DRIFT BOTTLE RECORDS Marine Biological Laboratory FOR GULF OF MAINE AND GEORGES BANK, 1931-56

MAR 1 7 1958 WOODS HOLE, MASS.



UNITED STATES DEPARTMENT OF THE INTERIOR FISH AND WILDLIFE SERVICE

EXPLANATORY NOTE

The series embodies results of investigations, usually of restricted scope, intended to aid or direct management or utilization practices and as guides for administrative or legislative action. It is issued in limited quantities for official use of Federal, State or cooperating agencies and in processed form for economy and to avoid delay in publication.

United States Department of the Interior, Fred A. Seaton, Secretary Fish and Wildlife Service, Arnie J. Suomela, Commissioner

DRIFT BOTTLE RECORDS FOR GULF OF MAINE AND GEORGES BANK, 1931-56

bу

Dean F. Bumpus, Oceanographer, and C. Godfrey Day, Research Assistant Woods Hole Oceanographic Institution

Special Scientific Report--Fisheries No. 242 Contribution No. 941 from the Woods Hole Oceanographic Institution

Washington, D. C.
November 1957

TABLE OF CONTENT

	Page
The data	 3
Bottle type and distribution	 14
Literature cited	 6

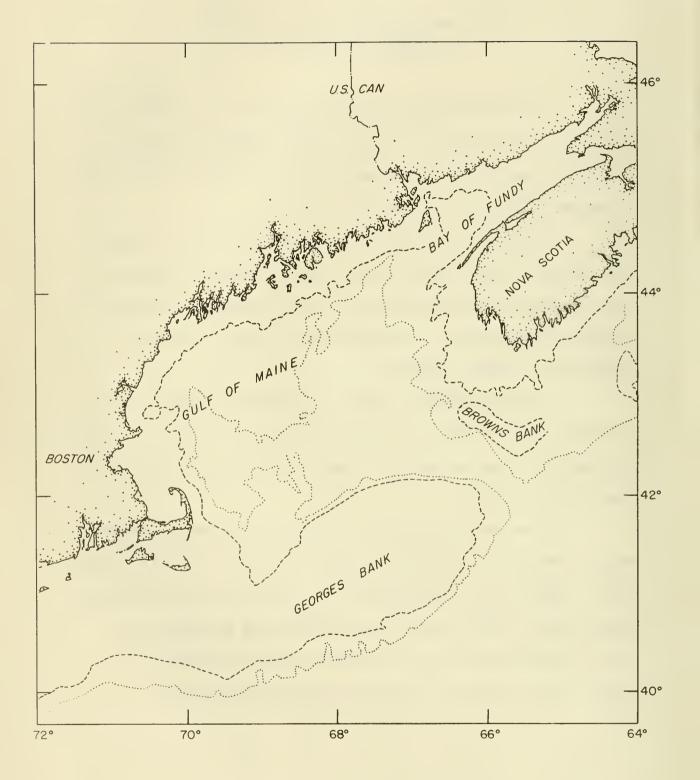
Drift Bottle Records for Gulf of Maine and Georges Bank, 1931-56

The drift-bottle data tabulated here are the result of extended studies by the United States Bureau of Fisheries and more recently by the United States Fish and Wildlife Service in the region of Georges Bank and the Gulf of Maine (fig. 1).

The apparent decline of the cod and haddock in this area has demanded attention over a period of years. Fishery biologists and oceanographers have been making concerted efforts to understand better the many complex, interrelated factors which influence the productivity of these fisheries.

One aspect of these studies has been an attempt by means of drift bottles to learn the nontidal movement of the waters bearing the planktonic eggs and larvae of commercially important fish which spawn in the region.

By the end of June 1956, 17 drift-bottle seedings had been made, representing the years 1931, 1932, 1933, 1934, 1953, 1955, and 1956. Walford (1938) discussed the bottle returns from the 1931 and 1932 cruises. Day (in press) made comparisons on a seasonal and year-to-year basis of all 17 cruises and considered surface-wind values for a period of 60 days following each bottle seeding.



THE DATA

The original data are on file at the Woods Hole Oceanographic Institution, where a punchcard system is maintained and supplemented as new returns are received or further studies initiated.

The listings below include all recoveries on record as of 5

December 1956 in the Georges Bank - Gulf of Maine area from the following cruises:

- Albatross II, 17-29 April
 Albatross II, 26 May 7 June
- 1932 Albatross II, 4-18 April
- 1933 Atlantis, cruise 16, 19-28 June
- 1934 Atlantis, cruise 28, 27 April 13 May
- Albatross III, cruise 46, 19 March 2 April
 Albatross III, cruise 48, 24 April 8 May
 Albatross III, cruise 50, 25 May 2 June
- Albatross III, cruise 57, 21 February 2 March
 Albatross III, cruise 58, 19 March 1 April
 Albatross III, cruise 60, 19 April 3 May
 Albatross III, cruise 61, 16-28 May
- Albatross III, cruise 71, 20 February 2 March
 Albatross III, cruise 72, 21-31 March
 Albatross III, cruise 73, 17-28 April
 Albatross III, cruise 75, 16-29 Mary
 Albatross III, cruise 76, 11-24 June

Returns received between 5 December 1956 and 21 October 1957 are listed in the Appendix.

The records for the cruises made during the 1930's are believed complete so far as returns are concerned. However, the original logs do not adequately record all release positions; consequently, in some instances positions of bottle-drop stations from which there were no returns cannot be listed. This is particularly true in the cases where bottles were distributed in pairs every 2 miles along a track.

Data for the Albatross III cruises made during the 1950's are complete in all respects both as to releases and recoveries.

During this period bottles were released only at stations, which formed a fairly uniform grid over the area of study.

BOTTLE TYPE AND DISTRIBUTION

The bottles used were those commonly employed for carbonated drinks. They were of clear glass and measured approximately 22 cm. high and 6 cm. in diameter with a capacity of 8 fluid ounces.

Of the bottles released on the 1931-34 cruises, most were equipped with drogues in an effort to reduce windage. More often than not, however, the drogue had been lost sometime before the bottle was recovered.

In figure 2 the components of the bottles used during the 1950's are shown; a completed drift bottle is shown at the right.



BREAK THIS BOTTLE

This bottle is one of several hundred released at sea to study ocean currents. The exact place and state of release has been recorded and is on file.

Yau can make the record for this bottle complete by the information requested on the enclosed postal eard. We will send a reward of lifty cents (5.50) and lell you where the bottle was dropped overboard if you will return the cord with the best information you can provide.

Your information will be combined with that sent in by ather finders of bottles. This is part of a study of the drift of floating objects being conducted by the Weeds Hole Oceanographic Institution, the Fish and Wildlife Service and the Fisheries Research Board of Canada.

Your cooperation in giving accurate information will be of great aid.

Nº 34101

FINDER OF THIS BOTTLE
PLEASE FILL IN THE INFORMATION
AS INDICATED AND SEND BY MAIL

Nº 34101

When found, date

Where found traine of beach or place on shore, near what Coast Guard station, Lighthouse, or other prominent reference point)

Your Name (sign and print)
Your Home Address (print)

Fifty Cents (\$50) will be sent to finder on return of this card.

FIRST QLASS
PLANIT NO 21
WHODS HOLE MASS

DUSINESS REPLY CARD

WOODS HOLE OCEANOGRAPHIC INSTITUTION WOODS HOLE, MASSACHUSETTS



Instead of drogues, dry sand ballast was added to all odd-numbered bottles. Those with even numbers contained no ballast. Six of each were launched at each release station. It was intended that the ballasted bottles float vertically at or near the surface and thus be less influenced by the action of winds and breaking waves. The results, however, indicate no significant difference between the conjectured movement of the two types.

LITERATURE CITED

Day, D. Godfrey
In press. Gulf of Maine circulation as deduced from drift bottles.
U. S. Fish and Wildlife Service, Fishery Bulletin.

In press.

Walford, Lionel A.

1938. Effect of currents on distribution and survival of the eggs and larvae of the haddock on Georges Bank.

Bulletin of the U. S. Bureau of Fisheries, vol. 49.

Drift Bottle Records for the Gulf of Maine and Georges Bank

from 1931 through 1956

Returns from 5 December 1956 to 21 October 1957 listed in Appendix

ALBATROSS II 17-29 April, 1931

10 bottles with drags released at each station

Released				Recovered
Bottle	Lat	Long	Date	Lat Long Date
3012 3018 3019 3030 3031 3038 3040 3047 3060 3065 3066 3067 3068 3069	12 06 14 14 14 15 06 16 17 14 17 14 18 1	69 54 69 39 69 39 69 39 69 22 69 06 69 06 69 40 69 59 70 48 70 48 70 48	17 Apr 17 Apr 17 Apr 17 Apr 17 Apr 18 Apr 18 Apr 18 Apr 18 Apr 20 Apr 20 Apr 20 Apr 20 Apr 20 Apr	No returns 41 21 70 40 22 Jul 31 41 21 70 39 25 Jul 31 41 30 71 12 23 Jul 31 43 10 65 38 28 Jul 31 44 15 70 05 16 Jul 31 44 20 70 49 31 Jul 31 44 21 70 39 26 Jul 31 44 21 70 51 1 Jun 31 44 19 70 49 25 May 31 44 27 71 26 23 May 31 44 21 70 30 1 May 31 44 20 70 45 8 May 31 44 21 70 27 12 May 31 44 21 70 42 9 May 31
3070	41 05 40 43 40 22	70 48 70 41 70 34	20 Apr 20 Apr 20 Apr	Here the second of the second
3093	40 Ol 39 57	70 29 69 24	20 Apr 21 Apr	41 17 70 13 5 Aug 31 No returns
3113 3115 3124	40 18 40 18 40 08 40 19 40 35	68 52 68 52 68 49 68 01 68 11	21 Apr 21 Apr 21 Apr 21 Apr 21 Apr 22 Apr	40 37 73 16 23 Jul 31 40 45 72 49 6 Sep 31 70 40 23 40 E 5 Mar 33 No returns
3151 3164 3168 3169 3179 3185	41 01 41 16 41 16 41 16 40 49 40 30	68 27 67 55 67 55 67 55 67 39 67 24	22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 22 Apr	41 35 70 39 30 Jul 31 41 21 70 30 5 Aug 31 41 21 70 30 6 Aug 31 40 54 72 20 21 Jul 31 40 35 73 50 10 Jul 31 60 20 01 25 25 Nov 32

Released				Red	covered	
Bottle	Lat	Long	Date	Lat	Long	Date
3207 3209 3210 3211 3221 3233 3238	40 23 41 04 41 04 41 04 41 29 41 44 41 17 41 17	67 18 67 0l ₁ 67 0l ₄ 67 0l ₄ 67 17 66 l ₄ 6 66 26 66 26	23 Apr 23 Apr 23 Apr 23 Apr 23 Apr 23 Apr 24 Apr 24 Apr	No 41 32 45 10 42 10 41 19 40 33 59 00 57 04	returns 71 12 64 46 66 00 70 49 67 05 05 20 06 34	21 Jul 31 20 Sep 31 25 Jul 31 28 Jul 31 6 Jun 31 14 Sep 32 7 Nov 32
3256	41 05 41 33 41 58	66 17 65 52 66 18	24 Apr 25 Apr 25 Apr	No 54 28 No	returns 08 28 returns	30 Oct 32
3279 3289 3294 3295 3307 3312 3316 3326	42 00.8 42 04 42 06 42 06 42 10.5 42 12 42 13 42 16	66 12 66 04.5 66 01.5 66 00 65 51 65 48 65 49 65 52	25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr	52 40 45 07 43 48 45 20 43 30 45 00 45 08 41 24	09 40 66 35 66 32 64 47 65 25 65 09 64 53 70 44	28 Sep 32* 29 Jul 31* 24 Jun 31* 10 Aug 31* 17 May 31* 29 Sep 31* 19 Sep 31* 6 Aug 31*
3366 3386 3390 3394 3406 3417 3430	42 28.5 42 24 42 11 42 11 42 36 42 23 41 57 41 45 41 29	66 04.5 66 33 67 07 67 07 67 17 68 00 67 40 68 12 68 46	25 Apr 26 Apr 27 Apr 27 Apr 28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 29 Apr	44 37 No 41 16 41 32 41 30 43 39 41 21 41 18	66 42 returns 70 11 69 54 71 08 65 06 70 39 70 16 returns	3 Aug 31* 7 Sep 31 16 Jul 31 27 Sep 31 31 Jul 31 3 Aug 31 25 Jan 33
3447	中 55	69 10	29 Apr	44 49	65 32	1 Oct 31

^{*} Bottles seeded in string, 2 every 2 miles. Recoveries only listed.

10 bottles with drags released at each station.

	Re	Leased	Recovered	
Bottle	Lat	Long	Date	Lat Long Date
3459 3471 3476 3477 3478 3479 3489 3491 3508	41 05 40 49 40 49 40 49 40 49 40 49 40 26 39 57 40 08 40 19	70 48 70 02 70 02 70 02 70 02 70 02 69 39 69 23 68 47 68 51 69 08	26 May 26 May 26 May 26 May 26 May 26 May 27 May 27 May 27 May 27 May	40 04 74 03 10 Jul 31 40 35 73 40 9 Jul 31 40 40 73 04 28 Jun 31 41 20 71 42 11 Jul 31 41 19 70 49 27 Aug 31 40 36 73 30 11 Jul 31 40 35 73 45 20 Jul 31 38 30 28 45 1 Jun 32 41 16.5 70 13 29 Jul 31 No returns
3531 3539 3540 3542 3545 3546 3560 3561 3562 3563 3567 3571 3572 3575 3576	41 15 41 15 41 12 41 42 41 42 41 42 41 58 41 58 41 58 41 58 41 58 41 16 42 16 42 16 42 16 42 16	69 23 69 23 69 23 69 40 69 40 69 40 69 54 70 21 70 21 70 21 70 21 70 21 70 21 70 21 70 21 70 21 70 21	27 May 27 May 28 May	41 39 70 00 4 Aug 31 41 14 66 24 30 Aug 31 41 15 72 00 7 Jul 31 41 29 71 10 14 Aug 31 41 31 69 44 30 May 31 41 02 71 56 12 Jul 31 41 21 70 30 7 Aug 31 41 21 70 30 7 Aug 31 41 30 71 06 14 Aug 31 41 21 70 27 28 Jun 31 41 51 69 58 7 Jun 31 41 55 69 58 14 Jun 31 40 57 71 57 3 Jul 31 41 54 69 57 14 Jun 31
3579 3580 3602	42 16 42 16 41 55 41 30 41 03	70 21 70 21 69 09 68 47 68 31	28 May 28 May 3 Jun 3 Jun 3 Jun	11 14 70 20 30 Jun 31 42 01 70 00 12 Jun 31 No returns No returns 41 33 70 32 2 Aug 31
3603 3614	41 03 40 35 40 20 40 31	68 31 68 09 68 03 67 24	3 Jun 3 Jun 3 Jun 4 Jun	41 21 70 30 4 Aug 31 40 54 72 20 22 Jul 31 No returns No returns

	R	eleased		Recove	ered
Bottle	Lat	Long	Date	Lat Lor	ng Date
3642 3645 3655 3664 3666 3670 3672 3673	40 49 40 49 41 16 41 29 41 29 41 29 41 04 41 04 41 09 41 18 41 18	67 40 67 40 67 54 67 20 67 20 67 20 67 20 67 02 67 02 66 16 66 26	4 Jun 5 Jun 5 Jun 5 Jun	No retu 41 17 69 41 27 70	58 27 Aug 31 33 12 Aug 31
3699 3700 3701 3702 3706 3707 3712 3726 3727 3734	41 18 41 14 41 44 41 44 41 40 41 59 41 59 42 13 42 31	66 26 66 26 66 44 66 44 66 44 65 57 66 10 66 10 65 47 66 08	5 Jun 5 Jun 5 Jun 5 Jun 5 Jun 5 Jun 5 Jun 5 Jun 6 Jun 6 Jun	55 23 07 41 23 70 41 21 70 41 27 70 41 35 70 41 16 70 41 30 71 41 21 70 41 19 70 48 39 04 No retu	25 20 Sep 32 31 12 Aug 31 42 23 Jul 31 55.5 30 Jul 31 39 30 Jul 31 11 29 Jul 31 06 30 Jul 31 30 5 Aug 31 49 27 Aug 31 13 25 May 33
3759 3761 3763	42 22 42 10 42 10 42 34 42 23	66 29 67 04 67 04 67 18 67 54	6 Jun 6 Jun 6 Jun 7 Jun 7 Jun	44 ? 66 44 52 65 44 52 65 No reta	
3792 3798	11 11 11 11 12 10	68 13 68 13 68 33	7 Jun 7 Jun 7 Jun	44 30 63	48 17 Sep 31 14 30 Aug 31

ALBATROSS II 4-18 April, 1932

From 5 to 20 bottles with drags per station and in strings of 2 bottles every 2 miles.

Released				Reco	vered	
Bottle	Lat	Long	Date	Lat	Long	Date
3884 3885	41 05 41 05 40 41 40 46	70 48 70 48 70 41 70 06	5 Apr 5 Apr 5 Apr 5 Apr	41 21 41 10 No retur No retur		28 Jun 32 21 Aug 54
3908 3910	40 31 40 31 40 08 39 57 40 08 39 55	69 46 69 46 69 34 69 25 68 45 68 35	6 Apr 6 Apr 6 Apr 6 Apr 6 Apr 6 Apr 6 Apr	56 30 52 15 No retur No retur No retur	06 58 06 47 ms ms	28 Aug 33 25 Jan 34
3976 3980 3984 3989 4010	40 57 40 57 40 55 40 50 40 35 40 44 40 22 40 23 40 18	68 27 68 27 68 25 68 22 68 12 69 08 68 53 68 03 67 13	7 Apr 7 Apr 7 Apr 7 Apr 7 Apr 7 Apr 7 Apr 7 Apr 7 Apr	41 16 41 14 41 16 38 25 58 10 No retur No retur No retur	ns ns	10 Jul 32 8 Aug 32 2 Aug 32 * 8 Feb 33 * 11 Mar 33
4037 4038 4039 4051	40 45 40 45 40 45 41 10 41 10 42 04 40 30	67 31 67 31 67 31 67 07 67 47 66 43 67 20	8 Apr 8 Apr 8 Apr 8 Apr 8 Apr 8 Apr 8 Apr	56 30 54 08 41 26 22 25 No retur No retur	06 58 10 12 70 53 74 00 ms	18 Apr 33 8 Aug 33 18 Aug 32 12 Feb 40
4084 4099 4103 4105	10 52 11 13 11 13 11 13 11 13 11 13 11 08	66 14 65 50 65 50 65 50 66 24 66 45 66 07	9 Apr 9 Apr 9 Apr 9 Apr 9 Apr 9 Apr 9 Apr	57 25 52 40 26 18 53 55 No retur No retur	07 25 09 40 77 00 10 05 ns	7 Aug 35 21 Jun 33 27 Mar 33 10 Jan 34
4109 4111 4115 4117	41 49 41 49 41 58	66 43 66 43 66 43 66 21	10 Apr 10 Apr 10 Apr 10 Apr	56 30 48 40 47 17 52 52	06 58 01 30 55 19 09 30	18 Apr 33 5 Aug 33 11 Oct 32 14 Aug 33

	leased	Re	covered			
Bottle	Lat	Long	Date	Lat	Long	Date
4129 4144 4155 4156 4157 4163 4180 4200 4201 4203 4210 4218 4219 4222 4232 4235 4240 4243 4243 4248 4259 4265 4273 4280 4282 4298 4300 4302	42 03 42 10 42 16 42 16 42 17 42 20 42 27 42 28 42 38.5 42 39.5 42 42 42 34 42 32 42 31 42 22 42 21 42 18 42 18 42 18 42 16 42 20 42 21 42 20 42 21 42 20 42 18 42 22 42 22 42 22 42 02 42 02 42 02 42 07 42 07	66 09 65 52.5 65 42 65 40 65 32.5 65 45 45 65 45 48 65 45 48 66 43 66 43 66 43 66 43 66 43 67 29 68 00 68 00 67 46 67 46 70 56	10 Apr 10 Apr 10 Apr 10 Apr 10 Apr 10 Apr 11 Apr	55 45 50 30 30 30 30 30 30 30 30 30 30 30 30 30		3 Oct 33 * 9 Jul 32 * 9 Jul 32 * 25 Jan 34 * 27 Jul 32 * 7 Oct 33 * 20 May 33 * 24 Oct 32 * 26 Dec 32 * 28 Aug 32 * 20 Sep 32 * 12 May 32 * 29 Apr 32 * 29 Apr 32 * 21 Jun 33 * 7 Jul 32 * 17 Sep 32 * 17 Sep 32 * 18 Aug 33 21 Aug 32 29 Aug 32 20 Jul 33 21 Aug 32 20 Jul 33 21 Jul 33 22 Jul 33 15 Oct 33
4326 4352 4356 4370 4373 4378 4381 4397 4406 4412 4419 4455 4473 4487	42 17 41 55 41 55 41 48 41 42 42 42 42 37.5 41 16 41 13 41 10.7 41 25 41 34	69 23 69 07 69 19 69 24 69 45 69 47 69 43 69 26 69 19 69 12 69 04.5 68 40 68 49 68 50	16 Apr 16 Apr 17 Apr 17 Apr	41 56 No retur 43 25 66 00 37 00 41 20 43 56 41 29 40 55.5 47 32 52 06 41 21 36 55 55 15 37 05	66 52	18 Jul 32 At sea 24 Mar 34 * 18 Dec 33 * 12 Oct 33 * 10 Jul 32 * 9 Jan 33 * 17 Sep 34 * 8 Oct 32 * 26 Dec 32 * 17 Jun 33 * 17 Aug 32 * 9 Oct 33 * 11 Nov 33 * 15 Jun 33 *

^{*} Bottles seeded in string, 2 every 2 miles.

Released				Re	covered	
Bottle	Lat	Long	Date	Lat	Long	Date
4499 4504 4507 4509 4523 4547 4565 4574 4600 4602 4611 4612 4613	41 46 41 50 41 51 41 50 42 01 42 21 42 37 42 30 42 33 42 33 42 33 42 33 42 33 42 33 42 33 42 33 42 33	68 48 68 45 68 44 68 38 68 34 67 59 68 10 69 39 70 18 70 24.8 70 34 70 36.4 70 36.4 70 39.4	17 Apr 17 Apr 17 Apr 17 Apr 18 Apr	以 52 33 36 55 38 59 08 46 48 44 22 5 43 41 25 41 05 42 01 44 01 44 01 44 01 44 01 44 01 44 01	70 55 09 58 25 10 06 12 03 20 56 25 66 05 66 07.8 64 47 64 08 73 55 70 12 70 00 70 12	25 Aug 32 * 14 Oct 33 * 4 Dec 33 * 31 Jul 33 * 27 Mar 34 * 23 Dec 32 * 16 Jun 32 * 2 Jun 32 * 12 Sep 32 * 4 Oct 32 * 32 Mar 33 * 11 May 32 * 31 May 32 * 24 Apr 32 *

^{*} Bottles seeded in string, 2 every 2 miles.

ATLANTIS, Cruise 16 19-28 June, 1933

Five to 10 bottles with drags released at each station and in strings of 2 bottles every 2 miles.

Released				Re	covered	
Bottle	Lat	Long	Date	Lat	Long	Date
4636 4639 4649 4652 4656 4706 4713 4716 4718 4721 4722 4723 4724 4741 4741 4743 4744 4754 4754	41 39.5 41 40 41 43 41 46 41 50 42 04 42 27 42 22 42 20 42 17 42 13.5 42 10 42 31 42 31 42 31 42 31 42 31 42 31 42 31 42 31	69 50 69 49 69 45.5 69 41 69 33 67 49 68 03 68 01 67 59 67 55 67 55 67 52.5 67 23 67 23 67 04 66 44 66 44	19 Jun 19 Jun 19 Jun 20 Jun 20 Jun 20 Jun 20 Jun 20 Jun 20 Jun 21 Jun	41 39.4 41 27 35 16 44 41 21 30 43 27 44 37 44 37 44 15.5 35 40 41 21 37 45 45 10 No retur 43 40 44 25 44 30 44 30 45 30 46 30 47 42 48 40	66 03 66 12 66 08 67 05 65 04 03 21	18 Aug 33 * 22 Jul 33 * 27 Oct 33 * 13 Sep 33 * 9 Jan 37 * 18 Aug 33 * 9 Mar 34 * 31 Jul 33 * 2 Aug 33 * 26 Oct 33 * 19 Sep 33 * 15 Jun 34 * 7 Sep 33 * 2 Apr 34 1 Sep 33 13 Sep 33 6 Jul 33 28 Oct 33 18 Jun 35 15 Now 33 *
4768 4770 4791 4798 4800 4801 4802 4804 4812 4814 4819 4824 4826 4828 4830 4830	42 07 42 10 42 23.5 42 29.5 42 31 42 32 42 33.5 42 37 42 37 42 40 42 46 42 46 42 48 42 50 42 55 42 55	66 19 66 16 65 53 65 48 65 48 65 48 65 53 65 53 65 53 65 55 65 55 65 55 65 55 65 55 65 55 65 55 65 55 65 55 65 55	22 Jun 22 Jun 22 Jun 22 Jun 22 Jun 23 Jun 22 Jun 23 Jun 23 Jun 23 Jun 23 Jun 23 Jun	44 16 43 54 44 52 44 58 42 05 44 16 44 52 44 52 44 50 44 52 44 20 43 05 44 20 42 20	66 22 64 45 65 45 67 04 70 09 66 08 65 27 65 55 04 00 27 15 65 30 66 00 66 28 66 12 66 50	15 Nov 33 * 27 Aug 33 * 1 Aug 33 * 22 Oct 33 * 28 Aug 33 * 21 Oct 33 * 21 Aug 33 * 1 Aug 33 * 1 Aug 33 * 11 Jan 35 * 11 May 31 * 21 Aug 33 * 21 Jul 33 * 21 Jul 33 * 25 Nov 33 * 4 Nov 33 * 10 Aug 33 *

Released

Recovered

Bottle	Lat	Long	Date	Lat	Long	Date
4838 4839 4841 4842 4846 4850 4856 4857 4858 4862 4866 4867 4868 4870 4876	43 01 43 03 43 05 43 05 43 15 43 18.5 43 18.5 42 18 42 14 42 10 42 10 42 08 42 08 42 00	65 49 65 48 65 47 65 45.5 65 37.5 65 37.5 65 31 65 31 65 31 65 32 65 32	23 Jun	44 17 51 28 44 33 44 40.5 44 30 44 26 45 23 44 36 45 02 44 50 43 17 44 16 29 15 43 22	66 18 09 23 66 02 65 48.5 66 06 66 00 64 39 65 58 66 49 65 17 66 59 65 46 66 08 13 27 65 40	1 Aug 33 * 31 Jan 37 * 25 Jul 33 * 14 Nov 33 * 16 Oct 33 * 7 Sep 33 * 21 Aug 33 * 13 Sep 33 * 23 Aug 33 * 31 Jul 33 * 27 Aug 33 * 21 Jul 33 * 21 Jul 33 * 23 Jul 33 * 24 Aug 35 * 4 Aug 33 *
487 7 4896 4912	42 00 41 58.3 41 32 41 39	65 32 65 46.5 65 55 66 08	23 Jun 24 Jun 24 Jun 24 Jun	37 45 43 37 40 46 No retur	25 45 65 16 72 45	11 Apr 35 * 27 Aug 33 * 26 Aug 33
4926 4927 4936 4944	41 39 41 39 41 30 41 19 41 03 40 48 40 53	66 46 66 46 67 07 66 39 66 25 66 44 66 21	24 Jun 24 Jun 25 Jun 25 Jun 25 Jun 25 Jun 25 Jun 25 Jun	43 39 42 05 41 35 41 31 No retur No retur	65 08 66 55 70 51 71 19 ms ms	28 Sep 33 1 Sep 33 22 Aug 33 1 Sep 33
4986 4988 4990 4992 5004	40 56 40 56 40 56 40 56 40 38	66 59 66 59 66 59 66 59 67 52	26 Jun 26 Jun 26 Jun 26 Jun 26 Jun	40 41 40 47.5 41 16 41 15 41 20.5	73 08 72 39 70 11 70 10 70 49.5	2h Aug 33 2h Aug 33 1 Aug 33 31 Jul 33 8 Aug 33
5006 5010	40 38 40 38 41 05 40 20	67 52 67 52 67 35 68 00	26 Jun 26 Jun 26 Jun 26 Jun	41 11 40 50 No retur No retur	ns	25 Aug 33 At sea 23 Aug 33
5024 5030 5040 5046 5054 5056	40 08 40 08 40 17.5 40 23 40 28.5 40 30.5	68 14 68 14 68 35.5 68 45 68 52 68 53.5	27 Jun 27 Jun 27 Jun 27 Jun 27 Jun 27 Jun	37 26 36 40 40 13 36 16 40 35 40 36	75 40 75 55 68 47 75 47 73 40 73 30	6 Sep 33 4 Jan 34 27 Jun 33 At sea * 29 Oct 33 24 Aug 33 4 Sep 33 *

Released				R	ecovered	
Bottle	Lat	Long	Date	Lat	Long	Date
5058 5070 5072 5079 5087 5090 5096 5098 5099 5102 5111	40 32 40 43 40 44 40 59 41 09 41 09 41 09 41 09 41 09 41 09 41 09	68 56 69 05 69 05 69 05 69 04 69 04 69 04 69 04 69 04 69 04 68 36 68 22	27 Jun 27 Jun 28 Jun	41 20 41 28 42 25 40 36 41 14 44 30 41 21 40 48 50 00 40 58 44 33 No return	70 02 71 10 65 50 73 26 68 45 66 00 70 30 72 37 05 15 72 08 66 02	4 Sep 33 * 11 Aug 33 * 25 Jul 33 * 25 Aug 33 * 16 Aug 33 * 11 Sep 33 * 31 Jul 33 * 24 Aug 33 26 Dec 34 24 Aug 33 21 Oct 33
5138 5140 5147 5154 5154 5157 5158 5159 5160 5166	中 50 中 50 中 50 中 38 中 33 中 33 中 33 中 33 中 33 中 33 中 3	68 15 69 07 69 07 69 20 69 38 69 38 69 38 69 38 69 38 69 38 69 38 69 51 69 59	28 Jun 20 Jun	No return 14 17.5 14 00 15 20.5 36 55 11 29 36 55 11 29 10 54 11 20 11 18		12 Sep 33 19 Oct 33 19 Oct 33 18 Nov 34 22 Jul 33 23 Jul 33 7 Nov 34 23 Jul 33 26 Aug 33 24 Jul 33 5 Jul 33 * 5 Jul 33 *

^{*} Bottles seeded in string, 2 every 2 miles.

ATLANTIS, Cruise 28 27 April-13 May, 1934

Five to 15 bottles released at stations. Others in strings of 2 bottles every 2 miles. Odd numbers with drags, even numbers without drags.

	Released			Recover	Recovered		
Bottle	Lat	Long	Date	Lat Long	<u>Date</u>		
5178 5178 5180 5187 5180 5202 5233 5233 5233 5233 5234 5244 527 5287 5287 5287 5387 5387 5387 5387 5387 5388 5387 5388 5	25 27 27 27 27 27 27 27 27 27 27 27 27 27	69 49 69 69 69 15 69 69 15 68 12 68 28 68 68 28 68 68 28 6	27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 30 Apr	24 20 64 1 32 20 64 1 32 20 67 1 32 20 73 1 40 21 56 9 1 41 42 56 9 1 41 42 50 50 1 42 50 66 1 43 42 50 66 1 44 00 00 1 45 50 60 1 46 67 1 47 66 1 48 51 50 66 1 48 51 51 51 66 1 48 51 51 66 1 51 51 66 1 52 66 1 53 66 1 54 56 66 1 55 66 1 56 66 1 57 66 1 58 51 51 51 51 51 51 51 51 51 51 51 51 51	23 Feb 36 * 15 Dec 37 * 14 6 Jan 35 * 19 Sep 34 * 23 Sep 34 * 25 5 Oct 35 * 11 Aug 34 * 29 Jul 35 * 10 3 Sep 34 * 29 Jul 35 * 10 16 Sep 34 * 11 Aug 35 * 12 30 Jun 34 * 13 Dec 35 * 14 Sep 35 * 15 Aug 34 * 16 Oct 34 * 17 30 Oct 34 * 18 Jun 34 * 18 Jun 34 * 18 Jun 34 * 18 Jun 34 * 19 Jul 34 * 10 Oct 34 * 11 Aug 34 * 12 Aug 34 * 13 Jul 34 * 14 Sep 35 * 15 Jul 34 * 16 Oct 34 * 17 30 Oct 34 * 18 Jun 34 * 19 30 Oct 34 * 10 Oct 34		

^{*} Bottles seeded in string, 2 every 2 miles.

	Rela	eased		Re	covered	
Bottle	Lat	Long	Date	Lat	Long	Date
5368 53716 53776 53876 5388 5388 54120 54120 54140 554665 554668 55468 55555 5555 5555 555	30 30 30 30 30 30 30 30 30 30	1588883333334422241177888883333155555555555555555555555555	30 Apr 30 Apr 1 May 1 May 1 May 1 May 1 May 2 May 3 May 4 May 5 May 8 Ma	35 36 37 38 30 31 31 31 31 31 31 31 31 31 31	74 10 66 16 02 66 16 07 00 E 63 00 75 66 20 56 66 20 57 66 20 57 66 66 10 66 1	8 Nov 3h 1 May 3h At sea h Aug 35 19 Oct 36 27 Jun 3h At sea 1 May 3h At sea 1 Jul 3h 19 May 3h At sea 23 Jul 3h At sea 7 Sep 3h 18 May 37 27 Jun 3h 16 Jun 3h 30 Jan 36 16 Nov 35 25 Feb 37 1 Jan 37 11 Oct 3h 23 Aug 3h 10 Aug 35 23 Aug 3h 10 Oct 35 31 Jul 3h 7 Sep 3h 3 Jul 3h 7 Sep 3h 3 Jul 3h 11 Nov 3h 11 Nov 3h 11 Nov 3h 11 Aug 3h 12 Feb 36 30 Sep 35 11 Sep 3h 11 Aug 3h 12 Feb 36 23 Jan 35 31 Jan 37 1 Jul 36 25 Sep 35

	Re	leased		Rec	covered	
Bottle	Lat	Long	Date	Lat	Long	Date
5604 5610 5617	41 13 41 20 41 31	66 16 66 32 66 45	8 May 8 May 8 May	55 00 54 07 23 30	08 30 10 05 75 45	12 Apr 35 11 Jul 35 5 Jan 38
5620 5621	41 31 41 33 41 27	66 45 66 45 67 18	8 May 8 May 9 May	41 21 39 41 No retu	70 36 74 09 Irns	24 Jul 34 4 Sep 34
5649 5653	41 01 40 36	67 03 67 03 67 05	9 May 9 May 10 May	55 35 40 47.5 No retu	rns	1 Sep 35 16 Sep 34
5669	40 49 40 59	67 36 67 46	10 May 10 May	38 07 No retu		22 Oct 34
5693 5701 5710 5715	41 09 40 57 40 47 40 47	67 57 68 27 69 00 69 00	10 May 10 May 10 May 10 May	69 00 38 40 44 25 44 00	15 00 E 27 15 66 03 66 10	6 Mar 36 1 Aug 35 19 Jul 34 8 Nov 34
5727 5737 5742	40 30 40 30 41 05	68 40 68 40 69 18	11 May 11 May 11 May	51 45 36 30 40 51	10 07 75 52 72 36	11 Apr 35 25 Sep 34 27 Sep 34
5744 5747	41 05 41 05 41 13	69 18 69 18 69 04	ll May ll May l2 May	40 41 40 38 No retu		21 Sep 34 18 Sep 34
5761 5762 5768 5772 5790 5798	中 52 中 50 中 50 中 50 中 50	68 32 68 40 68 40 68 40 68 26 69 28 69 28	12 May 12 May 12 May 12 May 12 May 13 May 13 May	No retu 45 16 45 30 44 52 44 25 54 15 40 49	65 49 60 56 65 27 66 02 08 30 72 30	23 Aug 34 10 Sep 34 21 Jul 34 4 Jul 34 27 Jul 35 13 Oct 34

ALBATROSS III Cruise 46 19 March-2 April 1953

		Re	leased	Recovered			
Station	Bottle	Lat	Long	Date	Lat Long	Date	
1 1 2 3 4 5 6 7 8 9 10 11	12102N 12107B	41 01 40 31 40 00 40 00 39 59 40 01 40 27 41 00 41 18 41 46 42 14 43 01	71 01 71 01 71 00 71 00 69 57 69 00 68 27 68 03 67 31 67 15 67 12 67 14 67 16	19 Mar 19 Mar 19 Mar 19 Mar 20 Mar 20 Mar 20 Mar 20 Mar 21 Mar 21 Mar 21 Mar 21 Mar	41 19.8 71 44 35 24 76 00 No returns	23 May 53 8 Aug 56	
13 14 15 15 15 16 16 16 16 16 17 17 17 17 17	12252N 12268N 12273B 12275B 12276N 12280N 12281B 12283B 12286N 12288N 12292B 12296N 12297B 12300N 12302N 12303B	43 40 43 38 43 30 43 30 43 30 43 30 43 01 43 01 43 01 43 00 43 00 43 00 43 00 43 00 43 00 43 00	67 13 68 59 69 314 69 314 70 31 70 31 70 31 70 31 70 00 70 00 70 00 70 00 70 00 69 00 68 00	21 Mar 22 Mar	44 15 68 41 43 32.5 70 14 44 15 68 59.3 43 17 70 34 43 48.5 69 40.5 43 47 69 40 42 17 70 52 41 59.5 70 04.8 42 56.5 70 47.6 42 56.5 70 47.6 42 56.7 70 48.7 42 39 70 41 41 44.3 70 37.3 42 39 70 41 41 230 90 50.5 41 27 70 56 No returns No returns	30 May 53 8 Jun 53 20 Dec 54 24 Apr 53 18 Apr 53 29 Mar 53 3 Apr 53 18 Apr 53 28 Mar 53 9 Apr 53 1 Apr 53 4 Apr 53 2 Apr 53 2 Apr 53 6 Apr 53 7 Aug 53	

		Rel		Recovered				
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
20 21 21 22 22 22 22 22 23 24 25 26 27	12335B 12341B 12346N 12346N 12354N 12357B 12358N 12359B 12366N 12376N 12398N	43 01 43 01 43 01 43 01 42 59 42 59 42 59 42 15 42 16 42 16	67 01 66 00 66 00 65 00 65 00 65 00 65 00 64 57 66 02 67 01 68 02 69 00	23 Mar 23 Mar 23 Mar 23 Mar 23 Mar 23 Mar 23 Mar 23 Mar 23 Mar 24 Mar 24 Mar 24 Mar		64 47.5 65 54.5 66 04 69 30 65 53 09 16 69 57 66 45.3 66 04 66 28 66 05 eturns eturns	19 Apr 55 17 Jul 53 16 Sep 53 21 Dec 53 29 Jul 53 21 Dec 54 7 Nov 53 6 Oct 53 30 Apr 53 29 Jul 53 16 Sep 53	
28 28 28 28 28 28 28 28	12425B 12428N 12430N 12432N 12434N 12436N	42 14 42 14 42 14 42 14 42 14 42 14 42 15	69 52 69 52 69 52 69 52 69 52 69 52 70 02	24 Mar 24 Mar 24 Mar 24 Mar 24 Mar 24 Mar 25 Mar	42 04.2 42 05 42 04.6 42 04.6 42 04.9	70 03 70 14.4 70 12.4 70 11.3 70 09.4 70 11.3 eturns	15 Aug 53 3 Apr 53 24 May 53 5 Apr 53 31 Mar 53 31 Mar 53	
30 30 30 31 32 33 34 35 36 37 38	12452N 12456N 12460N	市 市 市 市 市 市 市 市 市 市 市 市 市 市 市 市 市 市 市	69 44.5 69 44.5 69 00 68 30 68 00 66 58 66 02 65 45 66 11.5 67 00	25 Mar 25 Mar 25 Mar 25 Mar 25 Mar 25 Mar 27 Mar 27 Mar 27 Mar 27 Mar 27 Mar 27 Mar	41 57.1 41 57.1 41 59.6 No r No r No r No r No r No r	69 59.2 69 59.2 70 00.9 eturns	28 Mar 53 28 Mar 53 2 Apr 53	
39 40 41 42 43 44 45 46 47 48 49 50	12561B 12682N 12692N	41 15 41 16 41 17.5 40 35 40 46 40 47 40 46 40 45 41 31 42 15 42 39 42 41	68 01 68 59 69 19.5 68 51 67 59 67 30 67 00	28 Mar 28 Mar 28 Mar 29 Mar 29 Mar 29 Mar 29 Mar 29 Mar 29 Mar 30 Mar 30 Mar	35 46.5 No r No r No r No r No r No r No r	75 18 eturns	5 Jan 55 * 19 Sep 53 15 Aug 53	

*Bottle recovered from bottom

	Released		Recovered			
Station Bottle	Lat Long	Date	Lat	Long	Date	
50 12698N 51 52	42 41 67 00 42 46 68 00 42 40 69 00	30 Mar 30 Mar 30 Mar		66 28 returns returns	9 Jul 53	
53 12726N 54 12737B	42 38 69 56 42 37 70 24 42 37 70 24	31 Mar 31 Mar 31 Mar	41 58.3 41 59.5 41 54.7	70 00 70 04.5 69 58.1	11 Apr 53 2 Mar 55 11 Apr 53	
54 12740N 54 12742N 54 12743B 54 12745B	42 37 70 24 42 37 70 24 42 37 70 24	31 Mar 31 Mar 31 Mar	41 54.7 42 03.6 42 02	69 58.1 70 10 70 05.7	11 Apr 53 22 Apr 53 25 Apr 53	
54 12746N 54 12748N	42 37 70 24 42 37 70 24 42 00 69 53	31 Mar 31 Mar 31 Mer	41 57.5 41 54.7 No 1	69 59.5 69 58.1 returns	11 Apr 53 11 Apr 53	
55 6 57 58	42 00.5 69 00. 42 00 68 00 42 02 67 06	5 31 Mar 31 Mar 31 Mar	No 1	returns returns returns		
59 60 61	41 59 66 00 41 30 65 49 41 29 66 22	1 Apr 1 Apr 1 Apr	No 1 No 1	returns returns returns		
62 63 12852N	41 25.5 67 81 41 03 67 58	1 Apr 1 Apr		returns 60 00	21 Jul 53	
64 12862N 65 12872N	40 50 69 00 40 36 69 41	1 Apr 2 Apr	36 03.3 40 57.7	75 41 72 08.6	15 Oct 53 8 Aug 53	
66 12888N 66 12892N	40 55 70 16 40 55 70 16	2 Apr 2 Apr	41 26.1	70 42 .1 70 49	1 Jul 53 14 Jul 53	
67 12898N 67 12902N 67 12904N	41 12 70 42 41 12 70 42 41 12 70 42	2 Apr 2 Apr 2 Apr	41 17 41 20.7 41 19	70 14.5 70 00.5 70 19.1	10 May 53 3 May 53 28 Jun 53	

ALBATROSS III Cruise 48 24 April-8 May 1953

		Rel	eased		Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
1 2 3 4 5 6 7 8 9 10	12914N 12916N 12920N	41 16.8 41 16.8 41 01.5 40 29 39 59 40 00 40 00.5 40 00 40 30 41 00 41 15 41 45	71 00 71 00.5 70 59.5 70 58.5 70 00 69 00 68 30 68 00 67 30 67 16 67 13	24 Apr 24 Apr 24 Apr 24 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 26 Apr	No 1 No 1 No 1 No 1 No 1 No 1	70 57 70 43 71 37 returns returns returns returns returns returns returns returns returns	24 May 53 30 Apr 53 24 May 53	
12 13 13 14 14 15 16 17 18 18 19 19 20 20 21 22	13041B 13050N 13060N 13070N 13072N 13075B 13092N 13098N 13110N 13113B 13128N 13132N 13134N 13134N	12 15.7 12 58.5 12 58.5 13 10 13 10 13 10 13 10 13 20 13 00 13 00 13 00 13 59 14 59 14 50 14 50 15 50 16	67 15 67 15.5 67 15.5 67 15 68 00 69 00 69 40 70 33.6 70 00 70 00 69 00 69 00 69 00 69 00 69 00 69 00	26 Apr 26 Apr 26 Apr 26 Apr 26 Apr 26 Apr 26 Apr 27	45 19.8 45 06.3 45 02.3 43 51.7 45 22 43 47 43 00.3 42 04.8 44 34.3 53 10 45 05 44 15.5	64 41.8 66 24 66 53.5 68 53.1 64 20 66 09 70 36 70 42.9 70 14.5 71 37 65 55 09 14 66 25 65 19 66 20.2 returns	13 Sep 53 20 Sep 53 11 Aug 53 17 May 53 27 Sep 53 10 Apr 54 2 Jun 53 25 May 53 16 May 53 16 May 53 10 Aug 53 6 Sep 53 27 Jul 54 4 Oct 53 3 Dec 53 22 Aug 53	
23 23 24 25 26 27 28 29	13172N 13179B 13192N	43 02 43 02 43 02 42 15 42 14 42 15 42 13 42 12	66 00 66 00 65 01 64 55 66 00 67 00 68 00 68 59.5	28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 29 Apr 29 Apr 29 Apr	44 22.7 44 14.5 44 46.3 No No No No No	66 04.5 66 22.5 66 45 returns returns returns returns returns	19 Jul 53 9 Sep 53 24 Jul 53	
30 30	13254N 13256N	42 1 3 42 1 3	70 00 70 0 0	29 Apr 29 Apr	42 05 42 04.2	70 12.5 70 14.4	17 May 53 3 May 53	

Station	Bottle	Lat	Long	Date	Lat	Long	Date	
30 30 30 31 31 32 32 32 32 32 32 32 32 33 33 33 33 33	13258N 13260N 13264N 13266N 13266N 13268N 13274N 13280N 13282N 13284N 13286N 13286N 13290N 13291B 13292N 13292N 13293B 13294N 13296N 13296N 13296N	42 13 42 13 42 13 42 13 42 13 42 14 42 14 42 14 45 14 45 06 42 06 43 06 44 44 45 44 46 46 47 47 47 47 47 47 47 47 47 47 47 47 47 4	70 00 70 00 70 00 70 00 70 34 70 34 70 34 70 34 69 57 69 57 69 57 69 57 69 57 69 57 69 50 2 69 50 0 69 50 0 60 0 6	29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 30	No r No r	70 04.4 70 04.4 70 12.4 70 04.4 70 50 70 52.4 70 04.4 70 04.4 70 04.4 70 09.5 69 57 69 56 69 58.5 69 55.6 69 55.6 69 55.8 eturns eturns	3 May 53 3 May 53 3 May 53 3 May 53 9 May 53 10 May 53 3 May 53 9 May 53 17 May 53 17 May 53 19 May 53 9 May 53 10 May 53 10 May 53	
37 37	13339B 13341B	41 47 41 47	66 00 66 00	30 Apr 30 Apr	40 56.5	66 19.5	17 May 53 * 6 Jun 56 *	
38 39 40 41 42 42	12894N 13402N 13410N	41 46 41 15.5 41 15.5 41 08.8 41 08.8	65 42 65 59 66 59 68 00 69 01.5 69 01.5	l May l May l May l May l May l May	No r No r No r 11 18 11 23.3 11 16	returns returns returns returns returns returns returns returns	24 Jun 53 27 Jun 53 1 Jul 53	
43 44 45 45 45 46 46 46 46 47 48	13429 B 13438N 13440N 13442N 13446N 13450N 13452N 13454N 13455B	41 11 40 46 40 43 40 43 40 43 40 43 40 42 40 42 40 42 40 42 40 42 40 47	69 15 69 12 69 00 69 00 69 00 68 03 68 03 68 03 68 03 68 03 67 00 66 30	1 May 2 May	41 21.3 40 46 41 22 41 21 41 19 41 20.7 41 34.5 41 17.4 41 29.3	70 49 72 45 70 30	14 Jun 53 24 Jul 53 15 Jun 53 24 May 53 30 Jan 53 12 Jul 53 27 Jun 53 11 Jun 53 9 Jul 53	

Recovered

Released

^{*} Bottle recovered from bottom

		Re	leased	Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date
99000000000000000000000000000000000000	13496N 13497B 13500N 13503B 13510N 13516N 13516N 13530N 13546N 13550N 13566N 13570N 13571B 13572B 13573B 13576N 13576N 13578N 13579B 13581B 13586N 13586N 13586N	41 30 42 15 42 15 42 15 42 15 43 19 43 19 43 19 43 18 43 18 43 18 43 17 43 17 43 17 43 17 43 17 43 17 43 17 43 17 43 100 43 00 43 00 43 00	66 26.5 66 17.5 66 17.5 66 17.5 66 01 66 01 67 00 67 57 69 00 69 00 70 00 70 31 70 31 70 31 70 31 70 31 70 33 70 33 70 33 70 33 70 33 70 33 70 33 70 33	1 May 3 May 3 May 3 May 4 May 6 May	45 06 44 26.5 44 26 44 41.5 56 40 44 22 45 07 45 32	66 38.4 66 00.5 66 10.5 65 47 06 28 66 25 66 29 64 41 eturns 70 20 70 01 65 49.3 70 49 70 39.5 70 38.5 70 52 70 48 70 48.8 70 27	14 Jul 53 9 Jan 53 16 Oct 53 16 Feb 54 15 Oct 54 15 Aug 54 25 Jul 53 12 Sep 53 14 Aug 53 14 Aug 53 14 Aug 53 27 Feb 54 16 May 53 27 Jun 53 28 May 54 1 Dec 54 20 May 53 21 Jan 53 28 May 53 29 Jul 56 **
57 58 59 60 61 62 63 63 63 64 64 65 66 67 68 69 70 71 72 73	13588N 13594N 13638N 13654N 13656N 13658N 13662N 13668N 13674N 13680N	43 00 42 42 42 40 42 40 42 41 42 42 42 42 42 42 55 42 42 55 42 42 55 42 30 42 00 42 00 42 00 42 58 41 5	70 33 70 32.5 70 00 69 00 68 00 67 57 65 57 65 57 65 57 65 50 65 00 65 59.5 67 00 68 00 69 42 69 29 69 02 68 00	4 May 4 May 4 May 4 May 5 May 5 May 6 May 6 May 6 May 6 May	41 43.9 41 27 No 1 No 1 45 09 No 1 45 02.5 144 20 144 33.8 145 22 145 20 No 1 No 1 No 1 No 1 No 1	70 17.3 70 40 returns returns 66 14 returns 66 12 66 53.5 66 07.7 65 50.8 64 23.5 64 47 returns	30 May 53 16 Aug 53 7 Dec 53 10 Jan 53 22 Sep 53 6 Jul 53 2 Jul 53 8 Sep 53 20 Sep 53 4 Aug 53

* Bottle recovered from bottom

Station	Bottle	Lat	Long	Date	Lat	Long	Date
74 75 76	13783B 13807B	41 28.5 41 30 41 04	67 00 66 00 67 00	7 May 7 May 7 May	40 47 No r 40 31	67 58 eturns 68 47	9 Aug 54 28 Jan 54
76 77	13809B 13827B	41 04 40 46.5	67 00 67 45	7 May 7 May	38 47.7 40 46.6	75 10 68 06	19 May 55 29 May 53
78 79	13842N 13844N	40 31 40 28	68 13 69 00	7 May 8 May	37 53 41 39.3	75 25.7 70 07	7 May 55 29 Jun 53
79 79	13845B 13846N 13848N	40 28 40 28 40 28	69 00 69 00 69 00	8 May 8 May 8 May	山 38 山 27.7 山 31	70 14 71 21.8 70 39.5	7 Jul 53 18 Jun 53 28 Jun 53
79 79 79	13852N 13854N	40 28 40 28	69 00 69 00	8 May 8 May	41 14.5	70 06 70 40.3	13 Jun 53 31 Aug 54
80 81	13856N 13868N	40 24	70 00 70 20	8 May 8 May	40 49	72 33 . 7 70 39	14 Aug 53 10 May 53
81 81 81	13872N 13874N 13876N	41 10 41 10	70 20 70 20 70 20	8 May 8 May 8 May	41 20.8 41 20.7 41 21	70 39 70 40 70 46	16 May 53 9 Jun 53 13 Jun 53

Released

Recovered

		Rel	eased		Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
1 2 3 4 5 6 7 8 9 10 10 10 10 11 11 12 12 12 12 13 13 14 14 14 15 15 16 17 18 19	13885B 13885B 13990N 13992N 13994N 13998N 14002N 14006N 14008N 14012N 14013B 14022N 14024N 14026N 14034N 14036N 14036N 14036N 14036N 14040N 14040N 14040N 14040S 14053B 14066N	40 30 30 30 1.5 40 24.5 40 25 40 25 40 27 40 27 40 27 40 27 40 27 40 27 40 27 40 27 40 26.5 40 40 40 40 40 40 40 40 40 40 40 40 40	71 01 70 59 71 00 70 014 2 69 00 68 00 66 30 66 21 66 21 66 21 66 15 66 15 66 15 66 15 67 00 68 00 69 00 69 00 69 00 70 01 70 23 70 32 70 00 69 00	25 May 26 May 26 May 26 May 26 May 26 May 26 May 27 May 28 May 29 May	山 15.7 No 1 No 1 No 1 No 1 No 1 No 1 14 13.0 14 13.0 14 20 14 20 15 00 16 20 17 00 18 20 18 20 1	70 12.1 returns returns returns returns returns returns returns returns 66 10 64 48 66 09 64 47 64 54 66 10.5 66 45 64 47 65 34 66 05 66 57 66 44 66 05 66 57 66 42 66 06 70 08 70 03	1 Jul 55 * 1 Jul 55 * 1 Jul 55 * 1 Jul 55 * 1 Jul 53 * 1 Aug 53 * 17 Aug 53 * 27 Jul 53 * 19 Oct 53 * 23 Nov 53 * 8 Aug 53 * 14 Jun 53 * 8 Sep 53 * 20 Dec 53 * 10 Jun 54 * 28 Oct 53 * 12 Dec 53 * 21 Nov 53 * 22 Feb 54 * 15 Jun 53 * 7 Jul 53 * 2 Oct 53 * 3 Dul 53 * 4 Dul 53 * 5 Dec 53 * 6 Dec 53 * 7 Jul 53 * 7 Jul 53 * 7 Jul 53 * 8 Dec 53 * 9 Dec 53 * 15 Jun 53 * 16 Dec 53 * 17 Dec 53 * 18 Dec 53 * 19 Dec 53 * 20 Dec 53 * 21 Dec 53 * 22 Feb 54 * 23 Dec 53 * 24 Dec 53 * 25 Dec 53 * 26 Dec 53 * 27 Dec 54 * 28 Dec 55 * 29 Dec 55 * 20 Dec 55 * 20 Dec 55 * 20 Dec 55 * 21 Dec 55 * 22 Dec 55 * 23 Dec 55 * 24 Dec 55 * 25 Dec 55 * 26 Dec 55 * 27 Dec 55 * 28 Dec 55 * 29 Dec 55 * 20 Dec 55 * 20 Dec 55 * 20 Dec 55 * 20 Dec 55 * 21 Dec 55 * 22 Dec 55 * 23 Dec 55 * 24 Dec 55 * 25 Dec 55 * 26 Dec 55 * 27 Dec 55 * 28 Dec 55 * 29 Dec 55 * 20 Dec	
20 21 22	אויתיות	42 08 42 10 42 08	68 00 67 00 66 10	29 May 29 May 29 May		returns returns 66 10	25 Sep 53 *	
22 23 23 23 24 25 26	14143B 14150N 14158N 14160N 14162N	42 08 42 35 42 35 42 35 42 35 42 03.5 41 45	66 10 66 10 66 10 66 10 65 00 65 29 65 45.5	29 May 29 May 29 May 29 May 30 May 30 May 30 May		64 48	4 Jul 56 * 13 Sep 53 25 Jul 53 4 Sep 53 13 Sep 53	

^{*} Bottle recovered from bottom

		110	Teased	recovered			
Station	Bottle	Lat	Long	Date	Lat Long Date		
27 28 29 30	14233B	41 44 41 46.5 41 41.5	67 00 68 07 69 00 69 48.5	30 May 30 May 31 May 31 May	No returns No returns No returns LO 58 70 14 16 Oct 56 *		
31 31 32	14255B 14247B	41 21 41 21 41 25	69 28 69 28 69 03	31 May 31 May 31 May	39 59.5 69 19 4 Oct 56 * 40 46 70 35 1 Nov 55 * No returns		
33 34 35 36 37 38 39 40	14277В	41 18 41 20 41 00 41 00 40 29 40 29 10 28 40 26.5 40 24.5	67 59 67 01.5 66 11 66 31 67 02 68 02 68 58 70 00 70 57	31 May 31 May 1 Jun 1 Jun 1 Jun 1 Jun 1 Jun 2 Jun 2 Jun 2 Jun	No returns		
42 43	1 4379B	40 26.5 40 31	72 00 72 58.5	2 Jun 2 Jun	38 43 74 55 24 Sep 53 No returns		
146 146 145 146 141 141	14498N 14508N 14399B 14404N 14408N 14412N	40 47 40 47 40 59.5 41 00 41 00 41 00	72 09 72 09 71 27.5 70 50.5 70 50.5 70 50.5	2 Jun 2 Jun 2 Jun 3 Jun 3 Jun 3 Jun	40 37.3 73 18.4 18 Jun 53 41 04 71 51.6 10 Jun 53 41 07 71 30 31 Mar 54 41 24 70 27 5 Jul 53 41 19.5 70 49 9 Jul 53 41 23.8 70 30.3 14 Jun 53		

Recovered

Released

^{*} Bottle recovered from bottom

ALBATROSS III Cruise 57 21 Feb-3 March, 1955

		Re	leased		Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
1 2 3 4 5 6 7 8	16111 B	41 17.5 41 00 40 30 40 00 39 58.5	71 00 71 01 71 00 71 00 70 03	21 Feb 21 Feb 21 Feb 21 Feb 22 Feb	No r	70 47.1 returns returns eturns returns	30 Mar 55	
6 7	16166N	40 00 40 00	69 02 68 00	22 Feb 22 Feb	32 21.5		4 Dec 55	
8	16185B	40 36 41 00	67 43 67 31	22 Feb 22 Feb	52 45	9 35 eturns	29 Aug 56	
10 11	16220N	11 30 42 02.5	67 08.5 66 50	23 Feb 23 Feb	40 01	74 03.3 eturns	15 Oct 55	
12 12 13 14 15	1623 8 N 16239B	42 28 42 28 43 00 43 18 44 00	66 29 66 29 66 16 66 03.5 66 30	23 Feb 23 Feb 23 Feb 23 Feb 23 Feb	41 50 41 49 No r	69 56.6 69 56.5 returns returns	14 Jun 55 15 Oct 55	
16 17 18	16289B 16304N	43 55 43 47 43 44	67 03 68 00 69 00	23 Feb 24 Feb 24 Feb	44 22.2 41 30	66 05.2 71 02.6 eturns	23 Aug 55 23 Jul 55	
19	16320N	43 39	69 42	24 Feb	43 44.5	69 59.4	25 Aug 55	
19 19	1 6323B 1 632կN	43 39 43 39	69 42 69 42	24 Feb 24 Feb	42 02 41 19.4	70 05.7 70 45.4	22 May 55 4 Jun 55	
20	16331B	43 00	70 25	24 Feb	41 20.8	70 30	10 Jul 55	
20	16340N	43 00	70 25	24 Feb 24 Feb	40 46.5	72 42.6	14 Aug 55 15 Aug 55	
21 22	163կկՒ 16362N	42 34 • 2 42 00	70 25 70 30	25 Feb	37 11.4	76 00	11 Oct 55	
22 23	16364N	42 00 42 21	70 30 69 58	25 Feb 25 Feb	40 47.3	72 40 returns	17 Aug 55	
24	16382N	42 39.5	69 59	25 Feb	41 20.7	70 40	20 Aug 55	
25 25	16389B	43 00	69 56	25 Feb	36 02	75 40	26 Sep 55	
25	16395B	43 00	69 56	25 Feb	41 48	69 56.3	10 May 55	
26	16409B	42 57	68 59	25 Feb	42 02	70 10.1	7 May 55	
27 28	16415B	42 45	68 01	25 Feb 25 Feb	41 23 42 18	70 02.2 70 53.8	5 Aug 55 20 Jul 55	
29	1 6կ29B 1 6կկ8N	42 43 42 43	67 00 66 00	26 Feb	43 41.5	65 19.2	23 Jun 55	
30	тоддом	42 43	65 04	26 Feb		returns	2) (())	
31	16462N	42 20	65 30	26 Feb	44 13	68 46	21 Aug 56	
32		42 01	65 54	26 Feb		eturns		
33	16488N	口 58	67 01	26 Feb	39 26.5		18 Sep 55	
34	16497B	42 04	68 03	26 Feb	42 34.5	70 45	13 Jun 55	
34	16503B	42 04	68 03	26 Feb	42 49	70 49	13 Nov 55	
34	16507B	42 04	68 03	26 Feb	45 05	66 28	9 Oct 55	
35	16510N	42 00	69 00	27 Feb 27 Feb	41 27.8	71 21.7	1 Aug 55 14 Jul 55	
35	16516N	42 00	69 00	21 160	40 28.3	74 00	14 out 55	

		Re	leased		Recovered		
Station	Bottle	Lat	Long	Date	Lat	Long	Date
36 37 38 39		42 00 41 30 41 25 41 26	69 56 69 42 68 55 68 02	27 Feb 27 Feb 27 Feb 27 Feb	No No	returns returns returns returns	
40 41	16578N	41 30 41 29	67 05 66 00	28 Feb 28 Feb	38 45 No	28 20 returns	5 May 56
43 44 45 46 47	16602N	41 14 41 01 41 01 41 00 41 00	66 06.5 66 24 67 00 67 58 69 17	28 Feb 28 Feb 28 Feb 28 Feb 1 Mar	57 12 No No No	7 20 returns returns returns returns	15 Oct 56
47 48 49 50 51 52	1665UN	40 30 40 28 40 32 41 08 41 30 42 00	68 57 68 00 66 58.5 66 31 66 20 66 08	1 Mar 1 Mar 1 Mar 1 Mar 2 Mar 2 Mar	52 34 No No No No	9 56 returns returns returns returns returns	5 Jul 56
53 54	16726N	42 22 43 09.5	66 00 65 27	2 Mar 2 Mar	43 54.		21 Aug 55

ALBATROSS III Cruise 58 19 March-l April, 1955

	Released				Recovered		
Station	Bottle	Lat	Long	Date	Lat	Long	Date
1 2 3 4 5 6 7 8 9	16854N	41 17.5 41 00 40 28.8 40 01.5 39 59.5 40 02.4 40 04.2 40 30.4 41 01	71 00 71 00 71 00.8 71 00 69 50 68 57 67 58.5 67 44.5 67 32.2	19 Mar 19 Mar 19 Mar 19 Mar 19 Mar 20 Mar 20 Mar 20 Mar 20 Mar	No 1 No r No 1 No 1 No 1 No 1 No 1 35 58.3	2 Oct 55	
10	16863B 16867B	山 39.6 山 39.6	67 10.2 67 10.2	20 Mar 20 Mar	57 10 40 52	75 37.8 07 22 72 24	10 ot 56 14 Aug 55
11 12	16882N	42 00 42 33.6	66 57.2	20 Mar 21 Mar	45 04	66 34	26 Oct 55 10 Jul 55
12 12 13	16884N 16889B 16897B	42 33.6 42 33.6 43 00	66 34 66 34 66 17.8	21 Mar 21 Mar 21 Mar	44 24 44 34.3 45 06.4	66 12 65 55 64 56.5	5 Jul 55 21 Jun 55
14 15 16	16909B 16951B 16957B	43 20 43 43 44 00	66 06.8 66 18.2 66 30	21 Mar 21 Mar 21 Mar	44 30 45 00 44 33	66 06 66 57 66 02	21 Apr 55 24 Jul 55 29 Mar 55
16 17	16958N 16922N	址 00 43 55•5	66 30 67 01	21 Mar 21 Mar	145 09 145 09	64 50 66 45.5	12 Jun 55 27 Apr 55
17 18	16926N	43 55.5 43 52	67 Ol 68 O4	21 Mar 21 Mar		70 29.5 returns	11 May 55
19 19 19	16970N 16973B 16976N	43 位.5	69 00 69 00 69 00	22 Mar 22 Mar 22 Mar	42 25.7 42 39.4 42 03.1	70 56.1 70 42.2 70 38.6	10 May 55 21 May 55 29 Apr 55
20 20 21	16978N 16984N 16992N	43 35 43 35 43 21	69 43 69 43 70 06.5	22 Mar 22 Mar 22 Mar	山 30.5 山 56 山 21	71 04 70 33.7 70 47.4	6 Jul 55 10 Jun 55 5 Jun 55
21 21 21	16993B 16996N 16998N	43 21 43 21 43 21	70 06.5 70 06.5 70 06.5	22 Mar 22 Mar 22 Mar	41 40 41 27.7 42 02	69 57.1 70 39.5 70 05.8	4 Jul 55 4 Jun 55 20 May 55
22 22 22	17002N 17006N 17010N	43 00 43 00 43 00	70 31 70 31 70 31	22 Mar 22 Mar 22 Mar	42 04.9 40 57.2 41 55.6	70 10.6 72 10 70 32.8	29 Apr 55 25 Jun 55 1 May 55
22 22 23	17011B 17012N 17015B	43 00 43 00 42 56.8	70 31 70 31 70 01	22 Mar 22 Mar 23 Mar	42 03.7 37 29.7 35 21.2	70 09.5 75 38.8 75 30	25 May 55 18 Sep 55 11 Jul 56
23 23	17016N 17017B	42 56.8 42 56.8 42 56.8	70 01 70 01 70 01 70 01	23 Mar 23 Mar 23 Mar	42 06.6 41 55.6 41 49.2	70 40	3 May 55 30 Apr 55 13 Jun 55
23 24 24 24	17020N 17024N 17025B 17027B	42 56.8 42 55 42 55 42 55	70 01 68 55.7 68 55.7	23 Mar 23 Mar 23 Mar	41 44.1 41 56 42 03.5	70 20 70 33.6	25 Mar 56 15 May 55 22 May 55

		Released			Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
24 24 24 25 26 26 27 27 27 28 29 30 31	17030N 17031B 17036N 17043B 17054N 17058N 17066N 17066N 17072N	42 55 42 55 42 55 42 49 4 42 49 4 42 45 42 45 42 45 42 45 42 16 5 42 21 5 42 22 42 18	68 55.7 68 55.7 68 00 67 02.2 67 02.2 65 57 65 57 64 59.5 65 02 66 22 67 59	23 Mar 23 Mar 23 Mar 23 Mar 24 Mar 24 Mar 24 Mar 24 Mar 24 Mar 24 Mar 24 Mar 25 Mar 25 Mar	No r No r No r	72 15 70 30.3 74 08.4 75 31 66 57 66 09.2 64 49 70 10 67 02 e turns e turns e turns e turns	15 Aug 55 1 Jun 55 15 Sep 55 4 Oct 55 20 Oct 55 19 May 55 28 Aug 55 27 Aug 55 29 Jul 55	
33 33 34	17137B 17139B	42 13.3 42 13.3 42 12.7	69 00 69 00 70 08.2	25 Mar 25 Mar 25 Mar	41 31 41 39.4 No. r	71 04.2 69 59.1 eturns	5 Jun 55 29 May 55	
35 36 36 37	17165B 17175R 17180N	42 15 42 07.3 42 07.3 41 45	70 40 69 5 8 69 58 69 47	25 Mar 26 Mar 26 Mar 26 Mar	41 17.8 41 11.5 41 38	70 06.3 71 34 70 38.6 eturns	3 Jul 55 21 Jun 55 4 Jun 55	
38 38	17198N 17200N	11 14.5 11 14.5 11 146	68 52 68 52 68 02.5	26 Mar 26 Mar 26 Mar	40 56.5 41 37.8	72 11.7 70 14.5 returns	13 Aug 55 27 Jul 55	
39 X** " " " " " " " " " " " " " " " " " "	17262N 17264N 17266N 17272N 17276N 17277B 17280N 17282N 17283B 17284N 17288N	459 59 59 59 59 59 59 59 59 59 59 59 59 5	69 59 69 59	28 Mar 28 Mar 29 Mar 29 Mar	41 17.7 41 17.5 41 17.7 41 17.8 41 39.3 41 17.7 41 17 37 52.8 39 31 41 17.7 41 17.8	70 06.8 70 05.7 70 06.8 70 06.5 69 57.5 70 08 70 05 75 20.7 74 18 70 09 70 06.3 returns 72 44	1 May 55 8 Apr 55 25 Apr 55 5 Apr 55 17 Apr 55 17 Apr 55 19 Apr 55 2 Oct 55 16 Oct 55 17 May 55 30 Jun 55	
41 42 43 44	17307B 17316N 17336N 17344N	41 55.8 42 00 41 53.5	69 00 68 01.8 67 01 65 58.8	29 Mar 29 Mar 29 Mar 29 Mar	41 23 36 54.9 41 30.3 40 35	70 27 76 04.2 70 41.5 73 33.5	28 May 55 3 Oct 55 6 Aug 55 15 Sep 55	
45 46 47	17370N	41 55.3 42 29.6 42 27.3	65 32 65 02.8 66 00	29 Mar 30 Mar 30 Mar	43 20	returns 70 27 returns	22 May 55	

** Six releases every hour from 1000 through 2100.

		Rel	eased	Recovered			
Station	Bottle	Lat	Long	Date	Lat Long Date		
48 49 50 51 52 53 53 53	17430N 17432N 17443B 17448N 17450N	42 26.5 41 58 41 32.3 41 27 41 27 41 47 41 46.8 41 46.8 41 44.8	66 25 66 14 66 00.3 66 58.5 66 58.5 67 00 66 00 66 00 65 40.4	30 Mar 30 Mar 30 Mar 30 Mar 30 Mar 31 Mar 31 Mar 31 Mar 31 Mar	No returns No returns No returns 41 18.5 70 47.5 23 Jul 55 41 20.8 70 30 16 Jul 55 39 32.6 74 15.1 25 Aug 55 41 39.4 69 58.2 6 Aug 55 41 17.4 70 05.7 13 Jul 55 No returns		
52 53 54 55 57 58 59 60	17470N 17487B	41 15.3 41 10 41 03 40 52.5 40 44.5 40 36.5	66 06.2 66 32 67 1l ₁ 68 00.2 68 37.6 69 18.5	31 Mar 31 Mar 31 Mar 31 Mar 1 Apr 1 Apr	40 50.5 72 28.7 11 Aug 55 35 56.9 75 37 22 Sep 55 No returns No returns No returns 38 20 75 05 7 Sep 55		
61 62 63	175 7 2N	40 37 40 54.2 41 09	69 53 70 27 70 48.5	1 Apr 1 Apr 1 Apr	No returns No returns 37 51 75 28.1 20 Sep 55		

ALBATROSS III Cruise 60 19 April-3 May, 1955

	Released					Recovered			
Station	Bottle	Lat	Long	Date		Lat	Long	Date	
1 2 3 4 5 6 6a	17 592N	41 19 41 00.5 41 31.5 40 08.5 39 56.5 39 54 39 53.5	70 59 71 01.5 71 00.5 70 58.5 69 59 69 11 68 52.5	19 Apr 19 Apr 19 Apr 19 Apr 20 Apr 20 Apr 20 Apr		37 53.5 No r No r No r	returns 75 25 returns returns returns returns	24 Aug 55	
7	17667B	39 59.3 40 31	68 01 67 41	20 Apr 20 Apr		59 00	03 00 eturns	2 Nov 56	
9 10 11 11 12 13 14 15	17686N 17704N 17710N 17717B	41 02.5 41 32 42 02 42 02 42 16.2 42 37.5 43 01.5 43 19 43 41	67 29 67 08.5 66 50 66 50 66 41 66 23 66 19 66 05 66 18.5	20 Apr 20 Apr 21 Apr 21 Apr 21 Apr 21 Apr 21 Apr 21 Apr 21 Apr		41 20.8 38 25 40 34.7 40 39 No r No r No r	70 33.1 31 10 73 50 73 07.6 returns returns returns returns	8 Jul 55 12 May 56 13 Aug 55 3 Sep 55	
16 17 17 18 19 20 20 21 22 22 22 22 23 23 23 23 24 24 24 25 25 25	17782N 17784N 17797B 17812N 17826N 17828N 17835B 17843B 17844N 17847B 17850N 17854N 17856N 17856N 17866N 17866N 17866N 17868N 17871B 17876N 17878N 17878N 17883B 17884N	43 44 44 00 44 00 44 57.5 43 55.5 43 55.5 43 36.1 43 36.1 43 36.1 43 36.1 43 29.5 43 29.5 43 29.5 43 29.5 43 29.5 43 20 43 20 45 20 46 20 47 20 48 20	66 27.8 66 27.8 67 03 67 57.2 68 23.5 68 23.5 68 55 68 55 69 33.5 69 33.5 69 33.5 70 01 70 01 70 01 70 21	21 Apr 21 Apr 21 Apr 21 Apr 21 Apr 22		42 02.6 44 30 43 35.8 43 44.7 41 40 43 41 42 03 42 14.1 42 25.7 42 33 42 16.9 42 16.9 42 16.9 42 16.9 42 16.9 42 18.5 42 48.5 42 48.5	70 13 66 06 70 13.1 70 02 69 56 65 05 69 57 70 13.4 70 32.2 70 45.6 70 56.1 70 57.1 70 45.8 70 45.8 70 45.8 70 45.8 70 45.8 70 45.8 70 48.5 70 48.5	25 Jun 55 8 Sep 55 8 May 55 10 Sep 55 17 Oct 55 14 Aug 55 16 Nov 55 17 Jun 55 12 Jul 55 21 May 55 21 May 55 21 May 55 30 Apr 55 30 Apr 55 30 Apr 55 30 Apr 55 27 Apr 55 26 Apr 55 27 Apr 55 26 Apr 55 27 Apr 55 26 Apr 55 27 Apr 55 26 Apr 55	

				necovered		
Station	Bottle	T.a+	Long	Date	T.o.+	Long

Station	Bottle	Lat	Long	Date	Lat	Long	Date
26 26 26 26 27 27 27 27 27 28 29	17889B 17890N 17898N 17899B 17900N 17901B 17904N 17906N 17912N	42 56.8 42 56.8 42 56.8 42 56.8 42 55.8 42 55.8 42 55.8 42 55.8 42 55.8 42 56.5 42 56.5	69 59 5 69 59 5 69 59 5 69 59 5 69 59 5 69 33 8 69 33 8 69 33 8 69 33 8 69 33 8 69 33 8	22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 22 Apr 23 Apr		70 48.4 70 58.3 70 05.2 69 57.1 70 48.5 70 11 70 32.8 70 34.1 70 30.5 returns	28 Apr 55 29 Apr 55 20 May 55 26 Jun 55 4 Jul 55 9 May 55 30 Apr 55 22 May 55 8 May 55
30 31	17 955B	42 52.5 42 51	67 05 66 29	23 Apr 23 Apr	No 1	e turns 66 34.2	1 Aug 55
32 33 33 34 34	17977B 17979B 17993B 17994N	42 49.5 42 44.2 42 44.2 42 39.2 42 39.2	66 00.5 65 26 65 26 64 57 64 57	23 Apr 23 Apr 23 Apr 23 Apr 23 Apr	44 56 45 07.8 45 03 45 03.7	67 00.8 66 34.2 66 47 66 44	9 Oct 55 31 Jul 55 5 Sep 55 24 Jun 55
34 35 35 36 37 38	17985B 18005B 18008N 18017B 18028N	42 39.2 42 15 42 15 42 16 43 15.5 42 15.8	64 57 65 04 65 04 65 31.5 65 59.3 66 30.5	23 Apr 23 Apr 23 Apr 23 Apr 23 Apr 23 Apr	45 04.6 42 01.6 43 27 43 41 40 51.2	66 39 70 02.6 65 16 65 04 72 30 eturns	11 Sep 55 22 Oct 55 2 Jul 55 2 Dec 55 15 Oct 55
39 40 41		42 16 42 18 42 18	66 58.8 67 33.4 68 01	24 Apr 24 Apr 24 Apr	No r	eturns eturns eturns	
կ2 կ2 կ2 կ2	18086N 18087B 18088N 18089B 18090N	42 19 42 19 42 19 42 19 42 19	69 01.1 69 01.1 69 01.1 69 01.1	24 Apr 24 Apr 24 Apr 24 Apr 24 Apr	41 20.9 41 28.3 40 45.4 39 56.4 41 01.8	70 32.5 71 10 72 46.8 74 04.3 71 57.2	26 May 55 30 Jun 55 11 Aug 55 13 Aug 55 13 Jun 55
43 43 43 43 43	18096N 18097B 18100N 18101B 18103B	42 16 42 16 42 16 42 16 42 16	69 34.2 69 34.2 69 34.2 69 34.2	24 Apr 24 Apr 24 Apr 24 Apr 24 Apr	41 35.4 41 22.4 40 44.5 35 50 40 43	70 38.6 70 30.4 72 50 75 37.1 72 55	6 Aug 55 8 Aug 55 12 Jun 55 13 Nov 55 10 Jul 55
74 77 77 77 77 77	18108N 18110N 18115B 18119B 18125B 18128N 18129B	42 15.3 42 15.3 42 15.3 42 14.2 42 14.2 42 14.2 42 01.9	69 59 69 59 70 12 70 12 70 12 69 57.1	27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr	41 23.4 41 25 41 20.7 41 49 41 49.2 41 22.8	70 30.3 70 33 70 40 69 56.4 70 01.6 69 56.1 70 30	20 Jun 55 10 Jun 55 20 Aug 55 26 May 55 22 Jul 55 16 Aug 55 31 May 55
46 46 46	18131B 18132N 18133B	42 01.9 42 01.9 42 01.9	69 57.1 69 57.1 69 57.1	27 Apr 27 Apr 27 Apr	41 27.5 41 39.4 41 22	70 39.9 69 59.1 70 30	14 Jun 55 28 May 55 4 Jul 55

Released	Recovered
----------	-----------

Station	Bottle	Lat	Long	Date	Lat	Long	Date
46 46 46 46 46 47 47 47 47 48 48 49 50 51	18134N 18136N 18137B 18138N 18139B 18140N 18142N 18144N 18151B 18152N 18154N 18160N 18169B	42 01.9 42 01.9 42 01.9 42 01.9 42 01.9 42 01.9 41 44.6 41 44.	69 57.1 69 57.1 69 57.1 69 57.1 69 57.1 69 40 69 40 69 40 69 40 69 20 68 57 68 33 68 04.6 66 55.5 66 29.8	27 Apr 27 Apr 28 Apr 28 Apr 28 Apr 28 Apr	144 40 No r	70 30 70 39 72 51.8 70 55.3 70 50.2 70 32.5 72 55.7 74 33 70 47.4 73 18.5 70 30.3 75 49 72 45 eturns 65 46 eturns	20 May 55 4 Jun 55 12 Jun 55 20 Jul 55 6 Jun 55 26 May 55 15 Aug 55 9 Oct 55 8 Jun 55 14 Aug 55 31 May 55 17 Nov 55 21 Aug 55
53 54 55 56 57 57 58 59 60 61 61 61 62	18262N 18272N 18312N 18316N 18320N 18328N	41 44.7 41 45.2 41 35 41 14.8 41 14.8 41 14.2 41 15.1 41 16.5 41 16.5 41 17.2	66 03.8 65 43 65 54 66 16 66 16 66 30.5 66 59 67 29 68 03.4 68 03.4 68 32.7	28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 28 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr	No r No r 35 32.5 40 53.4 No r No r No r 41 32.6 40 49.2 41 20.8 42 02	eturns eturns eturns eturns 75 28 72 20 eturns eturns eturns 70 36.7 72 31 70 30 70 05.7	30 Sep 55 14 Aug 55 16 Jul 55 19 Aug 55 16 Jul 55 28 Oct 55
63 64 64 64 66 64 66 61 61 61	18346N 18348N 18350N 18352N 18354N 18355B	41 14.3 41 00 41 00 41 00 41 00 41 00 41 00 40 43.6	68 50.2 68 49.3 68 49.3 68 49.3 68 49.3 68 49.3 68 49.3	29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr 29 Apr	41 20.9 41 38.3 35 54.1 35 21 40 38.3 41 30	eturns 70 33 70 38.6 75 35.4 75 30 73 18.6 71 20 eturns	6 Jun 55 30 Jun 55 14 Sep 55 15 Sep 55 4 Sep 55 25 Jun 55
66 67 67 68 68 69 70	18383B 18389B 18393B 18402N	40 40 49 39.5 40 39.5 40 39.4 40 40.5 40 44.3	68 23.5 67 53.5 67 53.5 67 26.4 67 26.4 67 00.7 66 42.9	30 Apr 30 Apr 30 Apr 30 Apr 30 Apr 30 Apr 30 Apr	37 30 41 28.8 35 15.8 40 38.3	eturns 75 38.6 71 16.6 75 31 73 11 eturns 75 05	4 Oct 55 14 Aug 55 7 Oct 55 16 Aug 55 23 Sep 55

		Rel	eased		Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
71 71 71 72 73 74	18432N 18436N 18439B	41 01.5 41 01.5 41 01.5 41 33.6 42 02.6 42 26	66 32 66 32 66 32 66 17 66 03 65 39	30 Apr 30 Apr 30 Apr 1 May 1 May 1 May	No r	72 28.6 74 04.7 74 03 eturns eturns eturns	28 Aug 55 12 Aug 55 22 Sep 55	
75 75 76 77	18482N 18487B 18498N	42 45.6 42 45.6 42 57 42 58	65 28 65 28 65 20.5 65 41	1 May 1 May 1 May 1 May	45 05 41 47.7 44 36	66 28 70 01.2 66 54.5 eturns	12 Oct 55 23 Nov 55 30 Jul 55	
78 78 78	18518N 18521B 18522N	42 58 42 58 42 58	66 00 66 00 66 00	l May l May l May	43 48 44 34.5 43 20.3	66 09 65 55 65 37.3	21 May 55 31 May 55 29 Jul 55	
79 79 79	18526N 18531B 18532N	42 41 42 41	65 48.2 65 48.2 65 48.2	l May l May l May	43 29 43 07.2 44 45.9	65 29.5 70 51.5 66 44.2	6 Jun 55 28 Apr 56 3 Aug 55	
79 79 80	18533B 18534N	42 41 42 41 42 27	65 48.2 65 48.2 65 39	1 May 1 May 1 May	45 06 山 33	66 30 66 02 eturns	5 Jul 55 10 Aug 55	
81 82 83 84 85 86 87 88	18552N	42 15.2 42 07 41 55.8 41 46.3 41 32 41 18.5 41 12.3 41 03 40 52.5	65 31 65 45 66 02.5 66 17.1 66 34 66 52 67 15 67 30 67 48	1 May 1 May 2 May	No r No r No r No r No r No r No r	68 37 eturns eturns eturns eturns eturns eturns eturns eturns eturns	28 Oct 55	
90 91 92	18668N	40 40.6 40 36.8 40 33.2	68 08.5 68 11.4 67 51.4	2 May 2 May 2 May	56 30 No r	07 07 eturns eturns	25 Aug 56	
93 94 94 94 95 96	18694N 18703B 18705B 18710N 18711B	40 31 40 31 40 32 40 32 40 32 40 29.8 40 27.8	67 29 67 29 67 52.8 67 52.8 67 52.8 68 17.8 68 40	2 May		70 50 72 48 73 05 74 45.4 74 45.4 eturns eturns	6 Aug 55 17 Aug 55 28 Sep 55 14 Sep 55 25 Sep 55	
97 98 98 98 98 98 98	18748N 18753B 18754N 18756N 18758N 18759B 18761B	40 24.7 40 29.4 40 29.4 40 29.4 40 29.4 40 29.4 40 29.4 40 29.4	69 09 69 29 3 69 29 3 69 29 3 69 29 3 69 29 3 69 29 3	3 May	60 47 39 03 40 51 35 26.7 40 52 39 56.1 41 04	00 48 74 45.4 72 26.8 75 28.9 72 24 74 04.3 71 56.9	12 Oct 56 19 Sep 55 7 Aug 55 28 Sep 55 15 Aug 55 14 Aug 55 14 Aug 55	

	leleased		Recovered	
 	 _	 - .	-	

Station	Bottle	Lat	Long	Date	Lat	Long	Date
99 100 100 100 100 101 101 101	18777B 18778N 18781B 18782N 18789B 18791B 18792N 18795B	40 31.2 40 38.5 40 38.5 40 38.5 40 38.5 40 56 40 56 40 56	69 45.8 70 07.7 70 07.7 70 07.7 70 07.7 70 30.5 70 30.5 70 30.5 70 30.5	3 May	41 35.6 40 39.6 41 28.8 41 20.8 41 18.4 41 20.9 41 20 41 18.7	eturns 70 39 73 05 70 45.1 70 29 70 47.3 70 32.5 70 44 70 48	24 Jun 55 13 Jun 55 1 Jun 55 24 May 55 28 May 55 24 May 55 27 Jul 55 29 May 55
101	18796N	40 56	70 30.5	3 May	41 24.1	70 30.7	10 Apr 56
101 102	18799B 18811B	40 56	70 30.5 70 50	3 May 3 May	41 21 41 30.1	70 30.5 71 06.5	25 May 55 29 May 55

ALBATROSS III Cruise 61 16-28 May, 1955

	Released					Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date		
1 1 1 2 2 2 3 4 5 6 7 8	18816N 18818N 18820N 18822N 18825B 18829B 18831B 18844N 18853B	41 17.3 41 17.3 41 17.3 40 39.5 40 39.5 40 39.5 40 00 40 00 39 59 41 02 42 00	71 00 71 00 71 00 71 00 70 30 70 30 70 30 70 00 69 05.3 67 59 67 23.5 66 58	16 May 16 May 16 May 16 May 16 May 16 May 16 May 16 May 17 May 17 May 17 May	No r	70 44 71 34.6 70 20 70 17 70 55.8 71 33.9 71 33.8 74 16.5 72 40 returns returns	5 Jun 55 10 Jun 55 31 May 55 31 May 55 6 Jun 55 10 Jun 55 9 Jun 55 19 Sep 55 4 Sep 55		
8 8 9 9 10 11 11 12 12 12 12 13	18903B 18906N 18912N 18919B 18920N 18926N 18940N 18941B 18944N 18947B 18948N 18956N	42 37.2 42 37.2 43 15 43 15 43 15 43 15 43 52 43 52 43 52 44 20 44 20 44 20 44 23.8 43 47	66 21 66 06.8 66 06.8 66 06.8 67 21.5 66 20 66 20 67 30 67 30 67 30 67 30 67 12	17 May 17 May 18 May 19 May 19 May	43 40 45 08.5 45 04 43 38 44 05 42 41.5 44 46 45 07.2 44 57.5 43 36.4 44 16 No r	65 05 66 16 67 02.5 66 03 66 13 70 47.5 65 36.5 70 10 66 30 65 14 70 13 66 08 returns	12 Jun 55 12 Sep 55 5 Jul 55 16 Nov 55 18 Oct 55 25 Nov 55 14 Jun 55 21 Aug 55 22 Jun 55 31 Oct 55 14 Jun 55 10 Sep 55		
15 15 16 17	18981B 18988N 1900UN	43 29.3 43 29.3 43 30.3 43 31 43 31	66 11.2 66 11.2 68 03 69 00 70 03.4	19 May 19 May 19 May 20 May 20 May	45 08 45 01 44 57 No r	64 53 67 04.6 66 54 eturns	29 Aug 55 31 Jul 55 7 Sep 55		
19 20 21 21 22 22 22 22 23 24 25	19130N 19043B 19054N 19064N 19067B 19069B 19072N	42 57.8 42 48.9 42 48.9 42 47.4 42 47.4 42 47.4 42 44.4 42 33 42 00	70 22.3 68 55 67 53.8 67 53.8 66 57.2 66 57.2 66 57.2 66 02 64 38.8 64 42	20 May 20 May 20 May 20 May 20 May 20 May 21 May 21 May 21 May	39 20.6 44 52 45 14 44 49.3 43 38 45 06.9 44 49.5 No r	74 28 66 56 66 03.5 65 31 70 13 66 21.5 66 58 returns returns	7 Oct 55 22 Oct 55 14 Sep 55 25 Sep 55 8 Oct 56 28 Jul 55 30 Jul 55		

			Released			Recovered	
C + a + d = -	D. 443 -	Tak	Τ	Doto	Tak	T	

Station Bottle Lat Long	Date La	t Long	Date
26 19114N 41 58.2 66 03 26 19122N 41 58.2 66 03	21 May 43	41 65 35 26.3 65 37.6	1 Nov 55 28 Jun 55
27 42 04.2 66 58 28 19146N 42 02 68 01. 29 19150N 42 33.3 70 31.		No returns 27.7 65 29.6 27.5 65 39	11 Jul 55 18 Aug 55
29 19154N 42 33.3 70 31.° 29 19158N 42 33.3 70 31.°	7 22 May 42 7 22 May 42	03.7 70 06 04.3 70 07.8	12 Jun 55 15 Jun 55
30 42 10.7 70 02 31 41 51.8 69 36.9 32 19189B 41 49 68 55.		No returns No returns	20 San EE
33 41 44.7 68 04	23 May	56.5 65 17 No returns	20 Sep 55
34 19210N 41 32 69 32.		20.8 70 34	8 Jul 55
34 19211B 41 32 69 32.			14 Aug 55
34 19219B 41 32 69 32.5 35 41 18.5 68 55.5		20.8 70 30	15 Jul 55
		No returns	
	23 Ma y 8 24 May 41	No returns 17 72 15.7	15 Aug 55
37 19248N 41 32.8 66 55.0 37 19251B 41 32.8 65 55.0		30 71 07.6	25 Aug 55
		30 71 03	26 Jul 55
37 19255B 41 32.8 66 55.8 37 19256N 41 32.8 66 55.8			19 Jul 55
38 41 52.0 66 51.1		No returns	19 001 99
39 41 00.9 66 15.9		No returns	
40 19282N 41 03.6 67 00.5		58 72 07.8	15 Aug 55
40 192878 41 03.6 67 00.5		33.7 71 13.2	4 Aug 55
40 19288N 41 03.6 67 00.9		57.6 72 09	15 Aug 55
40 19290N 41 03.6 67 00.5		36.8 73 24.4	15 Aug 55
40 19291B 41 03.6 67 00.9		37 31 07	2 Aug 56
41 41 02 69 09.1		No returns	2 46 /0
42 19306N 40 30.4 69 03.1			14 Aug 55
42 19310N 40 30.4 69 03.3			9 Aug 55
42 19311B 40 30.4 69 03.3		35 73 34	21 Aug 55
42 19312N 40 30.4 69 03.5		33.1 73 56	15 Aug 55
42 19313B 40 30.4 69 03.2		47.3 72 40	14 Aug 55
42 19316N 40 30.4 69 03.3	2 25 May 41		22 Jul 55
43 19327B 40 28,2 68 00.		37.2 74 11.7	20 Sep 55
40 31.4 66 55.6		No returns	
45 40 31.3 66 31.0		No returns	
46 39 50 67 14	25 May	No returns	
47 19372N 40 58.5 67 57.1	8 26 May 40	48 72 42.7	21 Aug 55
47 19376N 40 58.5 67 57.1	8 26 May 41	30.5 71 05	8 Jun 56
48 19318N 39 45.8 68 28.	8 26 Ma y 39	19.5 74.30	8 Oct 55
49 40 57.4 69 00.1	8 26 May	No returns	
50 19392N 39 46 69 30.	4 27 May 40	51.5 72 25	15 Aug 55
51 19414N 40 42.3 70 06.1		52 72 23.5	13 Jun 55
51 194158 40 42.3 70 06.5	2 27 May 35	13.7 75 31.6	17 Sep 55

Released	Recovered

Station	Bottle	Lat	Long	Date	Lat	Long	Date
51	19416N 19418N	40 42.3 40 42.3	70 06.2 70 06.2	27 Ma y 27 Ma y	40 46.5	72 42.8 76 10.7	12 Jun 55 20 Sep 55
3 3 3	19423B	40 42.3	70 06.2	27 May	35, 25	75 29	7 Nov 56
5 <u>1</u> 52	19424N	40 42.3	70 06.2 70 33.1	27 May 27 May	40 46.5 No r	72 42.8 eturns	12 Jun 55
53	19440N	40 42	71 16	27 May	40 38	73 12	14 Aug 55
53 54	19442N	40 42	71 16 71 57.2	27 May 28 May	40 34.7 No r	73 50 eturns	9 Sep 55
55	19467B	山 00.2	71 37.6	28 May	36 05	75 42	18 Sep 55
55 56	19468N 19476N	加 12.8 加 12.8	71 37.6 71 15.5	28 May 28 May	38 36.5 38 30	75 03.6 75 03.1	14 Aug 55 24 Sep 55
56	19479B	41 12.8	71 15.5	28 May	38 20	75 05	17 Aug 55
56 56	19481B 19482N	41 12.8 41 12.8	71 15.5 71 15.5	28 May 28 May	40 38.1	73 11.8 71 34	13 Jun 55 9 Jun 55
56 56	19483B 19484N	11 12.8 11 12.8	71 15.5 71 15.5	28 May 28 May	40 38.1	73 11.8 71 34	12 Jun 55 9 Jun 56
0	T3 4040	тт. тс. О	11 1707	20 may	41 11	1- 24	9 0001 90

ALBATROSS III Cruise 71 20 Feb-2 March, 1956

		Rel	eased	Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date
1 2 3 4 5 6 7 8 9 10 11 12		41 17.5 40 50.5 40 24 40 00 39 58 39 56.5 39 56.3 39 56.3 40 53.5 41 23 41 55.3	71 00 71 01 71 00.5 71 00 70 22 69 45 68 57 68 00 67 42.5 67 26 67 16 67 01	20 Feb 20 Feb 20 Feb 21 Feb 21 Feb 21 Feb 21 Feb 21 Feb 21 Feb 22 Feb 22 Feb	No representation of the control of	returns	
13 14	19639B	42 18.5 42 45	66 45 66 32	22 Feb 22 Feb	41 30 No 1	71 02.5 eturns	5 Sep 56
15 16 17	19662N 19671B	43 18.8 43 44 43 56.7	66 13.3 66 32 66 41.2	22 Feb 22 Feb 22 Feb	43 34 44 58	65 47 67 03 returns	13 May 56 27 Jul 56
18 19 20 20 20 21 21 21 21 21 22 22 23 23 23 24 24 24 24 24 24 24 24	19694N 20344N 20356N 20356N 20361B 20364N 20365B 20369B 20370N 20373B 20374N 20379B 20379B 20381B 19704N 19706N 19707 B 19707 B 19707 B 19717B 19717B 19717B 19718N 19719B 19713B	43 50 43 44 66 43 34 66 43 34 66 43 30 55 43 43 43 43 43 43 43 43 43 43 43 43 43 4	67 30 68 05.5 68 05.5 68 34.9 68 34.9 69 20.7 69 20.7 69 20.7 69 20.7 69 20.7 70 04.5 70 26.5 70 26.5	23 Feb 23 Feb 24 Feb 25	世 23.5 42 18 43 56.9 42 01.9 41 38.1 42 23 41 23 41 23 41 23 41 23 41 336 42 04.8 42 04.8 44 04.8 45 04.8 46 04.8 47 04.8 48 04.8 48 04.8 48 04.8 48 04.8 48 04.8 49 04.8 49 04.8 40 04.8 40 04.8 40 04.8 41 04.8 42 04.8 43 04.8 44 04.8 45 04.8 46 04.8 47 04.8 48 04	66 12.7 70 53 70 01.3 66 58 70 05.6 70 27 70 20 70 43 69 56.6 70 30.3 70 46.1 70 45 70 10.5 70 39 70 14.3 69 57.1 70 20 70 37.5 70 14.8 70 13.3 70 08 70 04.7 70 14.7	5 May 56 26 Oct 56 28 Jul 56 28 Jul 56 29 Jun 56 1 Nov 56 29 May 56 1 Jun 56 26 Jun 56 27 Jul 56 13 Jul 56 13 Jul 56 13 Jul 56 13 Jul 56 14 Aug 56 15 Jun 56 16 Apr 56 26 Apr 56 27 Apr 56 28 May 56 27 Apr 56 28 May 56 21 Mar 56

	Released					Recovered				
Station	Bottle	Lat	Long	Date	La	t	Long	Date	<u>e</u>	
25 26 27	19729 B	42 48.5 42 48 42 47	69 14 68 27 67 38	23 Feb 24 Feb 24 Feb	41		70 14 returns returns	28	Jul	56
28 28 29 30 31 32 33 34	19806N 19808N	42 46.5 42 46.5 42 38 42 35.3 42 22.5 42 08.8 42 07.8	66 58 66 58 66 15 65 42 64 51.5 65 03 65 25.1 65 53.5	24 Feb		5 28 1 Oh. 8 No 1 No 1 No 1 No 1	64 50 70 13.3 returns returns returns returns returns		Jun Oct	
35 36 37 38 38 39	19969B 19980N 19984N 19990N	42 08 42 11 42 13 42 09.4 42 09.4 42 20.5	66 32 67 09 67 46 68 25.2 68 25.2 69 01	25 Feb 25 Feb 25 Feb 25 Feb 25 Feb 25 Feb	村	No 1 26 29.7	returns 70 42 71 08 70 30.3 70 46.7	2 28 2	Jul	56 56 56
40 40 40 40 40	20014N 20015B 20017B 20021B 20022N	42 31.8 42 31.8 42 31.8 42 31.8 42 31.8	69 46 69 46 69 46 69 46	25 Feb 25 Feb 25 Feb 25 Feb 25 Feb	713 713 713 713	1 23.1 1 加 20.8	70 06 64 47 70 30 69 58 70 30	14 16 21 24	Jun Mar May	56 56 56 56
河 河 河	20027B 20032N 20033B 20034N	42 11 42 11 42 11 42 11	70 07 70 07 70 07 70 07	27 Feb 27 Feb 27 Feb 27 Feb	42 43	30.4 2 04.4 2 37.6 2 04.1	71 04 70 14.2 71 12 70 14.6	2 1	Jul	56 56 56 56
1,1 1,2	20036N	42 11 41 52.7	70 07 69 39.5	27 Feb 27 Feb	43	L 44.9 No 1	70 25.7 returns		-	56
43 44 45	2005 1 B 20067B	山 52.7 山 53 山 51.5	69 00.8 68 21 67 38	28 Feb 28 Feb 29 Feb	117		returns	15	Jun Jul	56
46 46 47 48 49	20093В 2009ЦN	山 46.5 山 46.5 山 36 山 20 山 13.8 山 15.4	66 50 66 50 66 19.5 66 00 66 08 66 57	29 Feb 29 Feb 29 Feb 29 Feb 29 Feb 1 Mar	1†3 7†3	No : No : No :	70 42.5 70 47 returns returns returns returns returns		Jun Oct	56 56
50 51 52 53 54 55 56 57 58	201 65B	13.5 40 46 40 47 40 48.5 40 28.8 40 27.5 40 35.5	67 56 68 59.7 68 58 68 17 67 43.7 67 55.4 68 59 69 39	1 Mar 1 Mar 1 Mar 1 Mar 1 Mar 1 Mar 2 Mar	ţ ı .	No no no no no no no no	71 02.6 returns returns returns returns returns returns	10	Jul	56

		Released			Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
59 60 60 60 60	20257B 20260N 20264N 20265B 20267B	40 44.7 41 17 41 17 41 17 41 17 41 17	70 19.4 70 52.7 70 52.7 70 52.7 70 52.7 70 52.7	2 Mar 2 Mar 2 Mar 2 Mar 2 Mar 2 Mar	No r 41 19.2 40 21 41 25.5 41 25.5 41 26	70 山 70 55.5	18 Apr 56 18 Mar 56 15 Mar 56 26 Sep 56 11 Jun 56	

		Re	eleased	Recovered			
Station	Bottle	Lat	Long	Date	Lat Long Da	te	
1 1 1 2 3 4 5 6 7 8 9	20272N 20273B 20274N 20276N 20278N	41 17.8 41 17.8 41 17.8 41 17.8 40 38 40 02.5 40 01 40 01 39 57.5 39 57.5 40 32	71 00 71 00 71 00 71 00 71 00 71 01 70 59 70 13.5 69 26 68 38 68 04.3 67 43	21 Mar 21 Mar 21 Mar 21 Mar 21 Mar 21 Mar 22 Mar 22 Mar 22 Mar 22 Mar 22 Mar 22 Mar	41 30.5 71 04 24 41 16 70 12.3 2 40 58.5 72 06.2 17 40 58.3 72 07.3 17 No returns	Apr 56 Jun 56 Jun 56 Apr 56 Apr 56	
10	20413B 20422N	41 06 41 39 42 09	67 26.5 67 26.5 67 08 66 54	22 Mar 22 Mar 23 Mar 23 Mar		Jul 56 May 56	
12 12 13 14 15	20456N 20460N 20467B	42 40 42 40 43 10 43 03.8 42 59 42 35.5	66 22 66 22 66 13 65 31.3 64 40 64 38.5	23 Mar 23 Mar 23 Mar 23 Mar 23 Mar 23 Mar	44 54.5 65 21 25 45 09 64 48 21 44 50 66 56 14 No returns No returns	May 56 Jun 56 Jul 56	
17 18 19	20511B	42 38.5 42 50 42 48	65 43 67 23 68 05	24 Mar 24 Mar 24 Mar	No returns 44 52.7 66 57.8 26 No returns No returns	Sep 56	
20 21 22 23 24 25 26 27	20556N 20563B 20579B	42 47 42 39.7 42 35 42 04.5 42 04.8 42 07.5 42 04.3 42 01.5	68 54.5 70 02 70 23.5 69 52 68 57 67 38 67 00 66 04	24 Mar 24 Mar 26 Mar 26 Mar 26 Mar 26 Mar 27 Mar 27 Mar	45 22 64 20 7 41 39 70 11.5 2	Sep 56 Sep 56 Jul 56	
27A 28 29	20648N	42 03 42 07 42 46.5	65 56 65 06 65 07	27 Mar 27 Mar 27 Mar	A	Jul 56	
30 30 31	20677B 20680N	42 40.5 42 40.5 42 17. 5	66 08.3 66 08.3 66 02	28 Mar 28 Mar 28 Mar	44 13 66 09 23	Oct 56 Jul 56	
32 33	20710N	41 45.5	65 53 67 02.5	28 Mar	Lil 23.2 70 03 25	Nov 56	
34 35 36	20728N	41 50.5 41 45.5 41 47 41 47	68 00 69 01.5 69 46	28 Mar 28 Mar 28 Mar 29 Mar	Nc returns 41 22.8 70 30.3 14 Noreturns No returns	Jul 56	

	<u>F</u>	Released		Recovered			
Station Bot	tle Lat	Long	Date	Lat	Long	Date	
37 38 207 39 40 41 42 43 44	80N 41 25 41 30 41 24 5 41 20 41 06 41 05 40 45 8	66 05 66 27 67 17	29 Mar 29 Mar 29 Mar 29 Mar 29 Mar 29 Mar 29 Mar 30 Mar	41 47 No r No r No r No r	70 02 eturns eturns eturns eturns eturns eturns	12 Nov 56	
	66N 40 45 40 26	66 44 67 18	30 Mar 30 Mar	41 44.9 No r	70 35.4 eturns	4 Oct 56	
47 208 48 208 48 208 48 209 49 209 49 209 49 209 50 209 50 209 50 209 50 209 50 209 51 209 51 209 52 209 52 209 52 209 52 209 52 209 52 209	92N 41 04.3 93B 40 27.5 99B 40 27.5 99B 40 27.5 07B 40 55 11B 40 55 11B 40 55 17B 40 27 18N 40 27 21B 40 27 22N 40 27 27B 40 27 27B 40 27 27B 40 27 28N 40 27 27B 40 27 28N 40 56.8 36N 40 56.8 41B 41 17.8 44N 41 17.8 44N 41 17.8 44N 41 17.8	68 07.5 68 59 68 59 68 59 68 59 68 59 69 37.5 69 37.5 69 37.5 70 14 70 14 70 14 70 14 70 14 70 39 70 39 70 39 71 00 71 00 71 00 71 00 71 00 71 00	30 Mar 30 Mar 30 Mar 30 Mar 30 Mar 30 Mar 30 Mar 30 Mar 30 Mar 31 Mar	420.7 41 23.2 41 17.7 41 29.3 41 30.5 41 30.5 41 30.5 41 30.5 41 30.8 41 27.4 41 38.8 41 20.8 41 52.8 41 55.8 41 55.8 41 58.4 40 58.4 40 58.4 40 58.4 41 30.5	70 40 70 30.9 70 08.8 71 17.5 70 03 70 17 71 02.6 70 46.5 70 40.9 71 05.5 70 47.8 71 08 70 30 70 30 70 30 70 30 71 58.3 71 11.6 72 07 72 06.6 72 26.4 72 06.6 70 07.7 71 05.3	26 Jun 56 5 Jun 56 2 Jun 56 2 Jun 56 30 May 56 10 Jul 56 7 Jul 56 25 Jun 56 26 Jun 56 27 Jul 56 28 May 56 29 Jun 56 21 Jun 56 22 Jun 56 24 Jun 56 25 Apr 56 27 Apr 56 17 Apr 56	

ALBATROSS III Cruise 73 17-28 April, 1956

		Re	leased	Re	Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
1 1 1 2 3 4 5 6 8	20956N 20957B 20958N 20961B 20964N 20968N	40 56 40 56 40 56 40 56 40 56 40 31.4 40 00.5 40 01.5 40 00.5 40 00	71 00 71 00 71 00 71 00 71 00 71 00.2 70 56 69 58.3 68 52.5 68 00 67 31.8	17 Apr 17 Apr 17 Apr 17 Apr 17 Apr 17 Apr 17 Apr 18 Apr 18 Apr 18 Apr 18 Apr	41 27.4 No r No r	70 29.7 70 27 70 41.6 71 15.5 70 00.8 70 30.2 returns 70 49.5 returns returns	25 May 56 20 Jul 56 15 Jul 56 8 Jul 56 2 Jun 56 15 Oct 56 7 Jul 56	
9 11 11 12 12 12 12 13 13 13 13A 13A 13A 13A 14 14 14 14 14 11 15 16 16 16	21054N 21060N 21065B 21066N 21070N 21072N 21075B 21076N 21078N 21079B 21084N 21088N 21089B 21091B 21091B 21092N 21096N 21100N 21102N 21104N 21104N 21128N 21129B	43 43 43 43 43 43 43 43 43 43 43 43 43 4	67 11.7 66 38 66 28 66 28 66 28 66 28 66 20.4 66 20.4 66 20.4 66 38.5 66 38.5 66 51 66 51 66 51 66 51 66 9 00 69 00 69 00	18 Apr 19 Apr		66 58 66 58 66 58 66 58 66 58 66 54 65 52 66 31.5 66 57 65 52 65 45 65 43 66 44 48 66 53.6 64 48 66 64 67 02 65 69 22.4 70 36.5 70 13.7 70 12.8	27 Jun 56 214 Jun 56 10 Oct 56 25 May 56 6 May 56 16 Sep 56 28 Jul 56 29 Jul 56 29 Jul 56 9 May 56 13 May 56 14 Sep 56 9 May 56 21 Jul 56 21 Jul 56 21 Jul 56 21 May 56 10 May 56 10 May 56 11 May 56 21 Sep 56 11 Jun 56 12 Jun 56 11 Jun 56 11 Jun 56	
17 17 18 19	21136N 21140N 21153B 21162N 21163B	43 29 43 29 43 00.4 42 58.3 42 58.3	70 02.5 70 02.5 70 30 70 00 70 00	20 Apr 20 Apr 20 Apr 20 Apr 20 Apr	42 38 43 49 44 49 45 1 5.2 45 1 0	70 36.7 69 52.9 65 21 65 48.5 64 46	30 Sep 56 13 Jun 56 12 Nov 56 16 Sep 56 14 Oct 56	

		Rel	eased	Recovered			
Station	Bottle	Lat	Long	Date	Lat Long	Date	
20 21 21 21 22 22 22 23 24 25	21171B 21182N 21190N 21192N 21196N 21202N	42 53.2 42 48.8 42 48.8 42 48.8 42 53 42 53 42 53 42 51 42 37 42 01	68 55.8 68 03 68 03 67 00.5 67 00.5 66 13 65 01.5 65 12	20 Apr 20 Apr 20 Apr 20 Apr 20 Apr 21 Apr 21 Apr 21 Apr	44 50 66 56 44 55 66 56 43 41 70 07 42 18 70 55 45 28 64 52 44 48.5 66 58.9 No returns No returns No returns	14 Jul 56 16 Jun 56 12 Sep 56 11 Nov 56 26 Sep 56 12 Jun 56	
26 27 28 29 30	21241B 21271B 21287B	42 01.5 42 05.4 41 58 42 04.8 42 06.8	66 02 66 49 68 00 69 03.5 69 28.5	21 Apr 21 Apr 22 Apr 22 Apr 22 Apr 22 Apr	45 03 65 04 45 03 65 04 45 13 64 33 44 52 65 27 No returns	27 Nov 56 27 Nov 56 6 Nov 56 4 Nov 56	
31 31 32 33 34 35	21302N 21306N	42 14 42 14 42 33.4 42 16.5 41 31.5 41 34.5	69 46.1 69 46.1 70 38.8 70 15.5 69 40 69 04	22 Apr 22 Apr 22 Apr 22 Apr 23 Apr 23 Apr	42 04 70 15 43 27 65 28 No returns No returns No returns No returns	27 Oct 56 7 Sep 56	
36 37 39 40 42 43 445 46 47 48 49 50 52 52	21370N	41 28.5 41 30 41 02 41 01.5 40 58.2 41 03.5 40 30.3 40 30.5 40 34 41 13 41 32 42 13.2 42 23 42 23 42 59.5 42 14.5	67 55 66 54 66 27 5 66 58 5 68 05 5 69 04 68 51 68 00 66 59 66 28 5 65 46 8 65 32 5 65 10 1 65 47	23 Apr 23 Apr 24 Apr 24 Apr 24 Apr 25 Apr 25 Apr 25 Apr 25 Apr 25 Apr 26 Apr 26 Apr 26 Apr 26 Apr	No returns	30 Jul 56	
52	21 544N 21 548N 21 551B 21 5 54N	42 33 42 33 42 33 42 19.8 42 23	66 27 66 27 66 27 66 56.7 66 02	26 Apr 26 Apr 26 Apr 26 Apr 26 Apr	44 37 65 43	5 Aug 56 18 Jul 56 16 Nov 56 27 Oct 56	
52 53 54 55 55 56 57 58 59 60 61	21578N 21581B 21595B	42 18.6 42 18.6 41 46.3 41 47.5 41 45 41 26.8 41 10.5 40 44.5	65 30.6 65 30.6 65 30.4 65 58 67 03.5 66 53.9 66 43.5 66 29.5	26 Apr 26 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr 27 Apr	43 35 65 26 41 51 69 57	30 Jul 56 28 Oct 56 23 Jun 56	

Station	Bottle	Lat	Long	Date	Lat	Long	Date	
62 63 64	21663B	40 46 40 44.5 40 31.5	67 39 68 05.8 69 00	27 Apr 28 Apr 28 Apr	No r	70 39.6 eturns	17 Jul 56	
65	21701 B	40 48	70 02	28 Apr	11 27.5	71 11.6	13 Jul 56	
65	21705B	40 48	70 02	28 Apr	41 11.9	71 35.5	17 Jul 56	
65	21707B	40 48	70 02	28 Apr	LI 18	70 16	24 Jul 56	
66	21710N	41 04.4	70 34.7	28 Apr	41 17.2	70 14.8	2 Jun 56	
66	21711B	41 04.4	70 34.7	28 Apr	山 39	70 11.8	4 Jun 56	
66	21713B	41 04.4	70 34.7	28 Apr	41 36.9	70 26	13 Jul 56	
66	21714N	41 04.4	70 34.7	28 Apr	41 20.9	70 35	4 Jun 56	
66	2 1717 B	41 04.4	70 34.7	28 Apr	41 19	70 49	23 Jul 56	
66	21720N	41 04.4	70 34.7	28 Apr	妇 20.9	70 33.5	4 Jun 56	
67	21721B	41 11	70 50	28 Apr	ш 36.5	70 24	1 Jun 56	
67	21723 B	41 11	70 50	28 Apr	41 39.4	69 59	10 Jun 56	
67	21727B	41 11	70 50	28 Apr	垣 38	70 15	29 Jun 56	
67	21728N	41 11	70 50	28 Apr	41 29.8	71 02.4	26 May 56	
67	21731B	41 11	70 50	28 Apr	41 36.5	70 39	2 Jun 56	
67	21723N	41 11	70 50	28 Apr	41 39.2	70 07	23 May 56	

Recovered

Released

ALBATROSS III Cruise 75 16-29 May, 1956

		Re	leased	Recovered			
Station	Bottle	Lat	Long	Date	Lat Long Date		
1 1 1 1 1 1 1 2 2	21733B 21734N 21735B 21739B 21740N 21741B 21743B 21744N 21750N 21754N	41 01.7 41 01.7 41 01.7 41 01.7 41 01.7 41 01.7 41 01.7 41 01.7 40 09 40 09	70 57.7 70 57.7 70 57.7 70 57.7 70 57.7 70 57.7 70 57.7 70 58.6 70 58.6	16 May 16 May 16 May 16 May 16 May 16 May 16 May 16 May	41 30.5 71 04 24 Jun 56 41 16.5 70 13.4 2 Jun 56 36 31 75 52 24 0ct 56 41 24.2 70 31.5 10 Jun 56 41 17.2 70 14.8 4 Jun 56 41 23.1 70 30 9 Jun 56 41 23.2 70 30.8 5 Jun 56 41 39.4 70 07 21 Jun 56 35 41 75 29 7 Nov 56 41 20.8 70 50.4 12 Jun 56		
2 2 3 4 5 5 5 6 7 8	21782N 21785B 21789B	40 00.5 39 57.8 40 00.5 40 00.5 40 00.5 40 01.5 40 39 41 03	71 00 69 33 68 51 68 51 67 59.8 67 37.5 67 17	16 May 17 May 17 May 17 May 17 May 17 May 17 May 17 May	No returns No returns H1 09 71 34 1 Sep 56 H1 21 70 29 30 Jul 56 35 46 75 31 1 Nov 56 No returns No returns H1 21.8 70 30 14 Jul 56		
8	21 8 19 B	41 03 41 27	67 17 66 51	17 May 17 May	41 21 70 01.6 21 Jul 56 No returns		
10 11 11 12 13 13 13 14 14 14 14	21844N 21854N 21855B 21859B 21872N 21882N 21885B 21887B 21888N 21889B 21896N 21898N	41 57 42 34 42 34 42 34 43 01.5 43 15.4 43 15.4 43 15.4 43 17 43 17 43 17 43 16.5	66 30 66 06 66 06 65 46 66 03.7 66 03.7 66 03.7 66 43 66 43 66 43 67 23	18 May 18 May	43 25 65 37 27 Jul 56 44 51 66 58 29 Jul 56 45 20 64 47 29 Aug 56 41 44.7 70 25 27 Oct 56 44 28 63 36 22 Aug 56 42 02.5 70 03.7 30 Sep 56 42 02 70 06 16 Oct 56 43 42 69 50 1 Jul 56 43 42 69 50 3 Jul 56 44 58.5 67 00.7 24 Jul 56 43 33.4 70 17 19 Jun 56 43 42.1 69 50 11 Jul 56 45 27.5 64 52 2 Aug 56		
16 17 17 18 18 19 19 20 21	21926N 21931B 21941B 21984N 21954N 21958N	43 45.2 43 44.3 43 44.3 44 00.2 44 00.2 44 15.5 44 15.5 44 21 44 28	67 20.9 66 25.7 66 25.7 66 26.2 66 26.2 66 55 66 55 67 21.8 66 37	18 May 19 May 19 May 19 May 19 May 19 May 19 May 19 May 19 May	No returns 44 27 66 07 2 Jun 56 44 30 66 06 30 May 56 44 48 66 47 25 Jul 56 44 05 66 11 24 ct 56 44 25 66 03 28 Jul 56 43 48.8 70 05.7 4 Aug 56 No returns 44 24.4 68 00 23 Sep 56		

		Recovered					
Station	Bottle	Lat	Long	Date	Lat	Long	Date
22 22 22 22 22 23 23 23 23 23 24 24 25 25 26 26 26 27 28 28 28 28 28 28 28 28 28 28 28 28 28	21988N 21989B 21991B 21996N 21996N 21997B 21998N 22001B 22006N 22008N 22009B 22010N 22011B 22021B 22026N 22028N 22036N 22036N 22036N 22036N 22042N 22043B 22051B 22105N 22105N 22105N 22105N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N 22115N	22227777444444444444444444444444444444	66 11 11 10 66 11 10 66 66 66 66 66 66 66 66 66 66 66 66 66	21 May	5 7 5 7 5 7 5 7 7 5 9 8 6 4 7 6 5 5 7 4 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1 5 5 6 0 1	64 03 6 64 06 65 15 7 66 64 37 53 7 44 50 53 10 12 25 7 7 66 66 66 67 70 66 64 65 55 54 66 70 70 70 70 70 70 70 70 70 70 70 70 70	19 Jun 56 2 Dec 56 17 Jun 56 23 May 56 17 Jun 56 25 Aug 56 26 17 Jun 56 27 Jun 56 28 May 56 29 Jun 56 20 Jul 19 Jul 19 Jun 56 20 Jul 19 Jul 19 Jun 56 20 Nov 56 20 Nov 56 20 Jul 19 Jul
36 36	22154N 22155B	42 52 42 52	68 48 68 48	21 May 21 May	կկ 18 կ2 01.9	66 20 70 05.6	30 Jul 56 24 Nov 56

R	el	ęа	se	d

Recovered

Station	Bottle	Lat	Long	Date	Lat Long	Date
37 38 38 38 39 40 41	22181B 22182N 22184N 22193B	42 49.8 42 45.4 42 45.4 42 45.4 42 42.4 42 35.2 42 59	68 00.9 66 47 66 47 66 47 65 55 65 03.5 65 03.3	21 May 21 May 21 May 21 May 21 May 22 May 22 May	No returns 45 07 64 24 44 59 66 57 42 03.7 70 14.7 43 44.7 70 00.5 No returns No returns	7 Oct 56 25 Jul 56 26 Nov 56 16 Sep 56
42 42 43 43 43 44 45 46 47	22230N 22235B 22237B 22238N 22245B	43 02 43 02 43 04.3 43 04.3 43 04.3 42 20.9 42 17 42 14.5 41 59.2	66 03 66 03 66 57 66 57 67 00 65 48.5 65 02.7 65 04.2	22 May 22 May 22 May 22 May 22 May 22 May 22 May 23 May	43 45.5 69 37 41 18 70 05 41 49 69 58 44 38 66 42 41 43.5 69 55.7 No returns No returns No returns No returns	23 Aug 56 23 Nov 56 30 Aug 56 27 Jul 56 30 Sep 56
48 49 50 51 52 53	22307B	42 05 42 10.4 42 04 42 04 42 03.5	66 00 67 02 68 11 68 58 69 32.9	23 May 23 May 23 May 23 May 23 May 24 May	No returns 36 22.5 75 49 No returns No returns No returns No returns	2 Nov 56
55 54 54 54 54 54 55 55 57 58	22366N 22369B 22370N 22373B 22374N 22375B 22376N 22380N	42 38.2 42 34.2 42 34.2 42 34.2 42 34.2 42 34.2 42 34.2 42 34.2 42 34.3 41 31.3	69 33 70 34 70 34 70 34 70 34 70 34 70 34 70 31 70 31 70 31 70 31	24 May 24 May 24 May 24 May 24 May 24 May 24 May 24 May 21 May 21 May 24 May 24 May 24 May	45 03.6 66 27.5 42 34.5 70 42.5 42 35 70 41.8 42 35 70 41.8 42 34.8 70 44 42 35 70 41.8 42 34.7 70 44.2 42 35 70 41.8 No returns No returns No returns	14 Sep 56 22 Jul 56 27 May 56 27 May 56 28 May 56 27 May 56 26 May 56 28 May 56
58 59 60 61 62 63	22428N	41 37.2 41 26 41 32 41 31.6 41 18.8 41 06.5	69 00 67 44.5 66 57 66 18.7 65 57.7 66 12	24 May 25 May 25 May 25 May 25 May 25 May	36 54 75 59.3 No returns No returns No returns No returns No returns	28 Oct 56
64 65 66 66 67 68 69 70	22494N 22506N 22514N 22522N 22533B	41 06 41 06.5 40 59.5 40 59 40 41 40 43.3 40 40.6	67 15.5 67 59.5 68 51 68 51 69 12.8 69 08 68 45.3 67 55	25 May 26 May 26 May 26 May 26 May 26 May 26 May 26 May 26 May	41 20 70 02 44 55 65 21 36 15 75 47 36 52 75 59 36 32 75 52 No returns No returns	3 Aug 56 3 Nov 56 2 Nov 56 4 Nov 56 1 Nov 56

Released	Recovered

10 18 68 12 27 May No returns 76 2265hn ho 13 68 23 27 May 35 59 75 38 26 Oct 5 76 22656n ho 13 68 23 27 May hi 23 70 30 10 Aug 5 77 ho 28 68 59 5 27 May hi 23 70 30 10 Aug 5 78 22673B ho 11 69 09 27 May hi 30 71 02 21 Jul 5 78 22675B ho 11 69 09 27 May hi 15 70 10 2 Jul 5 79 22684N ho 21 70 21 h 28 May hi 15 70 10 3 Jul 5 79 22685B ho 21 70 21 h 28 May hi 15 70 10 3 Jul 5 79 22689B ho 21 70 21 h 28 May hi 32 5 70 39 5 23 Jul 5 79 22690N ho 21 70 21 h 28 May hi 31 70 31 11 Jul 5 79 22691B ho 21 70 21 h 28 May hi 33 70 39 2 21 Jul 5 79 22692N ho 21 70 21 h 28 May hi 33 70 39 2 21 Jul 5 79 22692N ho 21 70 21 h 28 May hi 33 70 39 2 21 Jul 5 79 22692N ho 21 70 21 h 28 May hi 33 70 39 2 21 Jul 5 79 22692N ho 21 70 21 h 28 May ho returns 81 39 46 5 70 27 5 28 May No returns 82 39 50 7 7 10 28 May No returns 84 ho 28 7 1 35 2 28 May No returns 85 ho 31 5 72 02 3 29 May No returns 86 ho 31 5 72 02 3 29 May No returns 87 ho 45 5 72 04 29 May hi 18 3 70 47 h 4 Jun 5 89 22801B hi 17 5 71 00 29 May hi 20 70 45 h Jul 5 71 70 29 May hi 39 27 045 h Jul 5 71 70 29 May hi 39 27 045 h Jul 5 71 70 29 May hi 39 27 045 h Jul 5 71 71 71 71 71 71 71								
72	Station	Bottle	Lat	Long	Date	Lat	Long	Date
7th	72 73		40 38.5 40 05	66 46.6 66 50	26 May 27 May		No returns No returns	
76	74X	22632N	40 37.2	68 01.8	27 May	加	36 70 39	24 Jul 56
78	76 76		40 13 40 13	68 23 68 23	27 Ma y 27 Ma y		59 75 38 23 7 0 30	26 Oct 56 10 Aug 56
79	78 78 7 9	22675B 22684N	40 11 40 11 40 21	69 09 69 09 70 21.4	27 May 27 May 28 May	41. 1 41. 1	30 71 02 15 70 10 28.5 70 48	
79	79 79	22689B 2269 0 N	40 21 40 21	70 21.4	28 May 28 May	717 713	32.5 70 39.5 25.2 70 55.6	23 Jul 56 26 Jun 56
83	79 80 81		40 21 40 07 39 46.5	70 21.4 70 25.5 70 27.5	28 May 28 May 28 May		33 70 39.2 No returns No returns	
88 41 02 71 32 29 May No returns 89 22801B 41 17.5 71 00 29 May 41 18.3 70 47.4 4 Jun 5 89 22803B 41 17.5 71 00 29 May 41 20 70 49.5 1 Jun 5 89 22804N 41 7.5 71 00 29 May 41 39.2 70 45.4 4 Jul 5	83 84 85 86		40 12 40 28.7 40 03 40 31.5	71 19 71 35.2 72 00.3 72 02.3	28 May 28 May 28 May 29 May		No returns No returns No returns No returns	
89 22810N 41 17.5 71 00 29 May 41 21 70 50.4 3 Jun 5	88 89 89 89 89 89	22803B 22804N 22808N 22810N	41 02 41 17.5 41 17.5 41 7.5 41 17.5 41 17.5	71 32 71 00 71 00 71 00 71 00 71 00	29 May 29 May 29 May 29 May 29 May 29 May	11 11 11 11	No returns 18.3 70 47.4 20 70 49.5 39.2 70 45.4 31.7 70 40.6 21 70 50.4	1 Jun 56 4 Jul 56 6 Jun 56 3 Jun 56

ALBATROSS III Cruise 76 11-24 June, 1956

		Re	leased		Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
1 2 3 4 5 6 7 8 9	228 1 1µN	40 41 40 01 40 00 39 58 39 58.5 40 03 40 31.5	71 01 71 01 71 00 70 10 69 18 68 46 68 00 67 40.5	11 Jun 11 Jun 11 Jun 12 Jun 12 Jun 12 Jun 12 Jun 12 Jun 12 Jun	N N N	75 49 5 71 05.4 5 returns 6 returns 7 returns 7 returns 7 returns 7 returns 7 returns	23 Oct 56 22 Jul 56	
8 9 10	22899B	41 05 41 36.5 42 07	67 17 66 58.5 66 31	12 Jun 12 Jun 13 Jun	38 03 No No	75 13.5 returns	4 Nov 56	
11 11 12 12	22936N 22937B 22952N 22954N	42 29 42 29 43 00 43 00	66 06.5 66 06.5 65 54 65 54	13 Jun 13 Jun 13 Jun 13 Jun	时 25 时 26 时 35	65 5 2 65 27 69 56	6 Aug 56 13 Nov 56 19 Oct 56 3 Nov 56	
13 13 14 15	22957B 22960N	43 12 43 12 43 11 43 33.8	66 24 66 24 66 59 66 15.3	13 Jun 13 Jun 13 Jun 13 Jun	42 01 45 12 No		23 Nov 56 10 Sep 56	
16 17 18	23000N 23016N 23028N	43 35 44 02 44 17.5	67 03.2 66 37.5 66 30	13 Jun 14 Jun 14 Jun	42 37 45 02 43 59	.8 70 39.4 .5 66 47 .1 66 09.6	14 Oct 56 6 Sep 56 25 Nov 56	
19 20 20 20	23038N 20347B 23050N 23051B	111 111 111 111 111 111	66 42.5 66 00 66 00 66 00	14 Jun 14 Jun 14 Jun 14 Jun	45 01 44 39 45 04 42 38		10 Jul 56 22 Aug 56 1 Jul 56 4 Nov 56	
21 21 21	23056N 23059B 23060N	45 03.5 45 03.5 45 03.5	65 18 65 18 65 18	llı Jun llı Jun llı Jun	45 02 45 03 41 52	.5 66 48.5 66 46 69 57	29 Jun 56 25 Oct 56 27 Oct 56	
21 22 22 22	23064N 23068N 23070N 23071B	45 03.5 45 00.8 45 00.8 45 00.8	65 18 66 07 66 07 66 07	14 Jun 14 Jun 14 Jun 14 Jun	45 19 44 39 44 50	66 45	14 Sep 56 30 Jul 56 5 Aug 56 16 Jul 56	
23 24 24	2308LN 23096N 23097B	44 58.8 44 32 44 32	66 33.8 66 12 66 12	14 Jun 14 Jun 14 Jun	40 17 44 46 45 07	·7 70 06.6 66 址 66 31	11 Nov 56 29 Jul 56 14 Sep 56	
25 26		44 13.5 43 58	66 58 67 34	15 Jun 15 Jun	Ne	returns returns		
27 27 28 28 28	23125B 23126N 23140N 23143B 23146N	43 50 43 50 43 46.5 43 46.5 43 46.5	67 57.5 67 37.5 68 40 68 40 68 40	15 Jun 15 Jun 15 Jun 15 Jun 15 Jun	42 01 44 52 45 02 43 51 43 45	66 56 66 52 3 69 52.7	24 Nov 56 21 Sep 56 24 Aug 56 30 Sep 56 2 Jul 56	

Released	Recovered
----------	-----------

					_		
Station	Bottle	Lat	Long	Date	Lat	Long	Date
28	23147B	43 46.5	68 40	15 Jun	43 44	69 52	4 Aug 56
29	23160N	43 39	69 38.2	15 Jun	43 43.1	70 08.1	14 Jul 56
30	2)200	43 22.1	69 17.5	15 Jun	No	returns	
31	23180N	43 05.5	70 05	15 Jun	45 08	64 53	9 Aug 56
31	2318LN	43 05.5	70 05	15 Jun	45 03.2	67 02.5	10 Sep 56
32	23196N	43 01.5	69 30.5	16 Jun	45 02.5		14 Sep 56
33		42 58	68 45.5	16 Jun		returns	-1
34	23209B	42 53	67 52	16 Jun	44 14	66 23.3	14 Sep 56
35	23228N	42 47.5	67 19.5	16 Jun	44 20	66 08	3 Aug 56
36	2323LN	42 45	66 19	16 Jun	եր 18 14 34	66 08 65 52	31 Jul 56 29 Jul 56
36	2323 <i>5</i> B	42 45 42 45	66 1 9 66 1 9	16 Jun 16 Jun	44 34 43 46.7	65 52 66 08	9 Jul 56
36 37	23236N	42 45	65 11.5	17 Jun		returns	9 001 00
38	23258N	42 50	65 45	17 Jun	43 40	65 52	12 Jul 56
38	23259B	42 50	65 45	17 Jun	44 29.5		7 Aug 56
38	23262N	42 50	65 45	17 Jun	44 40	63 54	29 Jul 56
38 38	23263B	42 50	65 45	17 Jun	44 20	66 07.5	3 Aug 56
38	23268N	42 50	65 45	17 Jun	44 23	66 04	31 Jul 56
39	23070N	42 38	66 43.5	17 Jun	42 06.8		1 Nov 56
40		42 22.8	65 45.1	17 Jun		returns	
43		42 04.8	65 34.1	17 Jun		returns	
42		坦 53.5	65 43.5	17 Jun		returns	
43 44 45		41 26.1	66 01	17 Jun		returns	
117	ecol Orr	41 24.5	66 45	17 Jun		returns 75 46	31 Oct 56
45	23348N	山 28	67 26 68 13.3	18 Jun 1 8 Jun	36 13	returns	31 06 6 30
46	22271.87	41 31 41 29.5	68 13.3 69 30	18 Jun	36 43	75 56	26 Oct 56
47 48	23374N	41 55.5	69 42.5	18 Jun		returns	20 400 70
49	23398N	42 18.5	70 10	18 Jun	44 28.2		9 Oct 56
50	23411B	42 34.5	70 27	18 Jun	45 18	64 32	22 Oct 56
50 51 52 53 54 55 56 57	حسبارات	42 46	70 24	19 Jun		returns	
52		42 42.3	69 15.8	19 Jun		returns	
53	23448N	42 06	69 10	19 Jun	ഥ 20	66 08	4 Aug 56
54		42 05	68 22	19 Jun		returns	
55		42 05	67 36	19 Jun		returns	
56		42 07	66 51	19 Jun		returns	0 5-3 56
	43485B	41 43	66 08	20 Jun	41 56	65 40 returns	9 Jul 56
58		山 28	66 25	20 Jun		returns	
59		41 09 41 04.5	66 43 66 50	20 Jun 20 Jun		returns	
60		41 04.5	67 22	20 Jun		returns	
6 1 62		41 01	68 16	20 Jun		returns	
63		41 02.8	69 00.8	20 Jun		returns	
64		40 52	69 03	20 Jun		returns	
65		40 43.5	68 28	20 Jun	No	returns	
9							

		Re	Recovered				
Station	Bottle	Lat	Long	Date	Lat	Long	Date
66 67 68 69 70 71	23625B	40 45.5 40 44 40 25.7 40 40 40 27.8 40 13	67 32 67 01 67 19.3 67 43 67 56.5 68 20	21 Jun 21 Jun 21 Jun 21 Jun 21 Jun 21 Jun	No 1 36 00 No 1 No 1	returns returns 75 39 returns returns returns	19 Oct 56
72 73 73 73 73 74	23678N 2368LN 23686N 23688N	40 37 40 19 40 19 40 19 40 19 39 53	68 51 69 24 69 24 69 24 69 24 69 42.6	21 Jun 21 Jun 21 Jun 21 Jun 21 Jun 22 Jun	41 21 35 44 41 18.5 41 40	70 28 75 29 70 47.6 69 59 returns	20 Aug 56 18 Oct 56 22 Jul 56 28 Jul 56
75 75 75 75 75 75 75 75 75 76	23701B 23702N 23704N 23705B 23706N 23707B 23708N 23712N 23714N	40 16 40 16 40 16 40 16 40 16 40 16 40 16 40 38	70 05 70 05 70 05 70 05 70 05 70 05 70 05 70 23 2	22 Jun 22 Jun 22 Jun 22 Jun 22 Jun 22 Jun 22 Jun 22 Jun 22 Jun 22 Jun	41 26.2 41 23 36 23.5 41 30.5 41 20 35 52 41 23 41 17.1 41 25.4	70 41.5 70 30.5 75 49.4 71 04 70 49.5 75 34 70 02 70 14.9 70 55	11 Aug 56 1 Sep 56 27 Oct 56 19 Aug 56 17 Aug 56 11 Nov 56 29 Jul 56 22 Jul 56 9 Jul 56
76 76 76 76 76 76 76 77	23715B 23717B 23718N 23721B 23722N 23723B 23724N 23733B	40 38 40 38 40 38 40 38 40 38 40 38 40 38 40 05.5	70 23.2 70 23.2 70 23.2 70 23.2 70 23.2 70 23.2 70 23.2 70 23.2	22 Jun 22 Jun	41 25.4 41 39 41 34 41 38 41 17.1 41 35 41 16.7 36 36	70 54 70 10 70 29 70 39 70 14.7 70 49.5 70 13.8 75 50	18 Jul 56 22 Jul 56 11 Jul 56 28 Jul 56 4 Jul 56 22 Jul 56 2 Jul 56 2 Jul 56 20 Oct 56
78 79 80 81 82 83 84 85		40 06 40 16 40 25.8 39 58.5 40 09.6 40 00 39 45.5 39 50.5 40 02	71 10 71 04 71 18.4 71 44 72 09.5 72 16.5 72 32 72 47 73 03	22 Jun 22 Jun 22 Jun 23 Jun 23 Jun 23 Jun 23 Jun 23 Jun 23 Jun	No 1 No 1 No 1 No 1 No 1	returns returns returns returns returns returns returns returns returns	
87 87 87 87 88 89	23846N 23848N 23852N 23856N	40 18 40 18 40 18 40 18 40 34 40 10	72 52.5 72 52.5 72 52.5 72 52.5 72 42 72 32.5	23 Jun 23 Jun 23 Jun 23 Jun 23 Jun 23 Jun		75 57 75 50 74 05 75 51 returns	8 Nov 56 22 Oct 56 23 Jul 56 18 Oct 56
90 90 91	23888N 23889B	40 17 40 17 40 39	72 21 72 21 72 06.5	23 Jun 23 Jun 23 Jun	36 19 36 01	75 48 75 39 returns	21 Oct 56 23 Oct 56

		Re	leased		Recovered		
Station	Bottle	Lat	Long	Date	Lat	Long	Date
92 93 94 94 94 95 95 95	23923B 23930N 23933B 23936N 23939B 23941B 23942N 23946N 23952N	40 24.4 40 52.5 41 00.5 41 00.5 41 00.5 41 17.5 41 17.5 41 17.5	71 48.8 71 28 71 14 71 14 71 14 71 10 71 00 71 00 71 00 71 00	23 Jun 23 Jun 23 Jun 23 Jun 23 Jun 23 Jun 24 Jun 24 Jun 24 Jun 21 Jun	No r 41 21.8 39 09.5 41 36.2 41 19 41 39.5 41 28 41 27.7 41 27.7 41 27.7	71 37 74 41 71 20 70 48.5 69 59.1 71 11 71 10.2 71 10.2 71 10.2	2 Sep 56 27 Oct 56 8 Sep 56 5 Aug 56 29 Aug 56 25 Jul 56 27 Jun 56 29 Jun 56 29 Jun 56

Appendix
Returns from 5 December 1956
to 21 October 1957

	Rel		Re	covered				
Station	Bottle	Lat	Long	Date	Lat	Long	Date	
		AI	LEATROSS I	III Cruise 46				
55	12760N	42 00	69 53	31 Mar 53	41 15.2	70 10.2	6 liar 57	
			Crui	ise 48				
2 31	12927B 13271B	41 01.5		2l ₁ Apr 53 29 Apr 53	41 08 40 57	70 45 73 1 3	25 Jun 57* 10 Jul 57*	
			Crui	ise 50				
28 5	16211B 13927B	41 46.5 40 24.5		30 May 53 26 May 53	46 40 40 40.5		15 Jan 57 21 May 57*	
Cruise 57								
18 27	16314n 164 19 B	43 44 45	69 00 60 01	24 Feb 55 25 Feb 55	50 45 60 30	0 52 01 22	25 Mar 57 4 May 57	
			Crui	ise 58				
19 60 X X 30	16966N 17532N 172853 17270N 17104N	43 41.5 40 36.5 41 59 41 59 42 21. 5	69 5 9	22 Mar 55 1 Apr 55 28 Mar 55 28 Mar 55 24 Mar 55	54 10 55 30 51 41 41 16.7 70 35	10 00 08 15E 09 40 70 05.3 23 00E	26 Dec 56 6 Jan 57 13 Dec 56 3 Jan 57 30 Jul 57	
Cruise 60								
9 64 48 71 100 8 27	17695B 18353B 18157B 18435B 18785B 17681B 17911B	41 02.5 41 00 41 44 41 01.5 40 38.5 40 31 42 55.8	67 29 68 49.3 69 20 66 32 70 07.7 67 41 69 33.8	20 Apr 55 29 Apr 55 27 Apr 55 30 Apr 55 3 May 55 20 Apr 55 22 Apr 55	53 14 64 15 40 43.6 47 48 41 20.7 64 30 40 57	09 35 10 15E 72 53.1 04 28 70 30 11 25E 70 22	4 Feb 57 5 Feb 57 14 Jul 55 6 Feb 57 26 Mar 57 25 Apr 57 20 Aug 57*	

^{*} Bottle recovered from bottom

	Released					Recovered			
Station	Bottle	Lat	Long	Date	Lat	Long	Date		
Cruise 61									
15 40	18990N 19284N	43 29.3 41 03.6	66 11.2 67 00.9		41 54.5 69 40	70 01 19 00E	25 Jul 57 18 Jan 57		
			Crı	ise 71					
48 12 21 38 18 29	2011/ ₁ N 19618N 20375B 19985B 19691B 19809B 20371B	41 36 41 55.3 43 30.5 42 09.4 43 50 42 42.5 43 30.5	66 00 67 01 69 20.7 68 25.2 67 0 66 15 69 20.7	29 Feb 56 22 Feb 56 23 Feb 56 25 Feb 56 23 Feb 56 24 Feb 56 23 Feb 56	51 41 54 ? 57 39 41 39.5 54 08 54 28 41 21	05 10 09 ? 07 27 70 06.9 10 11 08 18 70 01.5	1 Apr 57 1 May 57 3 May 57 13 Jul 57 2 Aug 57 22 Aug 57 21 Oct 57		
Cruise 72									
12 21 31 11 30 9 15 22 22 22 37 42 22 2 2 25 29 33	20458M 20558N 20691B 20448N 20687B 20420N 20487B 20569B 20570N 20770N 20822N 20576N 20286N 20490N 20671B 20722N	42 40 42 39.7 42 17.5 42 09 42 40.5 41 06 42 35 41 30 41 06 42 35 41 38 42 38 42 59 41 50.5	66 22 70 02 66 02 66 54 66 08.3 67 26.5 64 40 70 23.5 70 23.5 70 23.5 71 01 64 40 65 07 67 02.5	23 Mar 56 24 Mar 56 28 Mar 56 23 Mar 56 28 Mar 56 22 Mar 56 23 Mar 56 24 Mar 56 26 Mar 56 29 Mar 56 29 Mar 56 29 Mar 56 21 Mar 56	14 11 14 48 32 20 51 03 43 45.5 60 29 56 30 57 58 37 58 37 45 56 40 36 20 37 50 53 48 46 30 47 25	66 10 69 56 64 40.8 9 08 70 01.5 01 38 07 00 75 20 07 19 25 45 06 30 75 48.7 25 30 09 58 04 50 02 30	24 Jan 57 18 Jan 57 18 Jan 57 13 Dec 56 3 Apr 57 31 Mar 57 1 Hay 57 4 May 57 26 May 57 17 Jul 57 17 Jul 57 5 Jul 57 8 Aug 57 16 Aug 57 15 Sep 57 25 Sep 57		
			Cri	ise 73					
14 17 32 55 65 15 45 56	21105B 21143B 21320N 21583B 21702N 21116N 21457B 21590N	43 55.5 43 29 42 33.4 42 18.6 40 48 43 50 40 34 41 46.3	66 51 70 02.5 70 38.8 65 30.6 70 02 68 02 66 59 65 30.4	9 Apr 56 20 Apr 56 22 Apr 56 26 Apr 56 28 Apr 56 19 Apr 56 25 Apr 56 27 Apr 56	45 12 44 46.8 44 48.8 44 05 35 34 43 48 57 40 55 00.9	64 37 65 32.2 65 32.2 66 12.2 75 27.7 66 09 06 20 08 33.6	23 Nov 56 8 Jan 57 9 Jan 57 12 Dec 56 10 Jan 57 22 Feb 57 13 Feb 57 30 Jan 57		

Released					Re	covared	
Station	Bottle	Lat	Long	Date	Lat	Long	Date
			<u>C</u>	ruise 73			
57 35 31 45 62	21604H 21340N 21310N 21458N 21662N	41 47.5 41 34.5 42 14 40 34 40 46	65 58 69 04 69 46.1 66 59 67 39	27 Apr 56 23 Apr 56 22 Apr 56 25 Apr 56 27 Apr 56	39 25 57 32 41 55 51 35 39 50	31 10 07 23 66 59 09 50 31 10	30 Jan 57 19 Apr 57 29 Aug 57 24 Aug 57 13 Lar 57
			9	ruise 75			
8 10 39 45 52 27 47 65 20 61 43 5 44 39 75 62 74	21825B 21848N 22190N 22270N 22346N 22047B 22276N 22508H 21972N 22458H 22239B 21784N 22250H 22250H 22200H 22644H 22467B 22612N 22756N	41 03 41 57 42 42.4 42 17 42 03.5 44 51 42 14.5 41 31.6 43 04.3 40 00.5 42 20.9 42 42.4 40 18 41 18.8 40 23.5 40 03	67 17 66 30 65 55 65 48.5 69 32.9 66 27 67 59.5 67 21.8 66 18.7 68 51 67 55 68 12 65 57.7 67 28 72 00.3	17 May 6 18 May 56 21 May 56 22 May 56 24 May 56 19 Hay 56 26 May 56 19 Hay 56 27 May 56 21 May 56 22 May 56 24 May 56 25 May 56 26 May 56 27 May 56	36 57 57 57 57 57 57 57 57 57 57 57 57 57 5	75 58.5 59 44 65 20.2 66 09.9 65 527.6 75 32 75 31 09 37 10 30 25 30 07 44 07 09 03 22	20 Jan 57 2c Nov 56 25 Nov 56 17 Dec 56 17 Dec 56 11 Mar 57 22 Feb 57 1 Apr 57 21 Har 57 21 Har 57 21 Jun 57 11 Jun 57 19 Jul 57 18 Jul 57 22 Aug 57 22 Sep 57 2 Oct 57 29 Sep 57
			2	ruise 76			
17 19 20 22 25 26 28 45 93 1 16 36	23015B 23035B 23043B 23076N 23104N 23119B 23141B 23349B 23924N 22816N 23001B 23243B 23321B	44 02 44 44 45 00.8 44 13.5 43 58 43 46.5 41 28 40 51.5 40 41 43 35 42 45 41 26.4	66 37.5 66 42.5 66 00 66 07 66 58 67 34 68 40 67 26 71 28 71 01 67 03.2 66 19 66 01	14 Jun 56 14 Jun 56 14 Jun 56 14 Jun 56 15 Jun 56 15 Jun 56 15 Jun 56 18 Jun 56 23 Jun 56 11 Jun 56 13 Jun 56 14 Jun 56 15 Jun 56 16 Jun 56 17 Jun 56	41 44 14 17.5 45 12 44 17.2 45 00.5 44 05 44 23.4 44 54.5 36 22.6 Virgi 43 47.7 44 18 39 25	70 38 66 08 64 37.5 66 20.6 65 09.3 66 12.8 66 03.8 65 21.4 75 49.4 nia Coast 66 20 66 07.5 31 15	8 Dec 56 11 Feb 57 12 Dec 56 22 Dec 56 8 Dec 56 21 Jan 57 16 Dec 56 2 Jan 57 15 Dec 56 9 Mar 57 25 Feb 57 11 Mar 57 6 Har 57

	<u> </u>				Recovered		
Station	Bottle	Lat	Long	Date	Lat	Long	Date
29 41 74 77 22 1 61 90	23158N 23304N 23692N 23731B 23066N 22824N 23536N 23890N	13 39 142 04.8 39 53 140 00.5 145 00.8 140 11 141 05 140 17		15 Jun 56 17 Jun 56 22 Jun 56 22 Jun 56 14 Jun 56 11 Jun 56 20 Jun 56 23 Jun 56	43 51 55 10 35 33.9 36 22.5 45 17.5 34 55 57 07 35 22	75 757 777	27 May 57 8 Jun 57 14 Jun 57 25 Jun 57 15 May 57 11 Oct 57 25 Sep 57 9 Oct 57





