "	—	"	"	"	—	348 gms.	"	—		619 LNH
17	Sterna fuscata	♂	"	"	"	R 3X2mm. L 5X3mm.	177 gms	skin	yes		LNH 611
18	" "	♂	"	"	"	R 5X3mm L 3X2mm	221 gms.	"	"		LNH 623
19	" "	♂	"	"	"	R 5X4mm. L 8X5mm.	189 gms.	"	"		LNH 617
20	Pterodroma cooki	♂	13° 30.1' N	165° 06' W	May 13, 1965	R 3X2mm. L 4X2mm.	129 gms.	"	"		LNH 630
21	Phaethon lepturus	♀	10° 36' N	167° 37' W	May 14, 1965	ovary 14X14mm 1. ovum 4mm.	290 gms.	"	"		LNH 631
22	Sula dactylatra	♀ im	10° 09' N	167° 54' W	"	ovary 18X20mm granular	1698 gms.	"	"	Band No. 757-67400	LNH 632
23	Puffinus griseus	?	2° 35' N	174° 34' W	May 17, 1965	———	581 gms	"	"		LNH 633
24	" "	♀	2° 37' N	174° 42' W	"	ovary 12X8mm.	642 gms.	"	" marked as 5425		LNH 634
25	" "	♀	"	"	"	ovary 17X8mm.	673 gms.	"	"		LNH 638
26	" "	♂	"	"	"	testes 12X1mm.	549 gms.	"	"		LNH 635
27	" "	♀	"	"	"	ovary granular 14X8	618 gms	"	"		LNH 636
28	" "	♂	"	"	"	testes 6X1½mm.	675 gms.	"	"		LNH 637
29	" "	♂	"	"	"	testes 7X1mm.	700 gms.	"	"		LNH 640

Field No.	Species	Sex	Locality	Date	Gonads	Weight	Type of Specimen	Stomach Saved		Collector & No.
5430	Puffinus griseus	♀	2° 20'N 174° 53'W	May 17, 1965	ovary 13 X 6 mm.	556 gms.	skin	yes		LNH 639
31	Sterna fuscata	♂	Howland Island, Pacific Ocean	May 19, 1965	Testes 4 X 2 mm.	157 gms.	skel.	"		LNH 668
32		♂			testes 5 X 3 mm.	168 gms.				LNH 647
33		♀			ovary 14 X 9 mm. l. ovum 1.5 mm.	141 gms.				LNH 670
34		♂			testes 8 X 4 mm.	173 gms.				LNH 645
35		♀			ovary 10 X 8 mm granular	144 gms.				LNH 646
36		♂			testes 4 X 3 mm.	183 gms.				LNH 673
37		♂			testes 8 X 3 mm.	151 gms.				LNH 701
38		♂			testes 4 X 3 mm	167 gms.				LNH 642
39		♂			~~testes 6 X 4 mm.~~ testes 6 X 4 mm.	162 gms.				LNH 644
40		♀			ovary 14 X 8 mm.	160 gms.				LNH 669
41		♂			testes 4 X 3 mm.	149 gms.				LNH 641
42		♂			testes 6 X 3 mm.					LNH ~~671~~ 675
43		♀			ovary 16 X 9 mm. granular	152 gms.				LNH 674
44		♀			ovary 14 X 11 mm. l. ovum 1 mm.	160 gms.				LNH 677
45		♂			testes 4 X 2 mm.	177 gms.				LNH 6043
46		♀			ovary granular. 18 X 6 mm.	146 gms.				FC5 3191
47	Fregata ariel	♂		"	Testes 28 mm.	688 gms.	skin	yes	on nest w egg.	FC5 3192
48	Fregata minor	♂		"	Testes 13 mm	993 gms.	"	"		R55 1
49	Phaethon rubricauda	♀		"	ovary l. ova 5 mm. 8 X 15 mm.	605.5 gms.	"	"	on egg	LNH 676
50	Pterodroma alba	♀		"	ovary l. ova 2 mm 15 X 9 mm.	749 gms.	"	"		FC5 3201
51	Arenaria interpres	♀		"	ovary 6 mm.	104 gms.	"	"		FC5 3200
52	Arenaria interpres	♀		"	ovary 7 mm.	111 gms.	"	"		R55 2
53	Pluvialis dominica	♂		"	testis 1 X X mm.	120 gms.	"	"		LNH 677
54	Fregata ariel	—		"	—	624 gms	Alcoholic	No		LNH 678
55	Sterna fuscata	—		"	—	139.5 gms.	"	"		LNH 679
56		—		"	—	156.2 gms.	"	"		LNH 686
57		—		"	—	154.3 gms.	"	"		LNH 684
58		—		"	—	160.7 gms.	"	"		

Drill no	Species	Sex	Locality	Date	Gonads	Weight	Type of Specimen	Stomach Saved	Remarks	Collector & no.
5459	Sterna fuscata	♀	Howland Island, Pacific Ocean	May 19, 1965		143.8 gms.	Alcoholic	No		LNH 683
60		♀				160.1 gms.				LNH 690
61		♀				148.8 gms.				LNH 682
62		♀				139.0 gms.				LNH 687
63		♀				145.5 gms.				LNH 688
64		♀				134.1 gms.				LNH 680
65		♀				153.2 gms.				LNH 691
66		♀				139.2 gms.				LNH 681
67		♀				147.1 gms.				LNH 689
68		♀				147.1 gms.				LNH 685
69	Phaethon rubricauda	♂		May 20, 1965	Testes 10X8	677 gms.	skin	yes		LNH 694
70	Sula sula	♂		"	Testes 10X8 mm.	751 gms.	"	"		LNH 693
71	Sterna lunata	♂		May 20 1965	Testes 5X4 mm.	106 gms.	"	"		FCS LNH 3193 672
72	Phaethon rubricauda	♀		"	largest ovum 6 mm.	653 gms.	"	"		FCS 3193
73	"	♀		"	Ovary 15 mm.	653.5 gms.	"	"		DLS 851
74	"	♂		"	l. ova 5 mm.	654.5 gms.	"	"		RRF 2♂
75	Sterna fuscata (albino)	♀ im.		"	l. 9X7 mm R 13X6 mm.	793.5 gms	"	NO		LNH 695
76	Fregata minor	♂		"	ovary ova minute	1.56 gms	"	yes		LNH 696
77	" "	♂		May 21, 1965	Testes 11X11	787 gms	"	"		LNH 697
78	Fregata minor	♂		May 21, 1965	Testes 10X8 mm.	807 gms.	"	"		LNH 698
79	Phaethon rubricauda	♀		"	Testes 11X11	789 gms.	"	"		RRF 22
80	Phaethon rubricauda	♂		"	ovary 10X8 mm. ovum 4 mm.	670 gms.	"	"		LNH 700
81	" "	♂ nestling		May 21, 1965	Testes 10X5 mm.	675.6 gms.	"	"		LNH 699
82	Sterna lunata	♀		"	testes 4 X ½	404.5 gms.	"	"		FCS 3195
83	" "	♀		"	largest ova. 2.5 mm.	137 gms.	"	"		FCS 3197
84	" "	♀		"	largest ova 1 mm.	114 gms.	"	"		FCS 3194
85	Sterna lunata	♀		"	largest ovum 3 mm.	136 gms.	"	"		FCS 3196
86	Sterna fuscata	♂		"	largest ova 2 mm.	145 gms.	"	"		FCS 3198
87	Puffinus pacificus	♂		"	testes 3 mm	153 gms.	"	"		FCS 3199
				"	testes 10 mm.	377 gms.	"	"		

Field No	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector's No.
			03° 10' S 173° 45' W							
			~~Hull Island, Pacific Ocean~~							
			Hull Island, Pacific Ocean							
5488	Puffinus griseus	♂		May 23, 1965	Testes 9X5 mm.	350 gms.	Skin	Yes		LNH 702
89	Gygis albis	♂		May 24, 1965	Testes 5X3mm.	103 gms.	Skin	Yes		LNH 708
90	"	♂		"	Testes 6X4 mm.	115 gms.	"	"		LNH 707
91	Anous stolidus	♀		"	corpora lutea present ovary 15X13mm.	186 gms.	"	"		LNH 706
92	"	♀		"	1. ovum 4 mm. ovary	210 gms.	"	"		LNH 703
93	"	♀		"	13X10 mm. ovary	186 gms.	"	"		LNH 704
94	Anous stolidus	♀		"	10X9 mm. ovum 2mm.	209 gms.	"	"		LNH 705
95	Sterna lunata	♂		"	Testes 10X6	134.1 gms.	"	"		LNH 713
96	"	♀		"	ovary 14X8mm	115 gms.	"	"		LNH 711
97	"	♀		"	1. ovum 5mm.	129 gms.	"	"		LNH 712
98	Sterna lunata	♀		"	ovary 8X6mm. 1. ovum 1.5 mm.	112 gms	"	"		LNH 710
99	"	♀		"	1. ovum 5mm.	121 gms.	"	"		LNH 709
5500	Sterna furcata	—		"	—	162	Alcoholic	No		LNH 714
01	Sterna fuscata	—		"	—	173	"	No		LNH 716
02	"	—		"	—	156.5 gms	"	"		LNH 717
03	"	—		"	—	160.5 gms	"	"		LNH 718
04	"	—		"	—	164 gms.	"	"		LNH 715
05	Anous stolidus	♂		May 25, 1965	Testes 2mm	162 gms.	Skin	yes		FCS 3202
06	Gygis alba	♀		"	ovary 12X5 mm. 1. ovum 1.5 mm.	82.5 gms.	"	No		LNH 719
08	"	♂		"	L 4X3 R 2X2 L 4X2	82.0 gms.	"	yes		RF 23
08	Gygis alba	♂		May 25, 1965		77.1 gms.	"	"		RF 24
09	Pluvialis dominica	♂		May 25, 1965	Testes 3mm	116 gms.	Skin	yes		FCS 3207
10	Pluvialis dominica	♂		May 25, 1965	Testes 3mm.	132 gms.	Skin	yes.		FCS 3208
11	Arenaria interpres	♂		"	R 3X1mm.	103 gms	"	"		RSS 4
12	Anous minutus	♂		"	Testes 2mm.	86.1 gms.	"	"		FCS 3206
13	Anous minutus	♀		"	Ovary 4mm.	92.6 gms.	"	"		FCS 3203
14	"	♂		"	Testes 2X1	91.6 gms.	"	"		RSS 3
15	"	♀		"	Ovary 5mm.	94.7 gms	"	"		FCS 3205
16	"	♂		"	Testes 5mm.	103 gms.	"	"		FCS 3204

Field no.	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
5517	Fregata ariel	♂	Hull Island, Pacific Ocean	May 25, 1965	Testes 6X3 mm.	763 gms.	skin	yes		LNH 720
18	Nesofregatta albigularis	♂	Phoenix Island, Pacific Ocean	May 26, 1965	Testes 7X5 mm. ovary 10X5	68 gms.	skin	yes		LNH 747
19	Sterna fuscata	♀	"	"	1. ovum 2 mm.	144.5 gms.	"	"		RF 32
20	Sterna fuscata	♂	"	"	Testes 8X5 mm.	165 gms.	"	"		DSS 26.1
21	"	♂	"	"	Testes 2X2 mm.	143.0 gms.	"	"		RF 31
22	Sula sula	Nestling	Phoenix Island	May 27, 1965	—	114	Alcoholic	No		LNH 721
23	Fregata minor	♂	"	"	Testes 12X8 mm.	817 gms.	skin	yes		RF 25
24	Sula sula	♀	"	"	ovary 19X9 1. ovum 2 mm. parent of 5522	879 gms.	"	"		LNH 722
25	Fregata minor	♀ im.	"	"	ovary 15X5 mm. ova minute	963 gms.	"	"		LNH 723
26	Gygis alba	♀	"	"	1. ovum 3 mm.	97.4 gms.	"	"		FCS 3209
27	Sterna lunata	♂	"	"	R 10X5 L 5X5	100 gms.	"	"		RSS 5
28	Pterodroma alba	♂	"	"	Testes 10X6 mm.	288 gms.	"	"		LNH 757
29	" "	♀	"	"	ovary 1. ovum 11X8 mm. 4 mm.	257 gms.	"	"		RF 34
30	Sterna fuscata	—	"	"	—	150 gms.	Alcoholic	No		LNH 724
31	Sterna fuscata	—	Phoenix	May 27	—	141 gms.	Alcoholic	No		LNH 725
32	" "	—	"	"	—	163 gms.	"	"		LNH 726
33	Gygis alba	♂	"	May 28, 1965	L. 6X3 mm. R. 3X2 mm.	106 gms.	skin	yes		RF 35
34	Puffinus nativitatis	♂	"	"	Testes 8X4 mm.	338 gms.	skin	yes		LNH 761
35	Puffinus pacificus	♂	"	May 28, 1965	Testes 3X2 mm. L 10X7 mm. R 8X5 mm.	286 gms.	skin	yes		LNH 760
36	Procelsterna caerulea	♂	"	May 28, 1965	ovary 80X12 1. ovum 6 mm.	57 gms.	skin	yes		RSS # 13
37	Phaethon rubricauda	♀	"	"	ovary 10X5 mm. 1. ovum 3 mm.	722 gms.	"	"		LNH 756
38	Anous stolidus	♀	"	"	Testes 4X3 mm.	152 gms.	"	"		LNH 755
39	Puffinus l'herminieri	♂	"	"	—	173 gms.	"	"		LNH 759
40	LOST	—	—	—	—	—	—	—	—	—
41	Procelsterna caerulea	♂	"	"	Testes 8X4 mm.	64 gms	"	"		LNH 751
42	"	♂	"	"	Testes 6X4 mm.	44.5 gms.	"	"		LNH 752
43	"	♂	"	"	Testes 3X2 mm.	48.2 gms.	"	"		LNH 753
44	"	♀	"	"	ovary 6X3 mm.	43.5 gms.	"	"		LNH 754
45	Sterna lunata	—	"	May 28, 1965	—	110 gms	Alcoholic	No		RF 27

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
5546	Sterna lunata	—	Phoenix Island, Pacific Ocean	May 28, 1965	—	124.5 gms.	Alcoholic	No		RF 28
47	"	—	"	"	—	124 gms.	"	"		RF 29
48	"	—	"	"	—	137 gms.	"	"		RF 30
49	"	—	"	"	—	127 gms.	"	"		RF 26
50	Gygis alba	—	Phoenix Island	May 27, 1965	—	96 gms.	Alcoholic	"		DLS 253
51	Bulweria bulwerii	♂	"	"	testes 6X7 mm.	107 gms.	Skin	yes		LNH 747
52	Phaethon rubricauda	♀	Enderbury Island, Pacific Ocean	May 30, 1965	ovary 15X13 mm. l. ovum 5 mm.	680 gms.	"	"		LNH 731
53	Phaethon rubricauda	♀	Enderbury Island, Pacific Ocean	May 30, 1965	ovary 15X12 mm.	721 gms.	Skin	yes		LNH 730
54	Phaethon rubricauda	—	Enderbury Island, Pacific Ocean	May 30, 1965	—	772 gms.	Alcoholic	No		LNH 734
55	"	—	"	"	—	748 gms.	"	"		LNH 732
56	"	♀	"	"	ovary 20X17 mm. l. ovum 5 mm. l. ovum 7 mm.	667 gms.	Skin	yes		LNH 728
57	"	♀	"	"		780 gms.	"	"		LNH 729
58	"	♀	"	"	ovary 16X13 mm. l. ovum 5 mm.	728 gms.	"	"		LNH 727
59	Phaethon rubricauda	—	E. "	May 30, 1965	—	647 gms.	Alcoholic	No		LNH 733
60	Sula leucogaster	♂	"	"	R 20 X 5 mm. L. 15X10 mm.	1029 gms.	Skin	yes		LNH 750
61	Sula leucogaster	♀	"	"	ovary 20X10 mm	1442 gms.	Skin	yes		LNH 749
62	"	♂	"	"	eva minute testes 5 mm.	1087 gms.	"	"	FCS 3210	FCS 1087 gms.
63	Sula leucogaster	♀	"	"	l. ovum 2 mm.	1231 gms.	Skin	yes		RSS 16
64	"	♂	"	"	ovary 10X10 mm. testes 12X15 mm.	942 gms.	"	"		DLS 262
65	Sula leucogaster	—	E. "	May 30,	—	1129 gms.	Alcoholic	No		LNH 743
66	"	—	"	"	—	1057 gms	"	"		LNH 736
67	"	—	"	"	—	1070 gms	"	"		LNH 735
X 68	Sterna fuscata	—	Enderbury Island, Pacific Ocean	May 30, 1965	—	175 gms.	Alcoholic	"		LNH 738
69	"	—	"	"	—	165 gms.	"	"		LNH 737
70	"	—	"	"	—	169 gms.	"	"		LNH 739
71	"	—	"	"	—	167 gms.	"	"		LNH 746
72	Sterna fuscata	—	E "	May 30, 1965	—	169 gms	Alcoholic	"		LNH 741
73	Sterna fuscata	—	E. "	May, 30, 1965	—	149 gms.	"	"		LNH 742
74	Phaethon rubricauda	—	"	May 31, 1965	—	793 gms.	"	"		RSS 7

Field no.	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
5575	Phaethon rubricauda	–	Enderbury Island, Pacific ocean	May 31, 1965	—	602 gms.	Alcoholic	No		RSS 6
76	"	♂	"	"	Testes 10X17mm.	715.5 gms.	Skel.	Yes		DLS 266
77	"	♂	"	"	Testes 17X15 gms. ovary 20X10mm.	620.5 gms.	"	"		DLS 265
78	"	♀	"	"	1. ovum 5 mm. Testes	642 gms.	"	"		LNH 758
79	"	♂	"	"	5X10 mm.	727.5 gms.	"	"		RSS 18
80	"	♂	"	"	Testes 6X12mm.	870 gms.	"	"		RSS 19
81	Fregata minor	♂	"	"	Testes 12X10 mm.	798 gms.	Skin	Yes		DLS 264
82	Fregata minor	♂	"	"	L 19X15 mm. R 18X13 mm.	804 gms.	Skin	Yes		RF 33
83	Fregata minor	♀	"	"	ovary 10X7mm. 1. ovum 5mm	1267.5 gms.	Skel.	Yes.		FCS 3213
84	Anous minutus	♂	"	"	Testes 3X5mm.	88 gms.	Skin	Yes		DLS 263
85	Anous minutus	?	"	"	—	102 gms.	Skel.	No		FCS 3212
86	Anous minutus	♀	"	"	ovary 10mm. granular	103.5 gms.	Skin	Yes		FCS 3214
87	Anous stolidos	♂	"	"	Testes 10X4 mm.	166 gms.	Skin	Yes		RSS 15
88	Sterna lunata	♂	"	"	L 10X7 mm. R 7X4 mm.	142 gms.	Skin	Yes.		RSS 11
89	"	♀	"	"	1. ovum 5mm. ovary	123 gms.	"	"		FCS 3211
90	"	♀	"	"	10X5 mm.	123 gms.	"	"		RSS 17.
91	Sterna fuscata	♂	"	"	Testes 6X6mm.	171 gms.	Skin	Yes		LNH 746
92	Anous stolidus	♂	Spam Island, Canton Atoll	June 1, 1965	Testes 10X6mm.	184 gms.	"	"		RSS 12
93	Sterna lunata	♀	Spam Island, Canton Atoll	June 1, 1965	1. ovum 2mm. ovary 10X5mm.	131 gms.	Skin	"		RSS 14
94	"	♀	"	"	ovary 17X7mm. 1. ovum 2mm.	126.9 gms.	"	"		RSS 8
95	Anous stolidus	♀	"	"	ovary 13X10mm. 1. ovum 11mm.	182 gms.	"	"		RSS 10
96	Anous stolidus	♀	"	"	ovary 17X8mm. 1. ovum 4mm. 1. ovum 3mm.	173 gms.	"	"		LNH 748
97	Sterna lunata	♀	"	"	ovary 13X7mm.	116 gms.	"	"		LNH 745
98	Puffinus l'herminieri	♀	Spam Island, Canton Atoll, Pacific Ocean	June 1, 1965	ovary 7X2 granular R 9X7 L 3X2	182 gms.	Skin	yes.	catalog states: "ova minute"	RSS 9
99	Sterna fuscata	♂	" " "	"		179 gms.	"	"		LNH 744
5600	Phaethon lepturus	♀	at sea 13° 10'S 170°70'W	June 5, 1965	ovary 1. ovum 10X10mm. 4mm.	349 gms.	"	"		RF 36
01	Myzomela cardinalis	♂	Tutuila, American Samoa	June 6, 1965	Testes 7X5mm. (both)		"	No		LNH 762
02	Foulehaio carunculata	?	"	June 7, 1965	—	35.2 gms.	"	"		LNH 766
03	Ptilinopus porphyraceus	♂	"	"	Testes 13X6mm.	108.6 gms.	"	"		LNH 767

Field no.	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
5604	Ptilinopus perousii	♂	Tutuila, American Samoa	June 7, 1965	Testes 13 X 8 mm.	88.3 gms.	Skin	No.		LNH 764
05	Eudynamis Taitensis	♂	"	June 8, 1965	L. 7½ X ½ mm. R. 1 X ½ mm.	90.1 gms.	"	"		LNH 763
06	Aplonis atrifuscus	♂	"	"	L 11 X 5 mm. R 7 X 5 mm.	144 gms.	"	"		RF 39
07	"	♂	"	"	Testes 1 X 3 mm.	135.5 gms.	"	"		RSS 22
08	Halcyon chloris	♀	"	"	Testes 4 X 3 mm.	53.8 gms.	"	"		LNH 765
09	Gygis alba	♂	"	"	ovary 1. ovum 3mm. 10 X 9 mm.	111 gms	"	yes		RSS 20
10	"	♀	"	"	L 6 X 4 mm. R 4 X 2 mm.	107 gms.	"	"		RF 37
11	Phaethon lepturus	♀	"	"	ovary 7 X 5 mm.	295 gms.	"	"		DLS 269
12	"	♂	"	"	ovary 10 X 9 mm. 1. ovum 5 mm.	277 gms.	"	"		RF 38
13	Aplonis atrifuscus	♂	166° 18' W. 12° 31' S	June 9, 1965	Testes 11 mm.	151 gms.	"	No		FCS 3215
14	Pterodroma cookii	♂ Im.	Tongareva Atoll, Pacific Ocean	June 11, 1965	Testes 3 X 1 mm.	154 gms.	"	yes		RSS #21
15	Sula sula	♀ Im.	"	June 13, 1965	Testes 8 X 10 mm.	—	"	"		DLS 276
16	Sula sula	♂	"	"	ovary 4 X 9 mm.	—	"	"		DLS 275
17	Fregata ariel	♂	"	"	Testes 15 X 10 mm.	—	"	"		DLS 276
18	Sterna fuscata	♀	"	"	Testes 4 X 8 mm.	—	"	"		DLS 272
19	"	♀	"	"	ovary 7 X 12	—	"	"		DLS 273
20	"	♂	"	"	ovary 13 X 8 mm. 1. ovum 2 X 2 mm.	196 gms.	"	"		RF 45
21	Fregata minor Fregata ariel	♂ ♀	"	"	Testes 10 X 7 mm.	—	"	"		DLS 274
22	~~Gygis alba~~	♀	"	"	~~Corpora lutea~~ ovary 15 X 5 mm. ~~1. ovum 2 mm.~~	~~two~~	"	"		RF 40
23	Gygis alba	♂	"	"	Corpora lutea present	108 gms.	"	"		RSS 25
24	Anous stolidus	♂	"	"	Testes R 8 X 4 mm. 6 X 2 mm.	176 gms.	"	"		RF 42
25	Anous stolidus	♂	"	"	Testes 8 mm.	176 gms.	"	"		~~DLS~~ RSS 31
26	Anous minutus	♂	"	"	Testes minute	81 gms.	"	"		RSS 30
27	"	♀	"	"	largest ovum 15 mm. ovary 8 mm.	113 gms.	"	"		RSS 32
28	Gygis alba	♀	"	"	1. ovum 1.5 mm.	97.8 gms.	"	"		RSS 34
29	Anous minutus	♂	"	"	Testes 2 X 3 mm.	93 gms.	"	"		RF 44
30	Anous stolidus	♂	"	"	Testes L. 9 X 4 mm. R. 8 X 5 mm.	183 gms.	"	"		RF 43
31	Anous stolidus	♂	"	"	Testes 8 mm.	183 gms.	"	"		RSS 26
32	"	♂	"	"	Testes 13 mm.	164.5 gms.	"	"		RSS 27

Field no	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & no.
5633	Anous stolidus	♂ im.	Tongareva Atoll, Pacific Ocean	June 13, 1965	Testes L. 4x1mm. R. 3x1mm.	152 gms.	Skin	yes		RF 41
34	Gygis alba	♀	"	"	ovary 10mm.					LNH 768
35	Anous stolidus	♂	"	"	l. ovum 3mm.	109 gms.	"	"		DLS 271
36	Gygis alba	♂	"	"	Testes 2x4mm.	176 gms.	"	"		DLS 272
37	Numenius tahitiensis	♀	"	"	Testes 2x1mm.	109 gms.	"	"		RSS 28
38	Sterna fuscata	♂	"	"	ovary 13mm.					RSS 33
39	Sula sula	♀ im.	"	"	l. ovum 2.5mm.	538 gms.	"	"		RSS 29
40	Anous stolidus	♀	"	"	Testes 15mm.	220 gms.	"	"		RSS 23
41	Anous stolidus	♀ im.	"	"	ovary granular 10x6mm.	808 gms.	"	"		RSS 24
42	Fregata minor	♂	Vostock Island, Pacific Ocean	"	ovary 10x6mm					LNH 769
43	Sula sula	♀	"	"	ova minute	111 gms.	"	"		LNH 770
44	Gygis alba	♀	"	"	ovary minute	127 gms.	"	"		DLS 295
45	Anous minutus	♂	"	June 15, 1965	Testes 24x13 mm.	990 gms.	"	"		LNH 771
46	Blue-faced Booby	♀	"	"	ovary 18x10mm.	766 gms.	"	"		RF 46
47	Anous minutus	♂	"	"	ovary ova 1mm. 13x5mm.	110 gms.	"	"		LNH 778
48	Anous stolidus	♀	"	"	Testes 9x6mm	98 gms	"	"		LNH 776
49	Fregata ariel	♂	"	"	ovary 29x8mm.					RF 47
50	Fregata ariel	♂	"	"	l. ovum 13x5mm.	1660 gms.	"	"		RSS 35
51	Numenius tahitiensis	♂	"	"	Testes 6x3mm.	102 gms.	"	"		LNH 772
52	Sula sula	♂	"	"	ovary 12x8mm.	172 gms.	"	"		LNH 773
53	Sula sula	♀	"	"	R 11x4mm L 9x4 mm.	614 gms.	"	"		RF 48
54	Fregata minor	♀	"	"	Testes 25mm.	800 gms.	"	"		RSS 36
55	Fregata minor	♂	"	"	Testes 7x1mm.	360 gms.	"	"		FCS 3216
56	Sterna fuscata	♀	"	"	Testes 16x6mm.	803 gms.	"	"		RF 54
57	"	♂	"	"	Ovary 16x8mm.	873 gms.	"	"		LNH 777
58	"	♂	"	"	largest ovum 30mm.	1358 gms.	"	"		RF 55
59	Sula dactylatra	♀	"	"	Testes 13mm	757 gms.	"	"		LNH 774
60	"	♀	"	"	ovary 13x7mm.					RSS 37
61	Sula leucogaster	♂	"	"	l. ovum 4x4mm.	203 gms.	"	"		RSS 38
				"	L. 8x3 mm. R. 5x2½mm.	159 gms.	"	"		
				"	L 5x3mm. R 4x3mm	183 gms.	"	"		
				"	ovary 35x10mm.					
				"	l. ovum 5mm.	1373 gms	"	"		
				"	ovary 10x6mm					
				"	l. ovum 2.5mm.	2020 gms.	"	"		
				"	Testes 14x5mm.	1065 gms.	"	"		

Field No.	Species	Sex	Locality	Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	
5662	Anous minutus	♂	Vostok Island, Pacific Ocean	June 15, 1965	Testes 10X5mm.	100 gms.	skin	yes		DLS 291
63	"	♂	"	"	Testes 10X8mm.	106 gms.	"	"		RF 51
64	Gygis alba	♂	"	"	Right testes 5X3mm.	118 gms.	"	"		RF 50
65	"	♀	"	"	ovary 10X8mm 1. ova 4mm.	105 gms.	"	"		DLS 292
66	"	♂	"	"	Left 5X3mm. Right 4X2mm.	108 gms	"	"		RF 49
67	Gygis alba	♀	"	"	ovary 7mm. ova granular	105 gms.	"	"		DLS 296
~~68~~	Pluvialis dominica	♂	"	June 16, 1965	Testes 5X2mm.	116 gms.	"	"	medium fat heavy body molt DESTROYED	LNH 775
all st 69	"	♂	"	"	Testes 2X4mm.	126 gms.	"	"		DLS 290
70	Anous stolidus	♂	Caroline Atoll, Pacific Ocean	June 17, 1965	Testes 12X5mm.	150 gms.	"	"		RSS 39
71	~~Anous stolidus~~ Egretta sacra	♂	"	"	Testes 5X3mm	522 gms. ~~150 gms.~~	"	"	dark	~~39~~ LNH 783
72	"	♂	"	"	Testes 6X4mm.	540 gms	"	"	dark	RF 60
73	"	♀	"	"	largest ova 10mm.	541 gms.	"	"	light	FCS 3225
74	Sterna fuscata	♀	"	"	ovary 11X5mm 1. ovum 2X2mm	138 gms.	"	"		RF 57
75	"	♀	"	"	ovary 10mm. 1. ovum 1mm.	167 gms.	"	"		FCS 3221
76	Sterna fuscata	♂	"	"	Testes L 3X2mm R 7X5mm.	163 gms.	"	"		RF 58
77	"	♀	"	"	ovary 10X7mm.	166 gms.	"	"		DLS 297
78	"	♀	"	"	ovary 10X7mm (ova granular)	159 gms.	"	"		DLS 298
79	Heteroscelus incanum	♂	"	"	Testes 2mm.	102 gms.	"	"		FCS 3222
80	Heteroscelus incanum	♂	"	June 18, 1965	Testes 3X2mm.	101 gms.	"	"		RF 59
81	"	♂	"	"	Testes 3X2mm.	121 gms.	"	"		DLS 308
82	Pluvialis dominica	♂	"	"	Testes 3X2mm.	113 gms.	"	"		DLS 310
83	Procelsterna caerulea	♀	"	"	ovary 7X9mm. 1. ovum 2mm.	54.1 gms.	"	"		LNH 781
84	Egretta sacra	♂	"	June 18, 1965	Testis 5mm.	528 gms.	skeleton	"	dark phase	FCS 3217
85	Fregata minor	♀	"	"	ovary 18X10mm. 1. ovum 4X4mm.	921 gms.	skin	"		RF 52
86	"	♀	"	"	1. ovum 3mm.	1200 gms.	"	"		FCS 3220
87	Sula sula	♀	"	"	Ovary 10mm. granular	790 gms.	"	"		FCS 3219
88	Sula sula	♂	"	"	L 10X4mm R 9X3mm.	786 gms.	"	"		RF 53
89	"	♀	"	"	ovary 20X10mm	837 gms.	"	"		DLS 294
90	Sula sula	♂	"	"	Testes 14mm.	692 gms	"	"		FCS 3218

Field no.	Species	Sex	Location	Date	Gonads	Weights	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
5691	Sula Sula	♂	Caroline Atoll, Pacific Ocean	June 18, 1965	testes 14 X 7mm.	635 gms.	skin	yes		DLS 293
92	Gygis alba	♀	~~Starbuck Island, Pacific Ocean~~	〃 ~~June 20, 1965~~	l. ova 1.5mm.	100 gms.	〃	〃		FCS 3223
93	Sterna fuscata	♂	Starbuck Island, Pacific Ocean	June 20, 1965	testes 5 X 3mm.	162 gms.	〃	〃		LNH 784
94	〃	♀	〃	〃	ovary 7mm. l. ovum 1mm.	162 gms.	〃	〃		RSS 41
95	〃	♀	〃	〃	ovary 15 X 8mm. l. ovum 2mm.	149 gms.	〃	〃		RF 63
96	〃	♀	〃	〃	ovary 10X7mm. l. ovum 1X1mm.	152 gms.	〃	〃		RF 62
97	〃	♀	〃	〃	ovary 10X5mm.	162 gms.	〃	〃		DLS 313
98	〃	♀	〃	〃	ovary 10X4mm. l. ovum 2X2mm.	139 gms.	〃	〃		RF 61
99	〃	♂	〃	〃	testes 3X2mm.	140 gms.	〃	〃		DLS 312
5700	Sterna fuscata	♂	〃	〃	testes 4X3mm.	159 gms.	〃	〃		DLS 299
01	〃	♀	〃	〃	ovary 15X7mm.	167 gms.	〃	〃		DLS 314
02	〃	♂	〃	〃	testes 7X4mm.	159 gms.	〃	〃		LNH 785
03	〃	♀	〃	〃	largest ova 2mm.	155 gms.	〃	〃		FCS 3227
04	〃	♀	〃	〃	ovary 5mm. granular	134 gms.	〃	〃		FCS 3226
05	Sula dactylatra	♀	〃	June 21, 1965	ovary 27X10mm.	2085 gms.	〃	〃		DLS 308
06	Fregata minor	♀	〃	〃	ovary 12X5mm.	1186 gms.	〃	〃		PLS 307
07	Fregata ariel	♂	〃	〃	L. 26X18mm. R 24X16mm.	703 gms.	〃	〃		RF 56
08	Sula sula	♀	Malden Island, Pacific Ocean	June 23, 1965	ovary 15X9mm. l. ovum 2mm.	899 gms.	〃	〃		RF 65
09	〃	♀	〃	〃	ovary 15X5mm. l. ovum 1mm.	829 gms.	〃	〃		RF 66
10	〃	♀	〃	〃	ovary 14X3mm. granular	966 gms.	〃	〃		RF 67
11	〃	♀	〃	〃	ovary 12X4mm. granular	763 gms.	〃	〃		RF 64
12	Fregata minor	♀	〃	June 24, 1965	ovary 15X5mm. ova granular	1273 gms.	〃	〃		DLS 306
13	〃	♂	〃	〃	testes 8X4mm.	762 gms.	〃	〃		DLS 303
14	Fregata ariel	♀	〃	〃	ovary 12X7mm.	707 gms.	〃	〃		DLS 301
15	Fregata ariel	♂	〃	〃	testes 10X7mm.	581 gms.	〃	〃		DLS 305
16	Sula leucogaster	♀	〃	〃	ovary 25X5mm. ova 4mm.	1346 gms.	〃	〃		DLS 302
17	Sula leucogaster	♂	〃	〃	testes 20X14mm.	1091 gms.	〃	〃		DLS 300
18	Anous stolidus	♂	〃	June 25, 1965	testes 5X3mm.	184 gms.	〃	〃		DLS 304
19	Anous minutus	♀	〃	〃	ovary 10X6mm. granular	85 gms.	〃	〃		LNH 779

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type of Specimen	Stomach Saved	Remarks	Collector's No.
5720	Sterna fuscata	♀	Malden Island, Pacific Ocean	June 25, 1965	ovary 12X15mm. l. ova 3mm.	214 gms.	Skin	Yes		DLS 311
21	"	♀	"	"	ovary 10X9mm. | l. ovum 4mm.	152 gms.	"	"		LNH 782
22	"	♂	"	"	Testes 12X6mm.	181 gms.	"	"		RSS 40
23	"	♀	"	"	Ovary 15X6mm. l. ovum 3mm.	162 gms.	"	"		LNH 780
24	"	♂	"	"	Testes 9mm.	153 gms.	"	"		FCS 3224
25	"	♂	Christmas Island, Pacific Ocean	June 27, 1965	Testes 4mm.	181 gms.	"	"		RSS 47
26	"	♀	"	"	ovary 12X6mm. l. ovum 2mm.	188 gms.	"	"		RSS 43
27	"	♀	"	"	ovary 12X6mm. l. ovum 2mm.	192 gms	"	"		RSS 42
28	"	♀	"	"	ovary 10mm. l. ovum 2mm.	189 gms.	"	"		RSS 45
29	Sterna fuscata	♀	"	"	ovary 9X5mm. l. ovum 2mm.	157 gms.	"	"		RSS 46
30	"	♀	"	"	ovary 10X5mm. l. ovum 2mm.	179 gms.	"	"		RSS 44
31	Fregata minor	♀	"	June 30, 1965	ovary 15mm. l. ovum 7mm.	1199 gms.	"	"		FCS 3229
32	Sula leucogaster	♀	"	July 1, 1965	ovary 15mm. non granular	1193 gms.	"	"		FCS 3228
33	Nesofregetta albigularis	♀	"	"	ovary 8X7mm. l. ovum 3.3mm.	58.2 gms.	"	"		RF 68
34 (gill filaments)	Anous stolidus	♀	"	July 1, 1965	ovary 9X5mm. granular	176 gms.	"	"		RF 69
35	"	♀	Fanning Island, Pacific Ocean	July 2, 1965	ovary l. ovum 11X7mm. ½mm	161 gms.	"	"		RF 73 ✓
36	Phaethon lepturus	♀	"	"	ovary 10mm. l. ovum 3mm.	287 gms.	"	"		FCS 3231 ✓
37	Sula leucogaster	♀	"	"	ovary 24X15mm l. ovum 3mm.	1203 gms.	"	"		RF 72
38 ~~39~~	Sula sula	♀	"	"	l. ovum 12mm.	981 gms.	"	"		FCS 3230
39 ~~41~~	Fregata minor	♂	"	"	L. 16X12mm. R. 18X10mm.	996 gms.	"	"		RF 70
40 ~~42~~	Gygis alba	♂	"	"	L. 5X4mm. R. 3X3mm.	98 gms.	"	"		RF 71 ✓
41 ~~43~~	Gygis alba	♂	"	"	L 5X4mm. R 3X3mm.	114 gms.	"	"		RF 74 ✓
42 ~~44~~	Anous stolidus	♀	"	July 3, 1965	ovary 5X3mm. granular	164 gms	"	"		RF 75
43 ~~45~~	Pterodroma neglecta	♂	9° 00' N 155° 00' W	July 5, 1965	L. 5X1mm. R. 4X1mm.	412 gms.	"	"		LNH 786 ✓
44 ~~46~~	Puffinus pacificus	♂	"	"	L. 9X5mm. R. 7X5mm.	372 gms.	"	"		LNH 788 ✓
45 ~~47~~	Pterodroma cooki	♀	"	"	ovary 6X3mm. granular	164 gms	"	"		LNH 787 ✓
46 ~~48~~	Phaethon lepturus	♂	"	"	Testes 3X1mm.	311 gms.	"	"		RF 79 ✓
47 ~~49~~	Pterodroma externa	♀	"	"	ovary 10X5mm. granular	433 gms.	"	"		LNH 791 ✓
48 ~~50~~	"	♀	"	"	ovary 8X5mm l. ovum 1mm.	440 gms.	"	"		RF 78 ✓

Field No.	Species	Sex	Location	Date	Gonads	Weights	Type of Specimens	Stomach Saved	Remarks	Collector's No.
57H9	Pterodroma externa	♂	9° 00′ N 155° 00′ W	July 5, 1965	Testes 2X ½ mm.	421 gms.	Skin	yes		RF 77
50	Pterodroma externa	♂	"	"	Testes 1X ½ mm.	437 gms.	"	"		RF 76
51	"	♂	"	"	Testes 5X2 mm.	476 gms.	"	"		LNH 789
52	Pterodroma externa	♂	"	"	Testes 3X2 mm.	481 gms.	"	"		LNH 790
53	Sula dactylatra	♀	"	"	~~Testes~~ ovary ~~Testes~~ 5X2 mm.	1854 gms.	"	"		FCS 3234
54	"	♂	"	"	~~ovary 20x3 mm.~~ Testes 7X1 mm.	1673 gms.	"	"		FCS 3233
55	"	♀	"	"	ovary 20x3 mm. non-granular	2006 gms.	"	"		FCS 3232

ATF # 7

Howland, Baker, Phoenix Islands, Tokelau Islands, Line Islands

January 25 — March 25, 1965

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector + Number 1965
5101	Sterna fuscata	♀	Howland.	Feb. 3, 1965	L. ovum 5mm. heavy fat.	178.3 gms	skin	heavy fat	PWW 68
5102	Sterna fuscata	♀	Howland Is.	Feb. 1, 1965.	10X5mm L. ovum 2mm	189.2 gms.	skin	heavy fat	LNH 526
5103	"	♀	"	"	14X7 L. ovum 3mm	163 gms	"	medium fat	PWW 71
5104	"	♂	"	"	R. 6X3mm L. 8X4mm	160.8	"	med. Fat	72
5105	"	♂	"	"	R. 5X3mm L. 8X5mm	181.	"	" "	PWW 524
5106	"	♂	"	"	6X7mm	161.4 gms.	"	medium-fat.	LNH 70
5107	"	♀	"	"	ovary 8X5mm L. ovum 1mm	169	"	med. fat	PWW 523
08	sterna fuscata.	♀	"	"	13X9mm	153.6 gms	"		LNH 571
09	Sula dactylatra.	♀	"	"	L. ovum 7mm. ovary 22X10	1682 gms.	"		LNH RDK 549
10	Mus	♂	Baker	Feb. 4, 1965		9.7 gm	Skin		RDK 548
11	Mus	♂	Baker	"		9.9 gm	skin		RDK 551
12	Mus	♀	Baker	"		8.7 gm	Skin		
13	Anous stolidus	♀	McKean Is	Feb 6, 1965.	14X7mm. L. ovum 3mm	—	"	Little fat.	PWW 67 LNH
14	Procelsterna albigularis	♀	McKean Is.	Feb 7, 1965.	6X5mm	63	Skin	Broad patch, medium fat.	513
15	"	♂	"	"	10X7mm L. ovum 4mm.	67 gms	"	medium-Heavy fat.	512 LNH
16	"	♂	"	"	5X4mm	58	skin	Little fat.	514 LNH
17	Sterna Lunata	♂	"	"	10X7mm	129 gms.	"	Little-medium fat.	515 LNH
18	" "	♂	"	"	10X7mm	127	"	" " "	522 LNH
19	"	♂	"	"	10X6mm	134	"	Heavy fat.	527 LNH
20	"	♀	"	"	10X6 mm L. ovum 3mm	121	"		525 LNH
21	Sterna Lunata	♂	McKean Is.	Feb 7, 1965.	Largest testis 7X6mm	wt 129 gms	SKIN	Little-medium fat	LNH 516
22	Rattus	♂	Birnie Island	Feb. 10, 1965		—	Skin		RDK 557
23	Rattus	♂	Birnie Island	Feb. 10, 1965		—	Skin		RDK 558
24	Pluvialis L. dominicus	♂	"	Feb 11, 1965	5X4mm	168	"		LNH 528
25	Pluvialis pacificus	♂	"	"	6X4 mm	323	"		LNH 529
26	Pluvialis L. dominicus	♀	Enderbury Is.	Feb 13, 1965.	10X5 L. ovum 2mm.		"		517 LNH
27	Sula sula	♂	"	"	10X3mm.	792	"		518 LNH
28	Sula Sula	♂	"	"	10X5mm	wt 759	"		LNH 519
29	"	♂	"	"	15X8mm	752	"		LNH 520

Field No.	Species	Sex	Location			Date	Gonads	Weight	Type	Remarks	Collector Number
5130	Sula Sula	♀	Enderbury Is.			Feb 13, 1965	20X9mm L.ovum 3mm enlarged oviduct	891 gms.	Skin		LNH 521
131	sterna fuscata	♀	"			" 16 "	legs torn 1mm ovary 11mm	166.4	skin		MCT 4069
132	" "	♀	"			"	L.ovum 5mm.	162.6 gms	"		PWW 74
133	Anous stolidus	♀	Mckean Is.			Feb 6, 1965	L.ovum 10X9mm	—	"	heavy fat	68 PWW
134	Sterna fuscata	♂	At sea 1400	171° 05'W	8° 21'S	Feb 19, 1965	10X5mm	205	"		LNH 530
135	Anous stolidus	♀	Mckean Is.			Feb 6, "	10X11mm L.ovum 3mm	—	"		LNH 531
136	"	♂	" "			" " "	6X4mm	—	"		LNH 532
137	Puffinus Pacificus	♀	At sea 1610	170°40W	12°04S	Feb 20, "	10X5mm ovaminute	380 gms.	"	Light fat. no brood patch	75 PWW
138	Phaethon lepturus	♂	At sea 1650	170°40'W	12° 11S	Feb 20 "	5X2mm	29.6 gms	"		533 LNH
139	Pluvialis dominica	♀	Hull Is.			Feb 9, "	10X5mm granular ovary 8mm L.ovum 2mm	—	"	heavy fat	PWW 73
140	Gygis alba	♀	Tutuila Samoa.			Feb 24, 65.	5X2mm	110 gms.	"	medium Fat.	92 PWW
141	Procellariiformes	♀	Tutuila, Samoa			Feb 24, 1965	10X6 mm L.ovum 2 mm	48 gms	"	heavy Fat	578 LNH
142	"	♀	"			"	2X1/2mm	47 gm	"	heavy Fat	576 LNH
143	"	♂	"			"	8X4 mm granular	52 gms	"	heavy fat	574 LNH
144	"	♀	"			"	5X4 mm	45 gm	"	med. Fat	575 LNH
145	"	♂	"			Feb 24	5X4 mm	57 gm	"	med. Fat	573 LNH
146	Demigretta sacra rufescens	?	"			"	—	463 gm	"	—	88 PNW
147	Eteraophus stercorarius	♂	" "			"	—	376 gms.	skin skull		RDK 577
148	"	♂	Fakaofo Atoll. Tokelau Islands.			Feb 26, 65.	Testes 4X4 mm. largest ovum 2mm	101 gms.	Skin		549 LNH
149	"	♀	" "			"	ovary 14X6mm.	99.5 gms.	"		550 LNH
150	"	♀	" "			"	largest ovum 1/2 mm ovary 9X6mm.	98 gms	"		551 LNH
151	Mus	♂	Baker Island, Pacific Ocean			Feb. 4, 1965	—	—	Skull		RDK 552
152	Mus	♂	Baker Island, Pacific Ocean,			"	—	—	Skull		RDK 553
153	Mus	♀	Baker Island, Pacific Ocean			"	—	—	Skull		RDK 554
154	Canis familiaris	–	Hull Island, Phoenix Islands, Pacific Ocean			Feb. 9, 1965	—	—	Skull		RDK 555
155	Felis domestica	–	" " " " " "			"	—	—	Skull		RDK 556
156	Arenaria interpres	♀	Fakaofo Atoll, Tokelau Is.,			Feb 26, 1965	minute	134.9 gms.	skin	heavy body and head moult. Heavy fat	MCT 4070
157	" "	♂	" " " "			"	"	124.4 gms	"	" " " " " " "	MCT 4071
158	" "	♂	" " " "			"	"	135.8 gms.	"	" " " " " " "	INCT 4072

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector Number
5159	Arenaria interpres	♀	Fakaofo Atoll, Tokelau Is., Pacific Ocean	Feb. 26, 1965	minute	119.6 gms	skin	Heavy body & head molt, heavy fat	MCT 4073
60	" " "	♀	" " " " "	"	minute	99.3	"	" " " " " "	MCT 4074
61	" " "	♂	" " " " "	"	minute	108.9	"	" " " " " "	MCT 4075
62	" " "	♂	" " " " "	"	"	108.6	"	" " " " " "	MCT 4076
63	Pluvialis dominica	♀	" " " " "	"	"	137.5	"	light " molt " "	4077
64	Egretta sacra	♀	" " " " "	"	Largest ova 6mm. 12 subspeed follicles old brood patch	459.4	"	light fat	MCT 4078
65	Sygis alba.		" " " " "	"		99	"		
66	"		" " " " "	"		112	"		
67	"		" " " " "	"		118	"		
68	Hitroseelus incanum	♂	" " " " "	Feb 26, 65.	1X½ mm.	83 gms.	"	Little fat	577 LNH
69	" "	♂	" " " " "	"	Testes 2X1mm.	114	"		564 LNH
70	Pluvialis dominica	♂	" " " " "	"	Testes 9X6mm.	118	"		562 LNH
71	Arousminutus	♂	" " " " "	"	Testes 4X2½mm. granular	122	"		561 LNH
72	Egretta sacra.	♀	" " " " "	"	ovary 14X14	503	"	LNH	569
73	Strepsilas fuscata.	♂	" " " " "	"	R. 5X4mm. L. 11X6mm.	194	"		
75	Pluvialis dominica	♀	Nukunonu Atoll Tokelau Is. Tokelau Islands	Feb 28, 1965	12X7mm	124.6 gms	"	medium — heavy fat	559 LNH
76	Sygis alba. Ducula pacifica	♀	Fakaofo Atoll, Tokelau Is. Pacific Ocean	27 Feb 1965	Largest ova 3mm.	369.8 gms.	skin	milk glands active. Eating fruit & caterpillars	MCT 4080
77	Arous. stolidus.	♂	" " " "	"	Testes 9X5mm. granular	192 gms	"		547 LNH
78	Numenius tahitiensis	♀	" " " "	"	ovary 30X9mm.	580 gms	"		568 LNH
79	Fregata ariel	♂	" " " "	"	Testis 17X8mm	697.4	"	heavy fat	MCT 4081
80	" "	♂	" " " "	"	" 12X9 mm	830.0	"	" "	MCT 4082
81	" "	♂	" " " "	"	" 10X4 mm	725.6	"	" "	MCT 4083
82	Fregatta Ariel		" " " "	"		711.6.	"		
83	" "		" " " "	"					
84	Arous minutus	♂	" " " "	"	Testis 10X5mm	120.2	"	light fat	MCT 4084
85	Leucogaster	♂	" " " "	"	minute	1102	"	moderate fat, Immature	MCT 4085
86	Arous stolidus	♀	Nukunonu Atoll Tokelau Is. Tokelau Islands.	28 Feb.	1. ovum 3mm.	173.4	"		4056 MCT
87	" "	♀	" " "	"	1. ovum 4mm.	181.8	"		4087 MCT

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector + Number
5188	Anous stolidus	♂	Nukunono Atoll Tokelau Is. Tokelau Islands	Feb 28, 1965	Testes 4X3mm.	214.1	skin		558 LNH
4 89	"	♀	" " " "	"	1 ovum enlarged but broken	202.2	"		4089 MCT
4 90	Anous minutus	♂	" " " "	"	Testes 7X6mm.	98.7	"		554 LNH
4 5191	"	♀	" " "	"	ovary 22X15mm.	140.4	"		556 LNH
4 92	"	♂	"	"	Testes 10X7mm.	125.2	"		557 LNH
4 93	"	♀	"	"	1 ovum 2mm. ovary 15X9mm.	123.0	"		553 LNH
4 94	"	♂	"	"	R 6X4mm L 8X5mm.	121.8	"		77 PWW
4 95	"	♀	"	"	1 ovum 1mm. ovary 13mm.	121.1	"		76 PWW
4 96	Anous minutus	♂	Nukunono Atoll Tokelau Island Tokelau Islands	Feb 28, 1964	13X7mm	127.5 gms	"	Little - med fat	555 LNH
4 97	Sterna fuscata	♀	" " "	"	1 ova 8mm.	196.8	"		4088 MCT
4 98	Gygis alba	♀	" " " "	"	ovary 13X7mm. granular	108.5	"		552 LNH
4 99	Numenius tahitiensis	♀	" " " "	March 1, 1965	largest ovum 2mm.	615.7	"		4090 MCT
4 5200	Ducula pacifica		" " " "	"		457.2	"		
4 201	Gygis alba	♂	" " "	"	Testes 7X5mm.	126.8	"		536 LNH
4 02	"	♀	" " "	"	largest ova 2mm. ovary 8X7mm.	102 gms.	"		537 LNH
4 03	Sterna sumatrana	♂	" " "	"	Testes 4X3mm.	103	"		535 LNH
4 04	Arenaria interpres	♀	Tokelau Is. Nukunono Atoll Tokelau Islands Pacific Oc.	March 1, 19..	9X5mm granular	—	skin	no fat. starving to death	534 LNH
4 05	Rattus exulans		" " " "	"	—	90.0	skin skull		—
4 06	" "		" " " "	"	—	69.0	"		—
4 07	Sus scrofa		" " " "	"	—	—		part of mandible only	—
4 08	Sterna sumatrana	? im	" " " "	March 2, 1965	—	96 gm	"		581 LNH
4 09	"	♀	" " "	"	L. ovum 1mm. ovary 14X7mm.	92 gm	"		582 LNH
4 210	Sterna sumatrana	♂	" " " " "	March 2, "	6X4mm	96 gms.	"	Little - med fat	580 LNH
4 211	Eudynamis taitensis	♂	Atafu Atoll Tokelau Islands " "	March 3, 65	Testes minute	124.6 gms.	"	Light fat and heavy body molt.	4094 MCT
4 212	Sterna sumatrana	♀ im.	" " " "	"	—	106.2 gms	"		4097 MCT
4 13	Sterna sumatrana	imm ?	Atafu Atoll Tokelau Islands. Pacific Oc.	March 3. 65	—	109.4 gms	"	heavy fat	540 LNH
4 14	" "	♂	" " "	"	Testes 7X5mm.	112.3 gms	"	medium fat	541 LNH
4 15	" "	♀	" " " "	"	L. ovum 2mm oviduct enlarged	95.5 gms.	"	Little to medium fat	539 LNH
4 16	" "	♂	" " "	"	testes 6X7mm.	97.8 gms.	"		4095 MCT

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector + Number
5217.	Sterna sumatrana	♂	Atafu Atoll Tokelau Islands Pacific Oc	March 3, 65	8x6mm l. ovum 2mm.	99.7 gms.	Skin	mod. Fat	542. LNH
18	" "	♀	" " " " " "	"	ovary 18x9mm.	110.4	"		543 LNH
19	" "	♂	" " " " " "	"	Testes small	112.4	"		4096 MCT
20	Anous minutus.	♂	" " " " " "	"	Testes 1mm.	108.8	"		82 PWW
21	" "	♂	" " " " " "	"	Testes 1mm.	111.8 gms.	"		81 PWW
22	Anous stolidus	♀	" " " "	"	ovary 5mm.	166.7 gms	"		80 PWW
23	"	♀	" "	"	ovary 1mm.	185.2.	"		78 PWW
24	"	♂	" "	"	Testes 10x5mm.	219.1	"		79 PWW
25	Anous minutus	♀	" "	"	granular ovary 6x6mm.	134.2.	"		544 LNH
26	Rattus exulans.		" "	"		92.5.	"		
27	"		" "	"		104.7	"		
28	Sula leucogaster	♂	" "	"	Testes 18x4mm. brood patch	1043.0	"		4104 MCT
29	Bygis alba.	♀	" "	"	1 collapsed follicle	125.6	"		4099 MCT
30	"	♂	" "	"	Testes 5mm.	101.0	"		4098 MCT
31	"	♂	" "	"	Testes 5x4 mm.	119.7	"		591 LNH
32	"	♀	" "	"	Ovary 6x5mm. granular	102.3	"	little fat	93 PWW
33	Egretta sacra.	♀	" "	"	largest ovum 15mm.	508.2	"		4100 MCT
5234	Sterna fuscata	♂	" "	"	Testes 13x6mm.	194.5	"		538 LNH
35	"		" "	"		199.8	"		
36	Arenaria interpres	♂	" "	"	Testes 2½ x 1½mm.	107.3	"		584 LNH
37	"	♀	" "	"	granular Ovary 12x7mm.	141.9	"		583 LNH
38	Dacula pacifica		" "	"		351.1	"		
39	"		" "	"		210.8	"		
40	"		" "	"		392.8	"		
41	Fregata aviel		" "	"		739.7	"		
42	"		" "	"		834.3	"		
43	Bygis alba.	♂	" "	"	L 5x3mm.	112 gms	"		94 PWW
44	Heteroscelus incanum	♂	Atafu Atoll Tokelau Islands Pacific Oc	March 4, 1965.	Testes R 3x3mm.	130 gm	"	heavy fat	579 LNH
45	" " "	♂	" "	March 4. 1965	testes 3x1½mm. 2x1mm	123 gms	"	"	578 LNH

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector & Number
*5246	Egretta sacra	♀	ATafu Atoll Tokelau Islands						
*5247	Anous stolidus	♂	"	March 4, 1965	ova minute ovary 15mm.	403	skin		98 PWW
*5248	Anous stolidus	♀	"	"	Testes 6mmX3mm ovum 2mm.	184	"		95 PWW
*5249	Anous minutus	♀	"	"	ovary 13mm l ovum 5mm	176	"	PWW	83
50	"	♂	"	"	ovary 12mm.	106	"		84 PWW
51	"	♀	"	"	R 7X5mm. L 10X5mm. l. ovum 3mm.	105.	"		86 PWW
52	Arenaria interpres	♀	"	"	ovary 15mm. granular	110	"		85 PWW
53	Anous minutus	♂	"	"	ovary 9X4mm. R. 8X5mm L. ———	122	"		590 LNH
54	Sterna fuscata	♂	"	"	R 7X5mm. L 10X5mm.	105.	"		100 PWW
55	Fregetta grallaria		"	"		198	"		87 PWW
56	Puffinus gracilicus	♂	Motu Tabu Christmas Atoll Pacific Oc.	"		802.	"		
57	Sterna fuscata	♀	Palmyra Is. "	March 14, 1965	Testes 14X9mm. ovary 10X10	310gms	"	(weight from frozen specimen)	585 LNH
58	"	♀	"	March 16, 1965	L. ovum 3mm. l. ovum 1mm.	197 gms. from frozen spec.	"		587 LNH
59	"	♀	"	"	ovary 14mm. l. ovum 3mm.	202 gms.	"		96 PWW
60	"	♀	"	"	ovary 18mm. l. ovum 3mm.	211 gms	"		97 PWW
61	Arenaria interpres	♀	Hull Is. Pacific Oc.	"	ovary 13X12mm. granular	200 gms.	"		586 LNH
62	"	♀	"	Feb. 9, 1965	ovary 8mm. granular	———	"		89 PWW
63	"	♂	"	"	ovary 10X4mm.	———	"		588 LNH
64	"	♀	"	"	Testes minute granular	———	"		90 PWW
65	—			"	ovary 5X4mm.	———	"		589 LNH
66	—								
67	—?								
68	—								
69	—								
70	—								
71	—								
72	—								
73	Rattus exulans	♀	Tokelau Islands Fakaofo Atoll	Feb 27, 1965	———	60.2 gms	skin skull		ROK 562
74	" "	♂	" "	"	———	76.1 gms	"		ROK 561

not used

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector + Number
5275.	Emballonura.	♀	Tutuila Samoa.	Feb 23. 1965.	—	—	Alcoholic		572 RDK
76	"	♂	" "	"	—	7.0	"		559 RDK
77	"	♀	" "	"	—	—	"		568 RDK
78	"	♂	" "	"	—	—	"		569 RDK
79	"	♀	" "	"	—	—	"		576 RDK
80	Pteropus.	♀	" "	Feb 24. 1965	—	416.2 gms	skin		571 RDK
81	Egretta sacra	♂	Fakaofu Atoll, Tokelau Islands	Feb. 26, 1965	Testes 15X9 mm.	565.4 gms.	skin	no fat	570 LNH

Field No.	Species	Sp.	Location	
5165	Gygis	alba	Fakaofo	
5166	"		"	
5167	"		"	
5174	"		?	Present on chart
5179	Fregata	ariel	Fakaofo	
5180	"		"	
5181	"		"	
5182	"		"	
5183	"		"	
5185	Sula	leucogaster	"	
5200	Ducula	pacifica	Nukunonu	
5219	Sterna	sumatrana	Atafu	
5235	Sterna	fuscata	"	
5238	Ducula	pacifica	"	
5239	"	"	"	
5240	"	"	"	
5241	Fregata	ariel	"	
5242	"	"	"	
5255	"	"	"	

LS #22

PRELIMINARY REPORT

LISIANSKI ISLAND

Prepared

by

Roger B. Clapp

LS #22

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Field Trip Personnel: Eugene Kridler, Refuge Manager, Bureau of Sport Fisheries and Wildlife (Party Leader); Karl W. Kenyon, Wildlife Biologist, Marine Mammal Biological Laboratory; Ernest F. Kosaka, District Wildlife Biologist, Hawaii Division of Fish & Game; John L. Sincock, Research Biologist, Rare and Endangered Species Program, Bureau of Sport Fisheries and Wildlife; Roger B. Clapp, Pacific Ocean Biological Survey Program.

Support Vessel: U.S. Coast Guard Cutter Ironwood (Wagl 297), Captain William Reed.

Itinerary:			
1100	20 March 1968	--	Field party arrives Lisianski
1320	21 March 1968	--	Clapp departs Lisianski
c.1500	21 March 1968	--	Rest of field party departs Lisianski.

POBSP Man-days spent on Lisianski: 1.1

During our very brief survey of Lisianski the primary objectives of the party were to count, tag, and return Hawaiian Monk Seals and Green Sea Turtles. The POBSP observer tried to obtain credible population estimates and to determine, so far as was possible, the breeding status of the species occurring on the island.

A nearly complete count of the Blue-faced Booby nesting population was obtained and pair data were obtained for 142 birds. Hopefully, this data, when analyzed in conjunction with similar data taken in March 1965 and June 1967, will provide useful data on duration of pair bonds that will supplement similar data taken on Kure.

Three specimens were collected: a Sanderling, a Glaucous-winged Gull, and a hybrid Black-footed x Laysan Albatross. Fifty-two birds of 2 species were banded and 165 returns were obtained from 7 species. Thirteen of these returns were Ruddy Turnstones obtained by other members of the survey party. Of these 13 returns one was evidently from Laysan and two had been banded on Lisianski.

Vegetation on Lisianski appeared to be considerably more lush than on Nihoa, French Frigate Shoals, or Laysan, which may account in part for

the relatively more advanced nesting cycles found in several species. The Tribulus was blooming profusely and the Eragrostis appeared considerably greener than on Laysan

Black-footed Albatross Estimated breeding population -- 1500-2000

These albatrosses were not very abundant and apparently preferred to nest on the more open beaches of the southern third of the island. Only downy young were present.

Laysan Albatross Estimated breeding population -- 4000

This species was also not numerous and also appeared to be more abundant at the south end of the island. A number of old eggs were found but all active breeders had downy young.

Black-footed x Laysan Albatross No. collected ---------- 1

At 1145 on 20 March I collected a hybrid by hand at the south end of the island just north and east of the cutbank at the southeast corner of the island. The bird was standing near an adult Laysan Albatross and both were near a young Black-footed Albatross in a nest near the rim of the Scaevola. This area was about 100 yards from a mixed Blackfoot-Laysan colony. A series of photographs of the soft part colors was taken the following morning.

The specimen (Field #40809) was a male with the left testis measuring 20 x 10 mm. It weighed 3039 grams of which at least 366 grams were fat and was not molting in the flight or body feathers. The stomach was empty except for what appeared to be the distal half of a crab claw and a small amount of a greenish fluid.

Wedge-tailed Shearwater

None of these shearwaters was seen by me nor do I remember any other members of the party mentioning that they saw any. It is not impossible that a few may have been present but were overlooked due to the brevity and cursory nature of the survey.

Christmas Shearwater Estimated population ---------- 100

I saw several of these shearwaters north of the coconut trees in the interior of the island and others were doubtless present. I saw no evidence of breeding activity.

Bonin Petrel Estimated population ----------800,000

These petrels were extremely abundant and had burrows throughout the interior of the island. I checked no burrows but have no doubt that many

were breeding.

Petrel sp.

Kenyon found a dead small petrel in the center of the island near the edge of some morning glory. Judging from his comments it was either a Bulwer's Petrel or a Sooty Storm Petrel.

Red-tailed Tropicbird

Estimated population ---------- c. 100
Breeding status: only nests with eggs found.

Red-tailed Tropicbirds were low in numbers, a maximum of 10 birds having been seen in display over the northwest corner of the island at 1355 on the 20th. I found only about 5-6 birds down on the ground on the northwest corner of the island, either under Scaevola or mixed Scaevola and morning glory. Only two occupied nests were found by me and both contained eggs.

Blue-faced Booby

Estimated population ---------- 430
Nesting population ---------- c. 225
Results of sample nest count (believed to be about 85-90 percent complete) :

# of nests counted	98
# of nests with eggs	76(78%)
# of nests/naked young*	6(6%)
# of nests/small downy young	15(15%)
# of nests/medium downy young	1(1%)

Number banded: 18 (9 A-M, 9 A-F)
Number returns: 146 (76 A-M, 69 A-F, 1 A-U)

The nesting cycle of the Lisianski Blue-faced Boobies was in advance of all other islands where we found it nesting, with the possible exception of Green Island, Kure Atoll. Nonetheless, nearly 50 percent of the population was still in prenesting pairs.

On the afternoon and evening of the 20th I attempted to make as complete a nest count as possible and get pair data for as many birds as I could. The island was arbitrarily divided into three areas to see if one area or another was more favored by the early nesters. Area 1 was from the Fish and Wildlife Refuge sign (camp) around the north end of the island to where a distinctive, dike-like portion of rocky reef extends outward from the east side of the island (= roughly the northwest, north and northeast half of the east perimeters). Area 2 was from this point to the high south point of the island (= roughly the southeast half of the east perimeter). Area 3 was from the high south point to camp. (= roughly the south, southwest and central west perimeters). As Table 1 below shows, there appeared to be little difference in the stage of nesting from area to area, and allowing for differences in size of the sample area, little difference in nesting density from area to area.

* Includes nests that also contained an egg.

Table 1. Results by area of 20 March 1968 nest count of Blue-faced Boobies on Lisianski.

Contents of nest	Area 1 No.	Area 1 %	Area 2 No.	Area 2 %	Area 3 No.	Area 3 %	Totals No.	Totals %
Nests/ 1 egg	9	(25)	6	(27)	10	(25)	25	(26)
Nests/ 2 eggs	20	(56)	11	(50)	20	(50)	51	(52)
Nests/ egg & naked young	1	(3)	-		3	(8)	4	(4)
Nests/ 1 naked young	1	(3)	-		-		1	(1)
Nests/ 2 naked young	-		-		1	(3)	1	(1)
Nests/ 1 small downy young	5	(14)	4	(18)	6	(15)	15	(15)
Nests/ 1 medium downy young	-		1	(5)	-		-	(1)
Total nests/ eggs	29	(81)	17	(77)	30	(75)	76	(78)
Total nests/ young	7	(19)	5	(13)	10	(25)	22	(22)
Total active nests	36		22		40		98	

20 "clutches" were checked for stage of incubation by candling. 8 of 10 2-egg "clutches" were incubated while only 1 of 10 1-egg "clutches" was incubated. This results in a mean clutch size of 1.89 for 9 clutches known to have been completed.

Pair-data were obtained for 142 birds, of which 88 were prenesting birds roosting together and 54 were birds with active nests.

No clubs, subadult, or immature birds were seen by me nor do I remember any other members of the field party stating that they had seen any. Of the 146 returns, 142 had been banded on Lisianski and 4 had been banded on Laysan, one of them as a Laysan Albatross. Three of these birds were roosting with Lisianski-banded birds and the fourth was paired with a bird with one egg.

Brown Booby

Estimated population ---------- c. 20
Breeding status ---------- Unknown

On the afternoon of the 20th and the morning of the 21st I counted 15 Brown Boobies roosting on the reef rocks of the east side of the island. Fourteen were adults and one was an immature or subadult. During my nocturnal survey of the island perimeter I found none roosting in other areas.

No one in the survey party visited the breeding area in the southwest interior of the island where nests were found in September 1967. Hence, I do not know whether any of the birds seen were breeding or not.

Red-footed Booby

Estimated population ---------- c. 250
Sample nest count results:
# of nests counted ---------- 16
# of empty nests ---------- 11(69%)
# of nests with egg ---------- 5(31%)
# of nests with young ---------- none

Although just beginning to nest, the breeding cycle of the Lisianski

Red-footed Boobies was decidedly in advance of that of the population on Laysan (where only 1 nest in 8 contained an egg and where considerably more effort was expended in searching for nests.) Probably not less than 75-100 nests were present on Lisianski.

It is of interest to note that an almost identical difference in the cycles on the two islands was noted by Hackman last year when he visited the two islands on the same days of the month that I visited them this year. Hackman found that 18 of 85 (21 percent) nests checked on Lisianski had eggs but found no nests with eggs on Laysan although some as-yet empty nests were present.

As on Laysan and Nihoa the Red-footed Booby nests appeared to be much more scattered and less often found in clumps than were those of the Great Frigatebirds. The only area where there appeared to be somewhat of a concentration was in the higher Scaevola of the northeast corner of the island.

Great Frigatebird

Estimated population ---------- c. 1000
Sample nest count results:

# of nests counted ----------	36
# of empty nests ----------	23(64%)
# of nests with egg ----------	13(36%)
# of nests with small young --	none

The nesting cycle of Lisianski Great Frigatebirds did not appear to be significantly different from that on Laysan. Many birds were courting and many were nest-building. Ten eggs checked for stage of incubation by candling were fresh or very slightly incubated. I suspect that not less than several hundred active nests were present but this figure may well be erroneously low since coverage of the interior of the island was scanty.

As on Laysan a number of immature birds were present, most of them flying, but a few still on the nest and apparently still being fed by their parents.

Gray-backed Tern

Estimated population ---------- c. 1000
Breeding status: eggs but no young present.

Gray-backed Terns were nesting in the sand-Eragrostis association in the north central portion of the island. Kenyon reported that only nests with eggs were found and that these terns were nesting in an area peripheral to that occupied by the Sooty Terns.

Sooty Tern

Estimated population ---------- c. 7500
Breeding status: Down on ground by day but no nests with eggs or young found.

Sooty Terns were swirling over the north-central portion of the island

and some were down on the ground. Kenyon investigated this area on the 21st and reported that he found no nests with eggs.

Brown Noddy

Estimated population ---------- c. 100
Breeding status: At least a few eggs present.

I saw very few Brown Noddies, either by day or by night and found no evidence of nesting. Kenyon reported a small colony with 5 or 6 eggs in the north-central portion of the island near a frigatebird colony.

Black Noddy

Estimated population ---------- c. 500
Results of sample nest count:

# of nests with contents counted	156
# of nests with eggs ----------	105(67%)
# of nests with small downy young	30(19%)
# of nests with medium sized young	10(6%)
# of nests with large young -----	11(7%)

No. Banded ---: 34 (20 A-U, 14 N-U)
No. Returns --: 1 (A-U)

Black Noddies were evidently near the peak of nesting as many active colonies were found in the northwest corner of the island. On the whole, the population appeared to be at least several weeks ahead of that on Laysan. Thirty-two percent of all nests counted on Lisianski had young whereas on Laysan only 12 percent had young.

This difference in the progression of the breeding cycle was also supported by flotation tests to determine the stage of incubation of eggs. Of 30 eggs tested on Lisianski, 1 (3%) was fresh, 1 (3%) was very slightly incubated, 6 (20%) were slightly incubated, 7 (23%) were moderately incubated, and 15 (50%) were heavily incubated giving a total of 26 percent fresh to slightly incubated eggs and 73 percent moderately or heavily incubated eggs. In a sample of 25 eggs tested by flotation on Laysan 68 percent were very slightly or slightly incubated and 32 percent were moderately or heavily incubated.

My observational data not surprisingly also indicate that the larger colonies had been longer established than were the smaller colonies. The number of empty nests seen suggests that egg-laying was still proceeding and it seems likely that nests were still being built although I saw no birds carrying nesting material.

The single return obtained had been previously banded on Lisianski.

White Tern

Estimated population ---------- c. 100
Breeding status: no eggs or young found.
No. returns ---------- 1(A-U)

White Terns were scarce on Lisianski, the maximum concentration seen by me consisting of about 10 birds that were present in the northwest

Casuarinas. Most birds were found roosting either as scattered individuals or in pairs. Numbers did not appear to be appreciably greater at night than during the day. No eggs or young were found by me nor did other members of the survey party report finding any.

The single return had been previously banded on Lisianski.

Vagrants and Shorebirds

Glaucous-winged Gull

Population ---------- 1
Number collected ---------- 1

I first saw this gull as it flew along the crest of the northeast beach on 20 March. The following day I found it roosting in a tidal pool on the rocks. I pursued it around the island to the southwest beach where the bird was eventually collected.

The specimen (Field No. 40810) is a very fat immature female that weighed 1255 grams. It was not molting in the body feathers and its stomach was about 1/8 full of fish and bones that were lightly sprinkled with sand. The ovary measured 25 x 7 mm. but all ova were minute. The present specimen constitutes the second specimen record from Lisianski Island.

Golden Plover — Estimated population ---------- c. 600

Golden Plovers were found around the entire perimeter of the island and in the interior of the island. The largest concentration that I saw was a flock of about 500 birds, many of them coming into breeding plumage, that was roosting on the southwest beach. Kenyon reported that he had seen about 60 to 70 in the interior on the morning of the 21st. He noted that this species, and the turnstones and curlews, seemed to prefer to forage in areas of low Tribulus and morning glory but that the birds were somewhat more abundant in areas predominantly covered by morning glory.

At night I frequently found individuals roosting in small openings in the Scaevola and Eragrostis along the edge of the beach crest.

Kridler told me that seven were banded by the other members of the party on the night of the 20th.

Ruddy Turnstone — Estimated population ---------- c. 1000

Turnstones were abundant along the beaches and were commonly observed in the interior of the island. At night I saw small numbers of them on the beach crests but the largest roosting concentration was found in hollows in wave sculpted rocks on the central east portion of the island perimeter (where these birds were found most abundantly at night in September 1967).

Kridler informed me that the other members of the party had banded 170 and gave me a list of 13 returns, all obtained on the night of the 20th. Six had been banded on Lisianski by the POBSP last August and September, 4 evidently had been banded by another agency, 1 (712-51706) had been banded as a White Tern on Laysan in September 1967, and 2 had been banded on the East Killing Ground, St. George Alaska. One of the latter, 722-16178, had been banded as an immature on 25 August 1966 and no longer had a streamer or a red rump. The other, 1103-03235, a red-rumped, streamered bird, had been banded as a immature on 25 August 1967.

Wandering Tattler Estimated population ---------- 25

Wandering Tattlers were seen sparsely around the perimeter of the island. Three were banded by the Fish and Wildlife Service personnel and one return was obtained. This bird (943-84070) was banded by the POBSP on Lisianski, 2 September 1967.

Bristle-thighed Curlew Estimated population ---------- 100-125

As had been noted on a number of previous trips, the curlews were most abundant along the northern perimeter of the island, although scattered individuals and small groups were found along much of the island perimeter. The three largest flocks seen by me contained respectively 6, 21, and 11 curlews. The first two flocks were seen in the open Scaevola-Eragrostis association on the dunes at the northwest corner of the island and the third was seen on the southwest beach.

Eight curlews were banded by the survey party with bands supplied by the Fish and Wildlife Service and three returns were obtained, all of which had been banded on Lisianski last September by the POBSP.

Sanderling Estimated population ---------- 6 - 8
Number collected ---------- 1

Sanderlings were found along the beaches by both day and night but were relatively few in number. The most that I saw at one time was four birds flying along the northwest beach. By day 1 to 3 could be regularly found along the west beach. At night I found 2 to 3 on the sandy beaches of the west shore, above the waterline and collected one with a hand net. This specimen (Field #40808) was a male with testes measuring 2.5 x 1.5 mm. It was very fat, weighing 52.8 grams, and was molting in the body feathers.

Although previously reported on many occasions by POBSP personnel on Lisianski the present specimen is the only one that has ever been collected there.

Reptiles

Green Sea Turtle Population count ---------- 13

Kridler informed me that 13 turtles had been seen on Lisianski, one

of them a small "platter-sized" turtle. Nine turtles were tagged and 3 were returned by the Fish and Wildlife Service personnel. Each had a gray streamer affixed to the tag to make it easier to recognize tagged turtles on future surveys. Further details on sexes and dimensions of turtles handled are in Kridler's notes.

Mammals

Hawaiian Monk Seal — Population count ---------- 123

Results of the seal count taken by other members of the survey party are presented below. These data were contributed by Eugene Kridler.

Table 2. Results of Monk Seal count taken on Lisianski by Wildlife Personnel.

Age of Seals	Males	Females	Sex Undetermined	Totals
Adult	45	21	1	67
Subadult	24 { 14	21 { 13	-	27
Yearling	{ 10	{ 9	-	19
Pup	6*	4	-	10
Totals	75	47	1	123

* Pup total includes those tagged in addition to those seen on the count.

One pup was born on the night of 20 March.

Other members of the survey party tagged 24 seals, 6 male and 4 female pups, and 8 male and 6 female yearlings. Each had a gray streamer affixed to its tag. Thirteen returns were obtained, 8 from yearlings, 1 from a subadult, 1 from an adult, and 3 from seals of unknown age. Appendix I below presents data on tag numbers used and returned.

Appendix I. Seals Tagged and Returned on Lisianski 20-21 March 1968.

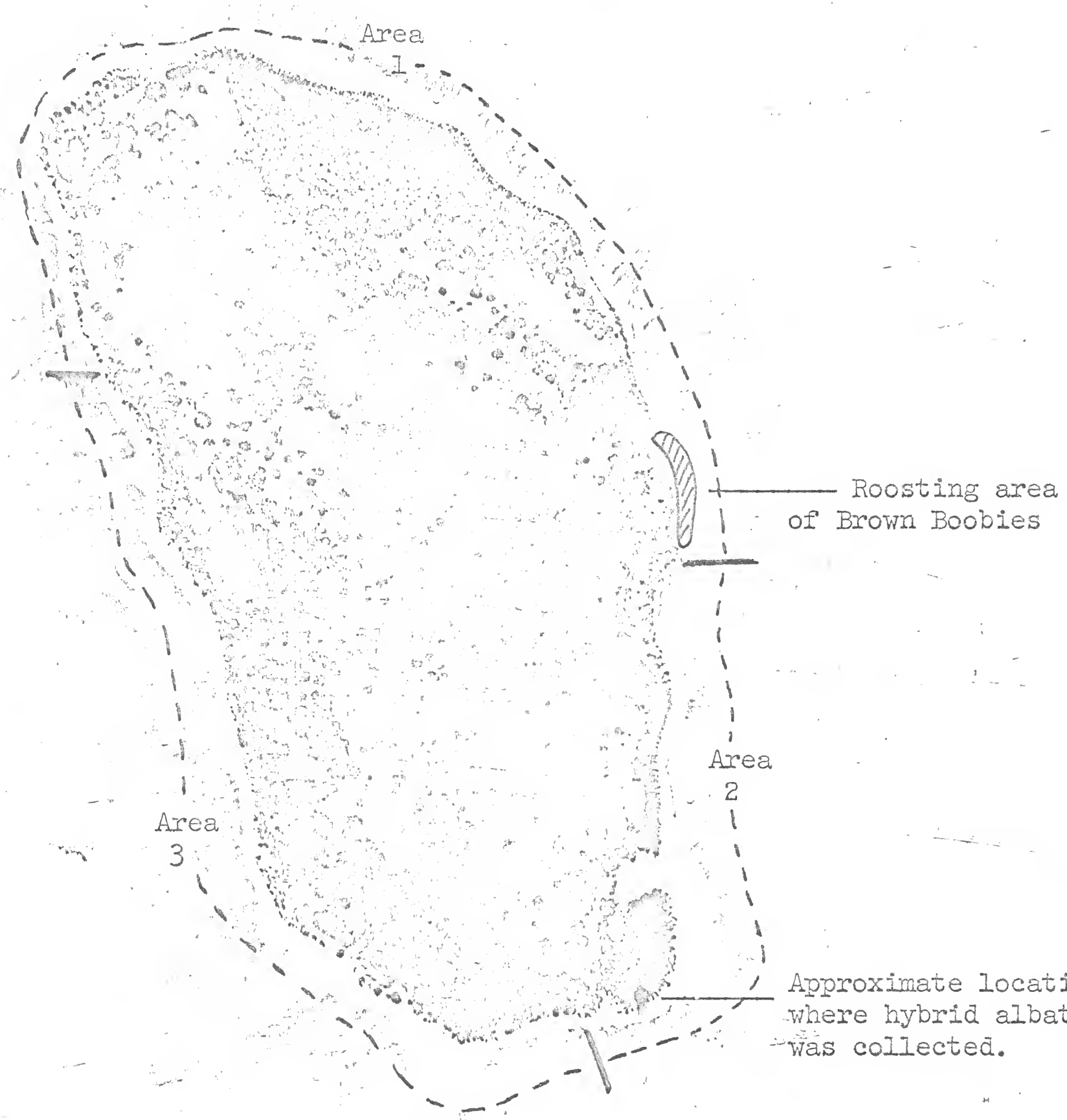
Seals tagged 20 March 1968		
Tag #	Sex	Age
A 308	♂	yearling
A 309	♀	yearling
A 310	♂	pup(gray)
A 311	♀	yearling
A 312	♂	yearling
A 313	♀	yearling
A 314	♂	yearling
A 315	♂	yearling
A 316	♂	pup
A 317	♀	pup
A 318	♀	pup
A 319	♀	pup
A 320	♂	pup

Seals tagged 20 March 1968		
Tag #	Sex	Age
A 321	♂	pup
A 326	♂	yearling
A 327	♀	yearling
A 328	♂	pup
A 329	♀	pup
A 330	♂	yearling
Seals tagged 21 March 1968		
A 331	♀	yearling
A 332	♂	pup
A 333	♀	yearling
A 334	♂	yearling
A 335	♂	yearling

Seals returned 20-21 March		
Tag #	Sex	Age
533	♀	yearling
537	?	???
A 65	♂	yearling
A 66	♂	yearling
A 77	♂	yearling
A 78	♀	yearling
A 85	♂	yearling
A 86	♀	yearling
A 87	♀	subadult
A 107	?	???
A 109	?	???
A 234	♂	adult
A 238	♀	yearling

Lisianski Island

1. Dashed lines show area divisions used on nest count of Blue-faced Booby (See Blue-faced Booby species account)



Temperatures Recorded on Lisianski in 1923 by Alexander Wetmore

Date	Times		
	7:00 a.m.	noon	6:00 p.m.
May 16	72 °	74°	73°
May 17	74°	72°	76°
May 18			
May 19	72°	74°	70°

SMITHSONIAN INSTITUTION
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C. 20560

25 November 1967

Dear Rog:

A short note from Jane mentioned that Tina had been (or was?) ill. Hope that she's recovered by now and feeling OK. (I didn't think that people who drank goat's milk were ever sick!).

1. Thanks for the copy of progress report to RLP. It contained information on several items I'd been wondering about. I'll add a few comments on it later.

2. We seem to have exclusive species accounts. I must have either left my duplicate set in Honolulu or misplaced them somewhere. Anyway I'll ask Jane for a duplicate set when I write her later. I still have the "original untyped final" copies of all that you listed. Do you have the Black-footed Albatross account? I have a rough "original" only. The last eight species accounts that I finished in Honolulu were typed in Washington but apparently not duplicated. I'll get these duplicated on Monday and send the originals to you then. (The duplicating facilities are locked up for vacation). These include: Bristle-thighed Curlew, Black Noddy; Bulwer Petrel; Laysan Albatross; Brown Booby; Sanderling; Golden Plover; Wandering Tattler. Four species are still in rough draft and I'll get these cleaned up, typed and sent off early in the week. These are: Great Frigatebird; Red-footed Booby; Blue-faced Booby; Red-tailed Tropic-bird.

3. Do you now have everything needed for the Leeward island reports for Aug.-Sept.?

4. I have no definite notes on Messerschmidia on SE but I seem to remember one plant on the northeast shore, west of our camp and one or more with Scaevola near the inlet (east side of inlet). One or another of your "panorama" shots should prove or disprove this. Both of the plants that I have in mind were conspicuous plants. I'm sure it was present on North Id.

8. Its good news that we finally have a skinner. Now if they will just let him skin and not put him on ADP or something maybe he can catch up. If we don't have these birds finished by Christmas, I'll ship them back for him. Who would guessed that the project would hire an Indian bird skinner???

9. I'm not quite sure what you mean here. I assume that you are referring to the big island reports. Do you mean mentioning the collector of each specimen, etc.? I could give a better opinion after seeing one of the final drafts, but if it reads better I'm in favor. On the other hand, if you have to qualify each name, or state that it was collected by Jones (of POBSP) or something of that sort then I disagree. It should be pretty obvious after you look over an account done each way.

10. I'd forgotten about the Sooty Tern table. Yes, I have a rough handwritten draft which I'll ask Jan to type and then send back to you.

Jan has been occupied with other things this semester and its ~~been~~ made quite a difference in my output. Sharing secretaries doesn't work any better here than in DC. Enough bitching, I'll see if I have any other items of this type.

12. I can find no references to turtles in the green books for either Laysan or Lisianski. So far as I know, no turtle counts were made on either island. I saw NO turtles on either island but did hear some of the Navy chaps talk about a female that was supposed to be laying on the west side of Lisianski near the FWS sign. Didn't Dave go over for a picture? I made half the shorebird count on Laysan and saw no turtles. I saw none on Lisianski during several circuits after shorebirds.

I. Included is a copy of the tagged seal data from the trip which I extracted while checking for turtle data. Sent the other copy to RLP.

II. Good luck on the "Additions . .." and "Swain's papers. Do you sometimes have the feeling that writing is the simplest part of preparing a publication? Well, you seem to get along with George better than most of us.

III. My Leeward slides will be leaving Monday now, and I'll leave it up to you to screen them and duplicate whatever ones you think are needed. Then would you please pass them on to Lamoureux? I'm writing him today too to try and get some of the misunderstandings and foul-ups straightened out. The slides that I took DO NOT duplicate those he, Butler, et. al. took earlier. I did take a series of "landscapes" at the north end of the island which may be of help to him. However, I also left the south end for the "next" morning and so did not get them taken.

IV. Still have 1½ days before my colleagues return so if I can get next week's lectures finished tonight will get back to Laysan. It's a bit frightening to see the time flashing by so rapidly. I suspect that the pressur on you is building more and more rapidly also. When it gets too bad, just say to hell with it, and set up nets for a few days. Hope that Tina is feeling better.

Chuck

SMITHSONIAN INSTITUTION
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6 November 1967

Dear Rog:

The banding data were so complicated (or confused?) for the other two islands that I concentrated on them first. I'm sure that there are still errors but at least they are consistent now. Sent these back to RP as requested and have been incorporating the inter-island and other data into the Banding and Movement sections for each of the three islands.

Now back to Lisianski. I'm finding that I have considerably less recall from here than from the other two and as a result can't add much without danger of error. But here goes anyway:

1) On 2 September (early morning hours) I found one that had wandered over to the beach north of camp, near the spot where the turnstones roosted in the wave-cut beach. I'm surprised that such apparently weak birds could cover so much ground. It was marked however.

2) I did not handle a large series as on North Island but I am sure that the percentage of dark phase birds was very low.

3) I noted three chicks: the one you mention ? (1 Sept.) and 2 on the 4th: 1 with a little down under Scaveola near the NW point; 1 younger and about ¼ downy under Scaveola near the southeast end of the island (after daylight). Judging from Laysan I suspect there were a good number of chicks under Scaevola, especially near the north end.

4) It was sitting alone on a narrow sandy beach on the east side of the island north of camp. A few rocks, completely covered with Scaveola were nearby (also a large log) but I could find no evidence of breeding. (Haven't skinned him yet).

5) The green books and banding records help here. Based on these and a few notes, the break down would be as follows: 128 nests: 4 with eggs; 16 with SDC; 12 MDC; 38 LDC; 58 fledglings. Under fledglings I've included those in the late (last) down stage. Since different people recorded chicks differently there may be a small degree of error. If your figures include the banding data they would be included in the above; if not they should be added.

Re: description of frigate feeding (or attacks, rather): While banding tropicbirds we were followed by several frigates (females and subadults) which repeatedly swooped down and tried to pick up fish that had been regurgitated. We did not see any actually succeed but they were quite persistent in their attempts. Many of the birds we released were attacked (even though they had regurgitated some food before release) and one was actually knocked into the water by a female frigate. I agree that frigates are faster than tropicbirds. In fact, I was quite surprised to see the speed of their flight when pursuing other species- I'd underestimated their ability before. Ron Amerson made some observations and reported the peak of activity (for tropicbirds) to be between 1200 and 1400. This agrees with what I remember.

6) Dave noted 2 clubs of about 60 birds each at the NW tip of the island - possibly your club of 100 on North beach??

His notebook entries do not distinguish between birds in clubs and those dispersed along the beach crest - so the only data available are those you might have.

5a) I don't know about dependent immatures. I'd consider most of the trios (2 ads & 1 imm) distributed around the island as dependents, but where do you draw the line? When does "dependency" stop?? So, I'd estimate from at least 50 (definitely non-fliers) to 300 or more , depending on use of term and would lean toward the higher figure.

6a) Did you ever watch long enough to see what happens to birds that are knocked into the water? Do they disgorge before taking off? Are they re-attacked when they leave? I'm curious but never noticed.

7) We may have erred in sexing Browns but IF the banding data are correct females outnumbered males 20 to 9. I agree that the estimate of 40 birds must be pretty close to correct. +2 r1 31 11

8) Based on 486 birds handled I'd estimate 1500-2000 birds present. This is several times higher than the estimate (?) I gave you in the field, I know. As late as the 4th, very few birds had been banded in some areas (e.g., the north end) and in one area only 2 of 56 had been banded. I worked the Scaveola along the East beach north of camp on three nights and was still getting a high percentage of new birds (though numbers did decrease). Also on the 3rd I captured all 17 birds in an isolated tree and only 1 had been banded.

8a) I'm puzzled about the nest count - the only figures that I can find in the green notebooks and banding data are for 14 large downy chicks; (5 at the south end; the remainder scattered around the island in Scaveola). It seems that there were more birds than this but perhaps I'm thinking of immatures still on nests.(many of the 71 immatures were prob. dep.

9) I pulled all of the Red-foot banding data for the first three nights (31 Aug - thru 2 Sept) including some omitted from the catalogue. The results are pretty similar to yours: 230 birds": 160 adults (70%); 48 subadults (21%); 22 immatures (09%). Some of the immatures were probably dependent young though not so marked.

I also made several counts to get some idea of age structure of roosting birds as follows: In the NW part of island, 123 birds (118 ads; 15 immatures); In the NE part; 56 birds (47 ads; 1 imms; 8 subad); single Messerschmitia tree (west central): 17 birds (12 ads; 4 imms; 1 ldc). None of these counts was very extensive because I always seemed to get side-tracked with something else. nb?

Based on the various counts and memory I would estimate 400 dependent immatures (including those flying but still with adults); those still at the nest site during the day not over a fourth of that number.

10) I now think that the population estimate is too low (based on 158 birds handled). On 4 September I checked 44 birds in the north roost and only one was painted. Birds were tame and easily approached. Of the 44 birds handled, 37 were adult (28 females; 9 males) and 7 were subadults.

11) Again I'm puzzled on nest counts. I find notes on only 31 (17 in the south end of the island; 2 near the FW sign (west); and 12 distributed in Scaveola elsewhere around the island). Contents were noted for 12 (1 SDC; 1 MDC; 8 LDC; 2 dependent young). As I remember the remainder were almost all large downies.

12) I'm also of the opinion that females were far more numerous on the ?? island than were males. (Do males predominate on Nihoa and the near islands) Of 124 roosting birds handled, 93 were adults (68 females; 25 males); 29 were subadults; 2 were immatures. I believe that these ratios should be pretty good since I handled most of them and did not make any special attempt to capture a particular age or sex.

13) My original estimate was 15,000 adults and I'll stay with this as a minimum. The birds were pretty well distributed throughout much of the center of the island and I always flushed groups when crossing the island and I had no difficulty in capturing a 100 birds in a short time.

14) After seeing Laysan, I'll go along with your estimate of 10 chicks. Each of the two adults collected was with a begging chick. Neither has yet been skinned but both were molting in the same manner as birds collected during the non-breeding season and previously considered "sub-adults". I'm now sure that Gray-backs have a speckled crown during the non-breeding season.

15) I think your estimate may be low since we actually handled over 1500 birds. I'm not too confident in the breakdown of chicks but my guesstimates are: eggs: none (or VERY few); SDC - 100; LDC - 1000; dependent(?) young, including flying immatures - 2000. A check of banding data showed only 20 "nestlings" banded. I think this is mostly because banding was concentrated in the roosting areas around the perimeter of the island rather than in the breeding areas a short distance inland. I do not recall seeing any eggs nor do any of the notebooks mention any. Did you see any? I'm sure I would have taken a few parents if I had seen any eggs. I did see a small proportion of small downies but by far the greatest number were stub-tailed juves or larger. I think the ratio of immatures to adults (roosting) was less than on Laysan - do you remember this??

16) My original estimate was 250 birds and I'll stay with this even though I'm less confident after Laysan. I'm sure that I saw at least 50 "families" scattered around the island in Scaevola. At night I saw birds in all areas that I worked.(where there was Scaevola, of course). I did not work the Casuarinas or Cocos so those would be in addition.

Of five nests recorded - 1 had an egg (Scaevola south of camp); four chicks from large downies to stub-tailed juves. In addition I handled at least 5 dependent ~~but~~ or flying immatures. The immatures are smaller, have a different voice and white shafts to the rectrices. I'm also pretty sure that the sexes OF A PAIR can be distinguished on wing length but my series is small and I haven't had a chance to work on it yet.

I have little to add on shorebirds. I've pulled all of the banding data so Laysan should be out in a few days. ~~I've enclosed a page covering your wing molt on Sooties for Laysan. Correction~~, will add it to Laysan report.

The only seal data for Lisianski was the beach count made at noon on 2 September by Dave: 141 animals: 60 adult, sex not recorded; 59 adult males; 12 adult females; 10 pups.

Chuck

Charles A. Ely

I still get interrupted everytime I get started - just like at S.I.!!

MASTER COPY

COUNTRY	TYPE OF MARK	STATION	
USA	Disk	LISIANSKI-1961 (HIRAN) (USC&GS) (AMS)	
LOCALITY	STAMPING ON MARK	AGENCY (CAST IN MARK)	ELEVATION
Lisianski Is., Hawaii	LISIANSKI-1961	USC&GS	Approx. 20 FEET METERS
LATITUDE	LONGITUDE	DATUM USC&GS	ORDER
N. 26° 04' 07.71"	W. 173° 58' 11.82"	Astronomic Position	
NORTHING	EASTING	GRID AND ZONE	DATUM
NORTHING	EASTING	GRID AND ZONE	ESTABLISHED BY-AGENCY-DATE

TO OBTAIN GRID AZIMUTH, ADD ° ' " TO THE GEODETIC AZIMUTH

OBJECT	(GRID) (GEODETIC) AZIMUTH	BACK AZIMUTH	GEOD. DISTANCE (M) (FT.)	GRID DISTANCE (M) (FT.)

Astronomic position of LISIANSKI RM 2: Lat. N. 26° 04' 08.03", Long. W. 173° 58' 12.02"; Astronomic Azimuth LISIANSKI RM 2 to AZ MK 322° 05' 41.56" from south.

The station is marked by a USC&GS triangulation disc stamped "LISIANSKI-1961" set in a mound of concrete which is flush with the ground. Located on the west side of Lisianski Island on a prominent sand ridge, which runs parallel to the west shore, approximately 120 meters east of a clump of pine trees located on the west shore.

RM 1 is marked by a USC&GS reference disc stamped "LISIANSKI-No 1-1961", set in concrete, 15.636 meters (51.29 feet) in astronomic azimuth from south of 66° 09' 30" from station.

RM 2 is marked by a USC&GS reference disc stamped "LISIANSKI-No 2-1961" set in concrete (dimensions not noted), 11.210 meters (36.76 feet) in astronomic azimuth from south of 150° 44' 48" from station (RM 2 was occupied as the light crossing station for the azimuth observations).

Az. Mk. is marked by a USC&GS azimuth disc (stamping not noted) (monumentation not noted). Located approximately 120 meters north of the southern tip of the island on an east-west sand dune ridge approximately 76 meters east of the highest sand dune which is near the southwest shoreline and approximately 1390 meters in astronomic azimuth from south of 322° 05' 41.56" from RM 2.

Boat landing is on west side of island, approach dangerous when heavy swells are present.

Appendix Table — Movements of Scaly Terns

to Locality

(3) Lawson I.

Original Banding Data			Recovery Data		
Band Number	Date	Age-Sex	Where Recovered	Date	Age-Sex
793-99818	09-17-64	A-U	Intracoastal S. Florida	06-10-66	A-U
793-99818	09-17-64	A-U	"	06-04-67	A-U
823-01100	09-17-64	A-U	"	06-18-66	A-U
793-99445	09-07-64	A-U	"	06-04-67	A-U
823-18811	07-17-65	A-U	"	06-04-67	A-U
963-62011	08-07-65	A-U	"	06-17-66	A-U
863-67712	08-03-65	A-U	"	06-18-66	A-U
863-67619	08-08-65	A-U	"	06-17-66	A-U
893-01179	08-05-65	A-U	"	06-17-66	A-U
893-01681	08-05-65	A-U	"	06-17-66	A-U
892-67926	08-05-65	A-U	"	06-04-67	A-U
892-09462	08-06-65	A-U	"	06-18-66	A-U
893-11955	08-06-65	A-U	"	09-03-67	A-U
863-71956	08-09-65	A-U	"	06-04-67	A-U
903-41890	06-11-66	A-U	"	06-04-67	A-U
903-43525	06-12-66	A-U	"	06-04-67	A-U
903-43933	06-12-66	A-U	"	09-03-67	A-U
903-60540	06-12-66	A-U	"	06-04-67	A-U

~~Banded as a Bonin Petrel listed on banding schedule as a Bonin Petrel~~

	Original Banding Data			Recapture Data		
	Band Number	Date	Age-Sex	Where Recaptured	Date	Age-Sex
(3)	903-61808	06-13-66	A-U	Kisianski I.	06-17-66	A-U
	903-63810	06-13-66	A-U	"	06-03-67	A-U
	903-52332	06-14-66	A-U	"	06-04-67	A-U
	(5) Pearl and Hermes Reef, Southeast I.					
(6)	753-43868	08-17-64	A-U	Kisianski I	06-18-66	A-U
(15)	753-44797	08-18-64	A-U	Kisianski I.	05-30-67	A-U (nesting)
	~~(4) 95~~					
	(4) Midway Atoll, Eastern I.					
FBR-9	713-70211	08-01-62*	Y-U	Kisianski I.	06-19-66	A-U ~~(nesting)~~
(16)	793-83954	08-15-64	N-U	Kisianski I.	06-04-67	A-U (nesting)
(16)	793-89441	08-19-64	N-U	"	06-04-67	U-U
(16)	863-09402	07-23-65	A-U	"	06-18-66	A-U ~~(breeding)~~
(16)	913-~~42473~~ 77624	06-~~21~~ 15-66	A-U	"	06-04-67	A-U
(16)	913-42473	06-21-66	A-U	"	06-04-67	A-U

* Banded by BSFWO ~~(CSR)~~

Alcoholics and skeletons — Lisianski

extracted from USNM catalogues July 28, 1967 CAE

		Diomedea immutabilis			
USNM 289162	Wetmore 7268	May 19, 1923	Ad.	M.	Skull
		Puffinus pacificus			
USNM 289186	Wetmore 7262	May 19, 1923	-	-	Skull
USNM 289348	Wetmore 7269	"	-	-	Alcoholic
		Pterodroma hypoleuca			
USNM 289187	Wetmore 7214	May 16, 1923	-	-	Skull
		Bulweria bulweri			
USNM 289201	Wetmore 7232	May 17, 1923	Ad.	F.	Skeleton
		Fregata minor			
USNM 289288	Wetmore 7251	May 18, 1923	-	-	Alcoholic young (to Leningr
USNM 289289	Wetmore 7243	"	-	-	" grad).
USNM 289290	Wetmore 7244	"	-		"
USNM 289291	Wetmore 7452	"	-		"
		Sterna lunata			
USNM 289225	Wetmore 7238	May 17, 1923	Ad.	F.	Skull
		Sula sula			
USNM 289296	Wetmore 7242	May 18, 1923	--		Alcoholic embryo
USNM 289298	Wetmore 7241	May 17, 1923			Alcoholic young
		Sula leucogaster			
USNM 289299	Wetmore 7240	May 17, 1923	--		Alcoholic young

Sula sula — Lisianski

Museum + Number	Date	Age	Sex	Collector	Comments
USNM 300909	May 19, 1923	Ad.	M.	A. Wetmore	
USNM 300910	"	Ad.	M.	"	
Fregata minor					
USNM 464438	May 17, 1923	Ad.	F.	A. Wetmore	
USNM 464439	May 18, 1923	Ad.	M.	"	
Sterna fuscata					
USNM 191503	Entered July 1904	-	-	(U.S. Treasury)	
USNM 191504	Entered July 1904	-	-	(U.S. Treasury)	
USNM 191505	"	-	-	"	
USNM 191506	"	-	-	"	
USNM 300584	May 19, 1923	-	M.	A. Wetmore	
USNM 300585	"	Ad.	F.	"	
USNM 300586	May 16, 1923	Juv.	F.	"	
USNM 495461	July 16, 1965	-	F.	POBSP	just off shore
Sterna lunata					
USNM 191501	— —	-	-	(U.S. Treasury)	
USNM 191502	— —	-	-		
USNM 300627	May 18, 1923	Ad.	M.	A. Wetmore	
USNM 494124	Mar. 13, 1965	-	F.	POBSP	
Anous stolidus					
USNM 300518	May 17, 1923	Ad.	M.	A. Wetmore	
USNM 300519	"	Ad.	M.	"	
USNM 495541	July 17, 1965	-	F.	POBSP	just off shore
USNM 496601	June 19, 1966	Ad.	F.	"	

Anous stolidus — Lisianski

Museum + Number	Date	Age + Sex		Collector	Comments
USNM 496602	June 19, 1966	Ad.	M.	POBSP	
USNM 496603	"	Ad.	F.	"	
USNM 496604	"	Ad.	M.	"	
USNM 496605	"	Ad.	F.	"	
USNM 496606	"	Ad.	M.	"	
USNM 496607	"	Ad.	F.	"	
USNM 496608	"	Ad.	M.	"	
USNM 496609	"	-	F.	"	
USNM 496610	"	Ad.	F.	"	
USNM 496611	"	Ad.	M.	"	
USNM 496612	"	Ad.	F.	"	
USNM 496613	"	Ad.	M.	"	
USNM 496614	"	Ad.	F.	"	
USNM 496615	"	Ad.	M.	"	
USNM 496616	"	Ad.	F.	"	
USNM 496617	"	Ad.	F.	"	
Anous tenuirostris					
USNM 300454	May 17, 1923	Ad.	M.	A. Wetmore	
USNM 300455	May 19, 1923	Ad.	M.	"	
Gygis alba					
USNM 191500	-	-	-	(U.S. Treasury)	
Larus argemtatis					
USNM 493353	Feb. 14, 1963	-	F?	POBSP	
Larus glaucescens					
USNM 494133	Mar. 12, 1965	-	M.	POBSP	

Bulweria bulweri — Lisianski

Museum + Number	Date	Age + Sex	Collector	Comments
USNM 300801	May 17, 1923	Ad. F.	A. Wetmore	
USNM 300802	"	Ad. F.	"	
USNM 300803	"	Ad. F.	"	
USNM 300804	"	Ad. F.	"	
USNM 300805	"	Ad. F.	"	

Puffinus pacificus

USNM 300727	May 16, 1923	Ad. F.	A. Wetmore	
USNM 300728	"	Ad. F.	"	
USNM 300729	"	Ad. F.	"	
USNM 300730	May 17, 1923	Ad. M.	"	
USNM 300731	May 19, 1923	- -	"	
USNM 300732	"	Ad. M.	"	
USNM 300733	May 16, 1923	Ad. F.	"	
USNM 300734	May 19, 1923	Ad. M.	"	
USNM 300735	"	Ad. F.	"	
USNM 492959	Mar. 12, 1963	- F.	POBSP	
USNM 495631	July 16, 1965	- F.	"	½ km from shore
USNM 495632	"	- F.	"	

Puffinus nativitatus

USNM 300697	May 17, 1923	Ad. M.	A. Wetmore	
USNM 300698	"	Ad. F.	"	
USNM 492967	Mar. 12, 1963	- M.	POBSP	
USNM 494122	Mar. 13, 1965	- F.	"	
USNM 494123	"	- M.	"	

Lisianski

Museum + Number	Date	Age + Sex	Collector	Comments
Diomedea nigripes				
USNM 300829	Mar 18, 1923	Ad. M.	A. Wetmore	
USNM 300828	May 17, 1923	Ad. M.	"	
Diomedea immutabilis				
USNM 300849	May 17, 1923	Ad. F.	A. Wetmore	
USNM 300850	May 19, 1923	Ad. M.	"	
USNM 300851	May 17, 1923	Ad. M.	"	
USNM 191497	--	- -	Treas. Dept.	
USNM 191498	--	- -	"	
AMNH 526869	July 3, 1891	no sex given	Palmer	Downy
AMNH 526870	"	"	"	
USNM 495735	July 17, 1965	Imm. F?	POBSP	
Diomedea immutabilis x Diomedea nigripes				
USNM 493918	Mar. 11, 1963	- M.	POBSP	
Pterodroma hypoleuca				
AMNH 528329	July 3, 1891	- -	H.C. Palmer	
USNM 300662	May 17, 1923	Ad. F.	A. Wetmore	
USNM 300663	"	Ad. M.	"	
USNM 300664	"	Ad. F.	"	
USNM 300665	"	Ad. M.	"	
USNM 494125	Mar. 13, 1965	- M.	POBSP	
USNM 494126	"	- F.	"	
USNM 496586	June 18, 1966	- F.	"	
USNM 496585	June 19, 1966	- M.	"	

Lisianski

Museum + Number	Date	Age + Sex	Collector	Comments
Squatarola squatarola				
USNM 494120	Mar. 13, 1965	- M.	POBSP	
USNM 494121	"	- F.	"	
USNM 496779	June 19, 1966	- F.	"	
Arenaria interpres				
USNM 494143	Aug. 22, 1964	Ad. F.	POBSP	
Numenius tahitiensis				
USNM 301042	May 19, 1923	- F.	A. Wetmore	
USNM 493202	Mar. 12, 1963	- M.	POBSP	
Limosa lapponica				
USNM 493478	Mar. 11, 1964	- F.	POBSP	
Heteroscelus incanum				
USNM 301020	May 19, 1923	- F.	A. Wetmore	
USNM 301021	May 16, 1923	- F.	"	
USNM 496688	June 17, 1966	- F.	POBSP	

Phaethon rubricauda — Lisianski

Museum + Number	Date	Age	Sex	Collector	Comments
USNM 191499	- -	-	-	(U.S. Treasury)	
USNM 300983	May 17, 1923	-	M.	A. Wetmore	

Sula dactylatra

USNM 189415	May 20, 1902	-	M.	W.K. Fisher	
USNM 300942	May 17, 1923	Imm.	F.	A. Wetmore	
USNM 300943	May 18, 1923	Ad.	M.	"	
USNM 300944	"	Ad.	M.	"	
BPBM 7060					21-D

Sula leucogaster

AMNH 729471	June 30, 1891	Ad.	M.	H.C. Palmer	
AMNH 729472	"	Ad.	M.	"	
AMNH 729473	"	Ad.	M.	"	
AMNH 729474	July 1, 1891	Ad.	M.	"	
AMNH 729475	July 2, 1891	Ad.	M.	"	
AMNH 729476	July 30, 1891	Ad.	F.	"	
AMNH 729477	"	Ad.	F.	"	
AMNH 729478	"	Ad.	F.	"	
AMNH 729479	July 1, 1891	Ad.	F.	"	
AMNH 729480	July 3, 1891	Ad.	F.	"	
AMNH 729481	July 1, 1891	Imm.	-	"	
USNM 240994	Mar. 12, 1913	Ad.	F.	G. Willett	
USNM 300873	May 19, 1923	Ad.	F.	A. Wetmore	
USNM 300874	"	Ad.	M.	"	
USNM 300875	May 16, 1923	Imm.	M.	"	
AMNH 729498	July 1, 1891	Imm.		H.C. Palmer	
BPBM 7062					22-C

Appendix Table — . Movements ~~of~~ (cont.) [Sooty Terns his. p.-

~~to~~

Original Banding Data			Recapture Data		
Band Number	Date	Age-Sex	Where Recaptured	Date	Age-Sex
(2) Johnston Atoll					
(16) 753-15469	08-03-63	A-U	Hisianski I.	06-18-66	U-U (1) (660)
753-22396	09-04-63	A-U	"	06-19-66	U-U
753-22662	09-05-63	A-U	"	06-17-66	U-U
753-23261	09-06-63	A-U	"	06-17-66†	U-U
753-9HH91	02-0H-6H	1?-U	"	06-0H-67	A-U (nesting)
753-23764	09-10-63	A-U	"	08-21-6H	U-U
823-0H010	05-09-65	1-U	"	06-0H-67	A-U (nesting)
823-01336	05-1H-65	1-U	"	06-0H-67	U-U
(10) 8H3-82437	07-22-65	A-U	"	06-15-66	U-U
8H3-9H012	08-12-65	A-U	"	09-03-67	A-U
(1) Ir ABA French Frigate Shoals, East I.					
(6) 863-23219	08-15-65	A-U	Hisianski I.	06-04-67	A-U (with egg)
(6) 923-26436	08-02-66	A-U	"	06-04-67	A-U (with egg)
(1) Wake Island					
743-49717	07-2H-63	A-U	Hisianski I.	06-04-67	A-U

† wanted with orange streamer on leg

Specimens Collected on Lisianski Island by the POBSP

STUDY SKINS

Museum No.	Species	Date Collected	Sex	Comments
492959	Puffinus pacificus	12 Mar. 1963	♀	
492967	Puffinus nativitatis	12 Mar. 1963	♂	
493202	Numenius tahitiensis	12 Mar. 1963	♂	
493353	Larus aggentatus	14 Feb. 1963	♀?	
493478	Limosa lapponica	11 Mar. 1964	♀	
493918	D. immutabilisXnigripes	11 Mar. 1963	♂	trunk skeleton 497919
494120	Squatarola squatarola	13 Mar. 1965	♂	
494121	Squatarola squatarola	13 Mar. 1965	♀	
494122	Puffinus nativitatis	13 Mar. 1965	♀	spelling is us in catalog
494123	Puffinus nativitatis	13 Mar. 1965	♂	
494124	Sterna lunata	13 Mar. 1965	♀	Feb. 1963 - 1 specimen
494125	Pterodroma hypoleuca	13 Mar. 1965	♂	
494126	Pterodroma hypoleuca	13 Mar. 1965	♀	Mar. 1963 - 4 specimens
494133	Larus glaucescens	12 Mar. 1965	♂	
494143	Arenaria interpres	22 Aug. 1964	♀	— Mar. 1964
495461	Sterna fuscata	16 July 1965	♀	
495541	Anous stolidus	17 July 1965	♀	
495631	Puffinus pacificus	16 July 1965	♀	Mar. 1965
495632	Puffinus pacificus	16 July 1965	♀	
495735	Diomedea immutabilis	17 July 1965		
496585	Pterodroma hypoleuca	19 June 1966	♂	June 1966 — Rept lists
496586	Pterodroma hypoleuca	18 June 1966	♀	We have
496601	Anous stolidus	19 June 1966	♀	
496602	Anous stolidus	19 June 1966	♂	
496603	Anous stolidus	19 June 1966	♀	Brown Petrel 2 1
496604	Anous stolidus	19 June 1966	♂	
496605	Anous stolidus	19 June 1966	♀	Black-bellied Plov 1 1
496606	Anous stolidus	19 June 1966	♂	Ruddy Turnstone 7 26
496607	Anous stolidus	19 June 1966	♀	Wandering Tatt 1 4
496608	Anous stolidus	19 June 1966	♂	
496609	Anous stolidus	19 June 1966	♀	Sooty Tern 4 42
496610	Anous stolidus	19 June 1966	♀	
496611	Anous stolidus	19 June 1966	♂	Brown Noddy 17 17
496612	Anous stolidus	19 June 1966	♀	Black Noddy 0 15
496613	Anous stolidus	19 June 1966	♂	
496614	Anous stolidus	19 June 1966	♀	
496615	Anous stolidus	19 June 1966	♂	
496616	Anous stolidus	19 June 1966	♀	
496617	Anous stolidus	19 June 1966	♀	
496688	Heteroscelus incanum	17 June 1966	♀	
496779	Squatarola squatarola	18 June 1966	♀	trunk skeleton
497536	Arenaria interpres	18 June 1966	♂	
497537	Arenaria interpres	18 June 1966	♂	
497538	Arenaria interpres	18 June 1966	?	
497539	Arenaria interpres	18 June 1966	♂	
542925	Sterna fuscata	19 June 1966	♀	
542926	Sterna fuscata	19 June 1966	♀	
542927	Sterna fuscata	19 June 1966	♂	
543020	Sterna fuscata	19 June 1966	♂	Sept 1967
543063	Charadrius mongolus	4 Sept. 1967	♀	missing one
543185	Bulweria (fallax)	4 Sept. 1967	♂	
543331	Arenaria interpres	17 June 1966	♀	2 GBT
543332	Arenaria interpres	17 June 1966	♂	1 G Plover
543333	Arenaria interpres	18 June 1966	♀	1 BP
543338	Crocethia alba	20 Mar. 1968	♂	
543339	Larus glaucescens	21 Mar. 1968	♀	
543343	D. immutabilisXnigripes	20 Mar. 1968	♂	

ALCOHOLICS (None listed through # 503641)

SKELETONS

497919	D. immutabilisXnigripes	11 Mar. 1963	♂	skeleton of skin # 493918
497951	Pterodroma hypoleuca	14 Feb. 1963	♂	
498366	Bulweria (fallax)	4 Sept. 1967		

Prepared 21 October 1968 by R.B.Clapp. Catalogs checked through # 498369 in the skeleton catalog and through # 543780 in skin catalog.