

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 newspaper account of the wreck of the Holder Borden in 1844 (Ward, 1967:34) stated that ". . . wild ducks . . . are plentiful . . . [and] . . . were readily tamed." 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.

* This duck, which Werner (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 low 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, minimum, and mean temperatures for a ten year period are shown in Figure 4V. The temperature variation shown is indicative of a marine environment. The mean annual range is 16°F. From December through April the means ^{ly} 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~~3~~: 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.

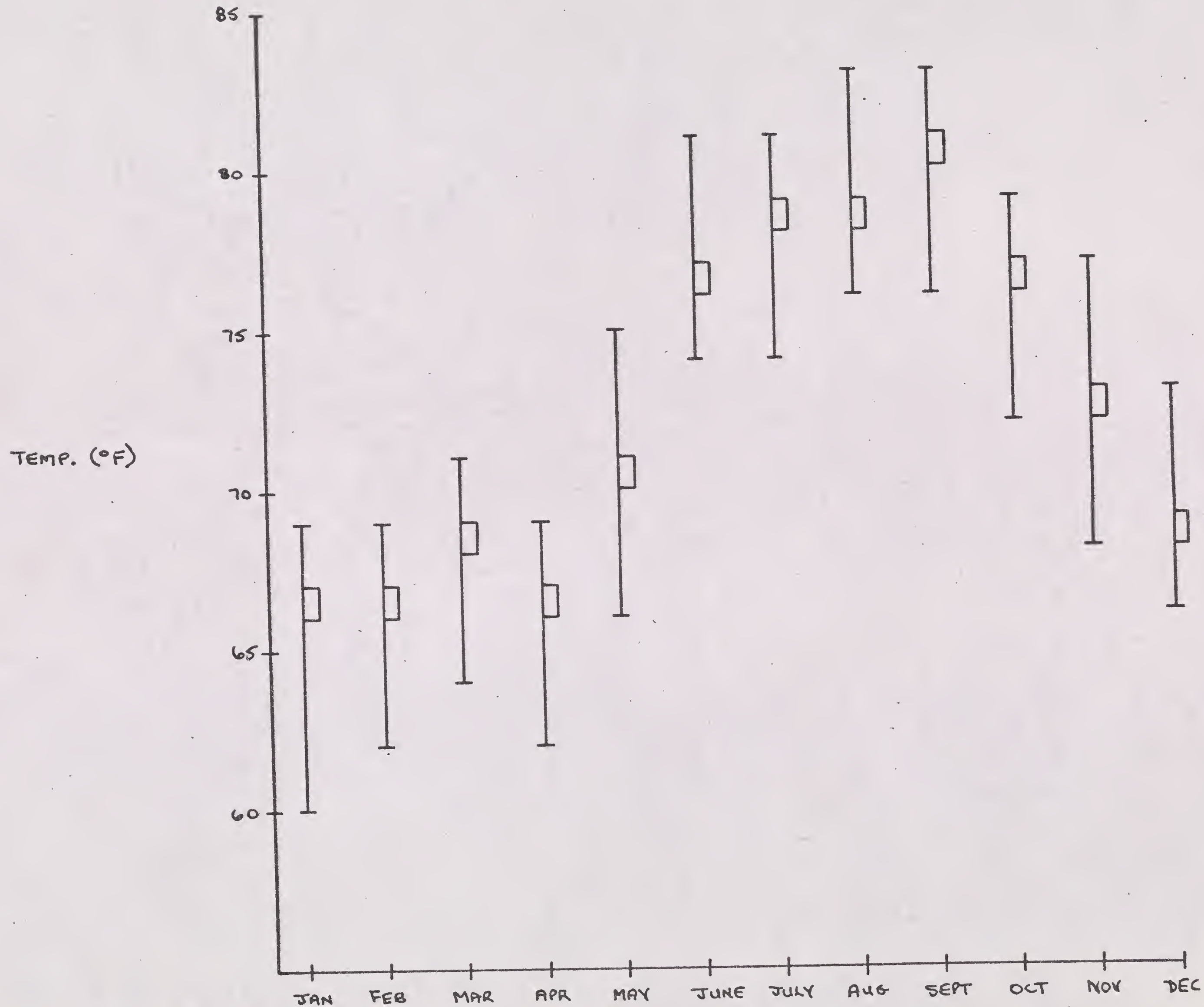


Figure ~~VI~~^{VII}:

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

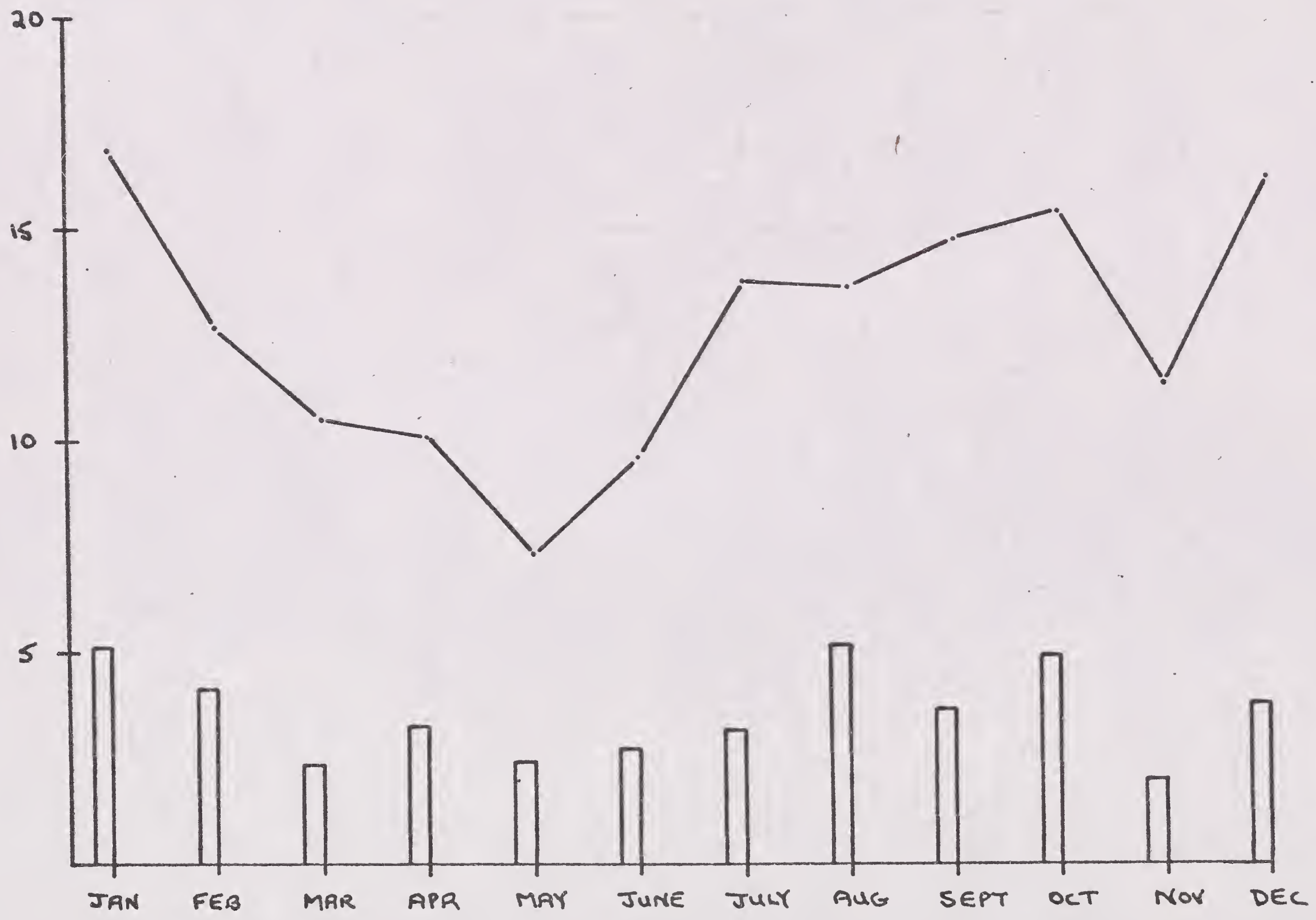
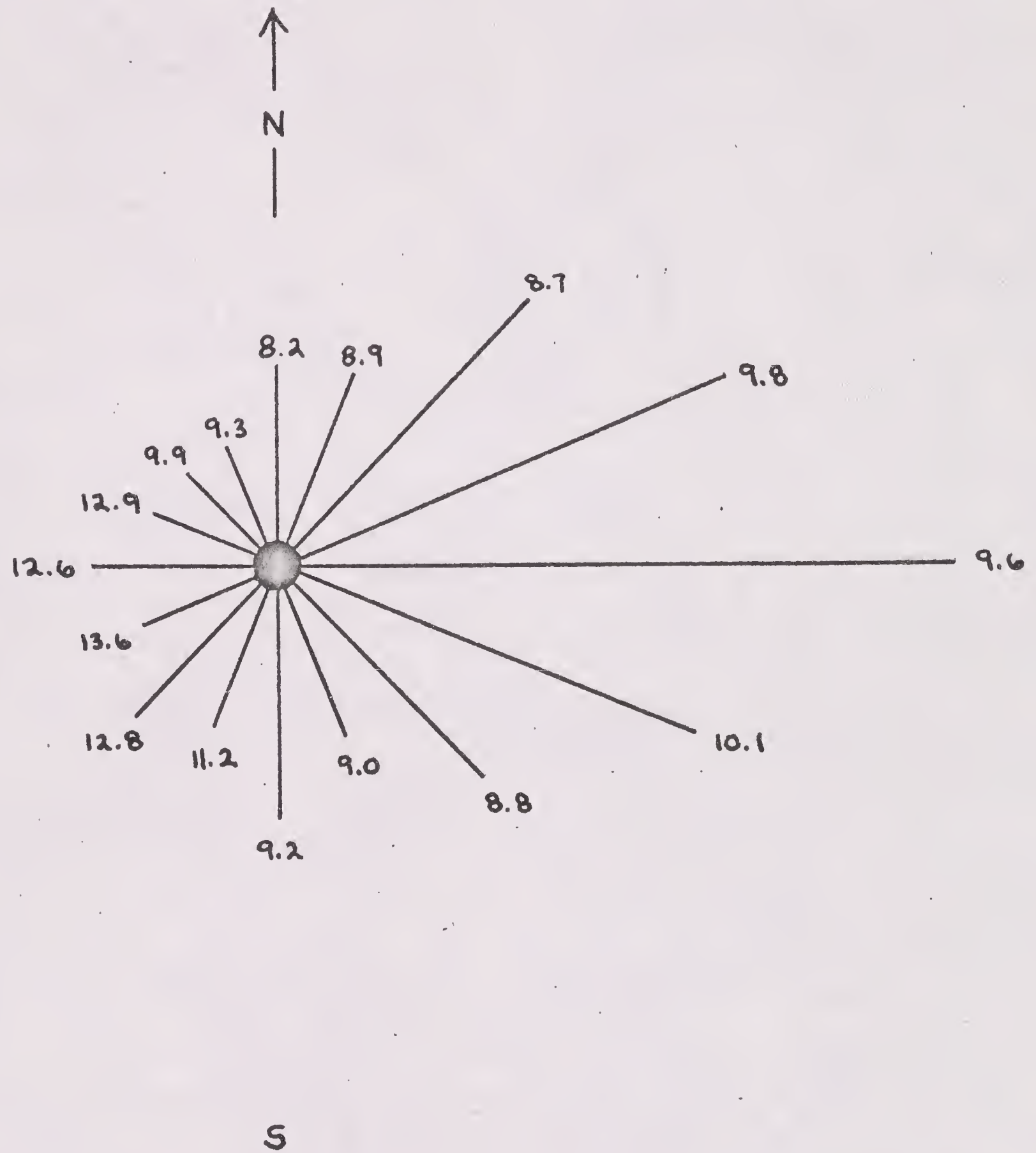


Figure VII : Wind direction and speed at Midway Atoll from 1953 - 63.

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

<u>When Seen</u>	<u>First Unequivocal Record of Occurrence</u>	<u>First Unequivocal Record of Breeding</u>	<u>First Published Record of Occurrence</u>	<u>First Published Record of Breeding</u>	<u>When and by Whom First Specimen Taken</u>
<u>March 1828</u>	Black-footed Albatross Laysan Albatross Great Frigatebird Red-footed Booby	Black-footed Albatross Laysan Albatross Great Frigatebird	von Kittlitz (1834) von Kittlitz (1834) von Kittlitz (1834) von Kittlitz (1834)	von Kittlitz (1834) von Kittlitz (1834) von Kittlitz (1834)	A. Wetmore, 17 May 1923 H.C. Palmer, 3 July 1891 A. Wetmore, 17 May 1923 A. Wetmore, 19 May 1923
<u>June-July 1891</u>	Blue-faced Booby Brown Booby Sooty Tern Gray-backed Tern Black Noddy White Tern Golden Plover Bristle-thighed Curlew Wandering Tattler Ruddy Turnstone	Blue-faced Booby Brown Booby Red-footed Booby Sooty Tern Black Noddy	Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893)	Rothschild (1893) Rothschild (1893) Rothschild (1893) Rothschild (1893)	(??Fisher, 20 May 1902) Wetmore, 17 May H.C. Palmer, 30 June 1891 U.S. Tres. Dept., 1904 U.S. Treas. Dept., 1904 A. Wetmore, 17, May 1923 U.S. Treas. Dept., 1904 NONE EVER COLLECTED A. Wetmore, 19 May 1923 A. Wetmore, 16 May 1923 (POBSP), 22 Aug. 1964
Mentioned in publications by Munro, 1941 and not by Rothschild	Wedge-tailed Shearwater Bonin Petrel Bulwer's Petrel Christmas Shearwater	Wedge-tailed Shearwater Bonin Petrel Bulwer's Petrel	Munter (1915) Munter (1915)	Munro (1941) Munro (1941) Munro (1941) Munro (1941)	A. Wetmore, 16 May 1923 H.C. Palmer A. Wetmore, 17 May 1923 A. Wetmore, 17 May 1923
<u>March 1915</u>	Brown Noddy		Munter (1915)	Munter (1915)	A. Wetmore, 17 May 1923
<u>16-19 May 1923</u> (Records by Wetmore, ms)	Red-tailed Tropicbird	Brown Noddy Christmas Shearwater		[None??] No - a rather ambiguous statement by Munro 1941 implies presence + breeding in 1941 [None??] Richardson (1957)	U.S. Treas. Dept, 1904
<u>26 March 1954</u> (Richardson, obs.)	Red-tailed Tropicbird Sanderling	Red-tailed Tropicbird	Richardson (1957) ?? Clapp & Woodward (1968)	Richardson (1957)	R.B. Clapp (POBSP) 20 March 1968
<u>14 February 1963</u> (POBSP)	Herring Gull		Clapp & Woodward (1968)		(POBSP) 14 Feb., 1963
<u>11 March '63</u> (POBSP)	Hybrid Laysan x Black-footed Albatross		[NONE]		(POBSP) 11 Mar. 1963
<u>11 March 1964</u> (POBSP)	Black-winged Gull Bar-tailed Godwit		Clapp & Woodward (1968)		G.S. Wislocki (POBSP) 11 Mar., 1964
<u>12-14 March 1965</u> (POBSP)	Peregrine Falcon Black-bellied Plover Glaucous-winged Gull		Clapp & Woodward (1968) Clapp & Woodward (1968) Clapp & Woodward (1968)		NONE EVER COLLECTED R.B. Clapp (POBSP) 13 Mar., 1965 (POBSP) 12 Mar., 1965
<u>4 September 1967</u> (POBSP)	Semipalmated Plover Mongolian Plover Jouanin's Petrel		[NONE] [NONE] [NONE]		C.A. Ely (POBSP) 4 Sept. 1967 R.B. Clapp (POBSP) 4 Sept. 1967 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 Woodward
40442	Sterna fuscata	♂	"	"	Testes: left 9x5mm Right - 5x4mm	170.4 gms.	Skeleton	1 Anderson
40443	Heteroscelus incanum	♀	"	Oct. 10, 1964	Granular ovary 7mm	93.3 gms.		#2 Anderson
40444	Heteroscelus incanum	♀	"	"	Granular ovary 5mm	78.0 gms.		FCS 3105 Woodward
40445	Pluvialis dominica	♂	"	"	Testes: left 1x0.5mm Right - 0.6x0.4mm	92.6 gms.		2
40446	Pluvialis dominica	♀	"	"	Granular ovary 5 mm.	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	
40450	Fregata ariel.	♀	"	Oct. 11, 1964	Ovary granular - 8mm	904.2 gms.	Skeleton, stomach saved	Merrill 117
40451	Fregata ariel		"	Oct. 11, 1964	Ovu	834.2 gms.	Stomach saved	Anderson 5
40452	Fregata ariel	♀	"	"	Ovary granular 8mm l. ovum 1mm	785.9 gms.	Stomach saved	FCS 3107 Woodward
40453	Fregata ariel	♀	"	"	Ovary 15x7 mm	876.6 gms.	Skeleton, stomach saved	3
40454	Fregata ariel	♀	"	"	l. ovum 4mm	833.5 gms.	Skeleton, stomach saved	Anderson 4
40455	Fregata ariel	♀	"	"	Ovary granular - 10mm	733.5 gms.	Skeleton, on nest, stomach saved	FCS 3109
40456	Fregata ariel	♀	"	Oct. 11, 1964	Ovary granular - 10mm	778.5 gms.	stomach stomach saved	3108 F.C.S
40457	Fregata ariel	♀	Howland Island, Pacific Ocean	Oct. 11, 1964	Ovary 20x8mm Testes: left 4x19mm Right 3x14mm	747.5 gms.	medium fat, on nest, stomach saved	Woodward 5
40458	Sula dactylatra	♂	"	"		1768 gms.	Skeleton, stomach saved	Merrill 116
40459	Sterna fuscata	♀	"	"	Ovary 5mm	203.5 gms.	Skeleton	Anderson 7

Field #	Species	Sex	Location	
40460	<i>Sterna fuscata</i>	♀	Howland Island, R.O. YED	✓
40461	<i>Sterna fuscata</i>	♀	Howland Island	✓
40462	<i>Sterna fuscata</i>	♀	DESTROYED	✓
40463	<i>Sterna fuscata</i>	♀	"	✓
40464			DESTROYED	
40465	<i>Sterna fuscata</i>	♂	"	✓
40466	<i>Sterna fuscata</i>	♀	Howland Island, Pacific Ocean	✓
40467	<i>Phaethon rubricauda</i>	♂	Howland Island, Pacific Ocean	✓
40468			DESTROYED	
40469			DESTROYED	
40470	<i>Pluvialis dominica</i>	♀	Howland Island, Pacific Ocean	✓
40471	<i>Heteroscelus incanum</i>	♂	Baker Island, Pacific Ocean	✓
40472	<i>Heteroscelus incanum</i>	♀	"	✓
40473	<i>Arenaria interpres</i>	♂	"	✓
40474			DESTROYED	
40475	<i>Sula dactylatra</i>	?	Baker Island, Pacific Ocean	✓
40476	<i>Anous stolidus</i>	♂	"	✓
40477	<i>Anous stolidus</i>	♀	"	✓
40478	<i>Anous stolidus</i>	♂	"	✓
40479	<i>Pluvialis dominica</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	✓
40480	<i>Heteroscelus incanum</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	✓
40481	<i>Erolia acuminata</i>	♀	"	✓
40482	<i>Sterna fuscata</i>	♀	"	✓
40483	<i>Sterna fuscata</i>	♂	"	✓
40484	<i>Sterna fuscata</i>	♂	"	✓
40485	<i>Sterna fuscata</i>	♀	"	✓
40486	<i>Sterna fuscata</i>	♀	"	✓
40487	<i>Sterna fuscata</i>	♂	"	✓
40488	<i>Sterna fuscata</i>	♂	"	✓

Date	Gonads	Weight	Remarks	Collector Number
11	Ovum 5mm.	180 gms		AHA 12
Oct. 11, 1964	Ovum 2mm ova minute Ovary 15mm	144 gms. 159 gms.	Skeleton	Anderson 8 PWW 12
	1. ovum 1mm.	148 gms.		AHA 13
	Testes R 8x5mm L 10x5mm	169 gms.		PWW 15 Anderson 6
Oct. 11, 1964	Ovary 8mm	197 gms.	Skeleton	PWW 9
Oct. 12, 1964	?	667 gms.	stomach saved	
	—	—	—	
	—	—	—	
Oct. 13, 1964	Ovary 5x4mm	60.8 gms.	emaciated, stomach saved	CDH 20
Oct. 13, 1964	Testes 2mm	112.9 gms.	Stomach saved	FCS 3110
Oct. 13, 1964	Ovary 1.5mm	133.7 gms.	Heavy fat, stomach saved	Woodward 6
	Testes 2mm.	89.0 gms.	Skeleton, stomach saved	FCS 3111
	?	1556.4 gms.	Stomach saved	FCS 3112
	Testes: left 8x4mm Right 9x5mm 1. ovum 3mm.	203 gms.	Skeleton, stomach saved	Anderson 9
	Ovary 10mm.	167 gms.	Skeleton, stomach saved	Woodward 7
	Testes: left 9x4mm Right 8x4mm.	183 gms.	Skeleton, Stomach saved	Woodward 8
Oct. 18, 1964	Testes: left 2x1mm Right: 1x8mm Testes: Right 2x5mm	107 gms.	Stomach saved	Woodward 17
Oct. 18, 1964	Left: 3x1mm.	93 gms.	Stomach saved	Merrill 121
	Ovary 8mm ova minute	67.5 gms.	Stomach saved	Woodward 16
	1. ovum 2mm.	133.8 gms.	Stomach saved	Anderson 21
	Testes: R 3x2mm. L 7x2mm	145 gms.	Stomach saved	Anderson 23
	Testes: R 5x4mm L 9x5mm	151.9 gms.	Stomach saved	Anderson 24
	1. ovum 1.5mm	143.1 gms.	Stomach saved	Woodward 19
	Ovary 12mm	145.7 gms.	Stomach saved	Anderson 25
	1. ovum 2mm. Testes: R 8x5mm L 11x5mm	152.1 gms.	Stomach saved	Woodward 18
	Testes R 3x2mm L 3x2mm	174.2 gms.	Stomach saved	AHA 22

Field #	Species	Sex	Location
40489	<i>Sterna fuscata</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean
40490	<i>Sterna fuscata</i>	♀	" " "
40491	<i>Sterna fuscata</i>	♀	" " "
40492	<i>Sterna fuscata</i>	♂	" " "
40493	<i>Anous stolidus</i>	♂	" " "
40494	<i>Puffinus lherminieri</i>	♀	" " "
40495	<i>Sterna fuscata</i>	♀	" " "
40496	<i>Numenius tahitiensis</i>	-	" " "
40497	<i>Sterna lunata</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean
40498	<i>Sterna lunata</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean
40499	<i>Sterna lunata</i>	♂	" " "
40500	<i>Sterna lunata</i>	♀	" " "
40501	<i>Sterna lunata</i>	♀	" " "
40502	<i>Sterna lunata</i>	♂	" " "
40503	<i>Sterna lunata</i>	♀	" " "
40504	<i>Sterna lunata</i>	♀	" " "
40505	<i>Sterna lunata</i>	♀	" " "
40506	<i>Sterna lunata</i>	♀	" " "
40507	<i>Sula sula</i>	♂	" " "
40508	<i>Pluvialis dominica</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean
40509	<i>Procelsterna cerulea</i>	-	" " "
40510	<i>Procelsterna cerulea</i>	♀	" " "
40511	<i>Procelsterna cerulea</i>	♂	" " "
40512	<i>Procelsterna cerulea</i>	♂	" " "
40513	<i>Procelsterna cerulea</i>	♀	" " "
40514	<i>Gygis alba</i>	♀	" " "
40515	<i>Gygis alba</i>	♂	" " "
40516	<i>Gygis alba</i>	♂	" " "
40517	<i>Gygis alba</i>	♀	" " "

Date	Gonads	Weight	Remarks	Collector No.
Oct. 18, 1964	1. ovum 1mm. 1. ovum 1mm	158 gms.	Stomach saved	Anderson 20
"	Ovary 15mm	147.8 gms.	Stomach saved	Woodward 18
Oct. 18, 1964	1. ovum 2mm. Testes: R 5x6mm L 7x11mm	134.6 gms.	Stomach saved	Anderson 19
"	Testes: R 2x2mm L 2x2mm	149.3 gms.	Stomach saved	Merrill 123
Oct. 18, 1964	1. ovum 2mm.	154.4 gms.	Skeleton	Anderson #27
"	1. ovum 2mm.	174.8 gms.	Skeleton	Anderson 26
Oct. 18, 1964	1. ovum 2mm	—	Skeleton	Anderson 28
Oct. 18, 1964	—	—	Found dead + skeletonized	Hackman 26
Oct. 20, 1964	largest ova 3mm	120.0 gms.	Stomach saved	FCS 3113
Oct. 20, 1964	largest ova 1mm. Testes: R 6x4 L 7x7.	102.5 gms.	Stomach saved	FCS 3115
"	largest ova 1mm. Ovary 12mm	129.8 gms.	Stomach saved, Skeleton (Stomach saved?) - <i>prob. the unnumbered one packed in Drum #1</i>	Woodward 22
Oct. 20, 1964	Testes: R 6x3 L 5x3	106.5 gms.		FCS 3114
Oct. 20, 1964	1. ovum 3mm.	103.1 gms.	Stomach saved	Hackman 25
Oct. 20, 1964	1. ovum 3mm. Ovary 13mm	119.4 gms.	Stomach saved, Skeleton	Merrill 124
"	1. ovum 1.5mm	112 gms.	Stomach saved, skeleton	Anderson 29
"	1. ovum 3mm	115.8 gms.	Stomach saved, skeleton	Woodward 21
"	1. ovum 3mm	118.5 gms.	Stomach saved, Skeleton	Anderson 30
Oct. 20, 1964	largest ova 3mm	119.7 gms.	Stomach saved	FCS 3116
"	Testes 7mm.	700 gms.	Stomach saved	FCS 3117
Oct. 21, 1964	Ovary 5mm	93 gms.	Stomach saved	FCS 3118
Oct. 21, 1964	—	48 gms.	Skeleton	Anderson 32
Oct. 21, 1964	Ovary 5mm ova minute Testes: R 5x4	41.5 gms.	Stomach saved, skeleton	Woodward 24
Oct. 21, 1964	Left 4x4 Testes R- 7x6	48.5 gms.	Stomach saved, skeleton	Woodward 25
Oct. 21, 1964	L 9x6	51 gms.	Stomach saved, Skeleton	Woodward 23
"	1. ovum 1.5mm.	45.5 gms.	Stomach saved, Skeleton	Anderson 33
"	1. ovum 1.5mm	103.5 gms.	Stomach saved	AHA 31
"	Testes 5x2mm.	92.0 gms.	Stomach saved	CPH 28
Oct. 20, 1964	Testes 4mm. 1. ova 2mm.	101 gms.	Stomach saved	FCS 3120
"		96 gms.	Stomach saved	FCS 3121

Field #	Species	Sex	Location	Date	Gonads	Weight	Remarks	Collector No.
40518	<i>Gygis alba</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes 3mm	109 gms.	Stomach saved	FCS 3123
40519	<i>Heteroscelus incanum</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes 2mm.	84.7 gms.	Stomach saved	FCS 3119
40520	<i>Sterna fuscata</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean	"	ova minute Ovary 10mm	143 gms.	Stomach saved	PWW 26 FCS 3135
40521	<i>Puffinus pacificus</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes 2mm.	443 gms.	Stomach saved	Woodward 27
40522	<i>Nesofregatta albigularis</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes: R 6x6mm L 8x6mm	67.2 gms.	Stomach saved, Skeleton	Woodward 32
40523	<i>Bulweria bulwerii</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes: R 1.5mm L 2mm ova minute	79.8 gms.	Stomach saved, Skeleton	Woodward 30
40524	<i>Puffinus l'herminieri</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 7mm ova minute	188 gms.	Stomach saved, Skeleton	Woodward 31
40525	<i>Puffinus l'herminieri</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 7mm ova minute	182 gms.	Stomach saved, Skeleton	Woodward 28
40526	<i>Puffinus l'herminieri</i>	♀	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Ovary 6mm. Testes: R 1mm. L 1.5mm	173.8 gms.	Stomach saved, Skeleton	Woodward 29
40527	<i>Puffinus l'herminieri</i>	♂	McKean Island, Phoenix Islands, Pacific Ocean	Oct. 21, 1964	Testes: R 1mm. L 1.5mm	174.6 gms.	Stomach saved, Skeleton	FCS 3124
40528	<i>Erolia acuminata</i>	♂	Gardner Island, Phoenix Islands, Pacific Ocean	Oct. 22, 1964	Testes 2mm.	80.7 gms.		FCS 3125
40529	<i>Erolia acuminata</i>	♂	Gardner Island, Phoenix Islands, Pacific Ocean	Oct. 22, 1964	Testes 3mm.	72.6 gms.	Stomach saved	FCS 3126
40530	<i>Erolia acuminata</i>	♂	Gardner Island, Pacific Ocean	Oct. 22, 1964	Testes 2mm.	76.7 gms.	Stomach saved	FCS 3127
40531	<i>Erolia acuminata</i>	♂	Gardner Island, Phoenix Islands, Pacific Ocean	"	Testes 2mm. ova minute	61.2 gms.	Stomach saved	Woodward 35
40532	<i>Gygis alba</i>	♀	" " "	Oct. 23, 1964	Ovary 8mm	100.3 gms.	Stomach saved	Merrill 139
40533	<i>Heteroscelus incanum</i>	♀	" " "	Oct. 23, 1964	Ovary 3x1mm Testes: R 4.5x3mm L 6x4mm	106.8 gms.	Stomach saved	Woodward 33
40534	<i>Anous minutus</i>	♂	" " "	"	R 5x2 L 7x3	93.4 gms.	Stomach saved	CDH 31
40535	<i>Anous stolidus</i>	♂	" " "	"	Testes: R 1mm L - 2mm	155.5 gms.	Stomach saved	Woodward 34
40536	<i>Heteroscelus incanum</i>	♂	Gardner Island, Phoenix Islands, Pacific Ocean	"	Ovary 1x1mm	83 gms.	Stomach saved	Merrill 140
40537	<i>Arenaria intrepes</i>	♀	" " "	"	Ovary 1x1mm	102.7 gms.	Stomach saved	FCS 3128
40538	<i>Fregata minor</i>	♀	" " "	"	1. ovum 4mm.	1167.5 gms.	Stomach saved	FCS 3129
40539	<i>Phaethon lepturus</i>	♀	" " "	"	1. ovum 2mm. ova miniscule	260.5 gms.		Anderson 40
40540	<i>Heteroscelus incanum</i>	♀	Sydney Island, Phoenix Islands, Pacific Ocean	Oct. 24, 1964	Ovary 10mm	99.2 gms.		FCS 3130
40541	<i>Pluvialis dominica</i>	♀	" " "	"	Ovary 5mm ova miniscule	720 gms.	Stomach saved	Anderson 41
40542	<i>Pluvialis dominica</i>	♀	" " "	"	Ovary 10mm	106 gms.		FCS 3134
40543	<i>Erolia acuminata</i>	♂	" " "	"	Testes 3mm	66 gms.	Stomach saved	FCS 3132
40544	<i>Anous stolidus</i>	♂	" " "	"	Testes 2mm	173 gms.	Stomach saved	FCS 3131
40545	<i>Heteroscelus incanum</i>	♀	" " "	"	Ovary 5mm	97.5 gms.	Stomach saved	FCS 3133
40546	<i>Sterna fuscata</i>	♂	Sydney Island, Phoenix Islands, Pacific Ocean	Oct. 24, 1964	Testes 8mm	109 gms.	Stomach saved	

Field #	Species	Sex	Location
40547	Gygis alba	♀	Sydney Island, Phoenix Islands, Pacific Ocean
40548	Foulehaio carunculata	♂	Tutuila Island, American Samoa
40549	Heteroscelus incanum		Phoenix Island, Pacific Ocean
40550	Eudynamis taitensis	♂	Tutuila Island, American Samoa
40551	Pluvialis dominica	♀	Gardner Island, Phoenix Islands, Pacific Ocean
40552	Pluvialis dominica	♀	Gardner Island, Phoenix Islands, Pacific Ocean
40553	Foulehaio carunculata	♂	Tutuila Island, American Samoa
40554	Aplonis atrifuscus	♂	Tutuila Island, American Samoa
40555	Foulehaio carunculata	?	Tutuila Island, American Samoa
40556	Aplonis atrifuscus	♂	Tutuila Island, American Samoa
40557	Aplonis atrifuscus	♂	Tutuila Island, American Samoa
40558	Tyto alba	♀	Tutuila Island, American Samoa
40559	Sterna fuscata	♂	Phoenix Island, Pacific Ocean
40560	Sterna fuscata	♂	" " " "
40561	Sterna fuscata	♂	" " " "
40562	Sterna fuscata	♂	" " " "
40563	Sterna fuscata	♀	" " " "
40564	Sterna fuscata	♂	" " " "
40565	Sterna fuscata	♀	" " " "
40566	Sterna fuscata	♂	" " " "
40567	Sterna fuscata	♀	" " " "
40568	Sterna fuscata	♀	" " " "
40569	Sterna fuscata	♀	" " " "
40570	Sterna fuscata	♂	" " " "
40571	Sterna fuscata	♀	" " " "
40572	Pluvialis dominica	♂	Phoenix Island, Pacific Ocean
40573	Arenaria interpres	♂	" " " "
40574	Puffinus nativitatus	♀	Phoenix Island, Pacific Ocean
40575	Puffinus nativitatus	♂	" " " "

Date	Gonads	Weight	Remarks	Collector no.
	1. ovum 3 mm. Ovary 10x5 mm	105.7 gms.	Stomach saved	Merrill 141
Oct. 29, 1964	Testes 1 mm	29.7 gms.	Skeleton, Stomach saved	Woodward 140
Nov. 4, 1964	Testes 2 mm.	105.3 gms.	Stomach saved	FCS 3136
Oct. 30, 1964	Testes 2 mm	135.3 gms.	Stomach saved	FCS 3137
Oct. 23, 1964	ova minute Ovary 6 mm.	122.0 gms.	Stomach saved	CPH 30
Oct. 23, 1964	ova minute Ovary 9 mm	119.2 gms.	Stomach saved	CPH 29
Oct. 30, 1964	Testes R 6x5 mm. L 5x5 mm	37 gms.	Skeleton, Stomach saved	Woodward 39
Oct. 30, 1964	Testes R 6x5 mm L 8x5 mm	158.5 gms.	Skeleton, Stomach saved	Woodward 36
Oct. 30, 1964	—	25.5 gms.	Skeleton, Stomach saved	Woodward 41
Oct. 30, 1964	Testes: R 6x3 mm L 7x3 mm	147.5 gms.	Skeleton, Stomach saved	Woodward 37
Oct. 29, 1964	Testes: R 5x4 mm L 6x4 mm	132.3 gms.	Skeleton, Stomach saved	Woodward 38
Oct. 15, 1964	Ovary 5 mm	—	Stomach saved Stomach saved	FCS 3138
Nov. 3, 1964	Testes 3 mm	151.3 gms.	Stomach saved	FCS 3163
"	Testes R 1.5 mm L 2.5 mm	144.4 gms.	Stomach saved	PWW 32
"	Testes R 1 mm L 1.5 mm	142.8 gms.	Stomach saved	PWW 48
"	Testes R 1 mm L 1.5 mm	160.0 gms.	Stomach saved	PWW 54
"	1. ovum 3 mm.	163.1 gms.	Stomach saved	AHA 63
"	Testes R 2 mm L 3 mm	163.5 gms.	Stomach saved	PWW 53
"	1. ovum 1.5 mm.	151.4 gms.	Stomach saved	AHA 64
"	Testes R 5x3 mm L 7x5 mm	182.1 gms.	Stomach saved	AHA 60
"	1. ovum 2 mm.	153.0 gms.	Stomach saved	AHA 69
"	ova 1 mm Ovary 10 mm	145.9 gms.	Stomach saved	PWW 51
"	1. ovum 2 mm.	146.8 gms.	Stomach saved	AHA 61
Nov. 3, 1964	Testes R 3x2 mm L 5x3 mm	178.9 gms.	Stomach saved	AHA 62
"	Ovary 7 mm	159.8 gms.	Stomach saved	FCS 3162
Nov. 4, 1964	Testes 2 mm	103.7 gms.		FCS 3139
Nov. 4, 1964	Testes 2 mm	96.8 gms.		FCS 3140
Nov. 5, 1964	Ovary 8 mm.	310 gms.	(Skeleton?)	FCS 3143
"	Testes 2 mm	331 gms.	Skeleton	FCS 3145

Field #	Species	Sex	Location	
40576	<i>Puffinus nativitatus</i>	♀	Phoenix Island, Pacific Ocean	No.
40577	<i>Puffinus nativitatus</i>	♂	" " "	
40578	<i>Puffinus pacificus</i>	♀	Phoenix Island, Pacific Ocean	100
40579	<i>Puffinus pacificus</i>	♂	Phoenix Island, Pacific Ocean	No.
40580	<i>Puffinus pacificus</i>	♀	" " "	
40581	<i>Puffinus pacificus</i>	♂	" " "	
40582	<i>Puffinus pacificus</i>	♂	Phoenix Island, Pacific Ocean	No.
40583	<i>Puffinus pacificus</i>	—	" " "	
40584	<i>Puffinus pacificus</i>	—	" " "	
40585	<i>Puffinus pacificus</i>	—	" " "	
40586	<i>Puffinus pacificus</i>	—	" " "	
40587	<i>Puffinus pacificus</i>	—	" " "	
40588	<i>Sterna lunata</i>	♂	" " "	✓
40589	<i>Sterna lunata</i>	♂	" " "	✓
40590	<i>Sterna lunata</i>	♀	" " "	✓
40591	<i>Sterna lunata</i>	♂	" " "	✓
40592	<i>Sterna lunata</i>	♀	" " "	✓
40593	<i>Fregata ariel</i>	♂	Phoenix Island, Pacific Ocean	✓ 100
40594	<i>Fregata ariel</i>	♂	" " "	✓ 100
40595	<i>Fregata ariel</i>	♀	" " "	✓ 100
40596	<i>Sula dactylatra</i>	—	Phoenix Island, Pacific Ocean	✓ 100
40597	<i>Procelsterna cerulea</i>	♀	" " "	✓
40598	Red-footed Booby	♀	" " "	✓
40599	<i>Gygis alba</i>	♂	" " "	✓
40600	<i>Pluvialis dominica</i>	♀	" " "	✓
40601	<i>Nesofregatta albigularis</i>	♂	" " "	
40602	<i>Nesofregatta albigularis</i>	♂	" " "	
40603	<i>Sula dactylatra</i>	—	Phoenix Island, Pacific Ocean	
40604	<i>Sula dactylatra</i>	—	" " "	
40605	<i>Sula dactylatra</i>	—	" " "	

Date	Gonads	Weight	Remarks	Collector no.
Nov. 5, 1964	1. ovum 3mm.	272 gms	Skeleton	AHA 50
"	Testes 2 mm	365 gms.	Skeleton	FCS 3144
Nov. 5, 1964	Ovary 15 mm. ova minute	353 gms	Skeleton	PWW 43
Nov. 5, 1964	Testes: R: 15x10 mm L: 18x10 mm	382 gms.	Skeleton	Woodward 44
"	1. ovum 3mm.	325 gms.	Skeleton	AHA 45
"	Testes R: 16x10 mm L: 15x10 mm	385 gms.	Skeleton	Woodward 42
Nov. 5, 1964	Testes: L 14x11 mm R. 12x10 mm	336 gms.	Skeleton	AHA 46
"	—	363 gms.	Alcoholic	FCS 3141
"	—	351 gms.	Alcoholic	FCS 3142
"	—	305 gms.	Alcoholic	AHA 48
"	—	319 gms.	Alcoholic	AHA 49
"	—	308 gms.	Alcoholic	AHA 47
"	Testes L. 5x2.5 R. 2x2	127 gms.	Stomach saved	AHA 68
"	Testes R 5x3 mm L 6x3 mm	118.5 gms.	Stomach saved	AHA 65
"	1. ovum 1.5 mm	106.5 gms.	Stomach saved	AHA 66
"	Testes R 4x2.5 mm L 5x3 mm	119.5 gms.	Stomach saved	AHA 67
"	Ovary 8 mm	103.5 gms.	Stomach saved	PWW 55
Nov. 6, 1964	Testes 2 mm.	297 gms.	Stomach saved	FCS 3148
Nov. 6, 1964	Testes 4 mm.	728 gms.	Stomach saved	FCS 3147
Nov. 6, 1964	Ovary 10 mm.	868 gms.	Stomach saved	FCS 3146
Nov. 6, 1964	—	1266.4 gms.	Alcoholic specimen --- found sick; banded 737-48022	RWM 143
"	1. ova 5 mm. Ovary 17 mm. ova minute	56.7 gms.	Stomach saved	FCS 3149
"	Testes 2 mm.	100.6 gms.	Stomach saved	Woodward 45
"	Ovary 8 mm, ova minute	113.5 gms	Stomach saved	FCS 3150
"	Testes L 7x7 R 4x4	70.5 gms.	Stomach saved Skeleton	PWW 57
"	Testes L 7x5 mm R 6x4 mm	66 gms.	Stomach saved Skeleton	AHA 73
Nov. 7, 1964	—	1699.5 gms	Alcoholic	AHA 74
"	—	1780.0 gms.	Alcoholic	CZH 33
"	—	1711.5 gms.	Alcoholic	AHA 51
"	—			AHA 52

Field #	Species	Sex	Location
40606	<i>Sula dactylatra</i>	-	Phoenix Island, Pacific Ocean
40607	<i>Fregata minor</i>	♂	"
40608	<i>Fregata minor</i>	♂	"
40609	<i>Fregata minor</i>	♀	"
40610	<i>Fregata minor</i>	♀	"
40611	<i>Fregata ariel</i>	♂	"
40612	<i>Anous stolidus</i>	♂	Birnie Island, Phoenix Islands, Pacific Ocean
40613	<i>Anous stolidus</i>	-	"
40614	<i>Anous stolidus</i>	♂	"
40615	<i>Procelsterna cerulea</i>	♂	"
40616	<i>Gygis alba</i>	♀	"
40617	<i>Heteroscelus incanum</i>	♀	"
40618	<i>Pluvialis dominica</i>	♀	"
40619	<i>Pluvialis dominica</i>	♀	"
40620	<i>Numenius tahitiensis</i>	-	"
40621	<i>Sterna fuscata</i>	♀	"
40622	<i>Fregata minor</i>	♀	"
40623	<i>Heteroscelus incanum</i>	♂	"
40624	<i>Anous minutus</i>	♂	"
40625	<i>Anous minutus</i>	♂	"
40626	<i>Anous minutus</i>	♀	"
40627	<i>Anous minutus</i>	♂	"
40628	<i>Anous minutus</i>	♂	"
40629	<i>Anous minutus</i>	♀	"
40630	<i>Anous minutus</i>	♀	"
40631	<i>Anous minutus</i>	-	"
40632	<i>Anous minutus</i>	-	"
40633	<i>Anous minutus</i>	-	"
40634	<i>Anous minutus</i>	-	"

Date	Gonads	Weight	Type	Remarks	Collection # No.
Nov. 7, 1964	-	1454.9 gms.	Alco		ANA 53
"	-	909.9 gms.	Alco		ANA 54
"	-	840.1 gms.	Alco		ANA 55
"	-	1333.3 gms.	Alco		ANA 56
"	-	1170.0 gms.	Alco		ANA 57
"	Testes R. 7x5 mm L 9x5 mm	620.3 gms.	Skin	Stomach saved	RWW 59
Nov. 8, 1964	Testes 4 mm	153.6 gms.	skin	Stomach saved	FCS 3151
"	-	177.6 gms.	Alco		RWM 145
"	Testes 2 mm.	191.9 gms.	skin	Stomach saved	FCS 3152
"	Testes 3 mm.	46.8 gms.	skin	Stomach saved	FCS 3153
"	1. ova 1.5 mm.	99.2 gms.	skin	Stomach saved	FCS 3154
"	Ovary 6 mm.	106.3 gms.	skin	Stomach saved	FCS 3155
"	Ovary 6 mm.	082.3 gms.	skin	Stomach saved	FCS 3157
"	Ovary 7 mm.	093.6 gms.	skin	Stomach saved	FCS 3156
"	-	435 gms.	Alco		RWM 151
"	Ovary 12 mm.	208 gms.	skin	Stomach saved	Woodward 46
"	1. ova 3 mm	1276 gms.	skin	Stomach saved	FCS 3158
"	Testes 2mm x 1mm	87.3 gms.	skin	Stomach saved	CDH 34
Nov. 9, 1964	Testes 2mm	93.0 gms.	skin	Stomach saved	FCS 3160
"	Testes 2mm.	102.6 gms.	skin	Stomach saved	FCS 3159
"	Ovary 1.5 mm	106.4 gms.	SKEL	Stomach saved	RWW 58
"	L. 2 mm R. 1 mm	100 gms.	SKEL	Stomach saved	ANA 71
"	R. 8 mm L. 1.5 mm	98.1 gms.	SKEL	Stomach saved	RWW 56
"	ova minute Ovary 9 mm	91.6 gms.	SKEL	Stomach saved	ANA 72
"	ova minute Ovary 10 mm.	93.9 gms.	SKEL	Stomach saved	ANA 70
"	-	86.8 gms.	Alco		RWM 146
"	<	104.2 gms.	Alco		RWM 147
"	-	104.1 gms.	Alco		RWM 148
"	-	109.1 gms.	Alco		RWM 149

Field #	Species	Sex	Location
440635	Anous minutus	-	Birnie Island, Phoenix Islands, Pacific Ocean
440636	Sterna fuscata	♂	Enderbury Island, Phoenix Islands, Pacific Ocean
440637	Sterna fuscata	♀	Enderbury Island, Phoenix Islands, Pacific Ocean
440638	Fregata minor	♂	Enderbury Island, Phoenix Islands, Pacific Ocean
440639	Sula sula	♀	Enderbury Island, Phoenix Islands, Pacific Ocean
440640	Sula sula	♀	Enderbury Island, Phoenix Islands, Pacific Ocean
440641	Fregata minor	♂	Enderbury Island, Phoenix Island, Pacific Ocean
440642	Fregata minor	♀	Jarvis Island, Pacific Ocean
440643	Fregata minor	♀	" " " "
440644	Fregata minor	♀	" " " "
440645	Fregata minor	♂	" " " "
440646	Fregata minor	♀	" " " "
440647	Sterna fuscata	♂	Jarvis Island, Pacific Ocean
4 48	Sterna fuscata	♀	" " " "
4 49	Sterna fuscata	♀	" " " "
4 50	Sterna fuscata	♀	" " " "
4 51	Sterna fuscata	♀	" " " "
4 52	Sula sula	-	" " " "
4 53	Sula dactylatra	♀	" " " "
4 54	Fregata ariel	♂	Jarvis Island, Pacific Ocean
4 55	Sula dactylatra	♀	" " " "
4 56	Sula sula	-	" " " "
4 57	Sula sula	-	" " " "
4 58	Sula sula	-	" " " "
4 59	Sula sula	-	" " " "
4 61	Phaethon rubricanda	♂	Jarvis Island, Pacific Ocean
4 60	Phaethon rubricanda	♀	" " " "
4 62	Phaethon rubricanda	-	" " " "
4 63	Phaethon rubricanda	-	" " " "

Date	Gonads	Weight	Type	Remarks	Collector number
Nov. 9, 1964	-	95.8 gms.	Alco		RWM 150
Nov. 10, 1964	Testes R 3mm L 1.4mm	154 gms.	Skin	Stomach saved	PWW 50
Nov. 10, 1964	Ovary 10mm ova minute	152 gms.	Skin	Stomach saved	PWW 49
Nov. 11, 1964	Testes: R 12x10mm L 15x9mm	906.3 gms	Skin	Stomach saved	
Nov. 11, 1964	Ovary 15mm ova minute	848 gms.	Skin	Stomach saved	Reward 47
Nov. 11, 1964	Ovary 16x9mm 1. ova 2mm.	847 gms.	Skin	Stomach saved	RWM 153
Nov. 11, 1964	Testes 6mm	824.5 gms.	Skin	Stomach saved	FCS 3161
Nov. 16, 1964	Ovary 12mm.	1172.6 gms.	SKEL	Stomach saved	AHA 175
"	Ovary 14mm.	1158.7 gms.	SKEL	Stomach saved	PWW 60
"	Ovary 13mm.	1152.9 gms.	SKEL	Stomach saved	AHA 76
"	Testes 5mm	944.4 gms.	SKEL	Stomach saved	PWW 61
"	Ovary 15mm	1121.2 gms.	SKEL	Stomach saved	
Nov. 17, 1964	Testes 13mm	188.5 gms	Skin	Stomach saved	FCS 3164
"	1. ovum 2mm	204.5 gms	Skin	Stomach saved	FCS 3165
Nov. 17, 1964	1. ovum of 2mm.	187.7 gms.	Skin	Stomach saved	FCS 3166
"	1. ovum 3mm	170.7 gms.	Skin	Stomach saved	FCS 3167
"	1. ovum 3mm	175.2 gms.	Skin	Stomach saved	FCS 3168
Nov. 17, 1964	-	802 gms.	Alco		RWM 161
Nov. 17, 1964	ova minute, Ovaries 15mm	1620 gms.	SKEL	Stomach saved	RWM 155
Nov. 17, 1964	Testes 6mm	770 gms	Skin	Stomach saved	RWM 154
Nov. 17, 1964	1. ovum 2mm Ovary 15mm.	1704.7 gms	SKEL	Stomach saved	RWM 160
Nov. 17, 1964	-	956.5 gms	Alco		RWM 156
"	-	980.0 gms	Alco		RWM 157
"	-	944.6 gms	Alco		RWM 158
"	-	810.6 gms	Alco		RWM 159
Nov. 18, 1964	Testes 12mm ova 3mm	608 gms.	Skin	Stomach saved	FCS 3169
"	Ovary 8mm.	686.5 gms.	SKEL	Stomach saved, Oviduct enlarged	PWW 62
Nov. 18, 1964	-	644 gms.	Alco		RWM 162
Nov. 19, 1964	Ovary 8mm	136.9 gms	Skin	Stomach saved	FCS 3170

Field Number	Species	Sex	Location
40664	<i>Nesofregatta albigularis</i>	-	Motu Upua, Christmas Island, Line Islands, Pacific Ocean
40665	<i>Nesofregatta albigularis</i>	-	Motu Upua, Christmas Island, Line Islands, Pacific Ocean
40666	<i>Pterodroma alba</i>	-	" " " " " "
40667	<i>Pterodroma alba</i>	-	" " " " " "
40668	<i>Pterodroma alba</i>	-	" " " " " "
40669	<i>Pterodroma alba</i>	-	" " " " " "
40670	<i>Pterodroma alba</i>	♂	Motu Upua, Christmas Island, Pacific Ocean
40671	<i>Pterodroma alba</i>	♂	Motu Upua, Christmas Island, Pacific Ocean
40672	<i>Pterodroma alba</i>	♂	Motu Upua, Christmas Island, Pacific Ocean
40673	<i>Pterodroma alba</i>	♂	Motu Upua, Christmas Island, Pacific Ocean
40674	<i>Nesofregatta albigularis</i>	♀	Motu Upua, Christmas Island, Pacific Ocean
40675	<i>Heteroscelus incanum</i>	♀	Cook Island, Christmas Island, Line Islands, Pacific Ocean ✓
40676	<i>Anous minutus</i>	♂	Cook Island, Christmas Island, Line Islands, Pacific Ocean ✓
40677	<i>Anous minutus</i>	♂	" " " " " ✓
40678	<i>Anous minutus</i>	♀	" " " " " ✓
40679	<i>Anous minutus</i>	♂	" " " " " ✓
40680	<i>Anous minutus</i>	-	" " " " " ✓
40681	<i>Procelsterna cerulea</i>	♀	" " " " " ✓
40682	<i>Procelsterna cerulea</i>	♂	" " " " " ✓
40683	<i>Procelsterna cerulea</i>	♀	" " " " " ✓
40684	<i>Procelsterna cerulea</i>	♀	" " " " " ✓
40685	<i>Procelsterna cerulea</i>	♀	" " " " " ✓
40686	<i>Gygis alba</i>	♀	" " " " " ✓
40687	<i>Gygis alba</i>	♂	" " " " " ✓
40688	<i>Gygis alba</i>	♀	" " " " " ✓
40689	<i>Gygis alba</i>	♂	" " " " " ✓
40690	<i>Gygis alba</i>	♀	" " " " " ✓
40691	<i>Crocethia alba</i>	♀	" " " " " ✓
40692	<i>Crocethia alba</i>	♂	" " " " " ✓

Date	Gonads	Weight	Type	Remarks	Collector Number
Nov. 21, 1964	-	68.4 gms.	Alco		RWM 168
Nov. 21, 1964	-	73.8 gms	Alco		RWM 169
"	-	317.4 gms	Alco		RWM 170
"	-	290.0	Alco		RWM 171
"	-	243.8	Alco		RWM 172
"	-	269.0	Alco		RWM 173
Nov. 21, 1964	Testes: R 4x2 L 4x3	230.7 gms.	SKEL	Stomach saved	AHA 79
Nov. 21, 1964	Testes: R 4x2 L 4x3	235.8 gms.	SKEL	Stomach saved	AHA 78
Nov. 21, 1964	Testes: R 5x2 L 4x2	244.0 gms	SKEL	Stomach saved	CDH 37
Nov. 21, 1964	Testes: R 5x2 L 5x3	266.0 gms.	SKEL	Stomach saved	AHA 77
Nov. 21, 1964	largest ovum 3mm	60.4 gms	SKEL	Stomach saved	AHA 80
Nov. 23, 1964	Ovary 7mm Testes: R 2x1 L 3x1	139.7 gms.	Skin	Stomach saved	CDH 40
Nov. 22, 1964	Testes: R 1.5x1 L 2.5x1	90.5 gms.	Skin	Stomach saved	RWM 177
"	1. ovum 1mm.	95 gms.	Skin	Stomach saved	AHA 83
"	Testes: R 7x12.5 L 9.5x14.5	103.8 gms.	Skin	Stomach saved	AHA 82
"	none visible	56.1 gms.	Skin	Stomach saved, bird sick + emaciated	RWM 175
"	1. ovum 15mm.	55.6 gms.	Skin	Stomach saved	RWM 176
"	Testes: 1.5x0.5mm	55.5 gms.	Skin	Stomach saved	CDH 38
"	1. ovum 2mm	51 gms	Skin	Stomach saved	AHA 85
"	1. ovum 2mm	48.4 gms.	Skin	Stomach saved	AHA 86
"	Ovary 8mm. 1. ovum 2mm.	45.5 gms.	Skin	Stomach saved	FCS 3177
"	Ovary 5mm	86.5 gms	Skin	Stomach saved	CDH 39
"	Testes: R 4x3 L 5x3	94.5 gms.	Skin	Stomach saved	FCS 3172
"	Ovary 5mm.	93.6 gms.	Skin	Stomach saved	RWM 178
"	Testes: less than 1mm	98.8 gms.	Skin	Stomach saved	FCS 3174
"	1. ovum 1.5mm	108.3 gms.	Skin	Stomach saved	AHA 84
Nov. 23, 1964	Ovary 4mm.	69.2 gms.	Skin	Stomach saved	FCS 3173
"	Testes 2mm	59.3 gms.	Skin	Stomach saved	FCS 3175
					FCS 3176

ATF # 8

Field No.	Species	Sex	Location	
5401	<i>Puffinus pacificus</i>	♂	19° 40' N	159° 23' W
02	" "	♀	" "	" "
03	" "	♂	" "	" "
04	" "	♀	" "	" "
05	" "	♀	" "	" "
06	<i>Puffinus pacificus</i>	-	19° 40' N	159° 23' W
07	" "	-	" "	" "
08	" "	-	" "	" "
09	" "	-	" "	" "
10	" "	-	" "	" "
11	" "	-	" "	" "
12	" "	-	" "	" "
13	" "	-	" "	" "
14	" "	-	" "	" "
15	" "	-	" "	" "
16	" "	-	" "	" "
17	<i>Sterna fuscata</i>	♂	" "	" "
18	" "	♂	" "	" "
19	" "	♂	" "	" "
20	<i>Pterodroma cooki</i>	♂	13° 30.1' N	165° 06' W
21	<i>Phaethon lepturus</i>	♀	10° 36' N	167° 37' W
22	<i>Sula dactylatra</i>	♀ _{im}	10° 09' N	167° 54' W
23	<i>Puffinus griseus</i>	?	2° 35' N	174° 34' W
24	" "	♀	2° 32' W	174° 42' W
25	" "	♀	" "	" "
26	" "	♂	" "	" "
27	" "	♀	" "	" "
28	" "	♂	" "	" "
29	" "	♂	" "	" "

Date	Gonads	Weight	Type of Specimen	Stomach saved	Remarks	Collector and No.
May 11, 1965	R 18x22mm L 15x11mm ovary 10x7	348gms.	SKin	yes		LNH ✓ 626
"	1. Ova 1.5mm	366gms	"	"		LNH ✓ 625
"	R 17x12mm L 13x11mm ovary 18x10mm	355gms.	"	"	" marked as 5404	LNH ✓ 624
"	1. ovum 5mm ovary 13x10mm	348gms.	"	"		LNH ✓ 627
"	1. ovum 3mm	350gms.	"	"		LNH ✓ 628
May 11, 1965	-	384gms.	Alcoholic	-		LNH 620
"	-	386gms	"	-		629 LNH
"	-	349gms	"	-		622 LNH
"	-	376gms.	"	-		618 LNH
"	-	-	"	-		616 LNH
"	-	-	"	-		621 LNH
"	-	356gms.	"	-		615 LNH
"	-	-	"	-		612 LNH
"	-	342gms.	"	-		614 LNH
"	-	337gms	"	-		613 LNH
"	-	348gms.	"	-		619 LNH
"	R 3x2mm L 5x3mm	177gms	SKin	yes		LNH 611
"	R 5x3mm L 3x2mm	221gms.	"	"		LNH ✓ 623
"	R 5x4mm L 8x5mm	189gms.	"	"		LNH ✓ 617
May 13, 1965	R 3x2mm L 4x2mm ovary 14x14mm	129gms.	"	"		LNH ✓ 630
May 14, 1965	1. ovum 4mm ovary 8x20mm granular	290gms.	"	"		LNH ✓ 631
"		1698gms.	"	"	Band No. 757-67400	LNH ✓ 632
May 17, 1965	ovary	581gms	"	"		LNH 633
"	18x8mm ovary	642gms.	"	"	marked as 5425	LNH ✓ 634
"	17x8mm testes	673gms.	"	"		LNH ✓ 638
"	12x1mm ovary granular	549gms.	"	"		LNH ✓ 635
"	14x8 testes	618gms	"	"		LNH 636
"	6x1 1/2 mm testes	675gms.	"	"		LNH ✓ 637
"	7x1mm	700gms.	"	"		LNH ✓ 640

Field No.	Species	Sex	Locality
5430	<i>Puffinus griseus</i>	♀	2° 20' N 174° 53' W
31	<i>Sterna fuscata</i>	♂	Howland Island, Pacific Ocean
32		♂	
33		♀	
34		♂	
35		♀	
36		♂	
37		♂	
38		♂	
39		♂	
40		♀	
41		♂	
42		♂	
43		♀	
44		♀	
45		♂	
46		♀	
47	<i>Fregata ariel</i>	♂	
48	<i>Fregata minor</i>	♂	
49	<i>Phaethon rubricauda</i>	♀	
50	<i>Pterodroma alba</i>	♀	
51	<i>Arenaria interpres</i>	♀	
52	<i>Arenaria interpres</i>	♀	
53	<i>Pluvialis dominica</i>	♂	
54	<i>Fregata ariel</i>	—	
55	<i>Sterna fuscata</i>	—	
56		—	
57		—	
58		—	

Date	Gonads	Weight	Type of Specimen	Specimen Saved	Collector & No.
May 17, 1965	ovary 13x6 mm. Testes	556 gms.	SKIN	yes	LNH ✓ 639
May 19, 1965	4x2 mm. Testes	157 gms.	SKEL.	"	LNH 668
	5x3 mm. ovary 14x9 mm	168 gms.			LNH 647
	1. ovum 1.5 mm. Testes	141 gms.			LNH 670
	8x4 mm. ovary 10x8 mm	173 gms.			LNH 645
	granular Testes	144 gms.			LNH 646
	4x3 mm. Testes	183 gms.			LNH 673
	8x3 mm. Testes	151 gms.			LNH 701
	4x3 mm. Testes	167 gms.			LNH 642
May 19, 1965	6x4 mm. ovary	162 gms.			LNH 644
	14x8 mm. Testes	160 gms.			LNH 667
	4x3 mm. Testes	149 gms.			LNH 641
	6x3 mm. ovary				LNH 671
	16x9 mm. granular ovary	152 gms.			LNH 675
	14x11 mm. 1 ovum 1 mm. Testes	160 gms.			LNH 674
	4x2 mm. ovary granular.	177 gms.			LNH 677
	18x6 mm. Testes 22 mm.	146 gms.			LNH 643
"	Testes 22 mm.	688 gms.	SKIN	yes	FCS 3191
"	Testes 13 mm. ovary 1.0 ovum 5 mm.	993 gms.	"	"	FCS 3192
"	8x15 mm. ovary 1.0 ovum 2 mm.	605.5 gms.	"	"	ASS 1
"	15x9 mm.	249 gms.	"	"	LNH ✓ 676
"	ovary 6 mm.	104 gms.	"	"	FCS 3201
"	ovary 7 mm. testis 1x1 mm.	111 gms.	"	"	FCS 3200
"	—	120 gms.	"	"	ASS 2
"	—	624 gms.	Alcoholic	NO	LNH ✓ 677
"	—	139.5 gms.	"	"	LNH ✓ 678
"	—	156.2 gms.	"	"	LNH 679
"	—	154.3 gms.	"	"	LNH 686
"	—	160.7 gms.	"	"	LNH 684

~~LNH 678 with 2/1/74~~

Field no	Species	Sex	Locality
5459	Sterna fuscata	—	Howland Island, Pacific Ocean
60		—	
61		—	
62		—	
63		—	
64		—	
65		—	
66		—	
67		—	
68		—	
69	Phaethon rubricauda	♂	
70	Sula sula	♂	
71	Sterna lunata	♂	
72	Phaethon rubricauda	♀	
73	"	♀	
74	"	♂	
75	Sterna fuscata (albino)	♀ im.	
76	Fregata minor	♂	
77	"	♂	
78	Fregata minor	♂	
79	Phaethon rubricauda	♀	
80	Phaethon rubricauda	♂	
81	"	♂ nestling	
82	Sterna lunata	♀	
83	"	♀	
84	"	♀	
85	Sterna lunata	♀	
86	Sterna fuscata	♂	
87	Puffinus pacificus	♂	

Date	Gonads	Weight	Type of Specimen	Stomach Filled	Remarks	Collector #70.
May 19, 1965	—	143.8gms.	Alcoholic	No		LNH 683 ✓
	—	160.1gms.				LNH 690 ✓
	—	148.8gms.				LNH 682 ✓
	—	139.0gms.				LNH 687 ✓
	—	145.5gms.				LNH 688 ✓
	—	134.1gms.				LNH 680 ✓
	—	153.2gms.				LNH 691 ✓
	—	139.2gms.				LNH 681 ✓
	—	147.1gms.				LNH 689 ✓
	—	147.1gms.				LNH 685 ✓
May 20, 1965	Testes 10x8	677gms.	SKIN	yes		LNH 694 ✓
"	Testes 10x8mm.	751gms.	"	"		LNH 693 ✓
May 20, 1965	Testes 5x4mm.	106gms.	"	"		FCS LNH 3193 692
"	largest ovum 6mm.	653.5gms.	"	"		FCS 3193
"	ovary 15mm.		"	"		DLS 851 ✓
"	l. ova 5mm.	654.5gms.	"	"		RRF 22 ✓
"	l. 11x7mm		"	"		LNH 695 ✓
"	R 13x6mm.	793.5gms.	"	NO		LNH 696 ✓
"	ovary ova minula	156gms.	"	yes		LNH 697 ✓
May 21, 1965	Testes 11x11	787gms.	"	"		LNH 698 ✓
May 21, 1965	Testes 10x8	807gms.	"	"		RRF 22 ✓
"	11x11mm.	787gms.	"	"		LNH 700 ✓
"	Testes 11x11	789gms.	"	"		LNH 699 ✓
"	ovary 10x8mm.	807gms.	"	"		FCS 3195
"	ovum 4mm.	670gms.	"	"		FCS 3197
May 21, 1965	Testes 10x5mm.	675.6gms.	"	"		FCS 3194
"	Testes 4x 1/2	404.5gms.	"	"		FCS 3196
"	largest ova. 2.5mm.	137gms.	"	"		FCS 3198
"	largest ova 1mm.	114gms.	"	"		FCS 3199
"	largest ovum 3mm.	136gms.	"	"		FCS 3198
"	largest ova 3mm.	145gms.	"	"		FCS 3199
"	Testes 3mm	153gms.	"	"		FCS 3199
"	Testes 10mm.	372gms.	"	"		FCS 3199

Field No	Species	Sex	Location	Date
5488	<i>Puffinus griseus</i>	♂	Hull Island, Pacific Ocean	May 23
89	<i>Gygis albis</i>	♂	Hull Island, Pacific Ocean	May 23
90	"	♂		
91	<i>Anous stolidus</i>	♀		
92	"	♀		
93	"	♀		
94	<i>Anous stolidus</i>	♀		
95	<i>Sterna lunata</i>	♂		
96	"	♀		
97	"	♀		
98	<i>Sterna lunata</i>	♀		
99	"	♀		
5500	<i>Sterna fuscata</i>	-		
01	<i>Sterna fuscata</i>	-		
02	"	-		
03	"	-		
04	"	-		
05	<i>Anous stolidus</i>	♂		May 23
06	<i>Gygis alba</i>	♀		
07	"	♂		
08	<i>Gygis alba</i>	♂		May 23
09	<i>Pluvialis dominica</i>	♂		May 23
10	<i>Pluvialis dominica</i>	♂		May 23
11	<i>Arenaria interpres</i>	♂		
12	<i>Anous minutus</i>	♂		
13	<i>Anous minutus</i>	♀		
14	"	♂		
15	"	♀		
16	"	♂		

Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector's No.
May 23, 1965	Testes 9x5 mm.	350 gms.	SKIN	yes		LNH 702
May 24, 1965	Testes 5x3 mm.	103 gms.	SKIN	yes		LNH 708
"	Testes 6x4 mm.	115 gms.	"	"		LNH 707
"	corpora tubera present	186 gms.	"	"		LNH 706
"	ovary 15x13 mm.	210 gms.	"	"		LNH 703
"	1. ovum 4 mm.	186 gms.	"	"		LNH 704
"	ovary 13x10 mm.	209 gms.	"	"		LNH 705
"	ovary 10x9 mm.	134.1 gms.	"	"		LNH 713
"	ovary 14x8 mm.	115 gms.	"	"		LNH 711
"	1. ovum 5 mm.	129 gms.	"	"		LNH 712
"	ovary 8x6 mm.	112 gms.	"	"		LNH 710
"	1. ovum 1.5 mm.	121 gms.	"	"		LNH 709
"	1. ovum 5 mm.	162	Alcoholic	No		LNH 714
"	-	173	"	No		LNH 716
"	-	156.5 gms.	"	"		LNH 717
"	-	160.5 gms.	"	"		LNH 718
"	-	164 gms.	"	"		LNH 715
May 25, 1965	Testes 2 mm.	162 gms.	SKIN	yes		FCS 3202
"	ovary 12x5 mm.	82.5 gms.	"	No		LNH 719
"	1. ovum 1.5 mm.	82.0 gms.	"	yes		RF 23
"	L 4x3		"	"		RF 24
"	R 2x2		"	"		FCS 3207
"	L 4x2		"	"		FCS 3208
May 25, 1965	Testes 3 mm.	116 gms.	SKIN	yes		FCS 4
May 25, 1965	Testes 3 mm.	132 gms.	SKIN	yes.		FCS 3206
"	R 3x1 mm.	103 gms.	"	"		FCS 3203
"	-	86.1 gms.	"	"		RSS 3
"	Testes 2 mm.	92.6 gms.	"	"		FCS 3205
"	Ovary 4 mm.	91.6 gms.	"	"		FCS 3204
"	Testes 2x1	94.7 gms.	"	"		
"	Ovary 5 mm.	103 gms.	"	"		
"	Testes 5 mm.		"	"		

Field No.	Species	Sex	Location
5517	Fregata ariel	♂	Hull Island, Pacific Ocean
18	Nesofregatta albigularis	♂	Phoenix Island, Pacific Ocean
19	Sterna fuscata	♀	"
20	Sterna fuscata	♂	"
21	"	♂	"
22	Sula sula	Nestling	Phoenix Island
23	Fregata minor	♂	"
24	Sula sula	♀	"
25	Fregata minor	♀ im.	"
26	Gygis alba	♀	"
27	Sterna lunata	♂	"
28	Pterodroma alba	♂	"
29	"	♀	"
30	Sterna fuscata	-	"
31	Sterna fuscata	-	Phoenix
32	"	-	"
33	Gygis alba	♂	"
34	Puffinus nativitatis	♂	"
35	Puffinus pacificus	♂	"
36	Procelsterna caerulea	♂	"
37	Phaethon rubricauda	♀	"
38	Anous stolidus	♀	"
39	Puffinus lherminieri	♂	"
40	LOST	-	-
41	Procelsterna caerulea	♂	"
42	"	♂	"
43	"	♂	"
44	"	♀	"
45	Sterna lunata	-	"

Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
May 25, 1965	Testes 6x3 mm	763 gms.	SKIN	yes		LNH 720
May 26, 1965	Testes 7x5 mm, ovary 10x5	68 gms.	SKIN	yes		LNH 747
"	1. ovum 2 mm, Testes 8x5 mm	144.5 gms.	"	"		RF 32
"	Testes 2x2 mm	165 gms.	"	"		DSS 261
"	—	143.0 gms.	"	"		RF 31
May 27, 1965	—	114	Alcoholic	No		LNH 721
"	Testes 12x8 mm	817 gms.	SKIN	yes		RF 25
"	ovary 19x9, 1. ovum 2 mm, parent of 5522	879 gms.	"	"		LNH 722
"	ovary 15x5 mm, ova minute	963 gms.	"	"		LNH 723
"	1. ovum 3 mm	97.4 gms.	"	"		FCS 3209
"	R 10x5, L 5x5	100 gms.	"	"		RSS 5
"	Testes 10x6 mm	288 gms.	"	"		LNH 757
"	ovary 11x8 mm, 1. ovum 4 mm	257 gms.	"	"		RF 34
"	—	150 gms.	Alcoholic	No		LNH 724
May 27	—	141 gms.	Alcoholic	No		LNH 725
"	—	163 gms.	"	"		LNH 726
May 28, 1965	L. 6x3 mm, R. 3x2 mm	106 gms.	SKIN	yes		RF 35
"	Testes 8x4 mm	338 gms.	SKIN	yes		LNH 761
May 28, 1965	Testes 3x2 mm	286 gms.	SKIN	yes		LNH 760
May 28, 1965	L 10x7 mm, R 8x5 mm, ovary 20x12	57 gms.	SKIN	yes		RSS #13
"	1. ovum 6 mm, ovary 10x5 mm	722 gms.	"	"		LNH 756
"	1. ovum 3 mm, Testes 4x3 mm	152 gms.	"	"		LNH 755
"	—	173 gms.	"	"		LNH 759
"	—	—	—	—		—
"	Testes 8x4 mm	64 gms.	"	"		LNH 751
"	Testes 6x4 mm	44.5 gms.	"	"		LNH 752
"	Testes 3x2 mm	48.2 gms.	"	"		LNH 753
"	ovary 6x3 mm	43.5 gms.	"	"		LNH 754
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	<i>Sterna lunata</i>	-	Phoenix Island, Pacific Ocean	May 28, 1965	-	184.5 gm.	Alcoholic	No		RF 28 ✓
47	"	-	"	"	-	184 gm.	"	"		RF 29 ✓
48	"	-	"	"	-	137 gm.	"	"		RF 30 ✓
49	"	-	"	"	-	187 gm.	"	"		RF 26 ✓
50	<i>Gygis alba</i>	-	Phoenix Island	May 27, 1965	-	96 gm.	Alcoholic	"		DL5 253 ✓
51	<i>Bulweria bulwerii</i>	♂	"	"	Testes 6x7 mm. ovary 15x13 mm. 1. ovum 5 mm.	107 gm.	SKin	yes		LNH 747 ✓
52	<i>Phaethon rubricauda</i>	♀	Enderbury Island, Pacific Ocean	May 30, 1965	ovary 15x13 mm. 1. ovum 5 mm.	680 gm.	"	"		LNH 731 ✓
53	<i>Phaethon rubricauda</i>	♀	Enderbury Island, Pacific Ocean	May 30, 1965	ovary 15x13 mm.	721 gm.	SKin	yes		LNH 730 ✓
54	<i>Phaethon rubricauda</i>	-	Enderbury Island, Pacific Ocean	May 30, 1965	-	772 gm.	Alcoholic	No		LNH 734 ✓
55	"	-	"	"	-	748 gm.	"	"		LNH 732 ✓
56	"	♀	"	"	ovary 20x12 mm. 1. ovum 5 mm.	667 gm.	SKin	yes		LNH 728 ✓
57	"	♀	"	"	1. ovum 7 mm.	780 gm.	"	"		LNH 729 ✓
58	"	♀	"	"	ovary 16x12 mm. 1. ovum 5 mm.	728 gm.	"	"		LNH 727 ✓
59	<i>Phaethon rubricauda</i>	-	E. "	May 30, 1965	-	647 gm.	Alcoholic	No		LNH 733 ✓
60	<i>Sula leucogaster</i>	♂	"	"	R 20x5 mm. L 15x10 mm. ovary 20x10 mm.	1029 gm.	SKin	yes		LNH 750 ✓
61	<i>Sula leucogaster</i>	♀	"	"	ova minute testes 5 mm.	1442 gm.	SKin	yes		LNH 749 ✓
62	"	♂	"	"	testes 5 mm.	1027 gm.	"	"	FCS 3210	(FCS) 1027 gm ✓
63	<i>Sula leucogaster</i>	♀	"	"	1. ovum 2 mm. ovary 10x10 mm.	1231 gm.	SKin	yes		RSS 16 ✓
64	"	♂	"	"	testes 12x15 mm.	942 gm.	"	"		DL5 262 ✓
65	<i>Sula leucogaster</i>	-	E. "	May 30,	-	1129 gm.	Alcoholic	No		LNH 743 ✓
66	"	-	"	"	-	1057 gm.	"	"		LNH 736 ✓
67	"	-	"	"	-	1070 gm.	"	"		LNH 735 ✓
X 68	<i>Sterna fuscata</i>	-	Enderbury Island, Pacific Ocean	May 30, 1965	-	175 gm.	Alcoholic	"		LNH 738 ✓
69	"	-	"	"	-	165 gm.	"	"		LNH 737 ✓
70	"	-	"	"	-	166 gm.	"	"		LNH 739 ✓
71	"	-	"	"	-	167 gm.	"	"		LNH 746 ✓
72	<i>Sterna fuscata</i>	-	E. "	May 30, 1965	-	169 gm.	Alcoholic	"		LNH 741 ✓
73	<i>Sterna fuscata</i>	-	E. "	May 30, 1965	-	149 gm.	"	"		LNH 742 ✓
74	<i>Phaethon rubricauda</i>	-	"	May 31, 1965	-	793 gm.	"	"		RSS 7 ✓

Field no.	Species	Sex	Location
5575	<i>Phaethon rubricauda</i>	-	Enderbury Island, Pacific Ocean
76	"	♂	"
77	"	♂	"
78	"	♀	"
79	"	♂	"
80	"	♂	"
81	<i>Fregata minor</i>	♂	"
82	<i>Fregata minor</i>	♂	"
83	<i>Fregata minor</i>	♀	"
84	<i>Anous minutus</i>	♂	"
85	<i>Anous minutus</i>	?	"
86	<i>Anous minutus</i>	♀	"
87	<i>Anous stolidus</i>	♂	"
88	<i>Sterna lunata</i>	♂	"
89	"	♀	"
90	"	♀	"
91	<i>Sterna fuscata</i>	♂	"
92	<i>Anous stolidus</i>	♂	Spam Island, Canton Atoll
93	<i>Sterna lunata</i>	♀	Spam Island, Canton Atoll
94	"	♀	"
95	<i>Anous stolidus</i>	♀	"
96	<i>Anous stolidus</i>	♀	"
97	<i>Sterna lunata</i>	♀	"
98	<i>Puffinus lherminieri</i>	♀	Spam Island, Canton Atoll, Pacific Ocean
99	<i>Sterna fuscata</i>	♂	" " " "
5606	<i>Phaethon lepturus</i>	♀	at sea 13° 10' S 170° 10' W
01	<i>Myzomela cardinalis</i>	♂	Tutuila, American Samoa
02	<i>Foulehaio carunculata</i>	?	"
03	<i>Ptilinopus porphyraceus</i>	♂	"

Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
May 31, 1965	—	662 gms.	A (colotic)	No		RSS 6
"	Testes 10x12mm.	715.5 gms.	SKel.	yes		DLS 266
"	Testes 12x15 gms. Ovary 20x10mm.	620.5 gms.	"	"		DLS 265
"	1. ovum 5mm. Testes 5x10mm.	642 gms.	"	"		LNH 758
"	Testes 6x12mm.	727.5 gms.	"	"		RSS 18
"	Testes 12x10mm.	870 gms.	"	"		RSS 19
"	L 19x15mm. R 18x13mm. ovary 10x2mm. 1. ovum 5mm.	798 gms.	SKin	yes		DLS 264
"	Testes 3x5mm.	804 gms.	SKin	yes		RF 33
"	—	6267.5 gms.	SKel.	yes.		FCS 3213
"	—	88 gms.	SKin	yes		DLS 263
"	—	102 gms.	SKel.	No		FCS 3212
"	ovary 10mm. granular.	103.5 gms.	SKin	yes		FCS 3214
"	Testes 10x4mm. L 10x7mm. R 7x4mm.	166 gms.	SKin	yes		RSS 15
"	1. ovum 5mm.	142 gms.	SKin.	yes.		RSS 11
"	ovary 10x5mm.	123 gms.	"	"		FCS 3211
"	Testes 6x6mm.	123 gms.	"	"		RSS 17.
June 1, 1965	Testes 10x6mm. 1. ovum 2mm.	171 gms.	SKin	yes		LNH 746
June 1, 1965	ovary 10x5mm. ovary 12x7mm. 1. ovum 2mm.	184 gms.	"	"		RSS 12
"	ovary 13x10mm. 1. ovum 11mm.	131 gms.	SKin	"		RSS 14
"	ovary 17x8mm. 1. ovum 4mm.	126.9 gms.	"	"		RSS 8
"	1. ovum 3mm. ovary 13x7mm.	182 gms.	"	"		RSS 10
"	ovary 7x2 granular R 9x7 L 3x2	173 gms.	"	"		LNH 748
June 1, 1965	ovary 1. ovum 4mm. 10x10mm.	116 gms.	"	"		LNH 745
"	Testes 7x5mm. (both)	182 gms.	SKin	yes.	catalog states: "ova minute"	RSS 9
June 5, 1965	—	179 gms.	"	"		LNH 744
June 6, 1965	—	249 gms.	"	"		LNH 744
June 7, 1965	—	35.2 gms.	"	"		RF 36
"	Testes 13x6mm.	108.6 gms.	"	"		LNH 762
						LNH 766
						LNH 767

Field no.	Species	Sex	Location
5604	<i>Ptilinopus perousii</i>	♂	Tutuila, American Samoa
05	<i>Eudynamis taitensis</i>	♂	"
06	<i>Aplonis atrifuscus</i>	♂	"
07	"	♂	"
08	<i>Halcyon chloris</i>	♂	"
09	<i>Gygis alba</i>	♀	"
10	"	♂	"
11	<i>Phaethon lepturus</i>	♀	"
12	"	♀	"
13	<i>Aplonis atrifuscus</i>	♂	166° 18' W 17° 31' S
14	<i>Pterodroma cooki</i>	♂	Tongareva Atoll, Pacific Ocean
15	<i>Sula sula</i>	♂ im.	"
16	<i>Sula sula</i>	♀ im.	"
17	<i>Fregata ariel</i>	♂	"
18	<i>Sterna fuscata</i>	♂	"
19	"	♀	"
20	"	♀	"
21	<i>Fregata minor</i> <i>Fregata ariel</i>	♂	"
22	<i>Gygis alba</i>	♀♀	"
23	<i>Gygis alba</i>	♀	"
24	<i>Anous stolidus</i>	♂	"
25	<i>Anous stolidus</i>	♂	"
26	<i>Anous minutus</i>	♂	"
27	"	♀	"
28	<i>Gygis alba</i>	♀	"
29	<i>Anous minutus</i>	♂	"
30	<i>Anous stolidus</i>	♂	"
31	<i>Anous stolidus</i>	♂	"
32	"	♂	"

Date

June

June

June

June

June

June

Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
June 7, 1965	Testes 13x8mm.	88.3gms.	SKIN	No.		LNA 764
June 8, 1965	L. 17x12mm. R. 1x1mm.	90.1gms.	"	"		LNA 763
"	L. 11x5mm. R. 7x5mm.	144gms.	"	"		RF 39
"	Testes 1x3mm.	135.5gms.	"	"		RSS 72
"	Testes 4x3mm.	53.8gms.	"	"		LNA 765
"	Ovary 1 ovum 10x9mm.	111gms.	"	yes		RSS 20
"	L. 6x4mm. R. 4x2mm.	107gms.	"	"		RF 37
"	Ovary 7x5mm.	295gms.	"	"		DLS 269
"	Ovary 10x9mm. L. ovum 5mm.	272gms.	"	"		RF 38
June 9, 1965	Testes 11mm.	151gms.	"	No		FCS 3215
June 11, 1965	Testes 3x1mm.	154gms.	"	yes		RSS #21
June 13, 1965	Testes 8x16mm.	—	"	"		DLS 276
"	Ovary 4x9mm.	—	"	"		DLS 275
"	Testes 15x20mm.	—	"	"		DLS 276
"	Testes 4x8mm.	—	"	"		DLS 272
"	Ovary 7x12	—	"	"		DLS 273
"	Ovary 13x8mm. L. ovum 2x2mm.	196gms.	"	"		RF 45
"	Testes 10x7mm.	—	"	"		DLS 274
"	Corpora lutea Ovary 15x5mm. L. ovum 2mm.	108gms.	"	"		RF 40
"	Corpora lutea present	108gms.	"	"		RSS 25
"	Testes 6x4mm. 6x2mm.	176gms.	"	"		RF 42
"	Testes 8mm.	176gms.	"	"		DLS RSS 31
"	Testes minuta	81gms.	"	"		RSS 30
"	largest ovum 15mm. Ovary 8mm.	113gms.	"	"		RSS 32
"	L. ovum 1.5mm.	97.8gms.	"	"		RSS 34
"	Testes 2x2mm.	93gms.	"	"		RF 44
"	Testes L. 9x4mm. R. 8x5mm.	183gms.	"	"		RF 43
"	Testes 8mm.	183gms.	"	"		RSS 26
"	Testes 13mm.	164.5gms.	"	"		RSS 27

Field No	Species	Sex	Location
5633	Anous stolidus	♂ im.	Tongareva Atoll, Pacific Ocean
34	Gygis alba	♀	"
35	Anous stolidus	♂	"
36	Gygis alba	♂	"
37	Numenius tahitiensis	♀	"
38	Sterna fuscata	♂	"
39	Sula sula	♀ im.	"
40	Anous stolidus	♀	"
41	Anous stolidus	♀ im.	"
42	Fregata minor	♂	Vostock Island, Pacific Ocean
43	Sula sula	♀	"
44	Gygis alba	♀	"
45	Anous minutus	♂	"
46	Blue-faced Booby	♀	"
47	Anous minutus	♂	"
48	Anous stolidus	♀	"
49	Fregata ariel	♂	"
50	Fregata ariel	♂	"
51	Numenius tahitiensis	♂	"
52	Sula sula	♂	"
53	Sula sula	♀	"
54	Fregata minor	♀	"
55	Fregata minor	♂	"
56	Sterna fuscata	♀	"
57	"	♂	"
58	"	♂	"
59	Sula dactylatra	♀	"
60	"	♀	"
61	Sula leucogaster	♂	"

Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	Collector # No.
June 13, 1965	Testes L. 4x1mm R. 3x1mm. ovary 10mm.	152gms.	SKin	yes		RF 41
"	l. ovum 3mm.	109gms.	"	"		LNH 768
"	Testes 2x4mm.	176gms.	"	"		PLS 271
"	Testes 2x4mm. ovary 13mm.	109gms.	"	"		PLS 272
"	l. ovum 2.5mm.	538gms.	"	"		RSS 28
"	Testes 15mm.	220gms.	"	"		RSS 33
"	ovary granular 10x6mm.	808gms.	"	"		RF RSS 29
"	ovary 10x6mm		"	"		RSS 23
"	ova minute ovary	111gms.	"	"		RSS 24
June 15, 1965	Testes 24x13mm.	990gms.	"	"		LNH 769
"	ovary 18x10mm.	766gms.	"	"		LNH 770
"	ovary ova 13x5mm. 1mm.	110gms.	"	"		PLS 295
"	Testes 9x6mm	98gms.	"	"		LNH 771
"	ovary 20x8mm.		"	"		RF 46
"	l. ovum 13x5mm.	1660gms.	"	"		LNH 778
"	Testes 6x3mm.	102gms.	"	"		LNH 776
"	ovary 12x8mm.	172gms.	"	"		RF 47
"	R 11x4mm L 9x4mm.	614gms.	"	"		RSS 35
"	Testes 25mm.	800gms.	"	"		LNH 772
"	Testes 7x1mm.	360gms.	"	"		LNH 773
"	Testes 16x6mm.	803gms.	"	"		RF 48
"	Ovary 16x8mm.	873gms.	"	"		RSS 36
"	largest ovum 30mm.	1358gms.	"	"		FCS 3216
"	Testes 13mm.	757gms.	"	"		RF 54
"	ovary 12x7mm.		"	"		LNH 777
"	l. ovum 4x4mm.	203gms.	"	"		RF 55
"	L. 8x3mm. R. 5x2.5mm.	159gms.	"	"		LNH 774
"	L 5x3mm. R 4x3mm.	183gms.	"	"		RSS 37
"	ovary 35x10mm.		"	"		LNH 774
"	l. ovum 5mm.	1373gms.	"	"		RSS 37
"	ovary 10x6mm		"	"		RSS 38
"	l. ovum 2.5mm.	2020gms.	"	"		
"	Testes 14x5mm.	1065gms.	"	"		

Field No.	Species	Sex	Locality
5662	Anous minutus	♂	Vostok Island, Pacific Ocean
63	"	♂	"
64	Gygis alba	♂	"
65	"	♀	"
66	"	♂	"
67	Gygis alba	♀	"
68	Pluvialis dominica	♂	"
^{all} _{st} 69	"	♂	"
70	Anous stolidus	♂	Caroline Atoll, Pacific Ocean
71	Egretta sacra Anous stolidus	♂	"
72	"	♂	"
73	"	♀	"
74	Sterna fuscata	♀	"
75	"	♀	"
76	Sterna fuscata	♂	"
77	"	♀	"
78	"	♀	"
79	Heteroscelus incanum	♂	"
80	Heteroscelus incanum	♂	"
81	"	♂	"
82	Pluvialis dominica	♂	"
83	Procelsterna caerulea	♀	"
84	Egretta sacra	♂	"
85	Fregata minor	♀	"
86	"	♀	"
87	Sula sula	♀	"
88	Sula sula	♂	"
89	"	♀	"
90	Sula sula	♂	"

Date	Gonads	Weight	Type of Specimen	Stomach Preserved	Remarks	
June 15, 1965	Testes 10x5mm.	100gms.	SKin	yes		DLS 291
"	Testes 10x8mm.	106gms.	"	"		RF 51
"	Right Testes 5x3mm. Ovary 10x8mm.	118gms.	"	"		RF 50
"	1. ova 4mm. Left 5x3mm.	105gms.	"	"		DLS 292
"	Right 4x2mm. Ovary 7mm.	108gms.	"	"		RF 49
"	Ova granular	105gms.	"	"		DLS 296
June 16, 1965	Testes 5x2mm.	116gms.	"	"	medium fat heavy body molt	LNH 775
"	Testes 2x4mm.	126gms.	"	"	<u>DESTROYED</u>	DLS 290
June 17, 1965	Testes 12x5mm.	150gms.	"	"		R55 39
"	Testes 5x4.3mm.	522gms.	"	"		LNH 783
"	Testes 6x4mm.	540gms.	"	"	dark	RF 60
"	largest ova 10mm.	541gms.	"	"	light	FCS 3225
"	Ovary 11x5mm.	138gms.	"	"		RF 57
"	1. ovum 2x2mm. Ovary 10mm.	167gms.	"	"		FCS 3221
"	1. ovum 1mm. Testes L 3x2mm.	163gms.	"	"		RF 58
"	R 7x5mm. Ovary 10x7mm.	166gms.	"	"		DLS 297
"	1. ova granular 10x7mm.	159gms.	"	"		DLS 298
"	Testes 2mm.	102gms.	"	"		FCS 3222
June 18, 1965	Testes 3x2mm.	101gms.	"	"		RF 59
"	Testes 3x2mm.	121gms.	"	"		DLS 308
"	Testes 3x2mm. Ovary 7x9mm.	113gms.	"	"		DLS 310
"	1. ovum 2mm.	54.1gms.	"	"		LNH 781
June 18, 1965	Testes 5mm. Ovary 18x16mm.	528gms.	SKELTON	"	dark phase	FCS 3217
"	1. ovum 4x4mm. 1. ovum 3mm.	921gms.	SKin	"		RF 52
"	Ovary 10mm. granular	1200gms.	"	"		FCS 3220
"	L 10x4mm. R 9x3mm.	790gms.	"	"		FCS 3219
"	Ovary 20x10mm.	786gms.	"	"		RF 53
"	Testes 14mm.	837gms.	"	"		DLS 294
"		692gms.	"	"		FCS 3218

Field no.	Species	Sex	Location
5691	Sula sula	♂	Caroline Atoll, Pacific Ocean
92	Gygis alba	♀	Starbuck Island, Pacific Ocean
93	Sterna fuscata	♂	Starbuck Island, Pacific Ocean
94	"	♀	"
95	"	♀	"
96	"	♀	"
97	"	♀	"
98	"	♀	"
99	"	♂	"
5700	Sterna fuscata	♂	"
01	"	♀	"
02	"	♂	"
03	"	♀	"
04	"	♀	"
05	Sula dactylatra	♀	"
06	Fregata minor	♀	"
07	Fregata ariel	♂	"
08	Sula sula	♀	Malden Island, Pacific Ocean
09	"	♀	"
10	"	♀	"
11	"	♀	"
12	Fregata minor	♀	"
13	"	♂	"
14	Fregata ariel	♀	"
15	Fregata ariel	♂	"
16	Sula leucogaster	♀	"
17	Sula leucogaster	♂	"
18	Anous stolidus	♂	"
19	Anous minutus	♀	"

Date	Gonads	Weights	Type of Specimen	Stomach Preserved	Remarks	Collector & No.
June 18, 1965	Testes 14x7mm.	635gms.	skin	yes		DLS 293
"	"	"	"	"		FCS 3223
June 20, 1965	1. ova 1.5mm.	100gms.	"	"		LNH 784
June 20, 1965	Testes 5x3mm.	162gms.	"	"		RSS 41
"	ovary 7mm.	162gms.	"	"		RF 63
"	1. ovum 1mm.	"	"	"		RF 62
"	ovary 15x8mm.	149gms.	"	"		DLS 313
"	1. ovum 2mm.	"	"	"		RF 61
"	ovary 10x7mm.	152gms.	"	"		DLS 312
"	1. ovum 1x1mm.	"	"	"		DLS 299
"	ovary 10x5mm.	162gms.	"	"		DLS 314
"	Ovary 10x4mm.	139gms.	"	"		LNH 785
"	1. ovum 2x2mm.	"	"	"		FCS 3227
"	Testes 3x2mm.	140gms.	"	"		FCS 3226
"	Testes 4x3mm.	159gms.	"	"		DLS 308
"	ovary 15x7mm.	167gms.	"	"		DLS 307
"	Testes 7x4mm.	159gms.	"	"		RF 56
"	largest ova 2mm.	155gms.	"	"		RF 65
"	ovary 5mm. granular	134gms.	"	"		RF 66
June 21, 1965	ovary 27x10mm.	2085gms.	"	"		RF 67
"	ovary 12x5mm.	1186gms.	"	"		RF 64
"	L. 26x18mm. R. 24x16mm.	703gms.	"	"		DLS 306
"	ovary 15x9mm.	"	"	"		DLS 303
June 23, 1965	1. ovum 2mm.	899gms.	"	"		DLS 301
"	ovary 15x5mm.	829gms.	"	"		DLS 305
"	1. ovum 1mm.	"	"	"		DLS 302
"	ovary 14x3mm.	966gms.	"	"		DLS 300
"	granular ovary: 12x4mm.	763gms.	"	"		DLS 304
"	granular ovary: 15x5mm.	"	"	"		LNH 729
June 24, 1965	Ova granular	1273gms.	"	"		
"	Testes 2x4mm.	762gms.	"	"		
"	ovary 12x7mm.	707gms.	"	"		
"	Testes 10x7mm.	581gms.	"	"		
"	ovary 25x5mm.	"	"	"		
"	ova 4mm.	1346gms.	"	"		
"	Testes 20x14mm.	1091gms.	"	"		
June 25, 1965	Testes 5x3mm.	184gms.	"	"		
"	ovary 10x6mm. granular	85gms.	"	"		

Field No.	Species	Sex	Location
5749	Pterodroma externa	♂	9° 00' N 155° 00' W
50	Pterodroma externa	♂	"
51	"	♂	"
52	Pterodroma externa	♂	"
53	Sula dactylatra	♀	"
54	"	♂	"
55	"	♀	"

Date	Gonads	Weights	Type of Specimens Saved	Remarks	Collector's #
July 5, 1965	testes 2x 1/2 mm.	421 gm.	SKIN	yes	RF 77 ✓
"	testes 1x 1/2 mm.	437 gms.	"	"	RF 76 ✓
"	testes 5x 2 mm.	476 gms.	"	"	LNH 789 ✓
"	testes 3x 2 mm.	481 gms.	"	"	LNH 790 ✓
"	testes ovary 5x 2 mm.	1854 gms.	"	"	FCS 3234 ✓
"	testes 20x 2 mm.	1673 gms.	"	"	FCS 3233 ✓
"	testes 7x 1 mm. ovary 20x 3 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
5130	Sula sula	♀	Endrbury Is.
31	Sterna fuscata	♀	"
32	" "	♀	"
33	Anous stolidus	♀	Mukran Is.
34	Sterna fuscata	♂	Atsea 1400 171° 05' W 8° 21' S
35	Anous stolidus	♀	Mukran Is.
36	" "	♂	" "
37	Puffinus pacificus	♀	Atsea 1610 170° 46' W 12° 04' S
38	Phaethon hyturnus	♂	Atsea 1650 170° 40' W 12° 11' S
39	Pluvialis dominica	♀	Hull Is.
40	Gygis alba	♀	Tutuila Samoa.
41	Procelsterna crevula	♀	Tutuila, Samoa
42	" "	♀	" "
43	" "	♂	" "
44	" "	♀	" "
45	" "	♂	" "
46	Demigretta SACVA	?	" "
47	Pteropus	♂	" "
48	Sterna sumatrana	♂	Fakaoto Atoll Tokelan Islands.
49	" "	♀	" "
50	" "	♀	" "
51	Mus	♂	Baker Island, Pacific Ocean
52	Mus	♂	Baker Island, Pacific Ocean
53	Mus	♀	Baker Island, Pacific Ocean
54	Canis familiaris	-	Hull Island, Phoenix Islands, Pacific Ocean
55	Felis domestica	-	" " " " " "
56	Arenaria interpres	♀	Fakaoto Atoll, Tokelan Is.
57	" "	♂	" " " " " "
58	" "	♂	" " " " " "

Date	Gonads	Weight	Type	Remarks	Collector Number
Feb 13, 1965	20x9mm L. ovum 3mm enlarged oviduct	891 gms.	skin		LNH 521
" 16 "	largest ovum 1mm ovary 11mm L. ovum 5mm.	166.4	skin		mct 4049
" "		162.6gms	"		PWW 74
Feb 6, 1965	L. ovum 10x9mm	—	"	heavy fat.	68 PWW
Feb 19, 1965	10x5mm	205	"		LNH 530
Feb 6, "	10x11mm L. ovum 3mm	—	"		LNH 531
" " "	6x4mm	—	"		LNH 532
Feb 20, "	10x5mm ova minute	380 gms.	"	light fat. no brood patch.	75 PWW
Feb 20, "	5x2mm	296gms	"		533 LNH
Feb 9, "	10x5mm granular ovary 8mm L. ovum 2mm	110gms.	"	heavy fat	PWW 73
Feb 24, 65.	5x2mm	48gms	"	medium fat.	92 PWW
Feb 24, 1965	5x2mm	48gms	"	heavy fat	57 LNH
" "	10x6mm L. ovum 2mm	47 gms	"	heavy fat	576 LNH
" "	2x1/2mm	52gms	"	heavy fat	574 LNH
" "	8x4mm granular	45 gms	"	mid. fat	575 LNH
Feb 24	5x4mm	57 gms	"	mid. fat	573 LNH
" "	—	463 gms	"		88 PWW
" "	—	376gms.	skin skull		RDK 507
Feb 26, 65.	testes 4x4mm.	101 gms.	SKIN		549 LNH
" "	largest ovum 2mm ovary 14x6mm.	99gms.	"		550 LNH
" "	largest ovum 1/2mm ovary 9x6mm.	98gms	"		551 LNH
Feb. 4, 1965	—	—	Skull		RDK 552
" "	—	—	Skull		RDK 553
" "	—	—	Skull		RDK 554
Feb. 9, 1965	—	—	Skull		RDK 555
" "	—	—	Skull		RDK 556
Feb 26, 1965	minutz	134.9 gms.	skin	heavy body and head mott. heavy fat	mct 4070
" "	"	124.4 gms	"	" " " " " "	mct 4071
" "	"	135.8gms.	"	" " " " " "	mct 4072

Field No.	Species	Sex	Location	Date	Gonads	Weight	Type	Remarks	Collector number
5158	<i>Arrearia interpres</i>	♀	Fakaofu Atoll, Tokelau Is., Pacific Ocean	Feb. 26, 1965	minute	119.6 gms	skin	heavy body & head molt, heavy fat	MCT 4073
50	"	♀	"	"	minute	99.3	"	"	MCT 4074
60	"	♂	"	"	minute	108.9	"	"	MCT 4075
62	"	♂	"	"	"	108.6	"	"	MCT 4076
63	<i>Pluvialis dominica</i>	♀	"	"	"	137.5	"	light " molt	MCT 4077
64	<i>Egretta sacra</i>	♀	"	"	Largest ovum 6mm if collapsed follicles old brood patch	459.4	"	light fat	MCT 4078
65	<i>Gygis alba</i>		"	"		99	"		
66	"		"	"		112	"		
67	"		"	"		118	"		
68	<i>Heteroscelus incanus</i>	♂	"	Feb 26, 65.	1x1 1/2 mm.	83 gms.	"	little fat	LNH 577
69	"	♂	"	"	Testes 8x1mm.	114	"		LNH 564
70	<i>Pluvialis dominica</i>	♂	"	"	Testes 9x6mm.	118	"		LNH 562
71	<i>Anous minutus</i>	♂	"	"	Testes 4x2 1/2 mm.	122	"		LNH 561
72	<i>Egretta sacra</i>	♀	"	"	granular ovary 14x14	503	"		LNH 569
73	<i>Sterna fuscata</i>	♂	"	"	R. 5x4mm. L. 11x6mm.	194	"		
75	<i>Pluvialis dominica</i>	♀	Nukunono Atoll Tokelau Is. Tokelau Islands	Feb 28, 1965	12x7mm	124.6 gms	"	medium - heavy fat	LNH 559
76	<i>Gygis alba pacifica</i>	♀	Fakaofu Atoll, Tokelau Is. Pacific Ocean	27 Feb 1965	Largest ovum 3mm	369.8 gms.	skin	Milk glands active. Eating fruit & caterpillars	MCT 4080
77	<i>Anous stolidus</i>	♂	"	"	Testes 9x5mm.	192 gms	"		LNH 547
78	<i>Numenius tahitiensis</i>	♀	"	"	granular ovary 20x9mm.	580 gms	"		LNH 568
79	<i>Fregata ariel</i>	♂	"	"	Testis 17x8mm	697.4	"	heavy fat	MCT 4081
80	"	♂	"	"	" 12x9mm	830.0	"	"	MCT 4082
81	"	♂	"	"	" 10x4mm	725.6	"	"	MCT 4083
82	<i>Fregatta ariel</i>		"	"		711.6.	"		
83	"		"	"			"		
84	<i>Anous minutus</i>	♂	"	"	Testis 10x5mm	120.2	"	light fat	MCT 4084
85	<i>Sula leucogaster</i>	♂	"	"	minute	1102	"	moderate fat, Immature	MCT 4085
86	<i>Anous stolidus</i>	♀	Nukunono Atoll Tokelau Is. Tokelau Islands.	28 Feb.	1. ovum 3mm.	173.4	"		MCT 4086
87	"	♀	"	"	1. ovum 4mm.	181.8	"		MCT 4087

Field No.	Species	Sex	Location
5188	<i>Anous stolidus</i>	♂	Nukunono Atoll Tokelau Is. Tokelau Islands
89	"	♀	" " " "
90	<i>Anous minutus</i>	♂	" " " "
5191	"	♀	" " " "
92	"	♂	" " " "
93	"	♀	" " " "
94	"	♂	" " " "
95	"	♀	" " " "
96	<i>Anous minutus</i>	♂	Nukunono Atoll Tokelau Islands Tokelau Islands
97	<i>Sterna fuscata</i>	♀	" " " "
98	<i>Gygis Alba</i>	♀	" " " "
99	<i>Numenius tahitiensis</i>	♀	" " " "
5200	<i>Ducula pacifica</i>		" " " "
201	<i>Gygis Alba</i>	♂	" " " "
02	"	♀	" " " "
03	<i>Sterna sumatrana</i>	♂	" " " "
04	<i>Arwaria interpres</i>	♀	Tokelau Is. Nukunono Atoll Tokelau Islands Pacific Oc.
05	<i>Rattus exulans</i>		" " " "
06	"		" " " "
07	<i>Sus scrofa</i>		" " " "
08	<i>Sterna sumatrana</i>	? im	" " " "
09	"	♀	" " " "
210	<i>Sterna sumatrana</i>	♂	" " " "
211	<i>Eudynamis taitensis</i>	♂	ATAFU Atoll Tokelau Islands " "
212	<i>Sterna sumatrana</i>	♀ im	" " " "
13	<i>Sterna sumatrana</i>	? im	ATAFU Atoll Tokelau Islands Pacific Oc.
14	"	♂	" " " "
15	"	♀	" " " "
16	"	♂	" " " "

Date	Gonads	Weight	Type	Remarks	Collector Number
Feb 28, 1965	Testes 4x3mm. 1 ovum enlarged but broken	214.1	SKIN		558 LNH
"		202.2	"		4089 MCT
"	Testes 7x6mm.	98.7	"		554 LNH
"	ovary 22x15mm.	140.4	"		556 LNH
"	Testes 10x7mm. 1 ovum 2mm.	125.2	"		557 LNH
"	ovary 15x9mm.	123.0	"		553 LNH
"	R 6x4mm L 8x5mm.	121.8	"		77 PWW
"	1 ovum 1mm. ovary 13mm.	121.1	"		76 PWW
Feb 28, 1964	13x7mm	127.5gms	"	Little - med fat	555 LNH
"	ova 8mm.	196.8	"		4088 MCT
"	ovary 13x7mm. granular	108.5	"		552 LNH
March 1, 1965	largest ovum 2mm.	615.7	"		4090 MCT
"		457.2	"		
"	Testes 7x5mm. largest ova 2mm. ovary 8x7mm.	126.8	"		536 LNH
"		102gms.	"		537 LNH
"	Testes 4x3mm.	103	"		535 LNH
March 1, 1965	9x5mm granular	—	SKIN	NO FAT. STARVING TO DEATH	534 LNH
"		90.0	SKIN SKULL		
"		69.0	"		
"		—		part of mandible only	
March 2, 1965		96gms	"		581 LNH
"	1 ovum 1mm. ovary 14x7mm.	92gms	"		582 LNH
March 2, "	6x4mm	96gms	"	Little - med fat	580 LNH
March 3, 65	Testis minute	124.6gms.	"	Light fat and heavy body molt.	4094 MCT
"		106.2gms	"		4097 MCT
March 3, 65		109.4gms	"	heavy fat	540 LNH
"	Testes 7x5mm.	112.3gms	"	medium fat	541 LNH
"	1 ovum 2mm or over but enlarged	95.5gms.	"	Little to medium fat	539 LNH
"	testes 6x7mm.	97.8gms.	"		4095 MCT

Field No.	Species	Sex	Location		
5217	<i>STERNA sumatrana</i>	♂	ATAFU Atoll	Tokelau Islands	Pacific Oc
18	" "	♀	" "	" "	" "
19	" "	♂	" "	" "	" "
20	<i>Arenaria interpres</i>	♂	" "	" "	" "
21	" "	♂	" "	" "	" "
22	<i>Arenaria stolidus</i>	♀	" "	" "	" "
23	" "	♀	" "	" "	" "
24	" "	♂	" "	" "	" "
25	<i>Arenaria interpres</i>	♀	" "	" "	" "
26	<i>Rattus exulans</i>		" "	" "	" "
27	" "		" "	" "	" "
28	<i>Sula leucogaster</i>	♂	" "	" "	" "
29	<i>Syngis alba</i>	♀	" "	" "	" "
30	" "	♂	" "	" "	" "
31	" "	♂	" "	" "	" "
32	" "	♀	" "	" "	" "
33	<i>Egretta sacra</i>	♀	" "	" "	" "
34	<i>STERNA leucata</i>	♂	" "	" "	" "
35	" "		" "	" "	" "
36	<i>Arenaria interpres</i>	♂	" "	" "	" "
37	" "	♀	" "	" "	" "
38	<i>Ducula pacifica</i>		" "	" "	" "
39	" "		" "	" "	" "
40	" "		" "	" "	" "
41	<i>Fregata ariel</i>		" "	" "	" "
42	" "		" "	" "	" "
43	<i>Syngis alba</i>	♂	" "	" "	" "
44	<i>Heteroscelus incanus</i>	♂	ATAFU Atoll	Tokelau Islands	Pacific Oc
45	" "	♂	" "	" "	" "

Date	Gonads	Weight	Type	Remarks	Collector Number
March 3, 1965	8x6mm 1 ovum 2mm. ovary 12x9mm.	99.7gms.	SKIN	mod. Fat	542 LNH
"		110.4	"		543 LNH
"	Testes small	112.4	"		4096 MCT
"	Testes 1mm.	108.8	"		82 PWW
"	Testes 1mm.	111.8gms.	"		81 PWW
"	ovary 5mm.	166.7gms.	"		80 PWW
"	ovary 1mm.	185.2	"		78 PWW
"	Testes 10x5mm. granular	219.1	"		79 PWW
"	ovary 6x6mm.	134.2	"		544 LNH
"		92.5	"		
"		104.7	"		
"	Testes 12x4mm. brood patch 1 collapsed follicle	1043.0	"		4104 MCT
"		125.6	"		4099 MCT
"	Testes small	101.0	"		4098 MCT
"	Testes 5x4mm.	119.7	"		591 LNH
"	ovary 6x5mm. granular	102.3	"	little fat	93 PWW
"	largest ovum 15mm.	508.2	"		4100 MCT
"	Testes 13x6mm.	194.5	"		538 LNH
"		199.8	"		
"	Testes 2 1/2 x 1 1/2mm granular	107.3	"		584 LNH
"	ovary 12x7mm	141.9	"		583 LNH
"		351.1	"		
"		210.8	"		
"		392.8	"		
"		739.7	"		
"		834.3	"		
March 7, 1965	L 5x3mm. Testes R 3x3mm.	112gms	"		94 PWW
March 4, 1965	testes 3x2mm.	130gms	"	heavy fat	579 LNH
"	2x1mm	123gms	"	"	578 LNH

Field No.	Species	Sex	Location	
5246	<i>Egretta sacra</i>	♀	ATAfu.	Atoll Tokelau Islands
5247	<i>Anous stolidus</i>	♂	"	"
5248	<i>Anous stolidus</i>	♀	"	"
5249	<i>Anous thimulias</i>	♀	"	"
50	"	♂	"	"
51	"	♀	"	"
52	<i>Arremonia interpres</i>	♀	"	"
53	<i>Anous minutus</i>	♂	"	"
54	<i>Sterna fuscata</i>	♂	"	"
55	<i>Fregata ariel</i>		"	"
56	<i>Puffinus pacificus</i>	♂	Motu Tabu	Christmas Atoll Pacific Oc.
57	<i>Sterna fuscata</i>	♀	Palmyra Is.	"
58	"	♀	"	"
59	"	♀	"	"
60	"	♀	"	"
61	<i>Arremonia interpres</i>	♀	Hull Is.	Pacific Oc.
62	"	♀	"	"
63	"	♂	"	"
64	"	♀	"	"
65				
66				
67				
68				
69				
70				
71				
72				
73	<i>Rattus exulans</i>	♀	Tokelau Islands	Fakaofu Atoll
74	"	♂	"	"

not used

Date	Gonads	Weight	Type	Remarks	Collector Number
March 4, 1965	ova minute ovary 15mm.	403	skin		98 PWW
"	Testes 6x2mm ovum 2mm.	184	"		95 PWW
"	ovary 13mm 1 ovum 5mm	176	"		83 PWW
"	ovary 12mm.	106	"		84 PWW
"	R 7x5mm. - 10x5mm.	105.	"		86 PWW
"	1. ovum 3mm. ovary 15mm. granular	110	"		85 PWW
"	ovary 9x4mm. R. 8x5mm. L. —	122	"		590 LNH
"	R 7x5mm. L 10x5mm.	105.	"		100 PWW
"		198	"		87 PWW
"		802.	"		
March 14, 1965	Testes 14x9mm. ovary 10x10	310gms	"	(weight from frozen specimen)	585 LNH
March 16, 1965	L. ovum 2mm. 1. ovum 5mm.	197gms.	"		587 LNH
"	ovary 14mm. 1. ovum 3mm.	202gms.	"		86 PWW
"	ovary 18mm. 1. ovum 3mm.	211gms.	"		97 PWW
"	ovary 13x12mm. granular.	200gms.	"		586 LNH
Feb 9, 1965	ovary 8mm. granular	—	"		89 PWW
"	ovary 10x4mm.	—	"		588 LNH
"	Testes minute granular	—	"		90 PWW
"	ovary 5x4mm.	—	"		589 LNH
Feb 27, 1965	—	60.2gms	skin		RDX 562
"	—	76.1gms	"		RDX 561

Field No.	Species	Sex	Location
5275	<i>Emballonura</i>	♀	Tutuila SAMOA
76	"	♂	" "
77	"	♀	" "
78	"	♂	" "
79	"	♀	" "
80	<i>Pteropus</i>	♀	" "
81	<i>Egretta sacra</i>	♂	FaKaofu Atoll, Tokelau Islands

Date	Gonads	Weight	Type	Remarks
Feb 23, 1965	—	—	Alcoholic	
"	—	7.0	"	
"	—	—	"	
"	—	—	"	
"	—	—	"	
Feb 24, 1965	—	416.2 gms	sh	
Feb 26, 1965	Testes 15x9 mm.	565.4 gms.	SKIN	no fat

Collector Number
572 ROK
559 ROK
568 ROK
569 ROK
570 ROK
571 ROK
570 ROK
LWH

Field No. Species Sex Location

5165 Gygis alba Fakaofo

5166 " "

5167 " "

5174 " ?

Present no data

5179 Fregata ariel Fakaofo

5180 " "

5181 " "

5182 " "

5183 " "

5185 Sula leucogaster "

5200 Ducula pacifica Nukunono

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

er

LS #22

PRELIMINARY REPORT

LISIANSKI ISLAND

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Roger B. Clapp

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 (be-
lieved 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		Area 2		Area 3		Totals	
	No.	%	No.	%	No.	%	No.	%
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.

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

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

One pup was born on the night of 20 March.

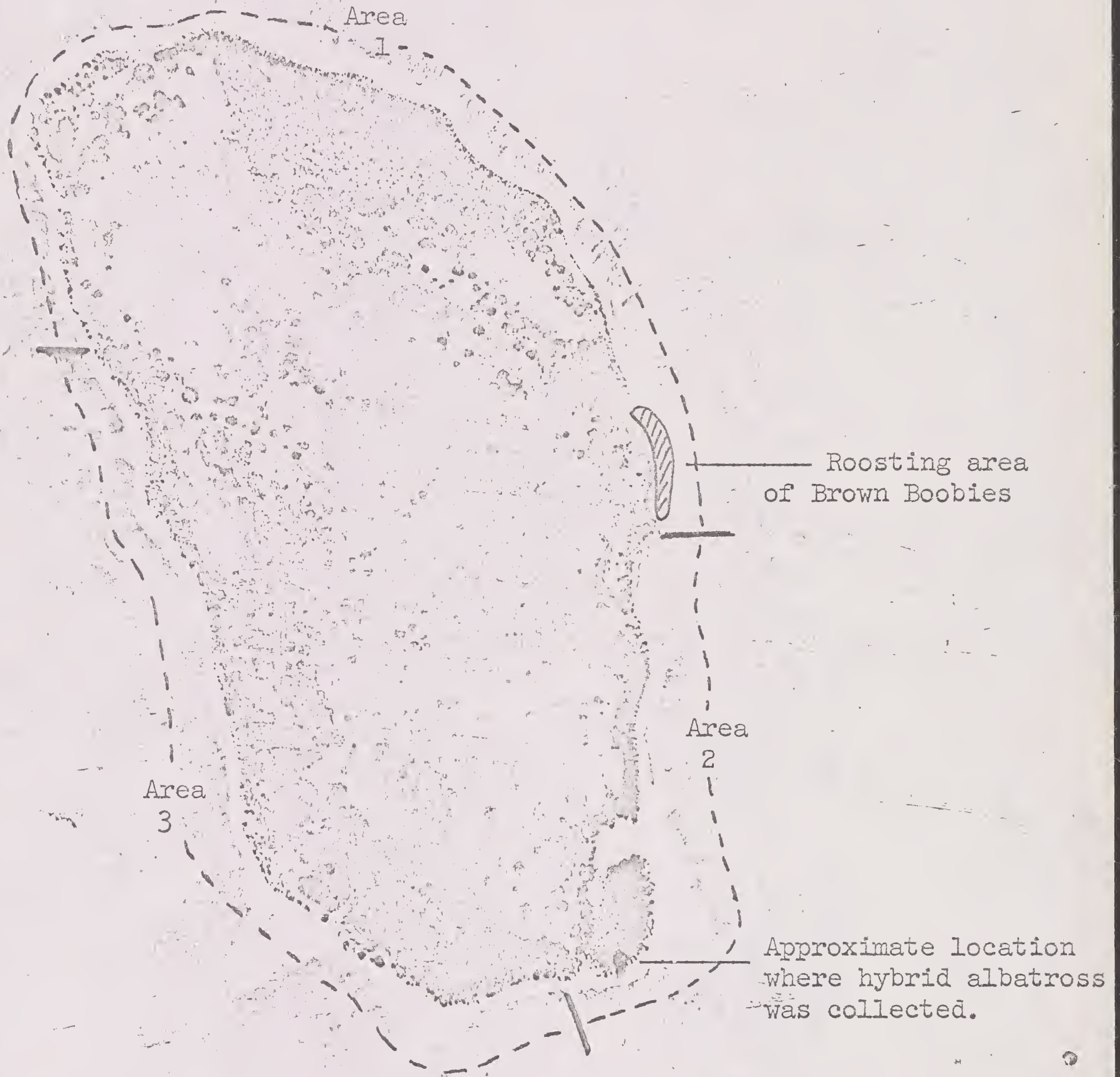
Other members of the survey party tagged 24 seals, 6 male and 4 female pups, and 8 male and 6 female yearlings. Each had a gray streamer affixed to its tag. Thirteen returns were obtained, 8 from yearlings, 1 from a subadult, 1 from an adult, and 3 from seals of unknown age. Appendix I below presents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

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

<u>Seals tagged 20 March 1968</u>			<u>Seals tagged 20 March 1968</u>			<u>Seals returned 20-21 March</u>		
<u>Tag #</u>	<u>Sex</u>	<u>Age</u>	<u>Tag #</u>	<u>Sex</u>	<u>Age</u>	<u>Tag #</u>	<u>Sex</u>	<u>Age</u>
A 308	♂	yearling	A 321	♂	pup	533	♀	yearling
A 309	♀	yearling	A 326	♂	yearling	537	?	???
A 310	♂	pup(gray)	A 327	♀	yearling	A 65	♂	yearling
A 311	♀	yearling	A 328	♂	pup	A 66	♂	yearling
A 312	♂	yearling	A 329	♀	pup	A 77	♂	yearling
A 313	♀	yearling	A 330	♂	yearling	A 78	♀	yearling
A 314	♂	yearling	<u>Seals tagged 21 March 1968</u>			A 85	♂	yearling
A 315	♂	yearling	A 331	♀	yearling	A 86	♀	yearling
A 316	♂	pup	A 332	♂	pup	A 87	♀	subadult
A 317	♀	pup	A 333	♀	yearling	A 107	?	???
A 318	♀	pup	A 334	♂	yearling	A 109	?	???
A 319	♀	pup	A 335	♂	yearling	A 234	♂	adult
A 320	♂	pup				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		
	<u>7:00 a.m.</u>	<u>noon</u>	<u>6:00 p.m.</u>
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 ^{copies} 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 pressure 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
UNITED STATES NATIONAL MUSEUM
WASHINGTON, D. C. 20560

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~~ 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 $\frac{1}{4}$ 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 ³⁾ 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.

^{18?} 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; 4 imm; 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.

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 Seeties 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 every time
I get started - just like at S.I.!!

COUNTRY USA	TYPE OF MARK Disk	STATION LISIANSKI-1961 (HIRAN) (USC&GS) (AMS)		
LOCALITY Lisianski Is., Hawaii	STAMPING ON MARK LISIANSKI-1961	AGENCY (CAST IN MARK) USC&GS	ELEVATION Approx. 20 <small>FEET METERS</small>	
LATITUDE N. 26° 04' 07.71"	LONGITUDE W. 173° 58' 11.82"	DATUM USC&GS Astronomic Position	ORDER	
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 — Measurements of Sooty Terns
to Lisianski.

PW Islands in alphabetical order

Original Banding Data

Re-banding Data

Band Number Date Age-Sex Where Recaptured Date Age-Sex

③ Lisianski I.

793-82159 09-17-64 A-U Lisianski I. 06-16-66 A-U

793-82184 09-17-64 A-U " 06-04-67 A-U

823-01100 09-17-64 A-U " 06-18-66 A-U

~~793-97215 03-07-65[†] A-U " 06-04-67 A-U~~

823-18811 07-17-65 A-U " 06-04-67 A-U

863-62311 08-07-65 A-U " 06-19-66 A-U

863-67412 08-03-65 A-U " 06-18-66 A-U

863-67615 08-08-65 A-U " 06-18-66 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

893-07386 08-05-65 A-U " 06-04-67 A-U

893-09402 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

903-43528 06-12-66 A-U " 06-04-67 A-U

903-43923 06-12-66 A-U " 09-03-67 A-U

903-60540 06-13-66 A-U " 06-04-67 A-U

† Banded as a Brown Petrel listed on banding schedule as a Brown Petrel

to his

Original Banding Data

Recapture Data

Band Number Date Age-Sex Where Recaptured Date Age-Sex

(3)	903-61808	06-13-66	A-U	Lisianski 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.

(16)	753-43868	08-17-64	A-U	Lisianski I.	06-18-66	A-U
(5)	753-44797	08-18-64	A-U	Lisianski I.	05-30-67	A-U

(nesting)

~~75~~

(4) Midway Atoll, Eastern I.

(FBR-9)	713-70211	08-01-62*	N-U	Lisianski I.	06-19-66	A-U (nesting)
(16)	793-83954	08-15-64	N-U	Lisianski 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 (nesting)
(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 BSEW ~~(SFW)~~

extracted from USNM catalogues July 28, 1967 CAE

Diomedea immutabilis

USNM 289162	Wetmore 7268	May 19, 1923	Ad. M.	Skull
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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
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Bulweria bulweri

USNM 289201	Wetmore 7232	May 17, 1923	Ad. F.	Skeleton
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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
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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
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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	<i>just off shore</i>
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	<i>just off shore</i>
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)
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Larus argentatis

USNM 493353	Feb. 14, 1963	-	F?	POBSP
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Larus glaucescens

USNM 494133	Mar. 12, 1965	-	M.	POBSP
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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.	"	1/2 mi 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.	"	

Diomedea nigripes

Lisianski

Museum + Number	Date	Age + Sex	Collector	Comments
USNM 300829	Mar ^y 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.	"	

Squatarola squatarola

Lisianski

<u>Museum + Number</u>	<u>Date</u>	<u>Age + Sex</u>	<u>Collector</u>	<u>Comments</u>
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	
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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	
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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. 10

Original Banding Data

Recapture Data

Band Number Date Age-Sex Where Recaptured Date Age-Sex

② Johnston Atoll

Band Number	Date	Age-Sex	Where Recaptured	Date	Age-Sex
753-15469	08-03-63	A-U	Hisianski I.	06-18-66	U-U
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
753-94491	02-04-64	A-U	"	06-04-67	A-U (nesting)
753-23764	09-10-63	A-U	"	08-21-64	U-U
823-04010	05-09-65	H-U	"	06-04-67	A-U (nesting)
823-07386	05-14-65	H-U	"	06-04-67	U-U
843-82437	07-22-65	A-U	"	06-18-66	U-U
843-94012	08-12-65	A-U	"	09-03-67	A-U

① French Frigate Shoals, East I.

863-23219	08-15-65	A-U	Hisianski I.	06-04-67	A-U (with egg)
923-26436	08-02-66	A-U	"	06-04-67	A-U (with egg)

① Wake Island

743-49717	07-24-63	A-U	Hisianski I.	06-04-67	A-U
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[†] marked with orange streamer on leg

Specimens Collected on Lisianski Island by the POBSP

STUDY SKINS

<u>Museum No.</u>	<u>Species</u>	<u>Date Collected</u>	<u>Sex</u>	<u>Comments</u>
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 <u>us</u> in catalog
494123	Puffinus nativitatis	13 Mar. 1965	♂	
494124	Sterna lunata	13 Mar. 1965	♀	
494125	Pterodroma hypoleuca	13 Mar. 1965	♂	Feb. 1963 - 1 specimen
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
496586	Pterodroma hypoleuca	18 June 1966	♀	We have ↓ Rept lists ↓
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	♂	Black-bellied Plover 1 1
496605	Anous stolidus	19 June 1966	♀	Ruddy Turnstone 7 26
496606	Anous stolidus	19 June 1966	♂	Wandering Tatt 1 4
496607	Anous stolidus	19 June 1966	♀	Sooty Tern 84 42
496608	Anous stolidus	19 June 1966	♂	Brown Noddy 17 17
496609	Anous stolidus	19 June 1966	♀	Black Noddy 0 15
496610	Anous stolidus	19 June 1966	♀	
496611	Anous stolidus	19 June 1966	♂	
496612	Anous stolidus	19 June 1966	♀	
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	♂	
543063	Charadrius mongolus	4 Sept. 1967	♀	Sept 1967
543185	Bulweria (fallax)	4 Sept. 1967	♂	Missy & one
543331	Arenaria interpres	17 June 1966	♀	2 GBT
543332	Arenaria interpres	17 June 1966	♂	1 SPH
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.