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LOG ENIWETOK LAB

Vol. III

May 21, 1954 — June 22, 1954

BEST COPY AVAILABLE

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Janet Belle Date May 21, 1954
Personnel Holt Palumbo Olson Weather Generally fair, usual wind
John Seymour Water conditions Chippy

Radiation level(s) Winter background 123 cpm;

Operations:

A.M. Held at lab working up glottidays invertebrate counts
Beady curves. Evidently counting trouble yesterday was that the
samples were too hot. Radium D+E Standard and background
are o.k. 7:50 Palumbo leaves Harbor 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 pile and 1 gull
1 fairy tern and 1 noddy on ocean side near east end of air strip
but did not get within 150 yards of any of them. Sparse ground
in southern part of island, grass and a few shrubs on a
small island. Each side of road in strip marked 32 dead
milkweed plants in about 1/2 of each. Only the 2 species
of grass and about 10 dead for some time. Returned about 11.
Checked with food etc. for our group.

1800 hrs on May 19

Palumbo 1250 hrs on " 17

Olson 1300 hrs on " 18

Palumbo 1400 hrs on " 18

Seymour 115 hrs on " 18

10:30 Shaded log for May 17-20

PM checking of traps material

TESTED
RECEIVED

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APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer, Belle Date Saturday May 22 1954
 Personnel Carroll, Olson, Hald, Hagerman Weather partly cloudy, light wind
 Water conditions choppy Air temperature 76-90°F

Radiation level(s) Background count 109/minute.

Operations:

9 AM. Last 22 fish samples in the series 7016 to 7039 with the exception of 7227-7032 to be reviewed in the lab last night or early this morning. Culture data (growth, color, etc.) are suggested.

Olson, Hagerman, Hald & Hagerman left at 9:50 for the big push at Belle. See work program and objectives of today's trip. Plants were collected and photographed with survey meter readings at each collection. These are to be compared with similar previous data. Algae and invertebrates in areas F, F and G and areas F and G respectively. Fish a good kill were collected in area F. All of today's invertebrates and fish are being frozen and will be sent home with Paul Hagerman. There are 10 groups of fish in the lab. See list of fish. Plus a group of *Marulius* and *Urosalpinx* and a crab? Fish groups are: marine, sand, brown, white, damselfish, parrot butterfly, and all small. Some fish were spined and preserved. 1600 bottles of preserved. Some left in the flight box. Few more ahead. In fish, some dried samples, water samples, soil samples, seaweed, and live plants. Fishes preserved invertebrates and plants. Labels and cards for the field samples. Fresh samples and cards for same were as follows:

Plants # 6291-6299, 7601-7648

soils # 7537-7544

Water birds # 7229-7244, 7312, 7321

Fish # 7211-7251

Crustaceans # 5457-5499, 7431-7495. (Cards for these)

Plankton water samples # 7204-7217. Water samples W-12, 13, 14. Not taken ③

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(2)

Locality _____ Date May 22nd continued

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

Samples for the home lab were frozen with nitrogen before leaving here. Arrangements have been made to pick up my car in Honolulu and to travel.

After dinner - processing today's land plant and algae samples and finishing up packaging bird samples from previous days' collection and which are to go to the home lab with Paul tomorrow.

Obtained no birds at Belle today. When we arrived at 10:15 there were a dozen or more fairy terns at least half a dozen noddys terns and 6 plovers (Chuck had seen no plovers for the last month or so). Because we were to leave Belle for 5 1/2 hours we decided to wait until near the end before getting birds and when we did there were no birds found like we had hoped - - -

What a phlogophen! The land plants today before shot was photographed. some was difficult to find. 7 plants of different species was collected, photographed and seeds were made. Soil samples in areas A, B, C & D were taken. Compressor from AEC arrived yesterday. Bill Thompson of Sandia Co. today is working to explain its workings. Couldn't start the motor. It will be overhauled by H.N. 4 species of algae, samples only collected on 4 areas. These still look healthy except that salt crystals were seen in area E.

K.P.
A.P. (H) 6

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③

Locality _____ Date May 22 Cort
 Personnel _____ Weather _____
 _____ Water conditions _____

Radiation level(s) _____

Operations:
 Following readings were made at Belle today using Jenco
 Meter #29. Values are in $\mu\text{R/hr}$

AREA	1' above ground			3 feet above ground		
	α	β	γ	α	β	γ
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	180	70	-	-	-
" " " dead	600	445	85	-	-	-
A plant 5	370	200	75	170	130	70
Central Survey Pt. sand	420	185	75	140	160	60
A plant 8 dead	600	440	70	150	110	55
" sand 8	320	170	60	160	110	55
B-sand	260	140	60	150	90	50
" plant dead	600	440	70	280	-	-
plant 1207 dead	700	460	170	270	220	110
plant 6 dead	950	440	120	380 270	205	100
C 1208 sand	430	200	110	190 250	150	90
" 1209 grass	550	310	120	230	170	90
1208 plant green	315	170	90	250	190	100
" sand	440	215	100	250	175	95
D plant dead	700	440	120	190	150	90
sand	270	160	85	170	130	85
West Survey Pt. sand	240	150	70	170 ENV. 110	85	65

③

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SEATTLE, WASHINGTON

Locality Elmer Date May 23, 1956 Sunday
 Personnel Don Hill Palumbo Weather Fair - moderate wind - a really nice
Seigneur Water conditions air temp 78-90°F
good

Radiation level(s) Count Bkgd 99 - 1h

Operations:

AM Sealing up samples packing frozen samples and getting material ready that Paul will take with him when he leaves today. Obtained nitrogen for freezing samples and prior to departure (from Dick Kles)
 1. Items being taken to the U.S. by Paul are as follows:

- 1) ~~Soils~~ Insects 7649-7705 with cards
- 2) dried Asporogopsis
- 3) adzed Halimeda
- 4) Soils 7550-7557 with cards
- 5) Fish 7041-8081
- 6) Invertebrate remains
- 7) Fish remains
- 8) Salt water samples (as data) 7558-7570 with cards
- 9) Fish cards 8052-8090

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 TYPE OF MATERIAL

NOTE Well!! On processing the May 22 collection ~~from~~ Belle please use the following numbers

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

Invertebrates - 9001 to 9150 inclusive

Rotos and Birds - Continue with present series and fill in info as of the last number used

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

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

algal and plants, soils being processed here, no seaweed
 cont.

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(2)

Locality _____ Date May 23 cont

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

Specimens numbers: Numbers reserved for Belle collection of May 22 at 407

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 milk water sample, W-13 and Belle "

Short tubes: 5-5 ml pipettes } ^{no marks} with June shipment
5-10 " " }

Miscellaneous notes: 1) In request for Formwar in ethylene dichloride send Formwar only.

2) We have Aquadag here. (Frank)

3) Is Dr. Donaldson in Japan?

4) An excess of fish in flat 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 algae, *Oparagopsis*

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 Elmer Date May 24 1954
Personnel Palumbo Seignior Weather Fair less wind than usual
Osore (Held) AIRTEL 28-90° F
Water conditions Good

Radiation level(s) Background count 97/min

Operations:

Paul's flight for last evening was cancelled. Paul left Elmer at 1005 after chilling frozen fish with liquid nitrogen. Called at 1300 to say that this flight had also been cancelled and now scheduled to leave about 2800 today or some flight in 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.

~~Notes received from Parents concerning rat collection of May 21st~~

1720 TWX sent to Col. Stanley at Hickam regarding Paula delay and expected arrival. TWX to UFW regarding Paula delay. Left at Henderson's office for transcription first thing in the morning. Telegraph office was closed at 1715.

Osore and Held left in the same plane, at approximately 2330.

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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 Janit released on Belle

45 ♂ large NVL

46 ♂ " "

47 ♂ " sparse hair, right rear quadrant, large sloughing

48 ♀ med. large NVL

49 ♂ large; small bite & enlargement about half length of tail "

" Otherwise you might say we caught 13 rats on Janit, one was run down by boat & Seymour and 5 (those released had no visible lesions. Eight rats were taken for radio-analysis and 4 of the 8 were sampled as pathological specimens. All had various degrees of burb singing of hair and weakness. Seven of the 18 specimens were photographed by AEC in color."

Note: 45, 46, 47, 48, 49 above separate marked toes.

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Locality Majuro - Date May 25, 1954
Personnel Columbio Segmour Weather Some rain; usual wind
Water conditions _____

Radiation level(s) _____

Operations:

Left Eniwetok at 0530 returned 5/26 0015.

Trip to Majuro to inquire about tuna fishing by the natives. While at Kwajalein talked with Maxon Wilder. He did not get on track with some of the local native fishermen but without success. There were reports that they regularly fish on Ebeye Passage and thought that they caught some tuna.

At Majuro first talked with Mr. Green, District Commissioner of the Marshalls then with Guy Howe, agronomist and finally with Raymond de Brune, our friend from Wakeup Bay for 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 only then can their boats get into 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 in the recesses given above. Mentioned limits yellow fin and yellow as being caught. Excessively tinned are landed at Eniwetok since fresh tuna is imported from Wakeup to Majuro by air rather frequently. But Howe spent 3 or 4 hours with de Brune as the island and some of his projects. He will send us (various papers) fresh out of Eniwetok.

On return stopped again at Kwajalein. Met Dr. Reiberg, on leave from U. of Hawaii and Archeryologist for the Trust Territories. He told us that he is agent 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 Cort.

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

regarding the conditions of the Kougelap natives. Holmes & Hoover are currently constructing new houses ~~for~~ for them at Majuro.

The Bikini natives at Keli are not satisfied with their new home and have asked to be transferred to any place other than Keli. 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 June
(2) rubber straps for face masks
"SQUALE"; Need a dozen to come out in June (with DeLander, et al)

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Locality Elmer - Belle Date May 26, 1954 (Wednesday)
 Personnel Polanski, Seymour Weather Fair, US401 wind.
 Water conditions
Air temp 78°-92°

Radiation level(s) Background 1100, 83 cpm

Operations:

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

Transportation is now arranged for thru Tom Hardison's office the AEC resident engineer.

Returned the flask for nitrogen to TU-2.

Mailed for Fungia coral to Ed Held at UoW.

The 32V. refrigerator piece 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.

Along from Belle #79 the reading was (in mμ/hr)

AREA	23 x " above sand	5 x	5
Central Survey Pt.	220	140	60

Collection made of Halimeda and Dictyota, Cerobita & T. croce water, Maerola, and fish. Fish collection extremely poor.

Worked same area as the big fall of Saturday but person moved east end in of route direction and westward. In fact made to record sightings the messages returned on Belle but no better luck.

Collected 2 goatfish, no mulllet and no more than 1 specimen of any other species. Processed the 2 goatfish. There were many fish in the area. The "sick" mulllet are no longer present. The mulllet stream is still present to the west of the beach and below. However generally less than 100 yards wide. Took gun saw no better. Returned 100%. Processed today's samples, except waterbats after dinner.

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Locality Elmer Date Thursday May 27, 1954
 Personnel Palumbo, Seymour Weather Partly Cloudy
 Water conditions Air Temp. 80-92

Radiation level(s) Background

Operations:

Keypost cards #8200 - 9200 received today. (11[#] postage ^{\$}6.45)

~~Assembled~~ Disassembled the numbering mix up and came up with following

	Numbers already Used	Numbers probably used but not recorded in log	Numbers Assigned to UW Lab for 5/22 collection	Nos. to be at Elmer
Fish	4000-4951 7811-8090	4952-4999 7800-7810	8091-8200 8301-8350	8351-9
Invertebrates	8 5000-5499 7431-7495	5444-5456	7446-7449 9001-9150	7496-75 5500-59
Rats and Birds	7000-7394	7157-7158 7251-7257 7293 7322-7328 7298-7312	7395-7430 9301-9350 9151-9200	9251-95 9201-95
Plant life	8201-8218			8219-83
Soils and Water	7500-7570		7571-7580 (collected 5/19)	7581-760
Algae and Land Plants	6000-6499 7001-7705			7706-779 6500-6999

Note: This will require renumbering some of the cards out here but was the best solution 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) ~~Stamp sheets for samples number 8249-8300, 8400-9000, 8400-9000.~~

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②

Locality _____ Date Thurs. May 27 Cont

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations: Short Runs; 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 Eniwetok and Bikini, plastic covered, were received today.

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

Ralph is dissecting and processing yesterday's invertebrate collections.

Talked with Mr. Harrison concerning progress report shelter for Belle financial status - he is to get an itemized account for us within a day or two. Bongday people - they have apparently recovered from the burns but are to be at Majuro for the year, and Bikini - present schedule or better the present request that has been made is that an RCD be sent to Bikini for about 10 days either in late July or early August. Purpose is to take us there so we can 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 Santyke is here for the month of July and hence post for Ralph's return from August 30th to late July/September.

NOTE CHANGE OF ADDRESS (see log for May 17)

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Locality Clam - Belle Date Friday May 28, 1954
Personnel Palumbo, Seymour Weather Fair

Water conditions

Air Temp 78-90

Radiation level(s) Background 78 c/m

Operations:

at Belle 230 mi 190-60

at 3 feet
100-80-45 m.

Finished progress report for Captain Curry last night and left with Journal of NAC office for typing.

Bob 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 pre-tot. In the field 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 *Ectocarpus* was growing in the burned area and was as long as 20-25 m. Pictures were taken by Craig, all samples preserved and frozen. Another striking observation (Palumbo has noted in his memoir) is the ^{sporadic} ~~sporadic~~ of the flora. It was observed May 22 (11+8) and of course has increased and grown since then. Some of the plants appeared dead, were well piled up and appeared to be nothing more than sticks, ^{but} are ~~growing vigorously~~ ^{growing}. Distances to all the plant areas now recognizable were determined i.e. distances from the central survey point. Returned at 1550.

Today's fish collection 10 mullet and 8 golffish will be sampled to maintain continuity and in part to make up for the poor collection of May 26. Fish from area E. Trud but no fish in E.

Again discussed the matter of our account here. An amended account will be available within a few days but McHard 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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(2)

Locality

Date

May 28 (cont)

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 sleepers 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. Eliff 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 domed buds sprouting on *Messerschmidia* and *Scaevola*. These sprouts were approximately 1mm in length and found especially at the base 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 growing on mullet appeared to be superficial on the scales. A sample of scale algae has been saved in formalin.

Aperidum plant to the tagged debris that has been exposed and it looks it even w/ the debris survey. It looks found and was burned at top 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 Air Temp 77-91°F Sunny
Water conditions Good

Radiation level(s) Counter background 7.6 c/n

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 single tanks of ours to 2100" and 3 double tanks belonging to Col Lable, at Col Commander. Then done on 3 capacity loads of reserve tank which holds 2600^c, 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.

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SEATTLE, WASHINGTON

Colony Parry, Ramit 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 traps. At 10:20 Palumbo off w/ Atoll Commander Col. Lante and group on YAG 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 Ramit Pier for short instructions. Pleined then to "shell grounds" off NW Tip island in lagoon 20-30 ft depths. Around one long head found 6 Tridacnas the largest measuring about 30" long, about 20" tall and about 20" wide. Col Lante 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.

Clearing lab, defrosted refrigerator, saw decay curves.

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Locality Cluer Date Monday May 31st
Personnel Blumen, Seymour Weather Rainy & windy - No sun all day
Water conditions Air Temp - 78 to 83

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

Operations:

No flights today, official holiday.
With Frank and Ed please take note of the
following and correct us if we are wrong. The following
specimens are to be sampled:

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

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
save the same species

Ed: For the next major collection ~ June 15 are the invertebrates
important coral, Sclerospira, sea cucumber, spider snail,
T. crocea, and Cerobita? Also the coral, Pocillopora & Porites

Completed drying & packaging May 28 collection. Ran decay curves

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SEATTLE, WASHINGTON

Locality Elmer, Belle Date June 1, 1959 (Tuesday)Personnel Salisbury, Seymour Weather pt cloudy AM; Rain, PM

Water conditions _____

Air Temperature 76-86°F.Radiation level(s) Counting Room 64 cps byOperations: Belle at 1" 80-50-30 mr. at 3 feet 60-45-30 mr.

7:30 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. Even in the heavy rains of the week and 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. Traced western tip of island but no luck. Tide was still moving and was using the old station on the 25th this. Poisoned a second time. This time in area A and also had a poor kill although there were lots of fish present. However did get 9 goatfish small, which will be used in today's sample. The last few fish collection traps have been using "Sea Marker" to indicate water movement and feel that it is real helpful. NOTE: If there are a few new cans available at the University, it may be well to include them in the next shipment. Saw about 6 fairy terns and 1 nockle, but not at time when gun was being carried.

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

Low plants green especially, grass, Guettarda, spouts
 ex. Seede, messes, dunes and Guettarda. Some spouts about
 2" long

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APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Belle Date June 2, 1959 (Wednesday)
 Personnel Palumbo, Seymour Weather Pt Cloudy - Sunny
 Water conditions Moderate wind

air temp 76-91°F.
 Radiation level(s) Courtesy room - Dg 61c/m
 Operations Belle June # 89 at 1" 30 50 80 } in no./hr
 at 3' 30 43 60

We fished up rat traps on Belle. In 15 traps caught 1 rat
 #20 is a 2nd toe from hind line on left rear foot removed.

Rat skinned then frozen whole. Hunted for birds saw
 several fairy terns but hit none.

On incidental expenses less total is \$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 & a primary
 M. boat is about \$20 per hour, at least under Marine operation.
 For 245 hours of labor (with 2 men per boat, 108 operating hours) our
 charges were about \$2050. In light of this a shelter for Bu
 was ordered at a cost of approximately \$200. This will allow
 Tongue of rubber netting there from which plankton tows and other
 operations 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 prep better collections for this
 as well as if 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
 fees will require other such expenses until a reply is obtained
 from Mr. Spain.

PM went out with the crew by harpnetting coral heads but saw
 only a few of the common reef fishes. Made no collection.

Letters from Wolander & Leon received. Also 500 coin envelopes, also 100
 polythene bags and numbered tags 8200-8700

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APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Party Parry + Circuit seaboard Date 3 JUNE 1954
 vessel SEYMOUR, PALUMBA Weather Fair, few clouds but no rain
 Water conditions average
 Air Temp 76-94°F.

Background Count Counting room 50 cps
 Belle at 1' 25 28 30 32 34 36 38 40
 at 3' 25 28 30 32 34 36 38 40
 Left Parry via Helicopter at 0800 for circuit tour of
 Atoll. Assisted by Dr. Talley 7.2; Dr. Blake and Dr. Garrett,
 H.E.N. Stopped for collection of Algae, sea cucumbers
 and beach sand and land sand samples at Prince, Punut,
 Vera, Olive, Janet, Alice, Jerry and Henry. Stopped
 at Belle to reset dead traps. one white bird
 shot by Dr. Blake at Janet. Dead rat #42
 found in rat trap at Belle, threw it away. Noted
 advertisement vegetative sprouts ^{at} plants of
Messerschmidia and Scalvola at Alice. These plants
 appeared undamaged in contrast to those plants
 w/ sprouts at Alice. Failed to procure sea cucumbers
 at Janet and Jerry, only 2 picked up at Punut.
 Algae collected where Halimeda, Caulerpa and Sargassum
 where possible. Noted that Cordia plants at Henry
 burned by fire shot when 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 Jerry (Pigilli) Sand spit at N. Wend 0 or possibly 1 or 2 highest reading
 No sea cucumbers (checked diligently), 3 algae, sand & soil sample.
 1514 Henry (Mini) 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) 1968

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Observations

Following is a summary of today's tour. All soil samples were taken at the same place as water readings. Beach samples taken below water in intertidal zone.

Time Data	Time up	Island	Area	Meter Readings with June 289 at 1"	at 3 feet
-----------	---------	--------	------	------------------------------------	-----------

808 Elmer (Perry)

816 850 Bruce (Aniyamii) - W. end of air strip - 0 all reading
 Sand soil samples. 2 species Algae. 4 sea cucumber.
 Lots of birds with fairy & noddy terns

857 927 Grouse (Runit) - 400 yds S from NW tip - 0, 1, 3 (1) -
 Sand soil samples, 3 algae, 2 sea cucumbers
 a few birds seen

933 1002 Vera (Araambira) - W end near white marker - 0, 3, 6 m/hr -
 2 algae, 3 sea cucumbers (many available), ~~2 algae~~ sand and

1007 1037 Olive (Auta) - Lagoon side near center - 1, 2, 5 m/hr -
 2 algae, 3 sea cucumbers sand & soil samples
 many birds - both fairy & terns

1091 1129 Janet (Eugene) - NW end of air strip - 6, 11, 20 m/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
 Crested tern. Its feet are badly burned. bill looks odd. has been

1035 202 Belle Central Survey Point 28, 50, 90 m/hr at 1". 28, 43, 48 at 3,
 Set rat traps (14). Evidently one trap was left
 un sprung yesterday as a very dead rat was found
 end of traps. 2nd left front tal and 4 left rear toe missing.

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Locality Elmer, Belle Date Friday June 9th 1954
 Personnel Palumbo, Seymour Weather Generally fine during day, rain in evening
 Water conditions average
air temperature 76-92°F
 Radiation level(s) Counting room - (log - 50 c/m
 Operator Belle @ 11" @ 3'
27-47-70 mr/hr 27-37-50 mr/hr.

700 left Elmer for Belle for "daily" collection, plants, plants, starting out plants, checking set traps and ^{bird hunting} regular ^{at} routine
 (John Tost, Hank Burgess, and ² Prowley ^{spelling}, of Smith & Spaulding) also went along.

Caught no rats, shot 2 fairy terns obtained ~~plants~~ algae, and water samples but no fish. Using old rotenone species 3 small bags but only killed a handful of fish of which were mostly goatfish or mullet. Hence did not save any for sampling. Returned to Elmer at 1430. Rechecked water for packaged samples of 20 cucumbers from yesterday's credit ton.

Photos of plants included specimens 1428-1433, Scaevola, messerschmidia and ¹⁴³¹ ~~stems~~ ^{stems} Also ⁽¹⁴³¹⁾ ~~clump~~ ^{clump} showing healthy condition of grass after last week's rain. About 20 exposures made w/ Kodachrome at 25 F11 and 1/50 F11. Plant stakes painted white and nicely visible from a distance. Numbers will be painted in black later.

Received letter from Dr. Donaldson from Japan. Also tonight for messages and telebs. Evening packaged plant sample of 6-3-54, dinitroacetic acid and rain decayed water.

Ralph turned in badge A1, picked up badge A30

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SEATTLE, WASHINGTON PRIVACY ACT MATERIAL REMOVED

Locality Chum Date June 5 1956 Saturday
 Vessel Dalumbo Seaguer Weather Overcast
 Water conditions Good

Salinity level(s) Counting down by 5 cc/l's

Operation:
 Seaguer turned in badge A-2 picked up A-33.
 After a long and painful struggle the total gear and accumulated dosage was determined by Red Safe as follows

Badges as of May 21st
~~2 (Total)~~ ~~215 m.~~ 2015 m. apparently all badges reported
 1385 m. - may stand it was wet
 1300 m. apparently all badges reported
 1300 m. same on file but no record of film badge
 115 m.**

* For period from May 18 to 21 only one badge recorded, location of least the badge lost
 ** No exposure recorded for period May 18 to 21st which is assumed to be incorrect.

These source operators may come to light at a later date as the above values revised, but it is not expected that any of these would be more than a 100 m for anyone person. but especially for the above group as that they were changing systems and closing out most of their business. Most anticipate similar difficulties from now on.

Picked up algae and sea cucumbers from behind Lab to complete samples for count over of June 3.
 All the rest of day spent in processing samples filling out weight small alleghand bags, making counts for
 etc.

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(2)

Locality _____ Date June 15th Coast
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 ^{up} list in the daily log of May 31st for Emmett tissues for the next "major" collection. Both Art and Frank will be here to look after their areas of interest.

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

(4) Am enclosing complete sets of counts on Belle soil sample #49 from which the decay curve can be plotted to the scale which you desire.

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

Letter received from Dr. Donaldson written in Tokyo June 3rd. On substance to say that he is expecting big meetings in 10 days or 2 weeks (from the time 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 Emmetok.

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Locality _____ Date June 22nd 1954 ⁽³⁾ cont

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

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

Worked on the chart of Belli 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 pumkin dump 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. Could you tell us how you located this point on the chart? This is the point marked as B-1 and is the reference point for a family line 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 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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SEATTLE, WASHINGTON

Locality Elmer - Jeiroru Date Wednesday June ^{No} 2nd 1954
 Personnel Palumbo - Seignarine Weather Sunny with Showers
 Water conditions average
 Air Temp 80-91°F.

Radiation level(s) Counting Room Background - 38 C/mr

Operations:

Laid out areas and plant numbers for Belle on a chart drawn to the same scale as the H & N charts. Directions checked with those previously determined but as mentioned yesterday the central survey point 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 onto the chart just made. The east and west ends & sand spits were differentiated.

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 Elmer. Mussel capsules and digestive tract tissues were taken. One set is being prepared to be mounted here a duplicate set of samples will be added to regular invertebrate collection plate 5703-05.

Run decay curves.

P.M. To Jeiroru Island (Deep Entrance) for plankton tow, water sample, and more samples of *Siphoglia* from deep water by Ralph - Dick Garrett and Blake accompanied us. Plankton Uken across Deep Entrance on lagoon side. Many nudibranch and amphipods. at depth of 76 feet Dr. Garrett and Palumbo collected *Siphoglia*, two species 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 Elmer Date Thursday June 17 1959
Personnel Palumbo - Sequeira Weather Sunny with showers
Water conditions Wind 16 knots (predicted)

Radiation level(s) University Room Background 3R/m

Operations:

Processing yesterday algae invertebrate, plankton & water samples
Running decay curves.

Took rain water sample - and test sample of possible contamination from glassware and tap water

Trip to Belknap for June 22nd confirmed. PBM from Knapstein will pick us up here at Elmer dock at 0900.
Reservations have been made for Ronaldson, Ullander, Lawrence, Palumbo and Sequeira. Top of Rad-Safe will also go. Will take over own life raft.

Duplicate samples of yesterday's Langosta, algae and invertebrate (Garonna) samples are being processed here for counting.

PM - Counting water samples. Painting stakes.

Calibrated meters. Results as follows (Bet top of Rad Safe)

June # 89 - meter that has been used for survey readings at Belknap. Checked very well - no adjustments made

June # 108 - high range

Checked well - Batteries may be weak

June # 59

Read high - was adjusted

June # 46 needs repair - not usable

Uetosem with end window tube

appeared to be O.K. but a short, probably in wire to tube, needs repair.

Nuclear # 418 and # 275

Checked with a radium source and also Beta - O.K.

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SEATTLE, WASHINGTON

Locality Elmer - Belle - Date Friday June 18, 1959
 Personnel Palumbo - Seymour Weather Pt. Cloudy with Rain
 Water conditions Rough - Heavy

Air Temp 76-87°FRadiation level(s) Cocooning Room Backgrounds 37C/hr

Operations: Belle - @ 1" 1,3 - 29 ± 35
@ 3' 13 - 22 - 28
Palumbo and Seymour turned in badges (to Rad Safe) numbers
A-30 and A-33 respectively. They were issued badges A92 and
A 93 yesterday

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

Randall's Carves

1300 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 in hand. Camera
panned i.e. film in camera only! 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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SEATTLE, WASHINGTON

Locality Elmer - Belle - Janet Date Saturday June 18 1954
 Personnel Galumbo Seignour Weather Mostly Sunny Heavy rainfall last night.
"Major" collection Water conditions No white bluffs
 Air temp. 76-95° F.

Radiation level(s) Coinciding room background - 39 Gm

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 our fairs holidays 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, ^{and some} water samples collected. algae collection not quite complete. invertebrate collection. fish collection poor and probably will have to be redone. Plenty of goatfish, some whasse and that was about all. Put out 1 large and 2 small sacks of rotenone in area to and 1 large sack of old rotenone in area E.

PM processing today's samples
 2130 Art & Frank arrived at Elmer, Hale and Beatty

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Locality Elmer Date Sunday June 20 1954
 Personnel Uklanda Luman Weather Cloudy and Rain
Palumbo Seymour Water conditions _____

Radiation level(s) Counting Room Bkgrd. 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-averaging tube. If not, take the preamp off the big pig (in the plexiglass housing) and send it out. 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	$\frac{1.122}{.353}$	$\frac{462}{10} - 37 = 9 \text{ c/m}$
	$.769 \text{ gm}$	

Dig. Gland	$\frac{.758}{.340}$	$\frac{896}{10} - 37 = 53 \text{ c/m}$
	$.418$	

Carapace	$\frac{.606}{.351}$	$\frac{689}{10} - 37 = 32 \text{ c/m}$
	$.255$	

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

Lynghya (#1555)	$\frac{3.096}{2.330} = .766 \text{ gm}$	TOO HOT TO COUNT
Coral #248	$\frac{2.776}{2.327} = .449$	$\frac{7786}{10} = 779 - 37 = 742 \text{ c/m}$ (shelf)
Coral #249	$\frac{2.992}{2.256} = .736$	$\frac{13359}{5} = 2672 - 37 = 2635 \text{ c/m}$ (on the 4th shelf)

Am starting a decay curve on Coral #248

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

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Locality Elmer - Jeirora Date Wednesday June 2nd 1954
Personnel Palumbo - Seymour Weather Sunny with Showers
Water conditions average
Air Temp. 80-91°F.

Radiation level(s) Counting Room Background - 38 C/hrs

Operations:

Laid out areas and plant numbers for Belle on a chart drawn to the same scale as the H & N charts. Directions checked with those previously determined but as mentioned yesterday the central survey point 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 i.e. sand spits are 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 Elmer. Muscle, carapace and digestive tract tissues were taken. One set is being prepared to be mounted 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 *Lingulha* from deep water by Ralph - Dick Garrett and Blake accompanied us. Plankton taken across Deep Entrance on lagoon side. Many nudibranchs and amphipods. at depth of 76 feet Dick Garrett and Palumbo collected *Lingulha*, two species 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 Elmer Date Thursday June 17 1959
Personnel Palumbo - Slegers Weather Sunny with showers
Water conditions Wind 16 knots (predicted)

Radiation level(s) University Room Background 39/m

Operations:

Processing yesterday's algae invertebrate, plankton & water samples
Running bleach culvics.

Took rain water sample - and test sample of possible contamination from glassware and tap water.

Trip to Belknap for June 22nd confirmed. PBM from Kewajelen will pick us up here at Entwhistle at 0900.
Reservations have been made for Ronaldson, Ueland, Korman, Palumbo and Slegers. Top of Rad-Safe will also go. Will take over our life raft.

Duplicate samples of yesterday's langoustes, algae and invertebrate (Jarom) samples are being processed here for counting.

PM - Counting water samples. Painting stakes.

Calibrated meters. Results as follows. (Bob top of Rad Safe)

June #89 - meter that has been used for survey reading at Belknap.

Checked very well - no adjustments made

June #108 - high range

Checked well - Batteries may be weak

June #59

Read high - was adjusted

June #46 needs repair - not usable

Victoreen with end window tube

appeared to be O.K. but a short, probably in wire to tube. ^{needs repair.}

Nuclear #418 and #275

Checked with a radium source and also Beta - O.K.

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SEATTLE, WASHINGTON

Locality Elmer + Island Sweep Date Monday June 21, 1954
 Personnel Welande, Lorman Weather Generally fine, occasional showers
Kalumbo, Seymour Water conditions No whitings in lagoon
Air Temp 78-93°F
 Radiation level(s) Courtesy Room Background - 35, 41, 37 c/m

Operations:

8:00 Left for current tour + collection. No to run up in
 reservations - reservations were made for four on Friday but since Welande
 and Lorman had not arrived - they were removed from list and not put
 back on - only Kalumbo, Welande & Seymour made the sweep.
 Lorman working on Rats, birds and decapods. Three
 species of algae (*Halimeda, Caulerpa, Sargassum*) were swept. Three
 specimens of the sea cucumber (*H. atra*), land and lagoon bottom
 hand samples water samples and temperature and survey net
 readings were swept. Following is a summary of results

Island	Water at 1"			Water at 3 feet			Soil Sand Sample	Bottom Sand	Sea Cucumbers	Algae	Water Temp	
	r	br	or	r	br	or						
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 bottom
Henry	0	0	0	—	—	—	✓	✓	3	C. H.	✓	" "

* on reef, ocean side, temperature in isolated tide pool (low tide) was
 99°F where sea cucumbers were taken. In a shallow 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 Welande.

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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 Kaaj that was going to Bikini ~ 0945 departed from Fred and about an hour and a half later arrived Bikini. PBM hauled about 200 yards off shore opposite the "Officers Club" on Bikini Island. Put ashore in Ocean rubber life raft borrowed from air force at Fred. Boat put over side of PBM and inflated with a CO₂ cylinder. Took of Red Soft and Vitamins of H. & N. also on trip.

Fish, algae and plants investigated. Bottom sample water sample birds surveyed. ^{insects} ~~birds~~ readings and ~~birds~~ ^{photographs} were taken. Fish, algae and invertebrates from reef on Ocean side at north tip of Bikini Is. (How)

Name of Amen are now only sand islands.

Meter readings ^{in MR pm How} with #89 June taken by Lowman, areas follow:

AREA	at 3 feet		at 100 feet	
	F	OF	230	250
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
in land 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		304	33

Passing 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 altitudes of 250'. All islands except Bikini & Engeu

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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 climbed ~~to~~ ^{over} ~~the~~ ^{the} ~~edge~~ ^{edge} of reef on outer edge of Crater, crater appeared to be about 3000 yard across or more. Coconut trees on bechin all ringed & 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 Lalla trees like Pandanus, Pisone, Menehah, midia, and Jettada. (Close inspection (on the ground)) The coconuts were badly ringed with long compressed leaves hanging down, but only small number 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 withering. Many new plants of Tacca, Conocarpus, Scaevola depiturus, and Iporosa were seen at the lagoon side especially. Some of the leaf sprouts on Messerschmidia were 6" long. Tacca plants were pale yellow green and in some were in flower and fruit. An underground corn was dug

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(RS)

Locality _____ Date 6-22-54

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

up and sampled. Soil here was reading
160 mR gamma w/ Taft's T-39 meter.
readings on land ran from 130 mR - 300 mR.
On the beach it read about 30 mR (white sand).
Algae were collected on fisherman's net - on
rocks, water and bottom sample. Food
sample taken at base of Tacca plant mentioned above.

Many terns (noddy + fairy) were present on
the island and all appeared to be in good shape.
There were very few shore birds, however; only
one was seen; three of which were far out on the
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 periphery
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
in the central part of the island. In those spots
the activity was more concentrated.

Bob Taft and I both noted that the beta
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 of ≈ 2500 mR/hr.

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Class - _____ Date Sunday June 6, 1954
 Name Palumbo, Seymour Weather Generally fine
 Water conditions usual

air temp - 76 to 92°F

Salinity level(s) Background - University Room - 44‰

Specimens:

Housekeeping, sealing, making out cards, etc. for all of last week's samples. Ran decay curves and cleaned up some in the lab. In the morning Ralph came looking with crew to go out in Dr. Garrett & Bob Taff. Dipped down to 45'. Bled slightly from ears upon returning to surface, but no pain felt. It seems as though once the 20-25 foot window is passed, pressure in the ears has been equalized and it is no meant to continue down. Garrett, Taff and myself all blue a little and I noted that the blood looked green in my face plate. Collected a sample of Hydroids for processing (45 feet). Saw some Halmidae, lots of hydroids (blackish dark), and lots of fish, some 4-5 feet long, may be groupers or sea bass. Saw one white tipped shark, very narrow, about 5 feet long, who beat it as soon as he saw me.

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SEATTLE, WASHINGTON

Locality Clam - Pelle Date Monday June 7, 1954
 Project Edna Weather Fair
 Tidal level Low Water conditions 100-150 ft deep in large
 Temperature 47.0 Air Temp 74-77°F
 Bottom level(s) Clam Bay to 19, 47.0 Top of Pelle @ 1630 - 30.0
Pelle 22 42-70

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

Fish	7351-7500	150
Invertebrates	7496-7499	4
	5500-5660	161
Plants	7706-7799	90
	6500-6584	85
Seeds & water	7581-7800	20
	9151-9156	6
		26
		<u>Total 520*</u>

* 4 shell samples to be shipped later

Notes: Inside clam cards to show points to 100 ft Pelle for a sample. Top of Red Sep and Nuclei of Santa Fe Opuntia also shown. Following are water coverage in ml per liter.

	(June water '54)	at 100 ft	at 150 ft	at 200 ft	at 300 ft
Gravel	11	25	41	4	18 72
Edna, bottom End, Peas	10	80	90	70	80 90
above high tide line	500	500-600	500-600	500	500-600 500
Gravel, Beach	11	20	20	18	20 20
above high tide line	25	40	60	24	33 40
Clam	10	18	25	~ same as 1	
Pelle (bottom 2000 ft)	22	42	70	22	35 40

Note of dead and dried fish in Gravel, Edna many many species but just fish predominant

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SEATTLE, WASHINGTON

②

Locality _____ Date Monday June 7th Cont.
Personnel SE [unclear] [unclear] Weather _____
Water conditions _____

Radiation level(s) _____

Operations:

at Belle made a successful fish kill of removing 3 large and 23 small goatfish which will be used for samples. Kill of other fish not great although many fish present. Fish found from Area F all the way to western tip of island. Water temperature in 2 1/2 feet of water near incoming tide at 1430 was 30.6°C (87.1°)

Stopped at 112 m to check plants. Tagged 4. 14' 5' 4'. Clump # 1177 composed of plants of Messerschmidia, Sida, Lepturus, and Triumfetta has disappeared - only small stems with new shoots were seen within 1 area east of the large bunker. Large clumps of Triumfetta were burned badly with some leaves still green but wrinkled. Plants just in the lee of the bunker were less affected and a Messerschmidia plant measured 19" in height, a calceola 14". Most plants were not burned, but had very little leaves on them. New shoots were evident on Mess and Scandala plants. Other plants still surviving were small clumps of Lepturus (aquatic), Fimbristylis (a sedge), and some plants of Berhavia. The large Messerschmidia (see. pre stat) in front (west) of the bunker has gone completely. A soil sample was collected, as was a specimen of Mess. and one of Triumfetta. Flw even gone to check plant # 1183 and it also had seen its last days. No vegetation was seen in zone. Also time in Etwa. A soil

2

Locality _____ Date Monday, June 7th, Cont'd

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 20 feet from the western end of the island. The island was cleared off except for plant algae & fish debris. Soil sample taken near grass clump, which was also sampled. Series #1196 A, B, C all missing. *Onclima* plant #1197 (Miss) was not found. A sample of Miss shoots was collected. The *Scaevola* (1197A) was also missing, in fact all traces of any *Scaevola* were missing. Soil was taken here. Plant #1198 (2 plants) was present and was burned partly, other portion looked normal. Picture taken of it. #1198A was June 5 4", 12" *Scaevola*). On west end of island very little vegetation was present. small shoots of Miss are 12" long w/ diam up to 3" long; *Lepturus* mostly dried up. *Trinacta* bunched pastures w/ leaves; Coconut roots only. In middle island crop of *Lepturus* very healthy 3 ft diam seen & photographed, *Boerhaavia* plants also seen very small patches up to 6' diam, also many new plants 1/2' tall w/ 4-6 leaves. other *Lepturus* seen include *Commersonia* plant (bean) seen 2' tall w/ 3 leaves. Two of these chewed up but not burned or dried up. Eastern end of island looked bare

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Locality Elmer Date Tuesday, June 8 1959

Personnel Palumbo & Seymour Weather Fair - Sunny all day

Water conditions Normal
Air Temp 78-94°F.

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

Operations:

Weighting envelopes; dissecting - weighing - drying and making out cards on yesterday's collection; running decay curves; preparing tanks for aqua lungs. Knocked off 2300

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Locality Elmer - Wide Entrance - Leroy - Date Wednesday June 9 1959
Belle - Vada Area - Vera
Personnel Palumbo + Seymour Weather Rain, wind, cloudy all day; in machine
Bradley Water conditions Rough
Plankton tow water sample + fishing Air temperature 76-84°F.
Radiation level(s) Counting room background - No count made

Operations:

- 0730 Left Elmer 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 day's activities.
- 0845 Stopped Wide Passage, toward western side
1-20 min tow with $\frac{1}{2}$ meter net (#6 silk, 74 meshes/ft.). Good catch
No catch in 10" net (#12 silk, 173 meshes/ft.) as bottom and canopy
Water sample - Temp. 27.8°C.
- 1050 Stopped 2 miles north of Leroy
15 min tow with each net i.e. $\frac{1}{2}$ 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 Vada area ~ 1 mile off of reef
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 Elmer

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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 cpm
Belle at 1" 26-37-50 mv/hr
Operations: 3' 20-33-45 "

1000 left Elmer for Belle to complete surveying of areas for plotting to paint numbers on Ralph's stakes for core plots, and to set rat traps. Completed these assignments.
1610 left Elmer for Juliet to set 8 rat traps.
1655 Elmer

Ran decay curves, the 2 plates from yesterday's water samples and sealed samples from June 7th collection. June 6th sample of Lophozoa collected at 45 ft depth off Lierow I (Chand Island) counted 308 cpm (ashed) for 0.496 g wet wt tissue. This seems very high.

Stakes numbered were: Area A - 1213, 1214, 1215, 1216, 1408, 1410; Area B stakes only; also 1428, 1433, 1412 - ^{units 9} ~~quadrats~~
C. Area C - 1211, 1206, 1208, 1209; Area D stakes only.

Binoculars Area E, F, G will be set out to replace unmarked + burned marks present. These were painted black on white paint background floor with ink, black or purple fades rapidly in the sun.

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Locality Elmer - Belle Date Friday June 11th 1954
Personnel Palumbo - Seymour Weather Fair, rained hard last night
["daily" sample + rats] Water conditions normal
[and birds]
Radiation level(s) Counting Room Background - 42 cpm
Operations: Belle at 1" 211-31-50 mv. pktr.
at 3 feet 19-30-40 " " "

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

0800 Left for Janet to pick up rat traps - No catch. There are many rats on this island so evidently 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 where mullet with *Eutimorpha* were caught 2 weeks ago. Today catch was 43 small goatfish, 1 mullet, 1 brasse, 1 grouper, 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 kill a fish. Shot 1 fairy tern at Belle. Skinned + frozen.

The schedule of visitors + workers to this lab is as follows:

Dr. Keitt June 24 to July 1

Dr. Odum June 24 to August 10

Dr. " " " " " " " "

Dr. Boss July 1 to July 7

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

In today's mail - 6 rolls (20) day light Kodachrome, 35mm.; tickets 8701 to 9000; letter from Dr. Welander concerning cards + Frank

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Locality _____ Date Friday June 11, ^② continued
Personnel _____ Weather _____
Water conditions _____

Radiation level(s) _____

Operations:

Will use the daily log to reply to Dr. Anderson's letter

(1) Will only comment on the length of counting problem as I am not aware of all the arguments. However, would definitely favor a 10 min - 2000 count schedule rather than a shorter one. Take out here, it seems that the counting problem could be solved if that is the bottleneck by working two shifts a day. We were very surprised when 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 U W F L - 36. Also that he instructed us in taking tissues and the fact that there was much interest in the 8 day half life I_{131} in the thyroid left us with the impression that the tissues should be taken. However we did honor his request to freeze 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 these numbers were remembered.

(4) In regard to Ralph's scheduled return we were talking about his return to Edwinton which we thought was evident from the posted schedule and 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 B.K.'s trip is out for the present and after this week the work here will drop off considerably.

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Locality Little Elmer Date Saturday June 12, 1959

Personnel Palumbo - Seignour Weather Hot

Water conditions average
Air temp. 80-91°F.

Radiation level(s) Courtesy 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 Cluse Date Sunday June 13, 1959
Personnel Palumbo-Seymour Weather Clear and warm
Water conditions

air Temp. 79-94°F.

Radiation level(s) Creeping room background - 43C/m.

Operations:

Completed filling out cards selecting samples and preparing 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, aqua lunging off Dredge of Dr. Jarrett. Went to bottom - 90 feet - no trouble except for annoying turbidity of Resorcinol. Came up to six inches before tubing off. Bottom was very dirty and threw up 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 be up into our second line. Slight nose bleed by both of us on the way up. About 40 foot level. No pain etc. - Swam back out in shallower water. Al was practicing at south beach with the snorkel -

June
14 April 1954Locality EMER

Date

Personnel Seymour, Park

Weather

Hot - not much breeze

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, labeled and replaced gear in order. Have assigned certain shelves for certain items only, and put lockers kept for equipment that needs to be dry. Locker III for needles, sump meters, and other lab material. Locker II for labware & other lab stuff. Locker I for samples, cards, and stat books, maps, etc. Locker III for plant presses, stored clothes, dissecting equipment, labels etc. - Shelf I for preserved materials of all types organic and inorganic, cartons, shelf II for net, jars, and - shelf each for collecting gear for each organism type. Shelves III and IV for plankton fishing gear, hardware, aquaria gear, net, bags etc. Refrig moved to sidewalk, aquaria moved behind shelf II, all incubators and spawning gear cleaned and iced etc. Counting room cleaned up, and Chem lab completely rearranged. Place looks very nice and we hope that cooperation will keep it this way. Nodigs want - not much.

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Locality Elmer Date Tuesday June 15th 1954
Personnel Palumbo - Seignour 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 room lockers and porch are now in order. All dishes cleaned and washed.

The 32 volt upright freezer that was moved to our porch by J.4 about 3 weeks ago was picked up and stored by H.R.S. This was handled thru the DEC 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 ^{Walter} Mr. Hardison. 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.

Ran cleanup currier.

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 Leonard 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.

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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 vertebrate tissues for the next "major" collection. Belle and Frank will be here to look after their areas of interest.

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

(4) Am enclosing complete sets of counts on Belle soil sample #49 from which the decay curve can be plotted to the scale which you desire.

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

Letter received from Dr. Donaldson written in Tokyo June 3rd. On substance to say that he is expecting big meetings in 10 days or 2 weeks (from the time of writing his letter). If these meetings are delayed then he will try to get home 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 Euciwetok.

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Locality _____ Date June 15th 1953 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 ~~bone~~ ^{sample} scale were too heavy and ~~and~~ will correct that mistake from now on.

Worked on the chart of Belli 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 pandanus thicket 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 marked as B-1 and is the reference point for a family line made by Paul on the work charts, 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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SEATTLE, WASHINGTON

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 Backgrounds 37c/hr

Operations: Belle - @ 1" 1.3 - 2.9 - 3.5
3' 1.3 - 2.2 - 2.8
Palumbo and Seymour turned in badges (to Pal Safe) numbers
A-30 and A-33 respectively. They were issued badges A-92 and
A-93 yesterday

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

Randall's Carves

1300 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 in hand. Camera
 jammed i.e. film in camera only picture.

1600 left Belle for Janit. Set T traps on Janit
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 Elmer - Belle - Janet Date Saturday June 19 1954
 Personnel Galumbo Seymour Weather Mostly sunny ^{Heavy rainfall} _{last night.}
"Mojoi" collection Water conditions No whitecaps
 Air temp. 76-95° F.

Radiation level(s) Coinciding room background - 39 Gm

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 (#6?)

We had set plans to be picked up at 1400 but since Saturday afternoons are air force holidays 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 ^{and kept} water samples collected. algae collection not quite complete as invertebrate collection. fish collection poor and probably will have to be redone. Plenty of goatfish, some whasse and that was about all. Put out 1 large and 2 small sacks of rotenone in area G and 1 large sack of old rotenone in area E.

PM processing today's samples
 2130 Dr. Frank arrived at Elmer, Hale and Bearty

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Locality Elmer Date Sunday June 20 1954
 Personnel Wibanda Lorman Weather Cloudy and Rain
Palumbo Seymour Water conditions _____

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

Operations:

Run 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-averaging tube. If not, take the preamp off the big pig (in the plexiglass housing) and send it out. 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	$\frac{1.122}{.353}$	$\frac{462}{10} - 37 = 9 \text{ c/m}$
	$.769 \text{ gm}$	

Dig. Gland	$\frac{.758}{.340}$	$\frac{896}{10} - 37 = 53 \text{ c/m}$
	$.418$	

Carapace	$\frac{.606}{.351}$	$\frac{689}{10} - 37 = 32 \text{ c/m}$
	$.255$	

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

Lynghya (#1555)	$\frac{3.096}{2.330} = .7669 \text{ gm}$	TOO HOT TO COUNT
Coral #248	$\frac{2.776}{2.327} = .449$	$\frac{7786}{10} = 779 - 37 = 742 \text{ c/m}$ (shelf)
Coral #249	$\frac{2.992}{2.256} = .736$	$\frac{13359}{5} = 2672 - 37 = 2635 \text{ c/m}$ (on the 47 shelf)

Am starting a decay curve on Coral #248

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

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Locality Elmer + Island Sweep Date Monday June 21, 1954
 Personnel Welanden, Lowman Weather Generally fair, occasional showers
Palumbo, Seymour Water conditions No whitings or laggon
Air Temp 78-93°F
 Radiation level(s) Courtesy Room Background - 35, 41, 37 cpm.

Operations:

8:00 Left for circuit town + collection. Noth run up in reservations & reservations were made for forest (on Friday) but since Welanden and Lowman had not arrived they were removed from list and not put back on - only Palumbo, Welanden & Seymour made the sweep. Lowman working on bats, birds and decapod crabs. Three species of algae (Halimeda, Caulerpa, Sargassum) were swept. Three specimens of the sea cucumber (H. atra), land and laggon bottom hand samples, water samples and temperature and survey notes.

Stationing were recorded. Following is a summary of results

Island	Water Readings in 1" depth			Water Readings in 3 feet			Soil Sand Sample	Bottom Sand	Sea Cucumbers	Algae	Water Temp	
	r	br	or	r	br	or						
Bruce	0	0	0	—	—	—	✓	✓	3	L. only	✓	81°F
Yvonne	0	0	0	—	—	—	✓	✓	3	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 lagoon
Henry	0	0	0	—	—	—	✓	✓	3	C. H.	✓	" "

* on reef, ocean side, temperature in isolated tide pool (low tide) was 99°F. Here sea cucumbers were taken. In a shallow 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. I was searched but Alice by Welanden.

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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 Elmer to go to Fred to board PBM from Kwajalein 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 a small rubber life raft borrowed from air force at Fred. Boat put over side of PBM and inflated with a CO₂ cylinder. Top of Red Safe and vitamins of H & N also on trip.

Fish, algae, land plants, invertebrates, bottom sample, water sample, birds, seaweed, water radiations and ^{photomicrographs} taken. Fish, algae and invertebrates from reef on Ocean side at north tip of Bikini Is. (How)

Name of Amen are now only sand islands.

Melee readings ^{in MR packages} with #89 Geiger taken by Lowman, areas follow:

AREA	at 3 feet		at 100 feet	
	89	236	89	236
Water in over reef 10' out from beach	18		18	
Above high water mark on beach on over reef	44		50	
above high water mark	120		400	500
wood on beach			800	1800
in land 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		304	33

Counting of fish done in Area 1407, N. tip Bikini Is. Good results.

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

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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 chimists
~~at~~ ^{Cove} ~~at~~ ~~the~~ ~~edge~~ ~~of~~ ~~reef~~ ~~on~~ ~~outer~~ ~~edge~~ ~~of~~ ~~Coaster~~, crater appeared to be about
3000 yards across or more. Coconut trees on Bikini all ringed &
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
Laha trees like Coconut, Pandanus, Pisona, Messerschmidia,
Midia, and Jettarda. On close inspection (on the ground)
The coconuts who hadly ringed with large Compsonia
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 & that walking was difficult.
Some Pandanus trees were left standing, but with leaves
mostly gone. Scavola and Messerschmidia
plants had stems covered with new sprouting
leaves and old vegetation was dead and
withering. Many new plants of Tacca, Canavalia,
Scavola depiturno, and Iponoea were seen
the lagoon side especially. Some of the
best sprouts on Messerschmidia were 6" long.
Tacca plants were pale yellow green and in some were
in flower and fruit. An underground corn was dug

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(RS)

Locality _____

Date

6-22-54

Personnel _____

Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

used and sampled. Soil here was reading
160 m gamma w/ Teft's T-39 meter
reading on land ran from 120 m - 300 m
on the beach it read about 30 m (white sand)
Algae was collected on fish from area - on
rocks, water and bottom sample. Food
sample taken at base of Tacca plant mentioned above

Many terns (noddy + fairy) were present on
the island and all appeared to be in good shape.
There were very few shore birds, however; only
were seen; three of which were far out on the
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 beach
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 due
in the central part of the island. In those spots
the activity was more concentrated.

Bob Teft and I both noted that the β activity
ratio on the island was fairly high.

Items which were especially hot included
old steel camera towers, glass balls (some were in
and especially any unpainted wood. The wood gave
readings for β of ≈ 2500 m/hr.