

UNIVERSITY OF WASHINGTON  
LABORATORY OF RADIATION BIOLOGY  
SEATTLE, WASHINGTON

411111

Locality ELMER Date 1 AUG 1958  
Personnel CANTREL & CHAMPION Weather HOT  
Water conditions CRABBY Location APFL  
Radiation level(s) NORMAL

RG UNIVERSITY OF WASHINGTON  
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SEATTLE, WASHINGTON  
APFL  
SPK

1958-8/1/58-9/20-59

Operations:

Work still progressing on the Collette at a good rate we are getting a great deal of cooperation from HEN and ADAMSMENT from the NAVY. They want to know why it isn't done right now AND why our people aren't here ready to go. I AM IGNORING THEM THANK YOU. SIM AND I WENT THRU BACK STOREROOM LOOKING FOR ITEMS THAT WILL GO ABOARD SHIP (CLEANED IT UP TOO). CANT FIND 5 HP PUMP WE ARE SUPPOSED TO PROVIDE METER BLOCKS AND OTHER SMALL ITEMS. WE HAVE SET <sup>ASIDE</sup> THOSE BOXES THAT WERE MARKED FOR THE SILVERSTEIN. I AM HAVING ONE PROBLEM THAT IS DECIDING WHERE TO PUT LAB & COUNTING ROOM SINCE I DON'T EXACTLY KNOW THE REQUIREMENTS FRANK MIGHT HAVE. THE DECISION MAY HAVE TO BE MADE SOON IF FRANK ET. AL. ARRIVE ON 7 AUG. TIME WILL TELL!!! WE HAVE DECIDED TO CANCEL THE PLANKTON TRIP FOR A FEW DAYS UNTIL THE "OP FEVER" DIES DOWN HERE IT SEEMS LIKE EVERY TIME WE LEAVE THE LAB SOMEONE IS LOOKING FOR US.

BEST COPY AVAILABLE

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(5) . KPL  
IF

Locality ELMER Date 2 AUG  
Personnel CANTAL & CHAMPION Weather HOT  
Water conditions CALM

Radiation level(s) NORMAL

Operations: Work still progressing on COLETTE SHOULD  
BE DONE MONDAY. AFTER THE WINCHES WERE  
PLACED ETC. LOOKED LIKE THE RUNNING COULD  
HAVE BEEN A LITTLE LONGER THAN THE 20'  
CALLED FOR. WE HOPE EVERYTHING IS SATISFACTORY  
THE LAB IS STILL HERE BUT HAVE BEEN AT  
THE SHIP MOST OF THE TIME.

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Locality ELMER Date 3 Aug 1958  
Personnel CANTRELL & CHAMPION Weather Hot  
Water conditions calm

Radiation level(s) Normal

Operations: A & N NOT WORKING TODAY SINCE THEY NOW  
HAVE plenty of time. Started processing  
SAMPLES FROM PONAPE etc.

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Locality ELMER Date 4 AUG 58  
Personnel CANTRELL & COTRANPIAD Weather HOT  
Water conditions CALM

Radiation level(s)

Operations:

SPENT MOST OF THE MORNING ABOARD SHIP.  
DECK WORK FINISHED EXCEPT FOR MINOR DETAILS.  
COULD SEE SOME CHANGES THAT MIGHT HAVE MADE  
THE SET-UP A LITTLE BETTER BUT WILL LET FRANK  
DECIDE IF THEY ARE OK. HEN DID A FINE JOB  
AND THEY WERE VERY COOPERATIVE ALSO WORKED  
ON SAMPLES THIS MORNING.

MAILED SAMPLES

PLANTS - 91-106

FISH - 570-574, 575, 588, 589-602, 603-615,  
616-620

INVERT - 83-104

SOIL - UJELANG

ALSO LOGS

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Elmer

Locality Intril & Champion Date Aug 5, 1958  
Personnel \_\_\_\_\_ Weather Hot, little wind  
\_\_\_\_\_ Water conditions calm

Radiation level(s) Normal

Operations:

Finished packaging Ponape & Kapingamaranga samples, all but a few livers which should be dry tomorrow or the next day. U.S.S. Collett is out at anchor so we couldn't do anything aboard ship. Actually, H & N has done a beautiful job and all that we can do is done

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SEATTLE, WASHINGTON

Locality Elmer Date Aug 6, 1958  
Personnel Conrill & Champion Weather Hot - mild  
Water conditions Calm

Radiation level(s) Normal

Operations:

Again a greater portion of the day was spent cleaning up the lab after completion of Rongelap & Rapaunga samples. Ed's shipment for Rongelap is here except for 10 carboys. All the others arrived OK!

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(Cont'd)

Locality Elmer Date Aug 6, 1958  
Personnel Centril & Champion Weather Hot - fairly calm  
Welander & Weeks Water conditions calm to choppy  
Palumbo & Lowman  
Radiation level(s) Normal

Operations:

Welander, Weeks, Palumbo & Lowman arrived  
EPG at 0900 and are housed in 128 with  
Centril & Champion. Part of the morning was  
spent washing dishes etc.

Checked in with Ernie Wyntkoop, Cmdr. Wendell and Clement of  
DBM. Seven paint three and one are in a big rush to get the survey  
under way so that they can go home.

At 10:00 AM went to large pier to meet ship. Checked  
in with Captain <sup>J.D.</sup> Peterson as to operation of ship during cruise.  
Don had the spectrometer repaired and in working condition before  
noon.

The probe had gone to Honolulu prior to our flight and  
was locked up in the Airborne Freight warehouse. Sgt Pelot of  
Z1 at Hickam is going to ship it to us on the next flight.  
In afternoon collected necessary equipment and supplies for  
the lab for transport to the ship. Inspected ship and made  
arrangements for labs to be installed. The shipfitters shop  
below the main deck will be used for chemistry and the  
1<sup>st</sup> class lounge for counting room.

Champion & Centril have done a good job getting  
the ship outfitted for the cruise. The winches are installed  
and a canvas awning on the fantail. All of the boxed gear  
is aboard.

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Locality Elmer Date August 7 1958  
Personnel Censril, Champion, Weeks, Wendr, Weather fair  
Pelumbo Lawman Water conditions Smooth

Radiation level(s)

Operations:

In morning went to lab to pack for the Collett trip. Took the  $\beta$  counters and the spectrometers apart for shipboard use. Boxed and stored (also inventoried) the extra gear in the laboratory.

H+N is building the new addition on the building so the noise level is fairly high.

Made arrangements w/ H+N to build tables in the shipboard labs and to construct 4 blocks to use on the second winch and the probe unit. Put cable on the two winches after removing the old cable which was very rusty.

Checked with Frank Beebe about getting S&R plugs, caps, and red devil fans.

Talked to Cmdr Wendell about sailing date. Is dependent upon arrival of the probe.

Took the  $\beta$  counters and the spectrometers to the ship in late afternoon and installed in the labs. Made up S&R adapters for use w/ the equipment.

After evening chow went to ship and checked out the gear. Trouble in the analyzer which Don quickly remedied with a new tube.

Sat up the chem lab for operation.

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Locality Elmer & aboard the Collett Date Aug 8 1958  
Personnel Palumbo, Welander, Weeks, Champion, Weather Rein!  
Censill & Lowman Water conditions medium rough

Radiation level(s)

Operations:

Finished loading the gear from the lab aboard ship.  
The probe arrived at 0900 and was installed by our group  
and H & M. Work on J-4 & got batteries for probe. Probe didn't  
work so Weeks started trouble shooting.

Installed blocks on probe boom of forward winch frame.  
Got 6 cars, 2 red devils & snakes from Becks.

Rain was coming down in sheets during the entire operation.

Checked out the compass by running planes and calibrating  
w/ Co<sup>60</sup> standards. Calibrated the spectrometer.

Ralph & Art finished cleaning up the lab.

At 2:00 PM boarded ship and headed for sea. A few  
miles out ran 700' of wire out of aft winch through the  
metering block and painted the wire at 100' intervals.  
Then placed the metering block on the forward winch for  
use with the Nansen bottles.

Revised trip route and put off 300 miles and  
added 2 more stations. Sea is fairly smooth so we are  
using less diesel than we had planned. N 45 and L 4 W.

First station #34 at 1752 to 1812. Took 8 ml plankton at 70 M  
and water samples at 0, 25, 50, & 200 M. Plan to take water samples  
at 0, 25, 50, 100, & 200 M. has had a fuel up on the 1<sup>st</sup> station.

2<sup>nd</sup> station #35 at 2145 to 2220. 16 ml plankton from 35 M  
took planned water samples.

Specimens & cars are working fine - probe snafu. Still working  
on it but are also taking surface readings with a survey meter.

78.

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Locality USS Celtic Date Aug 9 58  
 Personnel Weeks, Welander, Council, Champion, Palumbo, Lowman Weather fair (rain at night)  
 Water conditions smooth (nobody sea sick so far.)

Radiation level(s)

Operations:

Stations	time	total ml. plankton	plankton depth	Water temp.
35	0121-0200	30	35M	as planned
-36	0501-0527	12	35	lost 100 M
-3	0902-0930	35	40	as planned
-38	1252-1312	20	35	" "

At station 36 the hinge that connects the bottle to the cable clamp came loose and the bottle was lost. Now have 5 bottles. We should get two more bottles before the Silverstein trip.

The shifts we are using are as follows:

Team A Lowman Champion Palumbo 0000-0600  
 1200-1800  
 Team B Welander Weeks Council 0600-1200  
 1800-2400

Here 12 men from the ship's crew helping us on Thursday and 8 hours off schedule. Payne, Hojka, Nichols, Creselius, Clemens, Pruitt, Beck, Colquhoun, Eiswirth, Kunkler, Justice and Chesley are the assigned men.

At 2:00 PM sent message on station through #38 to Klement.

In early afternoon one of the crew became very ill and had spasms so at 1600 we headed for Eniwetok. Arrived at Eniwetok at 2310. Had sent message requesting Klement to meet us.

Ed called by radio when we arrived in Port and requested we would allow some of their supplies. Klement was also in the plane so we talked to him and informed him that we would be in Eniwetok for fuel. Will discuss data w/ Klement

(8)

. 2 P.D.

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Locality SEATTLE TO PARRY IS. Date 6-9 AUG 58

Personnel BAKER, BENHAM, COLE, EISLER, Weather \_\_\_\_\_

GESSEL, HELD, JOYNER, KENADAY Water conditions \_\_\_\_\_

KIMMEL, RICHARDSON, WALKER \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

Left Seattle 2100, 6 VIII PAA 823. Arr. Honolulu 0730. Checked in HIKAM 0830. Departed HIKAM 1458 on MATS 627 of the 7<sup>th</sup> A/2190409. Arr. Eniwetok 1130, 8 VIII.

9 VIII all but Kenaday, Kimmel, Richardson, Walker to Parry I (no clearance for the four).

Had made final arrangements for Rongelap trip while others started checking equipment + supplies & packing.

Wynkoop through Harry Ryland & T-1 arranged to have Kenaday et al admitted to Parry I under escort. Held required to pick them up & escort them from Fred to Elmer (1600-1715).

Cdr. Wendell, J-3, T-1 making all arrangements for trip support & will be contact man at Elmer while ship is at Rongelap. He or Maj. Monaco will also get aerial photos of Rongelap, Eniwetok, & Kabelle Islands.

Col. ~~Arzack~~ <sup>Noseck</sup> (something?) J-1, T-1 notified HICOM Trust Territory, CINCPAC, & MR NEAS, District Administrator Majuro by TWX that trip was proceeding as scheduled. J-1 had previously been informed by Neas that T.T. representatives would meet the ALOTC at Rongelap.

1900 Msg from Luamanu to Klement that Collette coming in for hospital care. Luamanu requests meeting with Klement. Finally got together with Klement about

75, 15.

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Locality \_\_\_\_\_ Date 9 AUG (cont.)  
Personnel \_\_\_\_\_ Weather SHOWERS  
\_\_\_\_\_ Water conditions \_\_\_\_\_  
\_\_\_\_\_

Radiation level(s) \_\_\_\_\_

**Operations:**

2130. Klement & Held waited at personnel pier until 2330, finally contacted Lerman by voice radio through TV-3 at about 2345 - they will be in 11 AUG. to refuel & will be ashore for a short time.

Met Dr. St John this morning. His future address will be Chatham College, Pittsburgh, Pa. Baker & St John spent a couple of hours to see & St John checked Bakers Key to Rongelap Islands.

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Locality E Imer Date 10 AUG

Personnel Baker, Beckman, Cole, Eisler, Weather Rain - Showers

Gessel, Held, Jaynes, Water conditions

Kennedy, Kimmel, Richardson, Walker

Radiation level(s)

Operations:

Continued checking equipment & packing.  
Walker built boxes for plant nutrition experiment  
to be left set up at Eniwetok.

ALOTC arrived this evening loaded with  
equipment from BIKINI. All hands went down to  
look her over - met mate, Mr. Demstad (spelling?).  
ALOTC expected to be ready to start loading for  
Rongelap trip by 1300 tomorrow.

Dr. Stone arrived today & spent a few  
hours at the lab. He is continuing collections of *Drosophila*  
in the Marshalls & Carolines - Rongelap is included  
in his itinerary.

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Locality USS Collier Date Aug 10  
 Personnel same as Aug 9 Weather fair (rain before dawn)  
 Water conditions smooth

Radiation level(s)

Operations:

Station	Time	total ml plankton	depth of plankton	water sample
39	0635-0653	22	35M	as planned
32	0952-1022	8	"	"
21	1320-1400	14	"	"
29	1830-1851	10	"	"
28	2152-2212	12	"	"

On stations 32 & 31 collected samples (1 liter) at all depths for Libby and same size <sup>depths</sup> for us. On 32 collected 5 gal surface H<sub>2</sub>O for Harley.

On station 31 the ship stopped for the sampling and for some reason the screen came up again. The probe was broken off when it hit the screw - we also lost ~ 150' of probe cable. We almost lost the plankton net too. The screw put a mighty dent in the plankton cable ~~and~~ weight. We still taking the surface readings with the survey net.

Ralph put on a safety line and went down to look for the probe. Nothing on the screw.

Sent second message to Klemm on stations 39, 32, & 31.

5016

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Locality E Linn Date 11 AUG 58

Personnel Same as 10 Aug Weather showers

Water conditions \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

AM. Packing gear, final arrangements for last minute supplies through Cude Wendell who turned us over to Cornish (H+N) who in turn turned us over to Cornish (H+N shipping & receiving). Cornish had all items on list submitted assembled & packed and sent man with fork lift & packing materials to EMRL to move Rangelap material to place.

Met Capt. Fosse about 0930 discussed <sup>placement</sup> ~~arrange~~ of tents, reefer &c — all essentially as had been arranged by Donaldson.

1300 tents, water tanks, reefer, tables, &c started to be loaded. 1600 equipment & supplies loaded.

Personnel scheduled to board 0930 tomorrow departure at 1000.

Louman, Welanders, Palumbo, Weeks, Champney, Conrill in for about an hour this morning not much time for talking but all is going according to schedule & trip expected to be completed 16 AUG.

0830-1100 Walker, Gessel, Boham, Baker to Lupton I. to collect soil for plant nutrition experiments to be left set up at Eniwetok.

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(2)

Locality USS Collett Date Aug 11 1958  
 Personnel Weeks Welander Polumbo Weather fair  
Champion Conril & Lowman Water conditions smooth

Radiation level(s)

Operations:

Station	Time	Total ml Plankton	Depth of Plankton	Water samples explained
27	0120-0140	14 ml	35 M	0, 25, 50, 100, 300 M
13	0503-0523	12 "	"	0, 25, 50, 100, 300 M
1	1252-1312	15 "	"	" " " " "
37	1602-1632	10 "	"	" " " " 200 M
2	1937-1955	14 "	36 M	" " " " 300 M
4	2245-2310	20 "	36 M	" " " " "

*became fouled in water bottle.*

One net torn beyond repair. Processed & counted isoptera. Samples being taken with greater efficiency. ~~The crews~~ The crews, both navy and our own profit by experience. Travelling more rapidly between stations - 19 knots.

The water bottles have given us occasional trouble & need some work after every station.

New net lost when snap became unhooked while washing out net. Using Clivice from now on to attach net.

Results to Date

Sta #	Plankton D/m/cc	Surface 1120 D/ml	25 M d/ml	50 M d/ml	100 M d/ml	300 M	above surface that 5' m/hr
13	2560	72	0	0	0	180	0.12
1	3320	1300	1100	52300	0	370	0.30
37	27,100	37,000	35,600	42,400	3900	3900	0.34
2	34900	53400	50,500	157,300	5,400	6000	0.27
4	190,000	218,000	202,000	85,000	1740	4300	0.20

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Locality USS Collett Date Aug 11  
 Personnel Same as Aug 9 Weather fair  
 Water conditions smooth

Radiation level(s) \_\_\_\_\_

Operations:

*Results to date*

Station #	Plankton d/m <sup>3</sup> /cc	Surface d/m <sup>3</sup> /l	25M d/m <sup>3</sup> /l	50M d/m <sup>3</sup> /l	100M d/m <sup>3</sup> /l	300M d/m <sup>3</sup> /l	(5' above H <sub>2</sub> O) Surface r in m <sup>2</sup> /hr
34	13,000	255	801	96	—	331	0.14
33	2,600	1,250	234	931	4,560	0	0.11
35	15,700	9,220	1,620	11,400	8,470	365	0.06
36	125,000	44,400	46,800	157,000	—	9,180	0.15
3	851,000	33,100	53,100	20,300	15,400	3,190	0.22
38	213,000	75,500	101,000	47,400	1,690	7,110	0.25
39	310,000	59,800	69,800	23,000	6,260	28,000	0.21
32	18,700	5,500	4,970	28,300	13,700	8,300	0.21
31	35,500	2,490	9,040	11,300	2,190	3,760	0.30
29	5,650	130	0	0	0	0	0.175
28	5,110	160	65	0	0	0	0.08
27	410	130	0	0	0	—	0.14

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Locality ELMER - Eureka to Date 12 AUG '58  
Rongelap  
Personnel same as 10 AUG Weather clear  
Water conditions Calm

Radiation level(s)

Operations:

Departed shortly after 1000 - exceptionally calm weather - only two of party on Diamantine!

Discussed revision of proposed schedule with entire group - decided to proceed as per originally proposed schedule except that decision as to date of departure from Rongelap I. to Eureka I. will be reserved until night of 15 AUG & be dependent on progress made.

Mr. Willis, ship's engineer, is an amateur shell collector with a fine collection & considerable knowledge of Mollusca. He showed us all that portion of his collection that he still has aboard - a pleasure & profitable experience for all of us.

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Locality U.S.S. Collett Date Aug. 12, 1958 (Tuesday)  
 Personnel Lownan, Welles, Palumbo Weather Fair  
Centril, Champion, Welanders Water conditions Smooth

Radiation level(s)

Operations:

Station	Time	Total # of Plankton	Depth of Plankton	Water Samples
5	0210-0230	14	35	0, 25, 50, 100, 300 M
7	0530-0540	24	"	" " " " "
8	0834-0854	6	"	" " " " "
6	1141-1201	6	"	" " " " "
9	1447-1507	12	"	" " " " "
11	1755-1815	10	"	" " " " "
16	2100-2115	15	"	" " " " "

Travelling 19 knots between stations. Taking bathometer readings at each station. Biomass consumption reduced.

Flying fish found on board between stations 7 & 8. Processed liver, muscle, viscera, & Bone.

Results to date.

Sta #	Plankton $\mu\text{m}/\text{cc}$	Surface $\text{H}_2\text{O}$ $\text{d}/\text{ml}$	25M $\text{H}_2\text{O}$ $\text{d}/\text{ml}$	50M $\text{H}_2\text{O}$ $\text{d}/\text{ml}$	100M $\text{H}_2\text{O}$ $\text{d}/\text{ml}$	300M $\text{H}_2\text{O}$ $\text{d}/\text{ml}$	above surface $\text{d}/\text{ml}$
5	21,900	18,300	16,300	710	97	5700	0.15
7	17,600	13,200	17,900	1460	1040	3330	—
8	9110	3830	3510	851	1616	2050	0.22
6	<del>7110</del> 7110	72	460	460	1616	1870	—
9	1070	1700	640	1160	130	460	0.42
11	<del>1060</del> 1060	137	0	0	0	772	0.16
16	4670	4950	1800	1360	805	2830	0.22

✓ FSR Log

13 Aug 58 (Wed)

Collected foliose samples of *Scaevola*, *Coccoloba*, *Triumfetta* + *Convolvulus*, and *P. Guettarda* nuts at site of soil pit 21 on south side of island for redetermined and mineral analyses.

Marked twigs of *Scaevola* for future checks on leaf initiation and leader growth.

RBCW.

Beginning in afternoon after arrival at Rongelap a sail net was hung on seaward side opposite village. All necessary soil samples taken. In short sail through other portions of the island made to locate sample areas. Morning was spent on board ship setting up lab and packing equipment. *APL*

Jaynes Eiler

Richard Dig. Activities 7 Aug 13 '58  
1:15-5:10 PM. walked to NE end of Rongelap Is. and back going back - field across island. Saw following species of birds:

White Tern

Noddy Tern

Spotted Tern

Crested Tern

Golden Plover

Turnstone

Whimbrel Tattler

Brown Booby

No birds found eating *Hydrocotyle*

of white Noddy Tern feeding *Hydrocotyle*

seaward side. Plant to the *Hydrocotyle*

located in northern N.A. area.

Do some stay here all year at Rongelap.

Aug 13 1958

Arr. Rong. 11:20

1500 - Searched high on seaward reef - caught

45 spec. of Surgeon, demersal parrot and spongyfishes.

Returned to ground at high tide -

weighed & directed until 2100.

Ronaplap

13 Aug. 1958

Selection of a site for digging a soil pit, placing a lysimeter into operation and collection of plant parts in this immediate vicinity was accomplished. The soil pit revealed several buried soil profiles indicating submergence of past vegetation. This was relatively near the seaward side of the islet and the vegetation from the ocean in to about 75 yards appeared relatively undisturbed. The vegetation composing this band consisted mostly of *Scaevola*, with *Marschallia*, *Guttaria*, *Pandanus* + *Coccoloba* as dominant with much of the parasite dodder being present on many of these.

Jim Krammel

R. KENADY 8/13/58  
DAYS ACTIVITIES (1300-1730)  
ASSISTED DAVE COLE AND  
JOHN BRIDGES PUT IN  
ONE LYSIMETER TANK  
WITH THREE PLATES AND  
DUG SOIL PIT ON  
SEAWARD SIDE OF  
ISLAND (RONAPLAP)  
REMOVED LILYPADS  
LEARNED IDENTITY OF  
A FEW NATIVE TREE  
SPECIES AND SOME  
OF THE LESSER VEGETATION  
TOOK pH AND CONDUCTIVITY  
READINGS ON SOIL SAMPLES  
COLLECTED FROM PIT  
MENTIONED ABOVE

Baker - Aug. 13, 58

AM SET UP LAB + LIVING QUARTERS

PM COLLABORATING WITH WALKER, BESSLER, COLE,  
KIMMEL, + KENADY ON PLOT DIGGING COLLECTING  
PLANT SAMPLES WITH WALKER (SCAEVOLA, GUBETARDA, COCOS,  
TRINMFETTA, CASSYTHA). IDENTIFIED SEVERAL  
NEW PLANTS

August 13, 1958

Three lysimeter discs were placed at 1" depth  
near pitole # 21. Appared to be functioning normally. Spent  
some time with Bessel to locate new sample areas and  
lysimeter placements.

DWC

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Locality Arrived Rongelap 1145 Date 13 AUG 58  
Personnel Smith & 10 Aug Weather CLEAR  
Water conditions CALM

Radiation level(s)

Operations:

Sea was so calm that we started unpacking & setting up lab immediately after breakfast. Reached at Rongelap I. about 1140. Trust territory people not here. <sup>Bwico Soap</sup> ~~BH~~ (Billiet's brother) who is operating radio acted as interpreter. He had been informed of our arrival by Mackenzie. John & Billiet are at Congress & Majors - not expected to return before our departure. Carte blanche given by Rongelapese for soil collection plots, fertilizer plots, bird shooting & fish collections by either poisoning or blasting.

Afternoon: Tried fish collection by blasting & poisoning on seaward reef - no success with poison (2 or 3 surgeon fish). By blasting got 45 fish, mostly surgeon, some damselfish & parrot fish & one or two specimens each of other species.

Soil pit, lysimeter & plant collections made on seaward side of island on transect along road which starts from church. Several plants marked to check rate of growth & leaf initiation.

Richardson identified the following birds in walk around NE end of island: White tern, Noddy tern, ~~Spectacled~~ <sup>Black naped</sup> tern, Crested tern, Golden Plover, Turnstone, Wandering Tattler, Brown Booby. No nests found. Hundreds of White (pairy) & Noddy Terns feeding mostly on seaward side.

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Locality U.S.S. Collett Date Aug. 13, 1958 (Wed.)  
 Personnel Lowman, Control, Palumbo Weather Fair  
Webb, Champion, Welanders Water conditions Smooth

Radiation level(s)

Operations:

Station	Time	Total and Plankton	Depth Plankton	Water samples
10	0014-0034	10	35 M	0, 25, 50, 100, 300
17	0314-0334	8	"	" " " " "
18	0633-0656	10	"	" " " " "
22	0930-0950	8	"	" " " " "
19	1350-13 <del>45</del>	10	70	" " " " "
15	1651-1716	10	35	" " " " "
20	2045-2100	8	"	" " " " "

Injured ♀ sooty tern landed on deck.

Results to date

Sta. #	Plankton d/m/cc	Surface H <sub>2</sub> O d/m/l	25M-H <sub>2</sub> O d/m/l	50M-H <sub>2</sub> O d/m/l	100M-H <sub>2</sub> O d/m/l	300M-H <sub>2</sub> O d/m/l	5' above Surface μCi/l
0	1580	65	0	0	0	0	0.20
7	1270	770	620	0	97	0	0.13
8	1740	194	0	0	0	0	0.15
2	1600	497	0	90	0	720	0.24
9	8320	6710	6840	9440	9010	2460	0.70
5	4060	1210	4290	695	920	2720	—
20	1510	0	0	0	0	0	0.14

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DATA FROM WATER SURVEY OF DANGER AREA DURING  
OPERATION HARTFORD-AUGUST 1958 (Report #2)

STATION NR	GEOGRAPHICAL COORDINATES		SURFACE	25m	WATER SAMPLES			300m	STATION dpm/cc	EXT. COUNT nr/hr
	W	E			dpm/liter	50m	100m			
13	10-50	162-40	72	0	0	0	180	2560	0.12	
1	11-40	162-40	1300	1100	52,300	0	370	3520	0.30	
37	11-40	161-50	37,000	35,600	42,400	3900	3900	27,100	0.34	
2	12-30	161-50	53,400	50,500	157,300	5,400	6000	34,900	0.27	
4	13-20	161-50	218,000	202,000	85,000	1740	4300	190,000	0.20	
5	13-20	162-40	18,300	16,300	710	97	5700	21,900	0.15	
7	12-30	162-40	13,200	17,900	1460	1040	3300	17,600	-	
8	12-30	163-30	3630	3510	851	1610	2050	9110	0.22	

Counted 11 Aug 58: Station Nos 13, 1, 37, 2, 4. 12 Aug 58: Station Nos 5, 7, 8.

NOTE: Data are preliminary and uncalibrated. All above are dpm gross beta.

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R/minutes 8/13/58



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SEATTLE, WASHINGTON

Locality Rongelap I. Date 14 AUG 58  
Personnel Scott & 10 AUC Weather 0.58 in. rain 15:30 - 17:30  
Overcast, showers in afternoon  
Water conditions Calm

Radiation level(s)

Operations:

Algae collected from seaward reef - partial collection from lagoon side (more needs to be done there)

Fish collected by blasting on lagoon side & by trawling from DUKW from Rongelap to Busch Is' Invertebrates collected in same areas as fish collections.

Two more soil pits along transect from church to seaward beach.

Lysimeter with <sup>6</sup> plates at 2 depths set up at profile 22.

6 1 foot square plots set up for fertilizer studies with corn & tomato seedlings. Two  $\frac{1}{2} \times \frac{1}{4}$  chain plots established for KCl fertilization near plot 22 - fertilization delayed because of rain.

Richardson to Bikojarita & Rago ddagin Is. N of Rongelap I. Collected <sup>Black naped</sup> ~~Spectacled~~, Noddy, & White Terns. Only one nesting bird found. 24 mouse traps set.

2200 checked trap line (2 rats caught still living) & hunted crabs. Two large Coenobita found & taken.

Mixed rain gauge & wind direction indicator set up. Hygrothermograph aboard ship. Still undecided as to best location for weather instruments. Rainfall records taken aboard ship this date.

Missy Noseck to Keld: "NEWS REQUESTS"

- 2  
701.9.

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SEATTLE, WASHINGTON

Locality \_\_\_\_\_ Date 14 AUG (CONT)

Personnel \_\_\_\_\_ Weather \_\_\_\_\_

\_\_\_\_\_ Water conditions \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

CANCELLATION PARTICIPATION MACKENZIE AND MORRIS  
RONGELAP ECOLOGICAL STUDY DUE LACK TRANSPORTATION  
PLUS OTHER NEED ELSEWHERE MACKENZIE. "

REPLY: HELP TO NESECK. "REGRET CANCELLATION  
PARTICIPATION MACKENZIE AND MORRIS. REQUEST INSTRUCTIONS  
FROM NESE REGARDING PAYMENT FOR RONGELAPSE LABOS.  
REFER LETTER MUCKER TO HELP JULY. BELIEVE COPY IN  
YOUR ~~BE~~ POSSESSION."

263

UNIVERSITY OF WASHINGTON  
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SEATTLE, WASHINGTON

Locality USS Collett Date Aug. 14, 1958 (Thurs)  
 Personnel Lowman, Pahunko, Cantrol Weather Fair to stormy  
Champion, Wesley, Welander Water conditions Smooth to rough.  
gusts to 39 knots

Radiation level(s) \_\_\_\_\_

Operations:

Station	Time	M/L Plankton	Depth Plankton	Water samples
21	0034-0054	8	35 M	0, 25, 50, 100, 300 M
23	0434-0459	16	"	" " " " "
24	0905-0930	10	"	" " " " "
25	1244-1259	15	"	0 25 _____
26	1544-1604	8	"	0, 25, 50, 100, 300
14	1920-1945	12	"	" " " " "
12	2230-2255	12	"	" " " " "

Station 25 water sampling incomplete because of squall - winds up to 39 knots. Water bottle cable angle to surface of water was about 30° or less - could not get the bottle down to any depth.

Processed & counted samples, sent in the usual message. Received no message.

Results to date:

st.#	Plankton d/m/cc	Surf. H <sub>2</sub> O d/m/l	25M-H <sub>2</sub> O d/m/l	50M-H <sub>2</sub> O d/m/l	100M-H <sub>2</sub> O d/m/l	300M-H <sub>2</sub> O d/m/l	5' above surf γ number
1	1770	319	0	60	0	0	0.18
3	293	0	0	0	0	0	0.16
4	3410	252	97	130	0	0	0.20
5	6780	178	0	0	0	0	0.17
6	5060	0	463	0	0	0	0.22
1	1940	0	0	0	0	198	0.10
2	5410	640	1030	1930	0	360	0.175

- 8-6-58<sup>Wed</sup> With Held, Gessel, Eisler, Joyner, Baker, & Kimmel, left D.W. in 2 taxi cabs about 7 pm. Arr SeaTac 8 pm. Paid one taxi driver \$6.80. Departed SeaTac 9:30 pm; arr Portland 10:30; departed Portland 11 pm. Arr Honolulu 7 am on 8-7-58<sup>Th</sup>. Departed Hickam 3 pm. Arr Eniwetok 11 pm on 8-8-58<sup>F</sup>. Slept "Coral Cables".
- 8-9-58<sup>Sa</sup> 10:40 am T-boat to Parry. Located gear at Lab (EMBL) and started packing for Tues departure
- 8-10-58<sup>Su</sup> At Lab, studied sea cucumber collection. Continued packing.
- 8-11-58<sup>M</sup> with Gary, Dick, Stan, & Frank departed in M boat for Paptan I, 8:30 am. Arr. 8:50 am. Saw 3 monitor lizards 3 feet long, slender, climbing trees, noisily scratching the bark. Returned Parry I. 11 am. Continued packing. Loaded most of gear on Aloto. Volley-ball in evening. St John (Harold) will teach and televise at Chatham College for Women, Pottsburg, next year
- 8-12-58<sup>Tu</sup> "Aloto" left Parry I. pier 10 am smooth trip in calm weather, almost clear sky. Started rigging plankton net. Flying fish.
- 8-13-58<sup>W</sup> finished rigging plankton net. Arr. Rongelap 11 am, beached at village. Blasted and poisoned fish at high tide on outer reef at 3 pm. Blasting fairly successful; poisoning, not collected cucumbers and Yarum, other snails. Worked up invertebrates including those collected by Willis, Engineer, in evening.
- 8-14-58<sup>Th</sup> 10 am Blasted fish on reef on low tide; good take. No help from Rongelapese, apparently due to faulty communication. Invertebrates collected by others and by us, worked up, that is, identified, measured, dissected, bagged, labeled, and frozen. Fishing, trolling, rod & reel, from DUKW, 1540-1740 hours, running north inside reef to slightly beyond Busch I. Tim dived, collected 2 cucumbers. Prepared invertebrates.

END

R. M. KEARNEY

8/14/58

DAYS ACTIVITIES

0800 - 2200

ASSISTED STAN GOSSEL & DALE COLE.  
RPT IN LYSIMETER IN COCONUT GROVE  
BEHIND VILLAGE. CHECKED LYSIMETER  
RPT IN YESTERDAY TO NOTE EFFECT OF  
TODAY'S RAINFALL. DUG SOIL PITS IN  
COCONUT GROVE (#22) AND SOUTH OF  
GROVE (#23). SAMPLED PITS, TOOK MONOLITH  
SAMPLES OF PROFILE IN PIT #22. PUT  
IN WELL POINTS AND COLLECTED WATER  
AT PIT #22. TOOK pH AND ~~TEMPERATURE~~  
READINGS OF SOIL SAMPLES AND  
CONDUCTIVITY MEASUREMENTS OF  
GROUND WATER TAKEN AT WELL  
POINTS. COLLECTED A FEW SHELLS  
FROM ROOF GARDEN AT WEST END OF  
ISLAND. DOOPER !!

14/140 50

Esler

9

AM Collected fish (Borling) with Bonham & Jagger

PM Collected fish & dissected (Jagger)

Thursday, August 14, 1958

Dug soil pits and collected soil samples on transect seaward from village. Also put in well points and collected ground water from two pits. Helped with fertilizer placement and with lysimeter study. Rained very hard in the afternoon.

JES

UNCL

Rongelap

August 14, 1958

This day, algae collections were made on the seaward and lagoon sides of the inlet respectively. Many new specimens were found on the seaward side at the edge of the coral ridge. In the afternoon, a fence was built to protect a tomato-corn plot. Also, a new soil pit was dug revealing a rather dark soil to considerable depth. Preparation of the algae was made in the evening.

John Kimmel

30

Walker

Thurs 14 Aug 58

At site of soil pit 22,

Laid out 6

1 ft<sup>2</sup> plots, treated some with

fertilizers, and planted corn + tomato seedlings. Also fenced

around the plot area and set traps for rats around

fence (with help of GB + JK). No rats caught.

With help of GB, laid out 2 plots  $\frac{1}{2} \times \frac{1}{4}$  chain for

KCl fertilization in the near vicinity of ~~soil~~ above pit 22,

but did not fertilize because of rain.

Collected a green Pandanus fruit from tree about 30' north of pit 22.

Lysimeter study

Aug 14  
Located 6 lysimeter dishes adjacent to profile 22.

Noted the apparent satisfactory operation of the lysimeter setup at profile 21.

DWC

14 AUG

also

- in Algal Collection, seaward reef (and some lagoon).
- Working with Walker and other men - setting traps, putting in fence around tomatoes and setting up fertilizer plots.
- Working up algal collection - 1.5 gm samples, identification, putting specimens in formaldehyde (2% in seawater)

F. Richardson Aug. 14

Went to "Duck" to Bunkajarite and Rucodlagia Islands about 1 x 3 miles north of Rongelap Village. Collected \* of Black Noddy + white terns for skins, skeletons, stomach contents, muscle + kidney samples. Curiously, found just one bird nesting (one egg) - a Common Noddy. To the start of a fall nesting season or season ahead? Set 24 mouse traps for rats with results, if any, still to be seen.

\* Black noddy

7/15/68

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SEATTLE, WASHINGTON

Locality RENCELAPE IS - LAGOON TRANSECT Date 15 AUG 58

Personnel \_\_\_\_\_ Weather \_\_\_\_\_

\_\_\_\_\_ Water conditions \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

0600 - 0800 Trolling from DIKU (one ~~one~~ barracuda, 2 groupers, 1 surgeon).

0900 - 1730 (KBUEH) Transect across lagoon for plankton & bottom samples. One of those days when nothing works right. First, ship stuck on beach took 1/2 hrs to pull her free. Second pump which had checked out OK yesterday failed to operate - finally rigged it on well deck & with constant attention from Willis were able to get 40 gal per minute - not enough for good samples. Third, bottom sampler lost; Fourth, anchor cable fouled around f-likes & shank - took over an hour to free it before ship could beach.

To get a decent sized sample for counting & radiochemistry KB will make tow from DIKU tomorrow. A new pump is being rigged for a second attempt at getting quantitative samples along a transect.

Records are being kept on a chart on the bridge.

RE & T.J. stayed aboard ship dissecting fish from previous catches plus sharks caught while collecting plankton.

DC, SG, RW, GB, JK, FR, RK ASHORE  
Lygrometer set up at pit #23 & one started at pit #24. Leachate collected at pit #21. Treatment of 3 <sup>at 1" depth</sup> ~~discards~~ bath # 21 & 23 (1) with K, (2) with N (3) undisturbed.

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Locality \_\_\_\_\_ Date 15 AUG CONT.

Personnel \_\_\_\_\_ Weather \_\_\_\_\_

Water conditions \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

Conductivity + pH measurements made on leachates.

Soil pit installation completed on Village  
to seaward Reef transect. Well points put in at  
pits + ground water collected - some potable water.

SG + R.W. toured village gardens - many plants  
are chlorotic.

Tomatillo-corn fertilization plot checked +  
photographed. One rat caught at plot.

Scaevola + Messerschmidia leaves from  
terminal + basal regions collected for comparison  
of mineral content.

FR collected turnstones + Golden Plover.  
Saw 4 Reef Herons. Saw about 25 turnstones  
+ same number of Golden Plovers - believes these  
to be early migrants.

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SEATTLE, WASHINGTON

7624

Locality U.S.S. Collett & Elmer Date Aug 15, 1958 (Fri)  
Personnel Lowman, Palumbo, Weeks Weather Fair  
Conrail, Champion, Weland Water conditions Smooth

Radiation level(s)

Operations:

~~Reached to date~~ Collett into lagoon & docked 1st at oil barge about 0700, went in on Captain's gig & met with Ennie Wyncoop, later, Cmdr Weland & Al Clement. We were concerned about the use of the Collett for the next phase of the track but met with no encouraging response. We feel that the data should be tied together as well as possible & the chances of this fade as the dates between the 2 trips become separated.

Started to unload ship & completed same in less than 8 hours.

V-Spectrometer had not been working properly the last 24 hours of the trip. Repairs are under way.

UNW

DATA FROM WATER SURVEY OF DANGER AREA DURING  
OPERATION HAUTOAG-AUGUST 1958 (Report #5-71a-1)

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STATION NR	GEOGRAPHICAL COORDINATES		WATER SAMPLES-dpm/liter					PLANTOS dpm/cc	KIT. COUNT nr/hr
	N Deg-Min	E Deg-Min	Surface	25m	50m	100m	300m		
25	10-00	164-20	178	0	0	0	0	6780	0.17
26	10-00	163-30	0	463	0	0	0	5060	0.22
14	10-50	163-30	0	0	0	0	0	1940	0.10
12	11-40	163-30	640	1030	1930	0	360	5410	0.18

Counted 14 Aug 58: Station Nrs 26, 26, 14. 15 Aug 58: Sta Nr 12.

NOTE: Data are preliminary and unevaluated. All above dpm gross beta.  
Station Nr 12 is last station of survey.

Air Mail to  
 Dr. Loren R. Donaldson  
 Radiation Biology Laboratory  
 University of Washington  
 Seattle, Washington

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Dr. Donaldson

Warner 1/1/58

7/10

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SEATTLE, WASHINGTON

Locality Rongelap Is. Date 16 AUG 58  
Personnel Same as 10 Aug. Weather \_\_\_\_\_  
Water conditions \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

Trolling 0600 - 0800

FR prepared skins of rats & birds, observed Crested Terns feeding - none taken, set up rat trap line.

Algal collections completed on lagoon side by JK + GB.

Fish collected at Northern end of island by blasting by TD + RE - squirrel fish & snappers taken in large numbers. Specimens prepared in P.M.

Resampling of plants <sup>& soils</sup> from same areas as in Feb - Mar '58

RW made increment borings & checked nitrate content of *Scaevola* & *Messerschmidia* - latter very high (this checked with results of soil analyses from Feb-Mar survey).

Several well points established & water collected.

Selected site for weather station East of ship landing at high point above wash area. Area cleared with OK & help from Bowie & Kenny but owner of land decided he should have OK from the King of the Marshalls before final installation is made. Therefore a standstill until Monday, 18 Aug when Bowie will contact the King by radio. Checked ~~out~~ out operation & maintenance of instruments.

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7/19/54

Locality \_\_\_\_\_ Date 16 AUG (CONT)

Personnel \_\_\_\_\_ Weather \_\_\_\_\_

\_\_\_\_\_ Water conditions \_\_\_\_\_

Radiation level(s) \_\_\_\_\_

Operations:

Invertebrates dissected & KB made plankton  
tows from DiKW - 1/2 meter net, 65 mesh/in -  
good hauls.

Information obtained from Jabwe, local doctor,  
on use of local plants for medicinal purposes.  
Scaevola, ~~Acacia~~, Dodder, Messerschmidia, Guettarda,  
Allophylus all have specific uses & the list of  
plants was by no means exhausted in the time  
available.

Made arrangements with Benia to obtain  
~~meats~~ 25 daily rations exclusive of imported items  
which are primarily rice & C-ration. He is also  
working up a list of food items & methods of  
preparation.

This is the big Pandanus<sup>us</sup> season - Pandanus  
fruit are being collected from all over the atoll -  
primarily Rangelap I. & Eniaetok I. The pulp  
& juice are extracted from roasted keys &  
the resultant extract is dried in sheets for  
future use <sup>as</sup> the equivalent of "ketchup."

Breadfruit are plentiful on the trees  
but not quite ripe yet. Papaya fruit are beginning  
to appear. Observed first land pigs feeding on  
Macaranga fruit.

Mail plane in with Pie Stone from Genetics  
foundation who stayed ashore about 2 hrs.

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Locality Edmer Date Aug. 16, 1958  
Personnel Lowman, Palumbo, Cautsill Weather Rain, etc.  
Weeks, Champion, Welander Water conditions Fair

Radiation level(s)

Operations:

Cleaned up storeroom area & Porch - the latter left in a mess by the Rougelapese.  
Continued efforts to get counting equipment in shape at the lab.  
Set up Resin columns in cold room (6 in all)

Collett left at 12:00 noon today.

The addition to EMBL is almost ready & will give much needed bench space and storage facilities.

Cleaned and rearranged the storage room. Fine job by Welander and Champion. The entire Lab now is in spic and span shape.

Lowman called out of movie by Admiral Tyree to discuss the Collett Survey. We all dropped into 119 to check with Al Klement who had been asked about lack of fish data. We all emphasized the difficulty of catching fish at the speed travelled between stations and the poor luck of the fishermen aboard. Al understood completely and sent a Tux explaining the situation. This Tux is being copied for our files. Will send a copy to you today.

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Locality Rongelap I. - Eniwetok I. Date 17 AUG 58  
Personnel Same as 16 Aug Weather Clear  
Water conditions Calm

Radiation level(s) No significant differences from Mar 58 levels.

Operations: Tidling 0600-0800  
ALOTC  
Rongelap I. - departed for Eniwetok I. 1500 -  
SHIP SECURED AT ENIWETOK 1730.

AM - S.S., R.W., K.B., R.K., E.H. & Capt. Fesse to West  
end Rongelap I. Survey meter readings, one  
soil pit, composite soil sample collected, observations  
of pioneering plants made - it appears that both  
Scaevola & Messerschmidia are pioneers rather than just  
Messerschmidia as has been reported in litt. Photos of  
seedlings near antenna pole guy wire anchors.

FR collected Reef Tern, a black & white plumage  
on north end of Rongelap plus fish Herson had caught  
P.E. & J.K. poisoned tide pools on seaward reef  
at low tide.

P.M. J.K., F.R., E.H. departed Rongelap I. 1300 by stiff  
stepping at islands along the way to observe the birds  
& take survey meter readings. Also trapped all the  
way with no success. Collected two Geckos at cistern  
on Beach Island. Met ALOTC at Eniwetok 1730.

R.W. collected Scaevola & Messerschmidia at pits  
22 & 25 for nitrate testing - checked tomato-  
plot - all growing well. S.G. & K.B. at pit 26 taking  
samples & K.B. checked radiation levels on sidewall of pit  
with end window survey meter.

1500 ALOTC departed for Eniwetok air  
& secured on beach 1730. All worked in lab enroute.

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Locality

Date

17 AUG (CENT)

Personnel

Weather

Water conditions

Radiation level(s)

Operations:

Kennedy + Tit: accompanied us.  
D.C. confined to ship with infected scratches,  
headache.

2200 Kennedy, ch. Edge Willis, D.C., RK,  
E.H. to seaward reef for night collecting at low tide.  
Many langusta - collected 4 for samples & 2 for  
eatings. Collected shells - (cones, Drupa, limpets,  
& others). - it crabs.

Several Lambis & Strombus (one species  
new to all of us) were collected by crew & some  
of UW party immediately after arrival of ship -  
lagoon side 10-20 ft of water, sandy bottom.

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LRD ✓  
mc

Locality Perry Is. Date August 17  
Personnel Conril Champion Pelumbo Weather fair  
Wesley Welzender Lowman Water conditions Smooth

Radiation level(s) \_\_\_\_\_

Operations:

Set up resin columns for 7 samples. 4 Macroplankton, 1 microplankton, and two fish. Wet ashed the samples.

Started drying plankton plates to get dry wts and for second counting of plates.

Oiled extra cable for winch. Made plastic covers for winches. Worked on a sick gamma spectrometer.

Set up the  $\beta$  counters after cleaning the pigs, slides, and counter tubes.

UW  
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268

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SEATTLE, WASHINGTON

Locality Eniaetok Date 18 Aug 58

Personnel Sant & IG Weather clear

Water conditions calm

Radiation level(s) \_\_\_\_\_

Operations:

AM. GB & RW resampled plants collected in Mar. 57. RK, TJ & RE dug soil pit & sampled soils on seaward side. TJ & RE becoming familiar with techniques used. KB & JK took survey meter readings & collected sea cucumbers. F.H. worked up material from night collection. F.R. collected birds. DC. still ~~is~~ occupied to ship & also SG both worked in lab.

P.M. KB-plankton tows from DUKW. F.R. prepared skins. TJ, RE, JK collected fish by blasting - lagoon side. F.H., GB, JK collected algae & invertebrates on seaward reef flat & litoralthalassian ridges. RK & RW dug second soil pit & collected plant samples.

Kenny & Yiti spent most of morning searching coconut crabs without success. Finally found one this afternoon at first Island North of Eniaetok.

After dinner FR & FH ashore for rat trap setting & rat shooting - set 30 traps. No rats seen. GB collected plants for herbarium specimens.

RW & SG marked soil pits, collected ~~eggs~~  
- no fruit found. Squash have typical mobile mineral deficiency.

5 rats taken in traps

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SEATTLE, WASHINGTON

ARD  
mc

Locality Permy Is. Date Aug 18  
Personnel Same as Aug 17 Weather Fair - showers  
Water conditions smooth

Radiation level(s)

Operations:  
Started resin column experiments. Weighed dried plates, calibrated the  $\beta$  counters with standards and worked on the  $\gamma$  spectrometer which is really kept after the three power failures aboard ship.  
Started recounting the plates. Worked over waste bottles for next trip.

ENTR

AP