410687

LOG

ENIWETOK LAB

Vol. III

May 21, 1954 — June 22, 1

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer, Janet, Belle | Date May 21, 1954
Personnel Held, Palumbo, Olson, | Weather Generally fair, usual wind
Hines, Seymour | Water conditions Choppy

Radiation level(s) Counter background 123 c/m;

Operations:

A.M. Held at lab working up yesterdays invertebrate counts decay curves. Evidently counting trouble yesterday was that the samples were too hot. Radium D+E standard and background are o.k. 8:50 Palumbo, Olson, Hines, Seymour left Elmer by helicopter. Stopped at Janet to pick up rat traps. Caught 13 rats in 23 traps. Took rats to Belle marked 5 and released and brought 7 back to lab. Seymour stayed at Janet to hunt birds no luck. Saw 2 fairy terns at building pier and 1 plover, 1 fairy tern and 1 Noddy on ocean side near east end of air strip but didn't get within 150 yards of any of them. Ipomoea growing on southern end of island. [illegible] and [illegible] shrubs are [illegible] beach [illegible] strip [illegible] 52 dead [illegible] about [illegible] of [illegible]. Only the 2 species [illegible] have been dead for some time. Returned about 11.

[illegible] dosages for our group.

Held 900 mr on May 14
Palumbo 1350 mr on " 17
Olson 1300 mr on " 18
Hines 1100 mr on " 18
Seymour 115 mr on " 17

1630 Started log for May 17-20

PM Working up of Todays material

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer, Belle

Date Saturday May 22 1954

Personnel Barnes, [illegible]

Held, Seymour

Weather [illegible] fair [illegible] wind

Water conditions [illegible]

Air temperature 76-90°F

Radiation level(s) Background count [illegible]

Operations:

[illegible] last 22 fish samples in the series 7016 to 7039 with the exception of 7028 & 7032 [illegible] with the [illegible] last night or early this morning. [illegible] coconut crab or a rat are suspected.

Olson, [illegible] Held & Seymour left at 9:50 for the [illegible] at Belle. See work program [illegible] objectives of todays trip. Plants were collected and photographed with survey meter reading at each collection. These are to be compared with similar [illegible] data. Algae and invertebrates in areas E, F and G [illegible] areas F and G respectively. Fish a good [illegible] were collected [illegible] area F. All of todays invertebrates and fish are being frozen and will be sent home with [illegible] tomorrow. There are 10 groups of fish [illegible] plus a group of [illegible] a crab [illegible]?

Fish groups [illegible] wrasse, damsel, parrot, butterfly [illegible]

1600 [illegible] flight [illegible] dead [illegible] samples, water samples [illegible] plants [illegible] frozen fish and invertebrates [illegible] cards for the [illegible] samples and cards for same were as follows:

Plants # [illegible]-6019 · 7[illegible]-7649

[illegible] 7537-7549

[illegible] birds # 7229-7[illegible] 7313 · 7321

Fish # [illegible]-7651

[illegible] # 5057-5099 · 7431-7495 · Cards for these not taken

Plankton [illegible] Samples # 7204-7217 · Water samples W-12, 13 [illegible]

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(2)

Locality ______ Date May 22nd Continued

Personnel ______ Weather ______

______ Water conditions ______

Radiation level(s) ______

Operations:

Samples for the tissue lab were frozen with nitrogen before leaving here. Arrangements have been made to pick up dry ice in Honolulu with Travis.

After dinner – processing todays land plant and algae samples and finishing up packaging dried samples from previous days collection which are to go to the tissue lab with Paul tomorrow.

Obtained no birds at Belle today. When we arrived at 1015 there were a dozen or more fairy terns at least half a dozen Noddy terns and 6 plovers (Chuck had seen no plovers for the last month or so). Because we were to be on Belle for 5½ hours we decided to wait until near the end before getting birds and when we did there were none to be found on the island – – –

What a photographer! The land plants tagged before shot was photographed. Some was difficult to find. 7 plants of different species were collected, photographed and soils surveys made. Soil samples in areas A, B, C & D were taken. Compressor from AEC arrived yesterday. Bill Thompson of Sandia came today w/ Hodson to explain its working. Couldn't start the motor. It will be overhauled by H&N. 4 species of algae samples collected in 4 areas. Algae still look healthy except that salt [illegible] many in area E.

[illegible stamp]

KP.
AKF (1)

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SEATTLE, WASHINGTON

(3)

Locality _____ Date May 22 Cont.

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

Following readings were made at Belle today using Juno Meter #29. Values are in mr/hr per hour

AREA	1" above ground			3 feet above ground		
	~~2~~ Br	~~3~~ r	~~4~~	~~2~~ Br	~~3~~ r	~~4~~
A-4-grass	700	420	110	280	190	70
" " sand	500	230	90	170	130	80
A-1214 sand	440	190	80	170	100	65
A - sand 1	390	200	70	140	110	60
" - plant 1	500	270	90	140	120	50
A - plant 3 alive	320	160	80	—	—	—
" " " dead	600	145	65	—	—	—
A plant 5	320	200	70	170	130	70
Gutral Survey Pt, sand	420	185	85	140	160	60
A plant 8 dead	600	440	70	150	110	55
" sand 2	320	170	60	160	110	55
B - sand	260	140	60	150	90	50
" plant dead	600	460	70	~~280~~	—	—
plant 1267 dead	700	460	170	270	220	110
plant 6' dead	950	440	120	~~250~~ 210	205	100
C 1268 sand	430	200	110	~~190~~ 250	150	90
" 1209 grass	550	310	120	230	170	90
1268 plant green	315	110	90	250	190	100
" sand	490	215	100	250	175	95
D plant dead	700	490	120	190	150	90
sand	270	100	85	UNREADABLE 170	130	85
West Survey Pt sand	190	150	70	UNR. 110	85	65

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SEATTLE, WASHINGTON

Locality: Elmer

Date: May 23, 1954 Sunday

Personnel: (Olson) Held Palumbo Seymour

Weather: Fair - moderate wind - a really nice air temp 78-90°F

Water conditions: Good

Radiation level(s): Counter Bkgd 99 c/m

Operations:

AM Sealing up samples picking frozen samples and getting material ready that Paul will take with him when he leaves today. Obtained nitrogen for freezing samples just prior to departure (from Dick Rhea)

Items being taken to the U.W. by Paul are as follows:

~~[illegible]~~ (1) Plants 7649-7705 with cards

(2) dried Asparagopsis

(3) ashed Halimeda

(4) Soils 7550-7557 with cards

(5) Fish 7041-8081

6. Invertebrate remains

(7) Fish remains

(8) Salt water samples (in Elmer) 7558-7570 with ca[rds]

(9) Fish cards 8052-8090

NOTE WELL!! On processing the May 22 collection ~~[illegible]~~ from Belle plea[se] use the following numbers

Cards: Fish - 8091 to 8200 inclusive; 8301 to 8350 inclusive

Invertebrates - 9001 to 9150 inclusive

Rats and Birds - Continue with present series and then info[rm] us of the last number used

water samples (of May 19) - 7571 to 7580 inclusive

plankton - none to process (next number will be 8219)

Algae and plants, soils being processed here, no sweat

cont.

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(2)

Locality _____ Date May 23 cont

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

Specimen numbers: Numbers reserved for Belle collection of May 22 at HJ
FISH: specimen numbers 232 to 275 inclusive
Invertebrates: " " up to 200
Water Samples of May 19: please label the Strong sample as W-12, the Nuke Crater sample W-13 and Belle 14

Short items: 5 - 5 ml pipettes } no room with June shipment
5 - 10 " " }

Miscellaneous notes: 1) In regard to Formwax in ethylene dichloride send Formvar only.
2) We have Aquadag here. (Frank)
3) Is Dr. Donaldson in Japan?
4) An excess of fish - in fact all groups of which we had 5 or more specimens - from the May 22 collection were sent in order that Dr. Welander may select the 5 groups that are most important to us. The miscellaneous collection was sent for the purpose of exploring the possibility of selective uptake such as was found in the alga, Oedogonium
5) We are in desperate need of cards

Paul will take with him the Log of May 21, 22 and 23.

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Locality Elwha — Date May 24 1954

Personnel Palumbo Seymour Olson Field — Weather Fair, low wind then usual AIRT-57 78-90° F

Water conditions Good

Radiation level(s) Background count 97/min

Operations:

Pauls flight for last evening was cancelled. Paul left Elwha at 800 after chilling frozen fish with liquid nitrogen. Called at 1300 today that this flight had also been cancelled and now scheduled to leave about 2200 today on same flight as AM and PM - Packing, getting Paul and Ed off, cleaning up, running decay curves, etc.

Boxes #8 9 10 and 11 left with J-4 for shipment to the home laboratory.

~~Note received from Pauls concerning net collection of May 21st~~

1720 TWX sent to Col. Stanley at Hickam regarding Pauls delay and expected arrival. TWX to Hqtrs regarding Pauls delay left at Herbidors office for transmission first thing in the morning. Telegraph office was closed at 1715.

Olson and Field left on the same plane at approximately 2330.

C

(8)

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(2)

Locality --- Date May 24 cont

Personnel Weather

Water conditions

Radiation level(s)

Operations:

Received a letter from Barnes giving the details on the rat collections for May 21st. They are as follows:

" Following rats from Janet released at Belle

45 ♂ Large N/NL
46 ♂ " "
47 ♂ " sparse hair right rear quadrant, base sloughing
48 ♀ med. large N/L
49 ♂ Large; small bite & enlargement about ½ length of tail "

" Otherwise you might say we caught 13 rats on Janet. One was run down by Obst & Seymour and 5 (most released had no visible lesions. Eight rats were taken for radioanalysis and 4 of the 8 were sampled as pathological specimens. All had various degrees of burns singeing of hair and weakness. Seven of the 8 specimens were photographed for AEC in color."

Note: 45, 46, 47, 48, 49 above specific marked tags.

(a) 17

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Locality: Majuro
Date: May 25, 1954
Personnel: Palumbo Seymour
Weather: Sun & rain; usual wind
Water conditions:

Radiation level(s):

Operations:

Left Ebeye at 0530 returned 5/26 0015.

Trip to Majuro to inquire about tuna fishing by the natives. While at Kwajalein talked with Marine Wilds. He tried to get in touch with some of the local native fishermen but without success. However he reported that they regularly fish in Ebeye Passage and thought that they caught some tuna.

At Majuro first talked with Mr. Griese District Commission [illegible] the Marshalls, then with Guy Howe agronomist and finally with Raymond de Brum our friend from Likiep. By far the most information was obtained from Raymond. He said that only in August and September when the sea is calmer do the natives catch tuna with much frequency for then only then can their boats get to the outside waters. The larger boats can make more money hauling copra. He said he believed tuna were probably in the Marshalls the year around but were not available to the natives for the reasons given above. Mentioned bonito, yellow fin and albacore as being caught. Evidently tuna are landed at Jaluit since fresh tuna are [illegible] from Jaluit to Majuro by air rather frequently. Guy Howe said Boc 4 boats are [illegible] [illegible] the island and [illegible] [illegible] projects, yet we had no canned [illegible] for our breakfast at Uliga.

On return stopped again at Kwajalein. Met Dr. Riesberg on leave from U. of Hawaii and Acting [illegible] for the Trust Territories. Dr. Tobin is Acting [illegible] at Majuro and liaison between Rongelap natives (who are being transferred to Majuro) and U.S. government. Heard nothing new

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(2)

Locality _____ Date May 25th Cont.

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

regarding the condition of the Rongelap natives. Holmes & Narver are currently constructing new homes for them at Majuro.

The Bikini natives at Kili are not satisfied with their new homeland & have asked to be transferred to any place other than Kili. They are more or less resigned to the fact that they will never return to Bikini.

SHORT ITEMS: (1) 35mm. Kodachrome - to come out in J
(2) rubber straps for face masks
"SQUALE". Need a dozen to come out in June (with Welander, et al)

(19)

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Locality Elmer-Belle Date May 26 1954 (Wednesday)

Personnel Palumbo, Seymour Weather Fair, usual wind.

Water conditions

Air temp 78°-92°

Radiation level(s) Background 1100, 83 c/m

Operations:

Inquired at Rad-Safe for total accumulated dosage for our group especially Ralph, but they had not processed any film until Dr Cash inquiry, May 21st.

Transportation is now arranged for thru Tom Haidenois office the AEC resident engineer.

Returned the flask for nitrogen to TU-2.

Mailed few Fungia coral to Ed Held at U of W.

The 32V. refrigerator for use aboard ship was returned to us from J-4 as they were locking up shop. It is now on the front porch and later can be stored by AEC. Motor has been overhauled and is in running condition.

1300 left by helicopter for Belle for regular collecting trip.

Using Juno Meter #79 the reading was (in mr/hr)

AREA	α β γ 1" above sand	β γ	γ
Central Survey Pt.	220	140	60

Collection made of Halimeda and Dictyota; Cenobita & T. crocea water; Tracvola; and fish. Fish collection extremely poor. Worked same area as the big kill of Saturday but poison moved east and in opposite direction i.e. westward. An [illegible] made to seine ... with the remains of rotenone on Belle but no better luck. Collected 2 goatfish, no mullet and no more than 1 specimen of any other species. Processed the 2 goatfish. There were many ... in the area. The "sick" mullet are no longer present. The milky streak is still present to the west of the [illegible] area but narrower generally less than 100 yards wide. Took gun saw no ...

Returned 1600. Processed todays samples except vertebrates after dinner.

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Locality: Eniwetok Date: Thursday May 27, 1954
Personnel: Palumbo, Seymour Weather: Partly Cloudy
Water conditions:
Air Temp 80-92
Radiation level(s): Background

Operations:

Keypunch cards #8200-9200 received today. (11# postage $6.45)
~~[illegible]~~ Unscrambled the numbering mixup and came up with following

	Numbers already Used	Numbers probably used but not recorded in log	Numbers Assigned to U of W Lab for 5/22 Collection	Nos. to be … at Eni…
Fish	4000-4951	4952-4999	8091-8200	8351-9…
	7811-8090	7800-7810	8301-8350	
Invertebrates	~~8~~ 5000-5499	5444-5456	~~[illegible]~~	7496-75…
	7431-7495		9001-9150	5500-59…
Rats and Birds	7000-7394	7157-7158	7395-7430	~~8351-95…~~
		7251-7257	~~9301-9350~~	9201-95…
		7293	9151-9200	
		7322-7328		
		7298-7312		
Plankton	8201-8218			8219-83…
Soils and Water	7500-7570		7571-7580 (collected 5/19)	7581-76…
Algae and Land Plants	6000-6499			7706-779…
	7001-7705			6500-6999

Note: This will require renumbering some of the cards out here but was the best system that could be devised. In the future cards will be stamped out here.

SHORT ITEMS: to be brought out in June
(1) Stamp, such as is used for numbering cards
(2) 3000 blank cards
~~(3) Small slips for samples number 8219-8300, 7700-9000, 2400-7000.~~

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(2)

Locality _____ Date Thurs. May 27 Cont

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

Short Items; Cont

(3) small slips for samples, 8600-9000, 9501-1220

" " To be mailed as soon as possible

(1) small slips for samples, 8400-8600, 8219-830
9200-9500.

2 maps each of Envelōk and Bikini, plastic coated, were received today.

As of 1500 today we have had nine groups of visitors to the lab. ~~Today~~

Ralph is dissecting and processing yesterdays invertebrate collections.

Talked with Mr Hardison concerning progress report shelter for Belle financial status - he is to get an itemized account for us within a day or two - Douglas people - they have apparently removed from the barns but are to be at Majuro for one year, and Bikini - present schedule or better the present request that has been made is that an LCD be sent to Bikini for about 10 days setting in late July or early August. Purpose is to take us there as well as to do other work, in other words we are included in the Bikini plans. In light of this it might be well to consider delaying Frank's tour of duty until the Bikini trip especially if Pantzer is here for the month of July and hence post pone Ralph's return from August 30 to late ~~July~~ September.

NOTE CHANGE OF ADDRESS (See log for May 17)

Program 19 % AEC RESIDENT ENGINEER APO 187 HONOLULU

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Locality Elwha - Belle Date Friday May 28, 1954
Personnel Palumbo, Seguine Weather Fair
Water conditions
Air Temp 78-90
Radiation level(s) Background 78 c/m
Operations: at Belle at 1" 230 min 190 - 60 at 3 feet 100 - 20 - 45 mr.

Finished progress report for Captain Curry. Last night and left with Burial of ADC office for typing.

200 left for Belle for a general sample and a survey of Phelps plant station i.e. location of stations on the chart that was made pretest. In the fish kill 8 large mullet were captured that had been burned on one side (these have been observed from time to time) but a thick mat of algae Enteromorpha was growing in the burned areas and was as long as 20-25 mm. Pictures were taken by Craig and samples preserved and frozen. Another striking observation (Ralph has noted in his memos) is the sporulation of the plant. It was observed May 22 (11+8) and of course has increased and grown since then. Some of the plants appeared dead, were void foliage and appeared to be nothing more than sticks but are sprouting vigorously. Distances to all the plant areas were measurable and determined i.e. distances from the central working point. Returned at 1550.

Today fish collection 11 mullet and 8 goldfish will be sampled to maintain continuity and in part to make up for the poor collection of May 26. Fish from area E. Tried but no fish in E.

Again discussed the matter of our account here. An itemized account will be available within a few days but McHarg said that if we were charged for every thing (which he thinks will be the case) the total amount will be about $1400. He also said that it is likely that they will be able to clear

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APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

(2)

Locality ____ Date May 28 (con't)
Personnel ____ Weather ____
Water conditions ____
Radiation level(s) ____

Operations:

some sort of shelter on Belle for storing of equipment that we use there regularly. As for the Bikini trip they have asked for a LCD for a 10 day junket for late July or early August. According to our original plans a month earlier would be better. Must be sleepy as I note that the Bikini trip has already been recorded (5/27) — that at bottom of page for May 26 it should be invertebrate not vertebrate and near bottom of page 2 for May 27 substitute September for July.

Log for May 24, 25, 26 and 27 was classified by security and mailed to the home lab. Elliff of security said that we are to use "official use only" on daily logs until otherwise notified.

Re plant sprouts mentioned earlier. On May 22nd noted young dormant buds sprouting on Messerschmidia and Scaevola. These sprouts were approximately 1 mm in length and found especially at the bases of the main stems of injured plants. On May 26th the sprouts were much more noticeable and were up to $\frac{1}{2}$" long. On May 28th the longest were 1" long, green and very healthy looking and almost covered some of the stems. A sample was taken for analysis & another will be taken for autoradiography. The algae grazing mullet appeared to be superficial on the scales. A sample of scale foliage has been saved in formalin.

A pandanus plant to be tagged before shot has disappeared. Could not locate it even w/ aid of previous survey. Stake found and was burned at tips on two sides. Many of tagged plants show sprouts on stems, but original vegetation not improved.

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Locality Elmer Date May 29th Saturday

Personnel Seymour, PALumBo Weather A.M. temp 77-91°F Sunny

Water conditions Good

Radiation level(s) Counter background 76 c/m

Operations:

Signed and mailed report to Captain Curry. It was classified "Official use Only" by Cliff. Worked up 5/28 algae and land plants during day and evening worked up fish during day. Mechanics came today after some "pushing" and got air compressor going. Filled 4 angle tanks of ours to 2100# and 3 double tanks belonging to Col Labb, ATC Commander. Then done on 3 capacity loads of reserve tank which holds 2600#, at which pressure the compressor cuts out.

Mailed letter to Dr. Donaldson (at Seattle & to be forwarded regarding present and future operations here and enclosed a copy of the report sent to Captain Curry.

1 PM Filled out fish cards, ran decay curves etc

Knocked off at 2230

1c

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Locality Parry, Bronit Date 30 May 1954
Personnel AH Seymour, Palumbo Weather Fair Air temp 77-92°F
Water conditions Good

Radiation level(s) counter background 70 c/m

Operations:

Sealed fish and plant samples of 28 May trip. At 1020 Palumbo off w/ Atoll Commander Col. Lahti and group on V/AG for shell hunting and Aqualung Trip. Lt Ray Porter in charge of aqualungs did not know much about their use and requested air and any suggestions. Off at Bronit Pier for short instruction period then to "shell grounds" off NW tip island in lagoon 20-30 ft depths. Around one large head found 6 Tridacnas the largest measuring about 30" long, about 20" tall and about 20" wide. Col Lahti will let me know its weight as he got it to take home, match. Also found 1 helmet shell and some serrated fungia coral (Ed please note). Returned about 1715 after using up two full tanks.

Clean up lab, defrosted refrigerator, ran decay curves.

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Locality Elwha -- Date Monday May 31st

Personnel Palmisano, Seymour Weather Rainy & windy - No 2mm allow

Water conditions Air Temp - 78683

Radiation level(s) Counting room background, 66 c/m

Operations:

No flights today, Official holiday

Will Frank and Ed please take note of the following and correct us if we are wrong. The following tissues are to be sampled:

Rats (1-7 in UWFL-36)	Birds (None listed in UWFL36)	Invertebrates
1. liver	1. feathers	T. crocea, H. atra
2. kidney	2. muscle	Cryptodira Cerebrata
3. skin	3. bone	Ed: we will take tissue according to list you left rather than 7 list in UWFL-36.
4. femur	4. thyroid	
5. pelt	5. digestive tract	
6. lung	(Will freeze birds and send	
7. muscle	to home laboratory until	
8. thyroid	we hear definitely)	

Art: will you let us know which 5 of the 10 species of fish in the May 22nd collection you wish to use so that when we make the next big collection on June 15th we will get and use the same species

Ed: For the next major collection - June 15 are the invertebrates you want coral, Cerozoa, sea cucumber, spidy snail: T. crocea, and Cerebrata? Also the corals, Pocillopora & Porites

Completed tagging & packaging May 28 collection. Ran decay curves

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SEATTLE, WASHINGTON

Locality: Elmer, Belle
Date: June 1, 1954 (Tuesday)
Personnel: Palumbo, Seymour
Weather: Pt Cloudy AM; Rain, PM
Water conditions:
Air Temperature 76 - 86°F.

Radiation level(s): Counting Room 64 c/m bg.
Operations: Belle at 1" 80-50-30 mr. at 3 feet 60-45-30 mr.

830 AM left for Belle. Set 15 rat traps in area where rats had previously been released. The striking characteristic of the island this morning was the greenness of the tufts of grass. Evidently the heavy rains of the week end freshened things up. The botanist will elucidate further on this subject. A "daily" collection was made. Tide was low and area where collection was last made i.e. Offish including those with the algae on their backs was dry. Tried western tip of island but no luck. Tide was still moving and was using the old rotenone in the 25th tin. Poisoned a second time, this time in area G and also had a poor kill although there were lots of fish present. However did get 9 goatfish, small, which will be used in todays sample. The last few fish collecting trips have been using "Sea Marker" to indicate water movement and feel that it is real helpful. NOTE: If there are a few more cans available at the University it may be well to include them in the next shipment. Saw about 6 fairy terns and 1 noddy, but most at time when gun was being carried.

P.M. Dissected, weighed, put in drying oven all of algae, land plants and fish samples. Ran decay curves.

Land plants green especially, grass, guettarda, sprouts on Scaevola, messerschmidia and guettarda. Some sprouts about 2" long

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Locality Eleuthera - Belle — Date June 2 1959 (Wednesday)

Personnel Palumbo, Segurson — Weather Pt Cloudy - Sunny -

Water conditions Moderate wind

Air temp 76-91°F.

Radiation level(s) Counter room - Bg 61c/m — β γ & β δ

Operations Belle Jens # 89 — at 1" 30 50 80 } in mr/hr
at 3' 30 43 60

Picked up rat traps on Belle. In 15 traps caught 1 rat #20 i.e. 2nd lot from land Cuts on left rear foot removed. Rat thoroughly then preserved whole. Hunted for birds saw several fairy terns but got none.

Incidental expenses here total to #3052 of the $5000 allotted. Two thirds of the cost is indirect expense. Hardison has written to Spain asking that some of these charges be transferred to other accounts. The cost for operating marine vessels i.e. primary M boats is about $20 per hour, at least under Marine Operations. We had 216 hours of labor (both 2 men per boat, 108 operating hours) and charges were about #2050. In light of this a shelter for Belle was ordered at a cost of approximately $200. This will allow Tonga & rubber to be moved. Time from which Plankton tows and other observations can be made. Also scheduled an "M" boat for next week for a circuit tour of Plankton and water sampling. This is essential now and will forego later collections for this and some of the budget eliminates further "M" boat charters. The 3052 is double what we were told was likely to be the maximum charge. Hence after the shelter and next weeks "M" boat we will postpone other work expenses until a reply is obtained from Mr Spain.

PM went out with the crew hydrometer and heads but saw only a few of the common reef fishes. Made no collections.

Letters from Welander & Leon received. Also 500 Coin envelopes, also 100 polyethene bags and numbered tags 8200-8700

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SEATTLE, WASHINGTON

Locality Parry + Circuit seebdow   Date 3 JUNE 1954

Personnel SEYMOUR, PALUMBO   Weather Fair, few clouds but no rain

Water conditions average

Air Temp 76-94°F.

Radiation level(s) Background count Counting room 50c/m

Operations: Belle at 1" — 35 γ, 50 β γ, 90 α β γ; at 3' — 28, 43, 48

Left Parry via Helicopter at 0800 for circuit tour of atoll. Assisted by Dr Talley 7.2; Dr. Blake and Dr. Garrett HEN. Stopped for collection of Algae, sea cucumbers and beach sand and land sand samples at Bruce, Runit, Vera, Olive, Janet, Alice, Leroy and Henry. Stopped at Belle to reset rat traps. One white bird shot by Dr. Blake at Janet. Dead rat #42 found in rat trap at Belle, threw it away. Noted [illegible] vegetation sprouts and a few plants of Messerschmidia and Scaevola on Alice. These plants appeared undamaged in contrast to those plants w/sprouts on Alice. Failed to procure sea cucumbers at Janet and Leroy, only 2 picked up at Runit. Algae collected were Halimeda, Caulerpa and [illegible] where possible. Noted that Cordia plants on Leroy bypassed by [illegible] shot were in excellent condition and full of flowers.

1255 Alice — Center of air strip 34, 80, 120 @ 1". 29, 48, 60 at 3 feet. 3 algae (lagoon side) 3 sea cucumbers (ocean side) soil & sand sample

1412 Leroy (Rigili) Sand spit at N. end. 0 or possibly 1 or 2 highest reading. No sea cucumbers (searched diligently). 3 algae, sand + soil sample.

1514 Henry (Mui) western end of Island; 3 algae, 3 sea cucumbers (ocean), soil and sand samples and glass balls, large, 2 small.

1533 Olive — collected sand and soil samples behind lab.

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(2)

Locality: Circuit tour Date: June 3 (Thursday) cont.

Personnel: Weather:

Water conditions:

Radiation level(s):

Operations:

Following is a summary of todays tour. All soil samples were taken at the same place as meter reading. Beach sand samples taken below water in intertidal zone.

Time Down	Time Up	Island	Area	Meter Readings with Juno #89 at 1" γ β γ α β γ	at 3 feet γ β γ α β
	808	Elmer (Parry)			
816	850	Bruce (Aniyaanii)	W. end of air strip – 0 all reading. Sand soil samples. 2 species Algae. 4 sea cucumbers. Lots of birds both fairy & noddy terns		
857	927	Yvonne (Runit)	400 yds S from NW tip – 0, 1+, 3 C.1 – Sand, soil samples, 3 algae, 2 sea cucumbers, a few birds seen		
933	1002	Vera (Aaraanbiru)	W end near white marker – 0, 3, 6 mr/hr – 2 algae, 3 sea cucumbers (many available) sand an		
1007	1037	Olive (Aitsu)	lagoon side near center – 1, 2, 5 mr/hr – 2 algae, 3 sea cucumbers sand & soil samples. Many birds – both fairy & terns		
1041	1129	Janet (Engebi)	NW end of air strip – 6, 11, 20 mr/hr @ 1". No sea cucumbers 3 algae, soil & sand samples. Water murky off of NW end of island. Few birds. Dr. Blake shot 1 tern which I believe is a Crested Tern. Its feet are badly burned. bill looks odd. leg bon		
1135	1202	Belle	Central Survey Point – 28, 50, 90 mr/hr at 1" · 28, 43, 48 at 3. Set rat traps (14). Evidently one trap was left unsprung yesterday as a very dead rat was found in one of traps. 2nd left front toe and 4 left rear toe missing.		

Continued next page

2'

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Locality Elmer, Belle — Date Friday June 4th 1954
Personnel Palumbo, Seymour — Weather Generally fair during day, rain in evening
Water conditions average
air temperature 76-92°F
Radiation level(s) Counting room - 1 bkg. - 50 c/m
Operations: Belle @ 1" 27-47-70 mr/hr @ 3' 27-37-50 mr/hr.

700 left Elmer for Belle for "daily" collections, photographing plots, staking out plants, checking rat traps, bird hunting and regular routine. Bob Taft, Hank Burgess, and Ed Brawley (~~spelling~~, of Santa Fe Pictures) also went along.

Caught no rats, shot 2 fairy terns obtained ~~plant~~, algae, and water samples but no fish. Using old rotenone spread 3 small bags but only killed a handful of fish of which were goatfish or mullet. Hence did not save any for sampling. Returned to Elmer at 1430. Dissected weighed and packaged samples of sea cucumbers from yesterday's circuit tour.

Photos of plants included specimens 1428-1433, Scaevola, Messerschmidia, and Guettarda plants showing new growth from stems. Also Lepturus (1431) (a grass) clump showing healthy condition of grass after last week's rain. About 20 exposures made w/ Kodachrome at 1/25 f11 and 1/50 f11. Plant stakes painted white and nicely visible from a distance. Numbers will be painted in black later.

Recd letter from Dr. Donaldson from Japan. Also receipt for message sent to lab. Evening packaged plant samples of 6-3-54, dissected sea cukes and ran decayed water samples.

Ralph turned in badge A1, picked up badge A30

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Locality: Chuu   Date: June 5 1954 Saturday

Personnel: Palumbo Seymour   Weather: Overcast

Water conditions: Good

Radiation level(s): Counting room bkg 50 c/m

Operations:

Seymour turned in badge A-2 picked up A-33.

After a long and painful struggle the best guess as to accumulated dosage was determined by Rad Safe is as follows

Dosage as of May 21st

~~215 mr~~ 2015 mr. apparently all badges reported

1385 mr. - Two of these badges lost - May 18 and 21 were lost

1300 mr. apparently all badges reported same on file but no record of film badge

1300 mr*

115 mr**

* For period from May 18 to 21 only one badge recorded. Evidently at least the badge lost

** No exposure recorded for period May 18 to 21st which is known to be incorrect.

Other sources of errors may come to light at a later date and the above values revised but it is not expected that any such changes would be more than a 100 mr for any one person. Rad Safe had difficulty for the above period as they were changing systems and closing out most of their business. Don't anticipate similar difficulties from now on.

Picked up algae and sea cucumbers from behind Lab to complete samples for circuit tour of June 3.

All the rest of day spent in processing samples, filling out [illegible] weighed small cellophane bags, making counts for [illegible] etc.

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(2)

Locality _____ Date June 15th Cont

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

If there is no change in plans I may return early to assist with the work at the home laboratory.

(2) We will follow the list in the daily log of May 31st for invertebrate tissues for the next "major" collections. Both Art and Frank will be here to look after their areas of interest.

(3) The $3052 of the $5000 Eniwetok incidental expenses is not out of our budget. Did not explain this as I thought it was Proven by Wells Ed and Paul and that it was of some interest to them.

(4) Am enclosing complete counts on Belle sed sample #99 from which the decay curve can be plotted to the scale which you desire.

Marion - Thanks for your PS. By now we realize that something of the nature that you described must be the case. We received a second letter from L.R.D. today.

Letter received from Dr. Donaldson written in Tokyo June 3rd. In substance he says that he is expecting big meetings in 10 days or 2 weeks (from the date of writing his letter.). If these meetings are delayed then he will try to get down here via Guam and Kwajalein

Since Dr. Donaldson has not arrived it is likely that the meetings were called as scheduled and that he will not be able to get to Eniwetok.

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(2)

Locality _____ Date June 1st cont

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

Two notes were received from Kelly each with radioautographs. We very much appreciate your notes and comments. I should have realized that the bone and ~~[illegible]~~ scale ~~bone~~ samples were too heavy and ~~[illegible]~~ and corrected that mistake from now on.

Worked on the chart of Belle Island attempting to locate the various areas and numbered plants. We have the distances and directions from several reference points i.e. the central survey point, the pendanus clump and the southwest point but we are sure that the central survey point position on the chart that was left on top of the drafting table is incorrect. Ed could you tell us how you located this point on the chart? It is the point inked in as B-1 and is the reference point for a fairly long mesh by Paul on the work chart, at least that is the best assumption that we can make.

Kay - In a letter to Paul, I inquired about the possibilities of getting pre paid transportation from San Francisco to Seattle. At the present time we are thinking of Ralph who will leave here about the 26th of June but of course we never know for sure. He would like to go straight thru to Travis and then by commercial air line from San Francisco to Seattle. There is a United Air Lines Ticket office at Travis Field. He may have excess baggage also. Is it possible to have a ticket waiting for him at Travis or San Francisco not knowing exactly when he will be there? Could you let us know immediately so that other plans can be made if this is not possible.

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Locality Elwha - Jerrons Date Wednesday June 2nd 1954

Personnel Palumbo - Seymour Weather Sunny with showers

Water conditions average

Air temp 80-90°F.

Radiation level(s) Counting Room Background - 38 c/m

Operations:

Laid out areas and plant numbers for Belle on a chart drawn to the same scale as the H & N charts. Directions checked well with those previously determined but as mentioned yesterday the control survey party did not. After positions of areas and plants had been plotted they were then overlaid on a map of Belle and the chart so moved that the positions of the stations were all on logical places and the north-south line for the two charts coincided. Then the outline of Belle Island was drawn/painted onto the chart just made. The east and west ends i.e. sand spits are different on a

Some very dead shrimp lobsters were brought into the lab by some H & N people. They had found about a dozen washed up on the beach at Elwha. Muscle cahapace and digestive tract tissues were taken. One set is being prepared to be counted here a duplicate set of samples will be added to regular invertebrate collection, plate 5703-05.

Ran decay curves.

P.M. To Jerrons Island (Deep Entrance) for plankton tow, water sample and more samples of Lepralia from deep water. By Ralph - Jim Garrett and Bibbe accompanied us. Plankton taken across Deep Entrance on lagoon side. Many medusae and ctenophores. at depth 70-76 Feet Dr Garrett and Palumbo collected Lepralia, two species scored, a bottom sample, and a water sample. Water murky but visibility at bottom was fine. Used rubber life raft with outboard motor. Made plankton tow at lowest speed

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Locality Eniwetok — Date Thursday June 17 1954
Personnel Palumbo - Seymour — Weather Sunny with Showers
Water conditions Wind 16 Knots (Predicted)

Radiation level(s) Counting Room Background 39c/m

Operations:

Processing yesterdays algae invertebrate, plankton & water samples
Running Decay curves.
Took rain water sample - and test sample for possible cross-
contamination from glassware and tap water
Trip to Bikini for June 22nd confirmed. PBM from
Kwajalein will pick us up here at Eniwetok at 0900.
Reservations have been made for Rosaldam, Orlander, Fairman
Palumbo and Seymour. Top of Rad-Safe will also go. Will take
over own life raft.
Duplicate samples of yesterdays Langouste, algae and
invertebrate (Jarons) samples are being processed and for
sorting.
PM - Counting water samples. Painting stakes.
Calibrated meters. Results as follows (Bob Top of Rad Safe)
Juno # 89 - meter that has been used for survey reading at Belle etc.
Checked very well - no adjustments made
Juno # 108 - high range
Checked well - Batteries may be weak
Juno # 59
Read high - was adjusted
Juno # 46 needs repair - not useable
Meters with end window tube
appeared to be O.K. but a short, probably in wire to tube. needs repair.
Nuclear #416 and #275
Checked with a radium source and also Beta - O.K.

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Locality Elmer - Belle - Date Friday June 19, 1959
Personnel Palumbo - Seymour Weather Pt. Cloudy with Rain
Water conditions Rough - Heavy
Air Temp 76-87°F
Radiation level(s) Counting Room Background 37 c/m
Operations: Belle - @ 1" 1.3 - 29 - 38
@ 3' 13 - 22 - 28

Palumbo and Seymour turned in badges (to Rad Safe) numbers A-30 and A-33 respectively. They were issued badges A 92 and A 93 yesterday

Bodies 12 and 13 delivered to shipping department. are scheduled to leave next week. Freight charges are COD i.e. will be charged to us at Univ. of W.

Run decay curves

13 Zero departed for Belle to drive stakes take pictures of plant, measure distances shoot birds, ~~and~~ take radiation measurements, and to set rat traps. No birds seen when gun on hand. Camera jammed i.e. film in camera only 1 picture.

1600 left Belle for Janet. Set T traps on Janet and returned to Elmer

Letter received from Dr. Donaldson dated June 11 Tokyo. Her schedule is still indefinite, hopes to leave Tokyo within 10 days (of June 11th).

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Locality Elwell - Belle - Janet
Date Saturday June 18 1955
Heavy rainfall last night.
Personnel Palumbo Segneur "Major" collectors
Weather Mostly Sunny
Water conditions No white caps
Air temp. 76-95°F.
Radiation level(s) Counting room background - 39 cpm

Operations:

0800 Left for Janet & pick up rat traps then on to Belle. Set 7 traps last night on Janet, no catch this morning. At Belle caught 1 rat in 14 that were set (#86?)

We had set plans & be picked up at 1400 but since Saturday afternoons are on Tokes holidays it would require a special crew both for the plane and for the landing strip so it was picked up at 1130. Fish collections were complete, numbered plants were photographed and water samples collected; algae collection not quite complete & no invertebrate collection. fish collection poor and probably will have to be redone. Plenty of goatfish, some wrasse and that was about all. Put out 1 large and 2 small sacks of returns in area C and 1 large sack of old returns in area E

PM processing todays samples

2120 Art & Frank arrived at Elwell, Hale and hearty

4

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Locality Clover — Date Sunday June 20 1954
Personnel Uklanda Forman — Weather Cloudy and Rain
Rolando Seymour — Water conditions

Radiation level(s) Counting Room Bkgnd. 37 c/m

Operations:

Ran decay curves. Would like for Paul to look up Mark I Model 3 RCL end window tube in the core/vague and see if it is a self-quenching tube. If not, take the preamp off the big pig (in the plexiglass housing) and send it over. Also send a 4 prong ♂ and ♀ radio tube socket and an octal ♂ and ♀ radio socket, and any spare cable material in the drawer to the right of the counter room sink.

Did the following counts.

Dead Langouste washed up on Skeer Beach - Perry Is.

6/16/54

Muscle — 1.122 / .353 / .769 gm — 462/10 − 37 = 9 c/m

Dig. Gland — .758 / .340 / .418 — 896/10 − 37 = 53 c/m

Carapace — .606 / .351 / .255 — 689/10 − 37 = 32 c/m

Material collected 6/16/54 at Jiorm Is. in 60 feet water

Lyngbya (#1555) — 3.096 / 2.330 / = .766 gm — TOO HOT TO COUNT

Coral #248 — 2.776 / 2.327 / = .449 — 7786/10 = 779 − 37 = 742 c/m (1st shelf)

Coral #249 — 2.992 / 2.256 / = .736 — 13359/5 = 2672 − 37 = 2635 c/m on the 4th shelf

Am starting a decay curve on Coral #248

Finished dissection and weighing of Saturday's Collection (June 19). Are waiting for blank cards to complete processing. Also out of small plastic bags for holding dust samples.

4

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Locality Elwen - Jeirora Date Wednesday June 16th 1954

Personnel Palumbo - Seymour Weather Sunny with Showers

Water conditions average

Air Temp. 80-91°F.

Radiation level(s) Counting Room Background - 38 c/m

Operations:

Sand out areas and plant numbers for Belle on a chart drawn to the same scale as the H & N charts. Directions checked well with those previously determined but as mentioned yesterday the control survey party did not. After positions of areas and plants had been plotted they were then overlaid on a map of Belle and the chart so moved that the positions of the stations were all in logical places and the north-south line for the two charts coincided. Then the outline of Belle Island was drawn onto the chart just made. The east and west ends of the sand spits were different.

Some very dead spiny lobsters were brought into the lab by some H & N people. They had found about a dozen washed up on the beach at Elwen. Muscle abdomen and digestive tract tissues were taken. One set is being prepared to be counted here a duplicate set of samples will be added to regular invertebrate collection, plate 5703-05.

Ran decay curves.

P.M. To Jeirora Island (Deep Entrance) for plankton tow, water sample and more samples of Lyngbya from deep water. By Ralph - Dr. Garrett and Bibbs accompanied us. Plankton taken across Deep Entrance on lagoon side. Many medusae and ctenophores. at depth 76 Feet Dr Garrett and Palumbo collected Lyngbya, two specimens of coral, a bottom sample, and a water sample. Water murky but visibility at bottom was fine. Used rubber life raft with outboard motor. Made plankton tow at low speed

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Locality Eluver — Date Thursday June 17 1954
Personnel Palumbo - Seymour — Weather Sunny with Showers
Water conditions Wind 16 knots (gusting)

Radiation level(s) Aerology Room Background 39c/m

Operations:

Processing yesterdays algae invertebrate, plankton & water samples
Running clean up cultures.
Took rain water sample - and test sample for possible contamination from glassware and tap water
Trip to Bikini for June 22nd confirmed. PBM from Kwajalein will pick us up here at Eniwetok at 0900.
Reservations have been made for Kwajalein, Orlando Lawrence Palumbo and Seymour. Taft of Rad-Safe will also go. Will take over own life raft.
Duplicate samples of yesterdays Langouste algae and invertebrate (Jarons) samples are being processed and for sorting.
PM - Counting water samples. Painting stakes.
Calibrated meters. Results as follows: (Bob Taft of Rad Safe)
Juno #89 - meter that has been used for survey reading at Belle etc.
Checked very well - no adjustments made
Juno #108 - high range
Checked well - Batteries may be weak
Juno # 54
Read high - was adjusted
Juno # 46 needs repair - not useable
Victoreen with end window tube
appeared to be O.K. but a short, probably in wire to tube needs repair.
Nuclear #416 and #275
Checked with a radium source and also Beta - O.k.

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Locality Eleven + Island Sweeps — Date Monday June 21, 1954
Personnel Welander, Forman, Palumbo, Seymour — Weather Generally fair, occasional showers
Water conditions No water temps on lagoon
Air temp 78-93°F
Radiation level(s) Counting Room Background - 35, 41, 37 c/m.

Operations:

0800 Left for circuit tour + collecting. Dr. Welander was up in reservations + reservations were made for forms (on Friday) but since Welander and Forman had not arrived - they were removed from list and not put back on - only Palumbo Welander & Seymour made the sweep. Forman working on Rate, Curds and Blenny curves. Three species of algae (Halimeda, Caulerpa, Sepsiteya) ~~were sought~~. Three specimens of the sea cucumber (H. atra), Land and Lagoon bottom Hand samples water samples and temperatures and survey radio readings were secured. Following is a summary of results

Island	Water Readings in Meter at 1" (r br xbr)	Water Readings in Meter at 3 ft (l br dbr)	Soil Sand Samples	Bottom Sand	Sea Cucumbers	Algae	Water Samples	Water Temp
Bruce	0 0 0	—	✓	✓	3	L. only	✓	81°F.
Yvonne	0 0 0	—	✓	✓	3	L. H.	✓	81°
Vera	0 3 4	—	✓	✓	3	C. H.	✓	81°
Olive	1 2 4	1-2-4	✓	✓	3	H. L.	✓	81°
Janet	7 13 17	5 9 12	✓	✓	none	C. H. A.	✓	82°
Alice	14 30 40	12 24 28	✓	✓	3	C. H. L.	✓	87° Shallow
Leroy	0 + +	—	✓	✓	none	C. H. L.	✓	84° on Reef *
Henry	0 0 0	—	✓	✓	3	C. H.	✓	" *

* on reef, ocean side, temperature in isolated tide pool (low tide) was 99°F when sea cucumbers were taken. In a shallower pool, isolated, it was 100°F and a small blenny like fish was present although it was difficult to tell exactly what the fish looked like. On the outer reef in the breaking surf temperature was 84°F.

A brown booby was seen on Leroy. Could not or did not fly. 1 was speared at Alice by Welander.

35 N

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Locality: Bikini Atoll - How (Bikini Is.) Date: Tuesday June 22 1954
Personnel: Welander, Palumbo, Seymour, Lowman Weather: Cloudy
Water conditions: Average

Radiation level(s): no background taken

Operations:

0700 Departed from Eluen to go to Fred to board PBM from Kwaj that was going to Bikini ~0945 departed from Fred and about an hour and a half later arrived Bikini. PBM anchored about 200 yards off shore opposite the "Officers Club" on Bikini Island. Paddled ashore in 6 man rubber life raft borrowed from Air Force at Fred. Boat put over side of PBM and inflated with a CO_2 cylinder. Toft of Rad Safe and Nitamaco of H&N also on trip.

Fish, algae, land plants, invertebrates, bottom samples, water samples, birds survey, meter readings and photographs were taken. Fish, algae and invertebrates mostly from reef on Ocean side at North tip of Bikini Is. (How)

Namu & Aomen are now only sand islands.

Meter readings in MR per hour with #89 Juno taken by Lowman, were as follows

AREA	at 3 feet β γ	at surface β γ	α β γ
water in over reef 10' out from beach	18	18	
below high water mark on beach on over reef	44	50	
above high water mark	120	400	500
wood on beach		800	1800
inland 100' from outer beach	200	450	600
middle of island	200	600	750
cleared area, inland from officers club	230	700	1100
low place full of mud behind officers club	350	1300	1700
lagoon side above high water	130	340	
" " below " "	25	30(4)	33

Poisoning of fish done in Area 1407, N. tip Bikini I. Good results.

PBM flew over entire reef chain. No plants of any kind visible from altitude of 250'. All islands except Bikini & Enyu

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Locality
Date Tuesday June 22, Continued
Personnel
Weather
Water conditions

Radiation level(s)

Operations:

appeared to be no more than sand spits. Charlie eliminated Baker Cove & Part of Namu, leaving only a comparatively thin edge of reef on outer edge of Crater, crater appeared to be about 3000 yards across or more. Coconut trees on Bikini all singed & with brown leaves mixed with green - all in all quite desolate. All buildings appeared out of plumb. Plant life from the air at Bikini Island looked badly damaged, especially the taller trees like coconut, Pandanus, Pisonia, Messerschmidia, and Guettarda. On closer inspection (on the ground) the coconuts were badly singed with large compound leaves hanging down, but new growth evident in many cases. Lots of coconut debris was all over and seemed to have been washed in - the lagoon road running north & south was debris covered so that walking was difficult. Some Pandanus trees were left standing but with leaves mostly gone. Scaevola and Messerschmidia plants had stems covered with new sprouting leaves and old vegetation was dead and wilting. Many new plants of Tacca, Casuarina, Scaevola, Lepturus, and Ipomoea were seen on the lagoon side especially. Some of the leaf sprouts on Messerschmidia were 6" long. Tacca plants were pale yellow green and many were in flower and fruit - an underground corm was dug

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(R3)

Locality ______ Date 6-22-54

Personnel ______ Weather ______

Water conditions ______

Radiation level(s) ______

Operations:

ng and sampled. Soil here was reading 160 mr gamma w/ Tafts' T-39 meter readings on land ran from 130 m - 300 mr On the beach it ran about 30 mr (white [illegible] Algae were collected [illegible] [illegible] [illegible] area - [illegible] Inverts, water and bottom sample. [illegible] Sample taken at base of Tacca plant mentioned [illegible]

Many terns (noddy + fairy) were present on the island and all appeared to be in good shape. There were very few shore birds, however; [illegible] were seen, three of which were far out on the [illegible] sand spit. Three fairy terns and 2 noddy terns were taken. One shore bird was collected. Many crab holes (prob. ghost crabs) were seen on the [illegible] of the outer reef. There were some insects on the island, mostly butterflies. No lizards were seen.

The radioactive contamination was fairly evenly distributed over the island except for low spots [illegible] in the central part of the island. In those spots the activity was more concentrated.

Bob Taft and I both noted that the β-γ ratio on the island was fairly high.

Items which were especially hot included old steel camera towers, glass balls (some were hot) and especially any unpainted wood. The wood gave readings for β-γ of ~ 2500 mr/hr.

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Locality: Elmer -
Personnel: Palumbo, Seymour

Date: Sunday June 6, 1954
Weather: Generally fair
Water conditions: usual
air temp - 76 to 92°F

Radiation level(s): Background - Counting Room - 49 c/m

Operations:

Finished processing, sealing, making out cards, etc for all of last weeks samples. Ran decay curves and cleaned up some in the lab. In the morning Ralph aqua lunging with Eniwetok group + Dr Garrett + Bob Taft. We got down to 45'. Bled slightly from ears upon returning to surface, but no pain felt. It seems as though once the 20-25 foot mark is passed, pressure in the ears has been equalized and it is no sweat to continue down. Garret, Taft and myself all bled a little and I noted that the blood looked green in my face plate. Collected a sample of Lyngbya for processing (45 feet). Saw some Halimeda, lots of hydroids that looked dark, and lots of fish, some 4-5 feet long, may be groupers or Sea bass. Saw one white tipped shark, very nervous, about 5 feet long, who beat it as soon as he saw me.

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Locality [illegible] - Belle [illegible] Date Monday June 7, 1954

Personnel Edna [illegible] Weather Fair

[illegible] + [illegible] Water conditions [illegible]

[illegible] [illegible] 79-82°F

Radiation level(s) [illegible] 47/[illegible] [illegible] @1630 - 30.1°C
Belle 22 42-70

Operations:

A.M. Packed and shipped 520 cards and 516 samples to the home lab. Samples and cards were as follows:

Fish	7351-7500		150
Invertebrate	7496-7499	4	
	5500-5660	161	165*
Plants	7706-7799	94	
	6500-6584	85	179
Soils +	7581-7800	20	
water	9151-9156	6	26
		Total	520*

** 4 still samples to be shipped later

[illegible] [illegible] to [illegible] [illegible] Belle for a daily sample Top of [illegible] and [illegible] of Sands [illegible] Operations also [illegible] [illegible] are [illegible] in mr per hour

	(Juneo meter #39)	at [illegible]			at three feet		
		β γ	β γ	α β γ	β γ	β γ	α β γ
Irene		11	25	41	9	16	22
Edna	eastern End Beach	70	80	90	70	80	90
"	above high tide line	500	500-600	500-600	500	500-600	5[illegible]
Nancy	Beach	11	20	20	18	20	2[illegible]
"	above high tide [illegible]	25	40	60	24	33	4[illegible]
Olive		10	18	25	[illegible]		1[illegible]
Belle	([illegible] pit)	22	42	70	22	35	4[illegible]

Lots of dead and dried fish on ~~[illegible]~~ Irene, Edna [illegible] Nancy. Many species but goatfish predominate

2[illegible]

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(2)

Locality _____ Date Monday June 7th Cont.

Personnel [illegible] Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

At Bikini made a successful fish kill of taming 3 large and 23 small goatfish which will be used for sample Kill of other fish not yet dead although many fish present. Fish found from area F all the way to western tip of island. Water temperature in 2½ feet of water on an incoming tide at 1430 was 30.6°C (87.1°F).

Stopped at 112 to check plots Tagged 4.14's 4 Clump #1177 composed of plots of Messerschmidia, Sida, Leptinus, and Tournefortia has disappeared - only small stems with new shoots were seen in this area. East of the large bunker. Large clumps of Tournefortia were buried badly with some leaves still green but wilted. Plants just in the lee of the bunker were less affected and a Messerschmidia plant measured 19" in height, a Sesuvium 14". Most plants were not buried, but had very little leaves on them. New shoots were evident on Mess and Scaevola plants. Other plants still surviving were small clumps of Leptinus (sparse), Fimbristylis (a sedge) and a few plants of Boerhavia. The large Messerschmidia (see pre shot) in front (west) of the bunker has gone completely. A soil sample was collected, as was a specimen of Mess. and one of Tournefortia. Skeeved Jane to Truck plant #1183 and it also had seen its last days. No vegetation was seen on Jane. Also none on Ellen. A soil

2

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Pag. 3.

Locality ---

Date Monday, June 7th Contd

Personnel

Weather

Water conditions

Radiation level(s)

Operations:

Sample and Enteromorpha on lagoon rocks were collected here. Daisy had 4-5 clumps of dried brown grass (Lepturus) 4-6" diam and flattened into the ground at a spot about 300 feet from the western end of the island. The island was cleared off except for plant, algae + fish debris. Soil sample taken near a grass clump which was also sampled. Series #1196 A, B, C all missing. Mcluna plant #1197 (Mess) was not found. A sample of Mess shoots was collected. The Scaevola (1197A) was also missing, in fact all traces of any Scaevola were missing. Soil was taken here. Plant 1198 (L plum) was present and was burned partly, other portion looked normal. Picture taken of it. 1118A was gone (4", 12" Scaevola). On west end of island very little vegetation was present. Small shoots of Mess are 12" long w/ leaves up to 2" long; Lepturus mostly dried up. Triumfetta burned - bottoms w/ leaves; coconut roots only. In middle island one plot of Lepturus very healthy 3 ft diam seen (photographed). Boerhaavia plants also seen very small portulaca up to 6" diam, also many new plants, 1/2' tall w/ 4-6 leaves. Other Lepturus seen. One live Cassytha plant (brown) seen 2' tall w/ 3 leaves. Two of these showed signs but not burned or dried up. Eastern end of island looked bare.

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Locality Elmer — Date Tuesday June 8 1954

Personnel Palumbo + Seymour — Weather Fair - Sunny all day

Water conditions Normal

Air temp 76-94°F.

Radiation level(s) Counting Room Background, 48 c/m.

Operations:

Weighing envelopes - dissecting - weighing - drying and making out cards on yesterdays collection; running decay curves; pumping tanks for aqua lungs. Knocked off 2300

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Locality Elwha - Wide Entrance - Leroy - Belle - Crater Area - Vera
Date Wednesday June 9 1954
Personnel Palmisano + Seymour; Bradley
Weather Rain and cloudy all day; no sunshine
Water conditions Rough
Plankton tows water samples + fishing Air temperature 76-84°F.
Radiation level(s) Counting room background - No count Heads

Operations:

0730 Left Elwha by M boat for plankton haul water samples, water temperatures and fishing. Bradley fished all the way around caught no fish had only one strike. Following is a summary of daily activities.

0845 Stopped Wide Passage, toward western side
1-20 min tow with ½ meter net (#6 silk, 74 meshes/in.). Good catch
No catch in 10" net (#12 silk, 173 meshes/inch) as bottom and current
Water Sample - Temp. 27.8°C.

1050 Stopped 2 miles North of Leroy
15 min tow with each net i.e. ½ meter and 10" Good catch
Water samples - Temp. 28.0°C.

1250 Stopped off of Belle
15 min tow with each net Good catch.
water samples - Temp. 28.0°C.

1330 Stopped off of Crater area ~1 mile off of rey
15 min tow with each net. Good catch
Water samples - Temp 27.8°C.

1504 Stopped off Vera ~1 mile off of the beach
15 min tow with each net. Good catch
Water sample - Temp. 27.8°C.

1705 Elwha

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Locality Elmer - Belle — Date Thursday June 10 1959
Personnel Palumbo - Seymour — Weather Hot - a beautiful day
Water conditions average

Radiation level(s) Background - Counting Room - 45 c/m
Operations: Belle at 1" 26-37-50 mr/hr
3' 20-33-45 " "

1000 Left Elmer for Belle & complete surveying of area for stakes & paint numbers on Ralphs stakes for Lava plants, and to set rat traps. Completed these assignments
1610 Left Elmer for Joliet & set 8 rat traps.
1655 Elmer

Ran decay curves, the 5 plates from yesterdays water samples and sealed samples from June 6th collection
June 6th sample of Lightning Collected at 45 ft depth off Lizard Island I (Channel Island) Counted 308 c/m (washed) for 0.496 gm wet sediment. This seems very high.

Stakes numbered were: Area A - 1213, 1214 1215, 1216 1408 1410; Area B stakes only; also 1428, 1433, 1412 ~~in Area~~ C. Area C - 1211, 1206, 1208, 1209; Area D Stakes only. Buoys marked Area E F G will be set out to replace unmarked & burned buoys present. These were painted black on white paint background flomaster ink, black or purple fades rapidly in the sun.

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Locality Elmer - Belle — Date Friday June 11th 1954
Personnel Palumbo - Siegmann — Weather Fair, rained hard last night
["daily" sample + rats and birds] — Water conditions normal

Radiation level(s) Counting Room Background - 42 c/m
Operations: Belle at 1" 31-37-50 mr. per hr.
at 3 feet 19-30-40 " " "

Unless otherwise stated meter readings at Belle are with June meter #89.

0800 Left for Jarvet to pick up rat traps - No catch. There are many rats on this island so obviously we picked a poor area.

0850 Belle Caught one rat #38; shot one fairy tern; froze both upon returning to Lab. Then proceeded to make "daily" collection. Poison set out in Area E in same area as other mullet with Entamoeba were caught 2 weeks ago. Today catch was 43 small goatfish 1 mullet 1 grass 1 grunt 1 blenny and that was it. Will use the small goatfish and the 1 mullet for sample. Also poisoned with old rotenone in area G where there were hundreds of larger goatfish and many other species but did not pull a fish. Shot 1 fairy tern at Belle. Labeled & frozen.

The schedule of visitors & workers to this Lab is as follows:
Dr Hiatt June 24 & July 1
Dr Odum June 24 & August 10
Dr. " " " " " "
Dr Boss July 1 & July 7

NOTE: Mr. Hardison received word today that the Bikini trip will not be before October 1st and even that date has not been confirmed.

Today mail - 6 rolls (20) daylight Kodachrome, 35 mm.; tickets 8701 to 9000; letter from Dr. Welander concerning cards & Fund

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(2)

Locality _____ Date Friday June 11, Continued

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

Will use the daily log to reply to Dr. Wilenders letter

(1) Wellonly comments on the length of counting problem as I am not aware of all the arguments. However would definitely favor a 10 minute count schedule rather than a shorter one. To me it seems that the counting problem could be solved if that is the bottleneck by working two shifts a day. We were very surprised to hear in Paul's letter of May 28 that "the early pre shot samples" were the ones being processed.

(2) In regard to processing the rats and birds, the instructions left by Chuck were contrary to those in the report of operations plan UW 7L-36. Also that he instructed us in taking tissues and that fact that there was much interest in the 8 day body life I, 31 in the thyroid left us with the impression that the tissues should be taken. However we did honor his request to forego the rats and birds and have followed this procedure.

(3) Numbers # 9151-9200 have been assigned to water and soil samples. Numbers 7395 to 7430 have not been used but the cards have i.e. the cards with those numbers were remunbered

(4) In regard to Ralph's scheduled return we were talking about his return to Edmonton which we thought was evident from the posted schedule and to the fact that it had been thoroughly discussed with Ed before he returned to the States. As for Frank we thought his time might be spent more profitably in Seattle since an extended Bikini trip is out for the present and after this week the work here will drop off considerably.

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Locality Battle Elwha — Date Saturday June 12, 1954

Personnel Palumbo - Seymour — Weather Hot

Water conditions average

Air temp. 80-97°F.

Radiation level(s) Counting Room Background - 42 c/m

Operations:

Sectioning and weighing samples from June 11th collection; decay curves; processing June 9th plankton collection; weighing bag

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Locality: Eniwetok

Personnel: Palumbo-Seymour

Date: Sunday June 13 1959

Weather: Clear and warm

Water conditions

Air Temp. 79-94°F.

Radiation level(s): Counting room background - 43 c/m.

Operations:

Completed filling out cards, sealing samples and processing collections of June 9th and 11th. Filling aqua lung tanks, decay curves, plotting decay curves. Ralph wrote and mailed a letter to the home lab. Aqualunging off Drydock w/ Dr. Garrett. Went to bottom - 90 feet - no trouble except for annoying habit of remoras of coming up to six inches before turning off. Bottom was very dirty and strewn w/ a few very small coral heads. Lots of medusae seen + many small floating or suspended material - made visibility poor on the way down + up. Lost one mushroom anchor when the line parted shortly after we started down it. Found it but couldn't bring it up as it had drifted too far to keep onto our second line. Slight nose bleed by both of us on the way up. About 40 foot level. No pain [illegible]. Finished tank of air in shallower water. Al was practicing at south beach with the snorkle -

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Locality: Elmer

Date: 14 ~~April~~ June 1954

Personnel: Seymour, Palumbo

Weather: Hot - not much breeze on top

Water conditions: Quiet

Radiation level(s): Counting Rm bkgd. 42 c/m

Operations:

Today is clean up day. Emptied all shelves, threw out lots of junk, cleaned shelves, labelled and replaced gear in order. Have assigned certain shelves for certain items only, and lockers kept for equipment that needs to be dry. Locker III for mikes, survey meters, and other labs' material. Locker II for library + other labs' stuff. Locker I for samples, cards, and stationery, maps, etc. Locker IV for plant press, stored clothes, dissecting equipment, labels etc. - Shelf I for preserved materials of all types organisms and empty sample cartons, Shelf II for vials, jars, shoes and - shelf each for collecting gear for each organism type. Shelves III and IV for plankton fishing gear, hardware, angling gear, nets, pages etc. Refuge moved to side wall, angling gear stored behind shelf II, all inhalator and spearing gear cleaned and oiled etc. Counting room cleaned up, and chem lab completely rearranged. Place looks very nice and we hope that cooperation will keep it this way. No digs meant - not much.

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Locality Eluru — Date Tuesday June 15th 1954
Personnel Palumbo - Seymour — Weather Wonderful
Water conditions Less wind than usual
Air temp. 80-93°F
Radiation level(s) Counting Room Background - 40 c/m

Operations:

Finished house cleaning. The rooms kitchen and porch are now in order. All dishware cleaned and washed.

The 32 volt upright freezer that was moved to our porch by J.A about 3 weeks ago was picked up and stored by H.H. This was handled thru the AEC resident engineers office.

Since a boat trip to Bikini is now out we spoke to Mr. Hardison about a Bikini trip by float plane which he went to work on immediately. Tentative date is June 22 or 23 at which time Art and Frank will be here and also Wayne Dr. Broadbent. Since the plane can only land in the Bikini Island area the tentative plan is to take a rubber life raft and work in the vicinity of the NW tip of Bikini Island.

Rain during night.

Ralph received a letter from Dr. Doty stating that he would be here on a survey trip on June 18 and expects to start work out here next fall.

Received a letter from Dr. Welander which I will answer here although we expect both he and Frank to arrive here in a few days.

(1) Enough has been said already about Frank's schedule. We thought that for both personal and business reasons Frank would welcome the chance to be in Seattle and secondly we see little need for more than 2 men here under the present schedule. Ralph is returning to Seattle as scheduled and there has been no thought by either of us that he do otherwise.

3

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(2)

Locality _____ Date June 15th Cont

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

If there is no change in plans I may return early to assist Bob the work at the home laboratory.

(2) We will follow the list in the daily log of May 31st for invertebrate tissues for the next "major" collection. Bob Ost and Frank will be here to look after their areas of interest.

(3) The $302 of the $5000 Eniwetok incidental expenses is not out of our budget. Did not explain this as I thought it was proper by Belle Ed and Paul and that it was of some interest to them.

(4) Am enclosing complete data of counts on Belle soil sample #99 from which the decay curve can be plotted to the scale which you desire.

Marion - Thanks for your PBS. By now we realize that something of the nature that you described must be the case. We received a second letter from L.R.D. today.

Letter received from Dr. Donaldson written in Tokyo June 3rd. In substance he says that he is expecting big meetings in 10 days or 2 weeks (from the date of writing his letter.). If these meetings are delayed then he will try to get down here via Guam and Kwajalein

Since Dr. Donaldson has not arrived it is likely that the meetings were called as scheduled and that he will not be able to get to Eniwetok.

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(3)

Locality _____ Date June 1st cont

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

Two notes were received from Kelly each with radioautographs. We very much appreciate your notes and comments. I should have realized that the bone and ~~scale~~ samples were too heavy and will correct that mistake from now on.

Worked on the chart of Belle Island attempting to locate the various areas and numbered plants. We have the distances and directions from several reference points i.e the Central survey point the pendamus plump and the southwest point but we are sure that the central survey point position on the chart that was left on top of the drafting table is incorrect. Ed could you tell us how you located this point on the chart? It is the point inked in as B-1 and is the reference point for a family tree made by Paul on the work chart, at least that is the best assumption that we can make.

Kay- In a letter to Paul, I inquired about the possibilities of getting pre paid transportation from San Francisco to Seattle. at the present time we are thinking of Ralph who will leave here about the 26th of June but of course we never know for sure. He would like to go straight thru to Travis and then by commercial air line from San Francisco to Seattle. There is a United Air Lines Ticket office at Travis Field. He may have ~~to~~ excess baggage also. Is it possible to have a ticket waiting for him at Travis or San Francisco not knowing exactly when he will be there? Could you let us know immediately so that other plans can be made if this is not possible.

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Locality Elmer - Belle - Date Friday June 18, 1954
Personnel Palumbo - Seymour Weather Pt. Cloudy with Rain
Water conditions Rough - Heavy
Air Temp 76-87°F
Radiation level(s) Counting Room Background 37 c/m
Operations: Belle - @ 1" 1.3 - 29 - 38
@ 3' 13 - 22 - 28

Palumbo and Seymour turned in badges (to Rad Safe) numbers A-30 and A-33 respectively. They were issued badges A 92 and A 93 yesterday

Bodies 12 and 13 delivered to shipping department. are scheduled to leave next week. Freight charges are COD i.e. will be charged to us at the U of W.

Ran decay curves

13 crew departed for Belle to drive stakes take pictures of plot, measure distances shoot birds, ~~and~~ take radiation measurements and to set rat traps. No birds seen when gun in hand. Camera jammed i.e. film in camera only 1 picture.

1600 left Belle for Jamit. Set T traps on Jamit and returned to Elmer

Letter received from Dr. Donaldson dated June 11 Tokyo. His schedule is still indefinite, hopes to leave Tokyo within 10 days (of June 11th).

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Locality: Elmer - Belle - Janet
Date: Saturday June 18 1954
Personnel: Palumbo Seymour
Weather: Mostly Sunny. Heavy rainfall last night.
"Major" collection
Water conditions: No whitecaps
Air temp. 76-95°F.
Radiation level(s): Counting room background - 39 c/m

Operations:

0800 left for Janet to pick up rat traps then on to Belle. Set 7 traps last night on Janet, no catch this morning. At Belle caught 1 rat in 14 that were set (#86?)

We had set plans to be picked up at 1400 but since Saturday afternoons are Air Force holiday it would require a special crew both for the plane and for the landing strip so we were picked up at 1130. Land plants collections were complete, numbered plants were photographed, soil and water samples collected. Algae collection not quite complete, nor was invertebrate collection. Fish collection poor and probably will have to be redone. Plenty of goatfish, some wrasse and that was about all. Put out 1 large and 2 small sacks of rotenone in area C and 1 large sack of old rotenone in area E

PM processing todays samples

2120 Art & Frank arrived at Elmer, hale and hearty

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Locality Elmer — Date Sunday June 20 1954
Personnel Alexander Forman — Weather Cloudy and Rain
Palumbo Seymour — Water conditions

Radiation level(s) Counting Room Bkgnd. 37 c/m

Operations:

Ran decay curves. Would like for Paul to look up Mark I Model 3 RCL end window tube in the catalogue and see if it is a self-quenching tube. If not, take the preamp off the big pig (in the plexiglass housing) and send it over. Also send a 4 prong ♂ and ♀ radio tube socket and an octal ♂ and ♀ radio socket, and any spare cable material in the drawer to the right of the counter room sink.

Did the following counts.

Dead Langousta washed up on Skeer Beach - Perry Is.

6/16/54

Muscle	1.122 − .353 = .769 gm	462/10	462/10 − 37 = 9 c/m
Dig. Gland	.758 − .340 = .418	896/10	896/10 − 37 = 53 c/m
Carapace	.606 − .351 = .255	689/10	689/10 − 37 = 32 c/m

Material collected 6/16/54 at Jiorum Is. in 60 feet water

Lyngbya (#1555)	3.096 − 2.330 = .766 gm	TOO HOT TO COUNT	
Coral #248	2.776 − 2.327 = .449	7786/10 = 779 − 37 = 742 c/m	(1st shelf)
Coral #249	2.992 − 2.256 = .736	13359/5 = 2672 − 37 = 2635 c/m	(on the 4th shelf)

Am starting a decay curve on Coral #248

Finished dissection and weighing of Saturday's collection (June 19). Am waiting for blank cards to complete processing. Also out of small plexiglass bags for holding dust samples.

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Locality Eleuer + Island Sweeps — Date Monday June 21, 1954
Personnel Welander, Foreman, Palumbo, Seymour — Weather Generally fair, occasional showers
Water conditions No intertemps on Lagoon
Air Temp 78-93°F
Radiation level(s) Courtney Room Background - 35, 41, 37 c/m.

Operations:

0800 Left for current tows + collections. Don't remember if reservations + reservations were made for Jones (on Friday) yet since Welander and Foreman had not arrived - they were removed from list and not put back on - only Palumbo Welander & Seymour made the sweep. Foreman working on Bats, Birds and Kenny curves. Three species of algae (Halimeda, Caulerpa, Lepidozya) ~~were caught~~. Three specimens of the sea cucumber (H. atra), Land and Lagoon bottom sand samples water samples and temperatures and survey meter readings were brought. Following is a summary of results

Island	Meter Readings in MR/hr at 1" (r br ∝Br)	at 3 feet (r br ∝Br)	Soil Sand Sample	Bottom Sand	Sea Cucumbers	Algae	Water Sample	Water Temp
Bruce	0 0 0	—	✓	✓	3	L. only	✓	81°F.
Yvonne	0 0 0	—	✓	✓	3	L. H.	✓	81°
Vera	0 3 4	—	✓	✓	3	C. H.	✓	81°
Olive	1 2 4	1 2 4	✓	✓	3	H. L.	✓	81°
Janet	7 13 17	5 9 12	✓	✓	none	C. H. A.	✓	82°
Alice	14 30 40	12 24 28	✓	✓	3	C. H. L.	✓	84° to Shallow
Leroy	0 + +	—	✓	✓	none	C. H. L.	✓	84° on outside *
Henry	0 0 0	—	✓	✓	3	C. H.	✓	" *

* on reef, ocean side, temperature in isolated tide pool (low tide) was 99°F when sea cucumbers were taken. In a shallower pool, isolated, it was 100°F and a small blenny like fish was present although it was difficult to tell exactly what the fish looked like. On the outer reef in the breaking surf temperature was 84°F.

A brown booby was seen on Leroy. Could not or did not fly. 1 was also speared at Alice by Welander.

4

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Locality Bikini Atoll - How (Bikini Is.) Date Tuesday June 22 1954

Personnel Welander, Palumbo, Seymour, Lowman Weather Cloudy

Water conditions Average

Radiation level(s) no background taken

Operations:

0800 Departed from Elmer to go to Fred to board PBM from Kwaj that was going to Bikini ~0945 departed from Fred and about an hour and a half later arrived Bikini. PBM anchored about 200 yards off shore opposite the "Officers Club" on Bikini Island. Put ashore in 6 man rubber life raft borrowed from Air Force at Fred. Boat put over side of PBM and inflated with a CO_2 cylinder. Toft of Rad Safe and Aitamano(?) of H & N also on trip.

Fish, algae, land plants, invertebrates, bottom sample, water sample, birds survey, meter readings and photographs were taken. Fish, algae and invertebrates mostly from reef on Ocean side at North tip of Bikini Is. (How).

Nanni(?) & Amen are now only sand islands.

Meter readings in MR per hour with #89 Juno taken by Lowman were as follows:

AREA	at 3 feet γ	at 3 feet βγ	at 3 feet αβγ	at surface γ	at surface βγ	at surface αβγ
water in over reef 10' out from beach	18				18	
below high water mark on beach on outer reef	44				50	
above high water mark	120				400	500
wood on beach					800	1800
inland 100' from outer beach	200				450	600
middle of island	200				600	750
cleared area, inland from officers club	230				700	1100
low place full of mud behind officers club	350				1300	1700
lagoon side above high water	130				340	
" " below " "	25				30	33

Poisoning of fish done in Area 1407, N. tip Bikini I. Good results.

PBM flew over entire reef chain. No plants of any kind visible from altitude of 250'. All islands except Bikini & Eneu ct

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Locality _____ Date Tuesday June 22, Continued

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

appeared to be no more than sand spits. Charlie eliminated Baby Cove & part of Namu, leaving only a comparatively thin edge of reef on outer edge of Crater, crater appeared to be about 3000 yards across or more. Coconut trees on Bikini all singed & with brown leaves mixed with green - all in all quite desolate. All buildings appeared out of plumb. Plant life from the air at Bikini island looked badly damaged, especially the taller trees like Coconut, Pandanus, Pisonia, Messerschmidia, and Guettarda. On close inspection (on the ground) the coconuts were badly singed with large compound leaves hanging down, but others showed livelier in many cases. Lots of coconut debris was all over and seemed to have been washed in on the lagoon road running north & south but debris cleared & walking was difficult. Some Pandanus trees were left standing but with leaves mostly gone. Scaevola and Messerschmidia plants had stems covered with new sprouting leaves and old vegetation was dead and wilting. Many new plants of Tacca, Cenchrus, Scaevola, Lepturus, and Ipomoea were seen on the lagoon side especially. Some of the leaf sprouts on Messerschmidia were 6" long. Tacca plants were pale yellow green and many were in flower and fruit - An underground corm was dug

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(23)

Locality _____ Date 6-22-54

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

area and sampled. Soil here was reading
160 mr gamma on Tafti T-39 meter
reading a land scan from 120 m - 300 m.
On the beach it read about 30 mr (while
Celge was collected on fish farm area - a
Insects, water and bottom sample. Fish
Samples taken at base of Taccia plant mentioned

Many terns (noddy & fairy) were present on the island and all appeared to be in good
There were very few shore birds, however;
were seen; three of which were far out on
sand spit. Three fairy terns and 2 noddy terns
were taken. One shore bird was collected. Many
crab holes (ghost crabs) were seen on the
of the outer reef. There were some insects on the
island, mostly butterflies. No lizards were

The radioactive contamination was fairly
distributed over the island except for low spots
in the central part of the island. In these spots
the activity was more concentrated.

Bob Tafti and I both noted that the
radio on the island was fairly high.

Items which were especially hot included
old steel camera towers, glass balls (some were hot)
and especially any unpainted wood. The wood gave
readings for a 1/8 of ~2500 mr/hr.