DAILY LOG SHEETS FROM ENIWETOK LABORATORY

410963

April 18, 1956 through September 29, 195-

Book No. _____

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Seattle - Eniwetok Date 18 April 1956 - 21 April

Personnel Bonham - Palumbo Weather

Water conditions

Radiation level(s)

Operations:

Left SeaTac at 8:30 PM, arrived Portland 9:45pm left Portland 10:30 PM
Excess baggage 36 lbs KB paid $10.80 Total
19 april, 1956
arrived Honolulu at 7:20 am. met by Mr. Andrade of H&N who took us to Transient area for billeting. Reported to Liason office Joint Task force for arrangements to Eniwetok. all set for 0500 20 April.

20 April 1956
left Hickam 0500 Crossed International Date Line: date now 21 April 1956 Arrived Kwajalein 12:35 pm visited shell museum next to the airport. left Kwaj at 2:10 pm arrived Fred 4pm. arrived Elmer 5:30 pm. checked in at Security, obtained Temporary Badges, had supper + Taken to quarters + sent in military area. After Dinner visited "AEC barracks" + met Tom Hardison, Ernie Wynkoop, Bob Taft, George Barnes, Jim Snyder, Jack Livingston, Wade Gibbons (UCRL), Jim Reeves, Ed Butts, Dr. Mathews (Sanitary Engineer, Chicago), Col Jaffis (Canton) and others. not much shop talk.-

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Locality Parry Island Date 4-22-56

Personnel Palumbo & Benham Weather E 20 main. 16mph p.m. estim.

Water conditions

Radiation level(s) UNDER

Operations: Exchanged temporary bridges for permanent at Security ~~co-affiliations as to JTF number are in such question that~~ no mess hall seating assignment has been made, and we remain in the military tent area. Ernie, Tom, & Ed will work it out when they get time. At EMBL, met Cassidy, instrument man for NYOO. Their automatic counting equipment almost fills the dehumidified rooms, but they will make us some room there. The warehouse has been cleared for other uses and our equipment moved to EMBL, to which a northward extension of about 12 feet has been added for storage. This is ~~not yet~~ completed but has to be equipped with shelves. It now houses NYOO samples. The main lab is crowded w/ glassware from the warehouse, but the 3 cabinets on the south wall are about as we left them in November 1955. The AFL cabinet was likewise undisturbed. Careful search failed to reveal plankton collars w/bayonet coupling, net ends, Waring Blendor, counting rate meter, typewriter, gunny-sacks of field shoes, rotenone distributing sacks, or refrigerator. We uncrated a 215-lb box of compound microscope and light. Both freezer boxes, on porch and inside are operating, ~~but not~~ and the walk-in box. A concrete pond adjoins the porch, south side, but no water in it yet. The outside aquaria contain living spider snail, anemones, stone fish. On the porch are NYOO equipment and a large wire fish trap, rubber boat package, Gilmartin's cans of plants (in good shape), and the 5 cabinets of museum specimens, 3 of fish, 1 of invertebrates, and 1 of bottled algae. We walked to and from lab, since transportation is about as scarce as housing. Tried to clean up 3 some of the mess in the lab.

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Locality Parry Date 4-23-56 Mon.

Personnel Palumbo & Bonham Weather Sunny

Water conditions

Radiation level(s)

Operations: Planned tentative schedule of pre-collections for the week and interviewed Tom Hardison to arrange transportation He said we had been wrongly assigned to Headquarters and that for smoothest operation we should be in ~~7~~ J.T.F.-7.1 rather than in his group 7.5. So he sent us to Cdr. A.C. Jackson, T.F. Supply Officer-(J-4) who after discussion w/ Admiral Hanlon (sp.?) arranged an interview w/ Dr. Ogle, Scientific Advis to Adm. Hanlon, Dr. Felt, Commander T.G. 7.1, Los Alamos, Major Chiment of Group 2 (Scripps), and Jim Reeves, head man of A.E.C. Ogle asked for clarification of the problem by a statement of our purpose. We mentioned radio-biological monitorin of aquatic organisms, possible crash programs, and the oceanic survey on the destroyer Walton June 10-20 and again in September. This was news to them. They apparently knew nothing of the oceanic survey or of the Walton in the ships' movements, and Ogle expressed the feeling that this may duplicate work planned by Scripps' and other ships in the area, except for work on fish. They put us in 7.1 rather than 7.5 since the latter simply serves 7.1 during the operation. If we were in 7.5 (AEC) requests ~~to~~ by them for services for us would be out of order, while if we were in 7.1 that group would care for our needs as part of their responsibili Jim Reeves assured us further that this interview was essentia that our situation had to be thus clarified. ~~Tom Ha~~ Armand Kelli will try to locate us in a barracks of 7.1. and will get us a brown (photographe's) badge, as he will do for others of our group who

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Locality _____ Date 4-23-56 Mon Cont'd.

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

arrive later.

Arranged an L-20 trip to Janet for tomorrow morning, a trip to Vera for the next day, and if Major Perley can arrange it, trips to Leroy and Henry, and to Belle before the end of April.

Tom Hardison through Col. Kerwin arranged for us to get a vehicle on temporary basis from Major Bowen at the Motor Pool.

Ken Perry of Security got the shotgun out of their safe for us. George Bernier says we can get some film from them, in all probability, if ours does not arrive in time.

Background on counter is 19.2 @ 1400 V. Plateau run. Proximity of multi-curie sources is impeding low-level counting by NYOO.

Prepared for tomorrow's trip to Janet.

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Locality Elmer - Janet Date 4-24-56

Personnel Bonham - Palumbo Weather Rain showers

Water conditions

Radiation level(s) at Janet in rat colony 1" 3ft r. ave 4mr/hr 3" Cutie range 0 - 8mr/hr 3 Pie"

Operations:

Obtained shoes and Coveralls from Rad Safe; Takeoff at Elmer at 0805 by L-20; Land at Janet at 0825. Looked for rats in usual area without success. Looked for Cucumbers east of lagoon without success. found 3 west of pan 200 yds by a 6" pipe. Collected plant specimens and surface soil in rat colony, also water in lagoon. Continued looking for rats and finally RP saw three in bunker area west of block house. Kelly saw one other. Caught none. Returned to anship. Takeoff 11:35 arrive Elmer 12:05. Put specimens in frig. Called Eniwetok PXre Rescue Parties - They do not have any at all! Poor show.

Bonham * Made arrangements with Comb Perley for boat and car drive to Yvonne for 4-25-56 and to Belle for 7-26-56. Contacted Burgess, Hardin et al for Burwood & Laboratory Caps etc. Kelly picked up his packaged Cesium for Vivo collection and Bile collection and arranged for Cutter to be boat freighted to Yvonne for pickup Thursday. No explosives allowed on aircraft since one accident had already occurred on or near aircraft.

4 pkg Scotchrome and 1-9.5 ft roll of Trex film arrived today from Seattle

Pickup Jeep in exchange for 3/4 ton we had been

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Locality _____ Date 4-24-56 TV. Cont'd

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

using.

Dried samples of island soil and bottom soil, plant specimens, and algae (Aphanizomenon very abundant) from Janet. filtered water samples w/o suction thru MF. will add acid (Na)CO_3 to formol samples and seed getting count, don't expect to. but want to try out the procedure.

Am checking the counts for background and standard counts.

Prepared algae plates for counting here and for Chicago time. Major face shot collections of all organisms will be made at Vlra and or Belle Janet (rats ~~plan~~ to be tried again if time permits) and plankton-pelagic fish if time and suspect PCM.

Will try get helicopter service early next week to Troy - Henry - these stops are at premium and we may have to resort to boat in which case small plankton fish also.

Hank Burgess helped us round up primacord, caps, generator, tape, and grease; stored in EMBL overnigh

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Locality Ursula, Vera, & Elmer Date 4-25-56 Wed.

Personnel Palumbo & Bonham Weather Cloudy a.m, clear p.m.

Water conditions

Radiation level(s)

Operations: 0800 water taxi to Ursula; collected 3 H. atra & 1 stichopus. By DUKW to Vera, ~~##~~ southern end, lagoon side. Spread 1 jugalug of rotenone (in sack); While it worked, collected mantle of 3 Tridacna crocea, 10 Acropora, 3 encrusting sponges, 3 H. atra, a tan, and a black warty cucumber; collected the fish kill - fair. Shot 30' Primacord in 6' of water, mid-island, lagoon side, but got no fish; any present were obscured by turbidity or hidden in coral crevices. Lack of time prevented another attempt, but rotenone sample will do. Dug out 1 Ocypode; found no Coenobita. Survey meter reading beside road, south end, using "Cutie Pie" U.S. NRDL-NN-0321, El-tronics Model CP-3DM, gave 1-2 mrep/hr either 1" or from ground. 1330 hrs DUKW pick-up to Ursula & Tilda air strip and L-20 @ 1415 to Elmer. Put specimens in freezer. Visited by Burch, 7.1 Safety advisor re storage of primacord & caps: Said <8 caps in locked safe, ok Should remove primacord to explosives shed - will do tomorro

Two 4' rolls of 2" hose or tubing in burlap arrived c/o Tom Hardison for Donaldson; stored on porch; also 2 crat

Collected algae and Land plants as per proposed schedule for monitoring; at south end of island Near K beacon - Lyngbya, Halimeda and Caulerpa; Messerschmidia Scaevola and Triumfetta. Collected 500 ml sample lagoon water and bottom sand below low tide; also island soil top inch South End Island in several spots.

Other lab occupants busy in lab and we tried to work around them. Some - jars up and

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Locality ____ Date 7-25-56

Personnel ____ Weather ____

____ Water conditions ____

Radiation level(s) ____

Operations:

Chased around for discussion w/ Howard Kelly. Our position not clear yet we may land upon Headquarters. Put in for missing typewriter - No work shoes available from supply - my ICB Red Safe boots are almost wide enough for me. I have been wearing 2 RDs' old sneaks. Priced sneakers in PX - $2.30, but supply limited to size 12 / others at $3.65 available in all sizes, but are low. Suggest You bring our shoes if you need Cor D widths, there are no old shoes kicking around.

Water samples filtered, plants & soils into drying oven, and prep for Tomorrow's Bellstrip.

Looks like Belle and Vira will represent our pre sample; may have trouble getting in library stuff for Ed since plans are being hurried and things are getting tight - but will down best, Ed - Ice plan & plankton trip may be in. Sat if possible - with pelagic fishing. On this last trip look out of the question.

Both KB and RP read from Sun, even our bad spots.

Counting background varies from 15.3 to 14.2 w-hr

Sources not exposed.

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Locality Elmer, Belle Date 4-26-56 Th.

Personnel Palumbo & Bonham Weather 20-25 estim. mph.

Water conditions

Radiation level(s) Belle F (Cotie Pè) 2-4 mr/hr.

Operations: Left Elmer by L-20 0830. Left Gene ~ 0915 by DUKW w/ Dan Jones #(LASL). Arrived Belle F ~0945, to learn that thru a misunderstanding Jones did not have our primacord as we thought. DUKW took him over to Alice where he very kindly collected 3 Holothuria atra, ocean side. We fished in shallow water of F area (in a frigid shower) with rotenone, getting on a few small fish. Collect the scheduled plants, algae (3 s, clams, corals, sponges, and Coenobita, legs but could find no cucumbers or Ocypode; saw Ocypode holes. Took meter readings (above), soil and water samples. Departed Belle 1300; DUKW went toward Clara > half way ~~but~~ then lagoon-w but got stuck ~ 20 min. at reef edge. Finally worked loose on the rising tide. Left Gene in L-20 @ 1400. At Elme froze samples. Lt. Beiler notified us of our assignme to JTF 7.1; we shall occupy a 6-man room next to his i a 70-man barracks; gave him, on request, names and dates of arrival (approx.) of others EH & RO. June 3; LD, J.D., AS, A.W., FSL, & NOH, 6-1 Tom Hardison mentioned receiving notification of shipment of ra meter, Waring blendor, etc. Cmdr. Perley arranged for passage of KB on M-boat-w/DUKW w/party to Leroy tomorrow 1400-2000 with 30-60 minutes ashore; will try to get algae & cucumbers on the high tide, and terrestrial crab samples in case Ed wants. On 4-24-56, Chambers (w/ Burgess in Safety) to of large groupers: 337-lb sent to Wn. D.C., 364-pound caught at Bikini, 371-lb off Elmer; and 471-lb on Elmer, in our wal in box now — it looks unbelievable! All caught within a year.

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Locality ..... Date 4-26-56 Th. Contd.

Personnel ..... Weather .....

..... Water conditions .....

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Radiation level(s) .....

Operations: The 364-pounder which Chambers once had on and lost was finally caught w 9/16" thick barbless hook baited w/ 5-lb half of a fish, and 1/4" nylon line. Most of these fish were beached for landing.

Talked w/ Col Schmitt Ike of DMA about our program. He said the tractor will arrive here on June 10. It will be outfitted w/ wash down gear and our gear for plankton etc and it is expected that the ship will be here 3-5 days for these details, then it will go out w/ our crew until June 20th at which time all our gear will be off loaded since there is no guarantee that this same ship will be available for the September cruise. The 3-5 days spent outfitting the ship will give Al and Frank a few days more to work with. The program of the AFL is now "in the show" and all the top dogs here are aware of its scope and importance.

Evening spent on lab work counting etc.

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Locality Elmer, Leroy, Section Date 4-27-56 Fri

Personnel Palumbo & Bonham Weather Cloudy showers + Sun

Water conditions Lagoon rough

Radiation level(s)

Operations: Opened some Hiatt cases at lab and removed to porch. Plankton tows by RFP? 0415 AM in Cable boat. fished in ten possible. no luck at all. 0430 - Departure tow ½ hr ? - 12" nets Temp of water 81° F. took water sample. Plankton catch, four

10:55 - Off Bruce ½ - ¾ mi. tow ½ hr 2-12" nets. water temp 82° F Took water sample. Four catch

12:05 Docked Elmer.

1300. Kelly off on M-Boat trip to Leroy with service party.

RP in Lab. weighed dried foliant samples, ran some counts. Talked w/ Dr. Gordon Dunning at the Lab. will send separate letter about this conversation to Dr. Donaldson. Dunning will be here 3 weeks before going to Japan. Left Elmer 1300 hrs on Leroy trip in M-380 w/ Bob Isa operator and Vance Cathey deck hand, 2 hrs going, 1½ hr there, & 3 hrs returning. Collected 3 ~~Stichopus~~ H. Jlevipsilota, 5 Coenobita, 2 Coypode, some Acropora, algae, 2 coconuts, leaves of Scaevola, Messerschmidia & Cordia, and Bob Isa got us 2 Birgus These could help fill the void if we can't get to Henry pre-shot. Capt. Hal Shaw, Capt. Chas Luke (UW Masters' in Physics 1948) and Lt. J.C. McNeilly of service party drove weapons carrier ashore as M-boat landed at north spit 1500 on 2.5'-3.0' tide (incoming). Arrived Elmer 1930. Collecting done at north end Leroy.

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Locality Elmer - & Henry Date 4-28-56 Sat.

Personnel Palumbo & Bonham Weather Good

Water conditions

Radiation level(s) At Henry under Pandanus tree at east end of road, using Cutie pie 2-4 mr/hr

Operations: Left Elmer 1100 by H-19 (lucky us!) for Henry with Preston of UCRL, the pilot, and the pilot's assistant who helped hunt for coconut crabs. Spread bread along road near burrows, but had to return too soon for it to lure the crabs. The pilot located 3 Birgus about 1/4 way from E end of road, which we jug-a-lugged. 5 Coenobita with shells were taken under the Pandanus tree at E. end of road; soil & plants also taken here. No Ocypode were found, but an Eriphia was taken near the sea cucumber (3 H. atra & 1 St. chorus) collecting site, seaward from the Pandanus tree. No coral or sponges seen and time was too short for going farther. Copter arrived Elmer 1215. Ed's Birgus, Coenobita, plants (Pandanus fruit, Morinda fruit, etc. as requested by Ed) packaged in a box labeled "Henry 4-28-56," in freezer on porch.

At Security, got our 7.1 brown identification badges. First mail from home arrived today. wet Chaetodon muscle from Vera counted 20/min (1.72 grams) ~~of~~ gross, minus 16 bg. = 4/min.

Plate numbers assigned to the various groups for this operation: Fish 1-1000, Invertebrates 1001-3000, plants 3001-5000, water 5001-5500, Soil-sand 5501-6000, Plankton 6001-7000, Birds 7001-7500, Rats 7501-8000.

Algae washed up on beach - also collected.

Soil-sand packaged bulk for radioassay & Chem if needed.

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4/29-5/3 AW FRL AHS PRO DS

Locality Elmer Parry & Janet Date 4-29-56 Sun.

Personnel Palumbo & Bonham Weather Good

Water conditions

Radiation level(s)

Operations: Left Elmer 0805 by L-20 for Janet. Collected 3 rats by bunkers using shovel and swatters. Dug ~~one~~ two out of burrow in pile of dirt; got one of these; other escaped. Uncovered one by moving dead tree; got it. Got third running in open. Workmen reported seeing rats other places near bunkers. Rat traps are still in bunker, 6-10 in number. Dug one burrow which proved to be of an Ocypode, collected, not a rat; surprizing for so far from water. Left airstrip 10:30 for Elmer.

Examined plankton taken 27th. Deep Entrance differe from Bruce chiefly in presence of many copepods at D.E. and their virtual absence at Bruce, but the presence of much debris at Bruce.

Yesterday Ralph initiated a guest log with Tom Hardson the first signer. Today's included Germishauser of Edgerton (sp). Greer, & Germshauser and 6 others. Fed the fish including 2 stonefish, anemones, and crabs.

Sampled fish at pier: papia, 2 Lethrinus, Remora, Cherinemus, rainbow runner, and a "minnow".

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Locality Elmer Date 4-30-56 Mon

Personnel Palumbo & Bonham Weather Good

Water conditions

Radiation level(s)

Operations: Got supplies: chlorox, sponges, mouse traps, and carborundum hone; work order at J-6 for muffle furnace racks. Ralph & I moved to Barracks 108, Room 4. Collected sea cucumbers 2 Holothuria atra & 1 Actinopyga mauritiana to seaward of barracks area, and algae near lab. 5 H. atra & A. maur. seen near lab but not collected. Got film: W/Geo. Bernier, rolled off 4 rolls of Tri X, 35-mm. 5½ feet each, from 95-ft roll of designation 1-TX-402-35 (George's number). Got ~ 40 shot-gun shells from Ken Perry, left in his custody by Frank. Stamped cards and dissected Vera cucumbers.

Experimented with mortar and pestle - algae Asparagopsis and Caulerpa homogenized well enough, but Scaevola leaves were too slippery and took much too long. Plated out samples of Thio looked good.

Soils and plankton samples are being treated exactly like they were for Caille series. Enough soil is being sent for Cl ion analysis if needed. Etc includes salt absorption studies and for other labs.

This lab is looking more like a biology lab daily & less like an instrument lab. It's still a struggle to get thru the air conditioned rooms and porch, but we are making headway.

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Locality Elmer Date May 1, 1956
Personnel Redman - Palumbo Weather Sunnic - changing
Water conditions
Radiation level(s)

Operations:

Scoured all possibilities for blender - no luck until I contacted Jack Livingston - There is a large box for us w/ 6 waring Blendors + it's to be delivered today! Arrived PM - Rate meter and all accessories - it had been at Cod Safe - no address on packing slips except Elmer - also arrived - 1 ice pick and 1 box unopened. from NYOC for L.P. Donaldson 2 large 7 ft tanks, 2 water pumps + large probes boxed up.

1 waring Blendor bag up in box from (o) Hawaii when looking for Nitric Acid. Several boxes mark acid, other unmarked have been left unopened will find out what's in them gradually - Packing slip removed before arrival at Lab -

Am in force Indian studies unit headed by Mist Peterson visited lab - Interested in helping us collect and process when their load slacks down

Homogenized like 4 of 5.56 plant samples. find it takes 1 part H2o 1 part plant or 2 pts water - 1 pt plant to do a good job. Have to do some juggling to get correct net weight, but is fine if proportions are kept standard. Punch cards, weight column will copy Sinne, but first refs will give calculations make Stems and dual pipets can be chopped up better for storage glass tips, metal tops most good enough

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(2)

Locality _____ Date May 1 1956

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

After homogenization, three plates are made, weighed wet, dried w/ infra red lator, and sealed in small bags - make a neat package. Scintillation will ash etc. Took one afternoon and part of evening to work up 12 specimens - 24 plates.

Continued dissecting cucumbers; made 24 plates; counted on 1" end window tube.

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Locality Elmer Date 5-2-56 Wed

Personnel Palumbo & Bonham Weather

Water conditions

Radiation level(s)

Operations: Continued cucumber processing. Collected Elmer pre-shot beach sand and island soil at Lab.

Processed Belle plant samples

KB collected soil behind lab intertidal and Island. RP located 2 more waring Blenders. in same load as Rate meter Received more supplies for LRD from N400. 2 boxes with Recorders etc.

Found that small glass tops on blenders work well if lets H2O used - This not good since samples too soupy & plates hard to handle. Halimeda and algae in general work nicely - Stems and fruits are tough - may consider changing in choice of land plant tissues to facilitate this job -

Plates dried under infrared in package easily * We need more 1½ inch plates, we are now using weighed but unnumbered plates - write the number in pencil, hope you can read it. Paul & Ed should definitely carry plates with them

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Locality Elmer --- Date 5-3-56

Personnel Palumbo & Bonham Weather

Water conditions

Radiation level(s)

Operations: Continued cucumber processing. Ralph located, and started using, for sea water sample filtering, the suction pump in the varnished box, that was at the lab previously. Received the second envelope of containers; this was 5" tubing, pliofilm, the first was peanut bags, cellophane.

The Cinco Hyvac pump [illegible] N400 gear does not function properly — Aspirators are almost as good — will try to remedy this situation tomorrow. Spent all afternoon except part of evening filtering (2) - 100 ml samples from Janet, Belle, Vha and Lt not [illegible] 2 plankton Station samples — My fingers were asleep from first filtration.

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5/4-5/6/56 AHS FGL

Locality Elmer- Date 5-4-56 Fri.

Personnel Palumbo & Bonham Weather

Water conditions

Radiation level(s)

Operations: Refrigerator (Gibson 8 ft³, new) delivered to lab. Continued trying to set up rate meter. Got it working ok. Appears to be suitable for hot, but not for pre-shot, samples. Assembled new tube, & cable on shield and attached to second counter; No response; spurious counts when timer goes on & off.

Removed Hytac pump from case & K.3 disassembled switch. Looks like there was a leak in the system somewhere, because at present the pump will hardly run. Finished doing all water samples to date. Filed pipettes & put samples in envelopes and sealed plates in small bags. Put all of this & remainder of the cobalt source in small bag. Took and plated and will count plates in Seattle. Will send cards & log with samples.

Rate meter continues to work ok, but sample changer (feeder) has its faults. Miswired to turn off recorder & stop feeder, but not work, or at least we haven't connected it up right yet.

END

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Locality Elmer Date 5-5-56 Sat.

Personnel Palumbo & Bonham Weather Good

Water conditions Mid

Radiation level(s) 21 c/m.

Operations: Everybody up early. Sealed ashed cucumber plates 1001 thru 1019 for shipment. Each plate is sealed in plioflm and inserted in its carrying card these cards with their plates in place are ~~re~~ stacked tou each other so that mutual pressure helps keep the ash from shifting. There will be some shifting of ash, but it is hoped that the ash will not shift are the edge of the plate and get underneath the plat If ash does not get under the plate, ~~the~~ removal the plioflm could best be done by burning, perhaps These plates have been counted at EMBL but should be counted in the Nucleometer for final Post Ne data. Other samples will be dried but not ashed EMBL, as stipulated in our planned program of monitoring.

The rate meter continues to work well, and is admirable for continuous background recording wh large (≥ 1.5-fold) fluctuations are expected. At t slowest speed the 103-foot tape runs 3/4" per hour and lasts 2 months; at fastest speed, 6" per minute = 3½ days total life. Slowest speed is suitable for bg Only one tape of each kind came with the machine an it would be desirable to have extras on hand. Sugg ordering 12 Record charts No. 4309-X @ $1.50 each from Esterline-Angus Co., Inc., P.O. Box 596, Indiana 6, Indiana. Prices in lots: 24-47 @ $1.40, 48-95 @ $1.30.

may be available Seattle

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Locality Elmer, Vera, Zona, Bruce Date 5-6-56 Sun.
Personnel Palumbo, Bonham Weather Good
Water conditions smooth

Radiation level(s) Vera 200-300 mr/hr @ 1110 1125 hrs. Other localities <

Operations: With Lewis Blake, Wm. Springs, and Pohlman left Elmer @ 0900 on M-boat 212 w/ Operator Gledhill & deck hand. Took plankton tow in Deep Entrance 0910-0935 w/ #12 (10) net 12" in diameter; the #6 net (10) ripped off the canvas and was lost; 2nd plankton tow at 1130-1200 w/ same net ½ mi off Vera toward Wi 3rd tow 1255-1325 1 mile off Alvin toward Bruce. From 2 to 4 fishing lines operated most of the running time using feather jigs and red spoons but no tuna caught 5 fish were caught near shore: 3 jacks, 2 by Blake @ ½ mile off Elmer, and 1128 at Vera, and 1 by Pohlman 1500 at Bruce; Blake also caught a 7-inch brown grouper and 2-line mackerel at Bruce ~ 1500 hr. At Vera Curtis Pie readings were 300 mr/hr in 10 m. ashore 1110-1120, KB collected 3 accum. H. atra at S. end where collected previously and RFP got algae, coral sponges, and sand (plants also), from the cable area mid-island where the M-boat landed. At Zona, lan. ¼ mr/hr; saw many sooty terns, an egg in a nest, a fledgling perched and no signs of heat damage, th. no coconut palms present. Collected acc. Actinopyga on outer reef, sponges, corals, algae on inner reef

At Bruce, north end, 1500 hrs, 0 mr/hr. Got 3 H. from tidal pool at NE edge of island; corals & alg from NW edge at boat landing.

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Locality ..... Date 5-6-56 Sun. Cont'd

Personnel ..... Weather .....

..... Water conditions .....

Radiation level(s) .....

Operations: Springs & Blake got young coconut sprouts for planting at Elmer. Coconut palm fronds were noticed by the deckhand, and the nest of eggs to be singed on the north side which is surprising in view of the distance from the north end of Yvonne and the lack of evidence at Zona.

Tatom brought in moorish idol and Fungia collected this afternoon from the south reef of Elmer.

Counted Vera soil sand samples. Vera ~~sand~~ soil was collected 100' inshore from boat landing at cable area where Messerschmidia leaves were taken. Two plates were made, one #1 by loading the 1½" plate with sand and then pouring off all but 5 mg of fine dust. Vera soil plate #2 contains 73 mg of coarser sand dipped from the top of the jar. When first counted at 2000 hrs. #1 was ~43,000 c/m and #2 ~ 10,000 c/m.

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rec'd. 5-15-56

Locality Elmer — Date 5-7-56 Mon

Personnel Palumbo + Bonham — Weather Cloud

Water conditions

Radiation level(s) Bg. 27 c/m on EMBL #65 (up to today has been 15-22)

Operations: Vera Island soil #1 decayed from 43,000 last night to 35,000 at 0800. Rate meter faulty, will not count this plate.

Ralph collected on Elmer reef behind lab at 0900: 3 dead mullet, 4" long, 2 young sea cucumbers ½" long and algae

DeVine, chief of instruments div. of NYU arrived and reorganized + dehumidified their equipment in the rooms to give us all more room: moved centrifuge, ~~and~~ small safe, Toledo balance into main lab. They now occupy the front dehumid. room except for furnace + oven; under oven is their air compressor; in the rear dehumid room they have space made by removal of centrifuge + safe; temp. in 1st room 70°F in 2nd 34°F. Plan temporary removal of panel over door between 2 rooms to cool Room 1. The lab is now pretty full with NYU + AFL. Hope no other investigator plans to occupy this lab before NYU leaves on or before Sept. 1.

J 4 warehouse called that they had stuff in storage belonging to us. We found all the missing items that had been in the warehouse behind the Res. Engineer's office: plankton nets, shoes, rubber boots, etc.

Also there is plankton gear: 3, 4-inch bayonet-fastening collars for adapting "cod-end" bags to nets, plus 1 collar not in working order; 9 new and 3 good used (attached to collars) cod-end bags, 1, 2-inch diam limnological

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Locality Elmer — Date 6-7-66 (cont.)

Personnel ____ Weather ____

Water conditions ____

Radiation level(s) ____

Operations: plankton buckets; ½-meter plankton nets for 3½ inch diameter buckets = 2, new, unused, at 7-ft and 36 meshes per inch; 2 almost new, marked Nylon #1 & #2, October 1965; complete with hoops, bridles, and bucket collars; 1, 3½" stainless buckets with screen for above nets; 3 extra 3½ inch adapting rings to attach buckets to nets; 1 thimbles, 3 rings (2"), 4 snaps, 200' unused No 9 (~ 5/16") sash cord, 200' of good 3/8" sash cord, scraps of plankton netting, and 1 rusty ½-m iron hoop, and 2 extra new ½-meter stainless steel hoops.

Packaged samples and cards for mailing tomorrow:

4 plankton 6001-4
12 water 5001-12
11 soil 5501-11
44 plants & algae 3001-44
50 invertebrates 1001-50 (See attached note among cards)

No fish; yet to be finished.

Spent afternoon organizing and stowing equipment; quite a job since we now have no warehouse space. Have started stacking empty crates on windward side of lab.

Leaving wire attached to two probe tanks to use during trip — will wash to prevent deterioration of rubber linings etc.

P.S. Public Law 89-435 — remember! No news except June rate. Thanks, glad you've been having fine time. April 15th, was forgiving; I'll keep posted.

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Locality Elmer Date 5-8-56 Wed Tues

Personnel Bonham - Palumbo Weather

Water conditions

Radiation level(s)

Operations:

Continued processing various plant, animal, soil and water samples. Algae from Elmer show increase in activity. Vaucheria and soil erythet - samples being sent for chemistry and for decays. Decays being run here. Asparagopsis project moving very slowly but KB cucumber program in full swing. Ratemeter back in operation; increased voltage to 1320 and set best results; at 1250 V got no correlation between different scales. EMBL Counter set up NO. 2 (Nonpig + RCL tube) now operating - again made possible by regulating the voltage, now counting at 1250 V. Who needs "electronicians"?

Schlegel ~~of~~ studying latest literature of "Digest of Oceanographic Data for the Marshall Island Area" by A. R. Gordon, Jr., U.S.N. Hydrographic Office, March 1956, 37 pp, a good popular summary of waves, swells, currents, temps, salinity, ~~density~~ density, geology, and sketchy biology. Mailed samples to Scripps Inst. yesterday.

Sent TWX re [illegible] to all [illegible] pinnipeds.

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Locality Elwha Date 6-9-76 Wed

Personnel Palmisano + Lenihan Weather Cool

Water conditions Moderate

Radiation level(s) 21-23 on 3 counters

Operations: Collected on reef south of Elwha got some algae, some pul gen eyeless amphipod blue crab and new the Id worked T-test for 3 forms (2 metric) in crevices H. nitra with could from 4 to 8 spec from area 1 to 1

Counters working well

Received mail and letter from Lenin and others. RP answered same about 10 minutes after you left.

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Locality Elmer — Date 5-10-56 Th.

Personnel Palumbo & Pinkham Weather Cloud

Water conditions Moderate

No rain today, very little yesterday

Radiation level(s) 21-25 c/m

Operations: Collected on south of Elmer about 1/3 way to Fed. Crania-like, red-encrusted worm, and white tube, sponges, 3" crepes, and Lyngbya. Water got wipe with dilute from Elmer; went home to switch boxes, bags, than Allenpyga and almost no bathing on peninsula, brought back 2 sigma and 1 small, pared thumbnail of bulk of tube spindles of the big one stored to be H with small plate of sponges (what counts 24 to 3-4 c/mm) and a lifer (2/m); but not encrusted

Recovered Elmer taking pre-samples of 4-2-56.

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Locality Eniwetok — Date 5-11-56 FTI.

Personnel Palumbo & Benham — Weather Good

Water conditions Moderate

Radiation level(s) 21-27

Operations: Processed Elmer fish of 5-6 & 1-56. Walk 1 rep 2 to island half way to Fred: slate pencil sea urchins common; Holothuria atra & Actinopyga common all the way; large H. atra measure 14" x 2½".

Arranged helicopter trip to Leroy & Henry for 1330 tomorrow, including KB, KFP and Ira Whitney and ER (Ted) French on "HYDE".

Water samples and plankton samples collected on Ven. 5-6-56 Trip processing completed.

Vertical profiles completed.

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(W)

Locality Elmer, Henry, Leroy Date 5-12-56
Personnel Palumbo & Bonham Weather Good
Water conditions Moderate

Radiation level(s) 2 mr/hr on Elmer.

Operations: Left Elmer early by helicopter with E. R. French and Whitney; at Henry collected Land plants, algae, soils, water, lagoon, H. atra Sea cucumbers, coral, sponge, and small Cucumbers—

Meter readings w/ cutie pie ionization chamber 2 mr/h

Left Henry arrived Leroy 1040 and collected similar samples as at Henry plus Coconuts and 1 large-13" clam, Hippopus sp. by Whitney. Arrived Elmer 1145. Monitor found coral to be rather warm. 10 mr/hr.

Hippopus kidney counted 200+ c/m wet and entire contents of clam minus the shell was dissolved in HCl and saved for chemistry—

Samples of various species collected were prepared - Land plants were cold; algae from Le were hot and remainder saved.

AEC office received wire from HM Hedge Dis Adm Ponape that natives had become ill from eating barracuda flesh; also inquired if ichthyologists would be interested. After long deliberation AEC personnel said they would be if immediate short flight could be arranged. Mr. Butler, AEC, made the arrangements for 1 day Trip for Sunday 5-13-56.

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Locality Elmer 7 - Pollapse Date 5 15 46 Sun.
Personnel Palumbo and Brannan Weather Good / Moderate - Wind & rain
Water conditions Moderate
Radiation level(s) 2 1 1 2 1m.

Operations: With PBY Whitney, left Elmer 7 on Jeep by Grumman
C 760. Left Fred by Grumman Albatross 0830 arrived
Pollapse 1052. Met by M. M. Hedges and arrived in town
11:40. At his house visited with Mrs. H., Mr. H. Anthony
and conferred re barracuda poisoning. The two other
passengers on the plane, Mr. Clark, Deputy Manager
of NWE, and Brig. Gen. Schuckstedt, USA M.D.
Pikenige Corp. and. The group recommended that the
community send to include the Naval Physician,
Dr S.H. Martin, the native surgeon Dr. Silas E.
Ivaniec, Extension Agent Christ, and N. Heinrich
General Supply Assistant. Dr. Martin told of his own
experience from eating three barracuda that
had been caught just off the reef two weeks ago
He ate quite a bit, about 6 pounds, and within 8
hours began to experience numbness in his legs;
it spread upward and was accompanied by
diarrhea, muscular aching, and partial loss
of equilibrium. Even now he still feels some of
the effect. The meat also tasted sweet and showing
a very few days after the meal. Many of the natives
were attacked by ciguatera (Ciguatoxin and
others). Dr. Martin thinks Dr. Gosline did not
told by a fisherman that the way to test if
toxic specimens was by a cat. Some kind of
to the bones on the fish or UNIVERSITY

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Locality ---

Date [illegible]

Personnel

Weather

Water conditions

was not clear whether the [illegible] appeared in

Radiation level(s) the [illegible] in the body cavity or within

Operations: the [illegible] bone. [illegible] year about this

time [illegible] people in [illegible] village (pop. [illegible])

were similarly poisoned. Two of the fish

from this year's catch were sent to [illegible]

at Fred, Eniwetok, by Mr Hedges.

Specimens obtained for radio-assay were:

muscle of 6 Sphyraena japonica (barracuda),

belly muscle of 1 and tail muscle of 2 yellowfin tuna

[illegible] albacora, and [illegible] muscle of 1 marlin.

Invertebrates were: 1 crab, large, from mangrove

swamp, (sold [illegible] at door of Hedges' house by young

Ponapean women); 1 larger, 1 small [illegible]

Achatina fulica from vegetation in village, and

2 sea cucumbers [illegible] from [illegible] all

of these samples counted dry on [illegible] meter (at time

of writing, a day or 2 later) were [illegible] background.

[illegible] left Ponape 1630, arrived Fred 2000.

Personnel [illegible]

Algae and coral collected at [illegible] visited

Agric. Expt. station and spent some time

with Mr Iwamie, agriculturist. Also took

photos of some plants, people and general

views.

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Locality Eniwetok — Date 5-14-56 M(en)

Personnel Pillmore + Denham Weather cloudy

Water conditions moderate

Radiation level(s) Bg's 20-25

Operations: Case by duty boat to Fred, brought back jeep on LCVP boat trip. T.L.S photographed ~~spirent~~ stonefish that had been opened until put into the equinium yesterday, but died overnight, also photographed large crab from mangrove swamp at Runit (Plate F-34) Fish F-34-6, 11, 12 Preserved fish samples.

Processed 2 more Army samples of water, soil & plants

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Locality [illegible] Date [illegible]

Personnel [illegible] Weather [illegible]

Water conditions [illegible]

Radiation level(s) Typ 20-21

Operations: Recovered time-temp plate; developed 2 rolls of 35 mm Tri-X of explosion & that of the Penafe trip of 5-13-56.

Shot most of day running tests & made fishing gear. Ran out a large skein look similar with design of round-1 & with a slight curve [illegible] for the seal. Ran bottom set about 6X [illegible] then into Basil & gear about half [illegible] had plastic net all.

Made first absorption column with Cellulose powder. Ran water & the stuff thru it, getting little absorption & a slight fade. Used sea solution to elute, 2 runs for each. The activity is low in 4 fractions indicating tagging and techniques in case find a more stable to play with.

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Locality Eglimet-- Date 6-16-56 Wed.

Personnel Palmberg Bonham Weather Partly cloudy

Water conditions moderate

Radiation level(s) Bg's 20-24

Operations: Replaced specimens in faunal display case by post office, disrupted by vehicle jarring the floor; cleaned aquaria glasses on porch; mailed logs thru 5-23-56 and 1 "Welcome to Tongass" brochure completed cards for fish and invertebrates to date.

Continued Asparagopsis study with gametangial material. Results look good at this stage. Want to get the plants for 12 L. Lit KB wants to wait a while as the plants still pretty warm.

Checked on coming equipment for Lund dock. Nine sets of ~~steps~~ ~~will~~ ~~be~~ ~~set~~ ~~something~~ ~~must~~ ~~be~~ ~~done~~ ~~suggest~~ ~~you~~ ~~check~~ ~~for~~ ~~you~~ ~~and~~ ~~the~~ ~~Hales~~ ~~(~~ ~~he~~ ~~is~~ ~~sick~~ ~~yet~~, ~~not~~ ~~the~~ ~~two~~ ~~couples~~ ~~one~~ ~~shields~~ ~~required~~. ~~Nine~~ men have partially assembled the big tanks for the probes - will test soon. Will help install aboard ships.

Walkaway left today. He was an excellent laborate and cooperated in all ways. Sorry to see him go.

Has Sigurd and Nicholas finished yet? Can't someone bring me out?

Please also send ~~out~~ ~~the~~ background ~~and~~ ~~sponge~~

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Locality Elwha — Date [illegible]

Personnel Emmons + Dinnel — Weather [illegible]

Water conditions [illegible]

Radiation level(s) [illegible]

Operations: Counting & weighing. Kilo water rig was started at 1 pm [illegible] counting & pan settling was continuous counting: 1 pan sample was put into KM, the rest was must be stirred from time to time by [illegible] for short time. For the drawing plate of unknown range must effectively be pooled in the continuous-ruling strips and counted without dilution, since high percentage of cocci will be ignored with stirred & not like as was. The KM is useful for giving a continuous record of background (on the smooth) d of samples when changes of rate during the unting is of interest.

Pan 2 algae, Lucy [illegible] samples Prepared.

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Locality Elmer — Date 6 [illegible]

Personnel Palumbo & Einhaus — Weather Rain steady. Might as well be in Seattle

Water conditions Moderate

Radiation level(s) 23 35 c/m bg on clusters

Operations: Counting and packaging samples

Tried alcohol benzine, acetone extractions of pigments from Alga mageja. Time is against us, very little progress in the aspect of the experiments but most work can be done. Visit by Schlegel and Hazlewood of USBCF Underwater Demolition Group who are doing a study of sedimentation in the bays, whole lots of eyeballing and who gave a confession until they have made Tentative arrangements to join with them to observe this method and to collect a few bottom samples of our own. Trip will be quite a bit [illegible] Dress - jeans and a sweat [illegible]

Nyce picked [illegible]

Seaweed - Zoomi sample

add a few drops Mn, Cl, let stand about 20 minutes, filter - count pupae

Remove, archive, add 5 drops Formalin.

Check round samples, [illegible]

~~Myzostoma pigment, [illegible] protein~~

~~extract [illegible] ionic solubilization [illegible]~~

Have [illegible] that most pelt activity is in the [illegible] of enzyme.

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Locality ____ Date 5 Ju 56 (cont'd)

Personnel ____ Weather ____

____ Water conditions ____

Radiation level(s) ____

Operations:

Raw milk was diluted at 1:100
1 litre sample; add 20 mg Fe^{+++} + NaHCO$_3$,
Adjust pH with HCl; count fuse
from pH; if not 7.0 titrate with
and back to pH 7.0 titrate.

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Locality Elmer Expanse Date 5-19-66 Sat.
Personnel Palumbo & Benham Weather rain, cloudy.
Water conditions moderate

Radiation level(s) Bgs. 19 - 27

Operations: Prepared and mailed the following samples Seattle and cards to Seattle:
Fish, 1-33 inclusive except #30 lost (duplicate anyway)
Inverts. 1051-1123 " " 1064-5, 1116, 1118-1, 1120-1 (for decay)
Plankton 6005-1 "
Water 5013-5021 "
Soil 5512-15
Plants 3045-3106
2 Pkgs. plants, bulk.
Leroy hot clam, bulk

Col's Schnittke and Thompson brought to the lab Liason officer Capt. Coleman who helped arrange for the vessel on the ocean survey. He emphasized the need for a tracer on the undelivered equipment shipped mid-April from Seattle. We sent TWX asking Lauren to start tracing from that end and to TWX us the designations of the shipment so that we might be able to locate it more quickly when it arrives and possibly anticipate its arrival, or even trace it from this end. A shipment is expected early in June, but if it is not in that shipment, air transportation would be required to get it here before June 16. Capt. Coleman said wash-down equipment is installed on the vessel already and it was his recollection that the ship was to be ready to sail, rather than ready to have the equipment installed, on June 16.

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Locality ... Date 5-19-56 Sat. Cont'd.

Personnel ... Weather Cloudy, rainy

... Water conditions ...

Radiation level(s) ...

Operations: Left Elmer 1600 by H-19 (1-20's not loading on Junet); arr. Jam I 1625 collected 2 adult and 2 juvenile rats at bunker area; Conchoecia echinata, Fimbriagstilis, eggmass and Sida Fallax went to lagoon beach 1730 where MX-5 and 2 mar. Int. Collected 1 Stichopus, H. leucospilota 2 echinoderms, 2 sponges (Ian, under rock), ~~Grit~~ 3 corals (Acropora), Halimeda, Caulerpa, Lyngbya, Asparagopsis, & Bryopsis; Eagle rocks, bottom sand. Island was sampled at rate collecting area.

Fish readings:

Gaid tint MX-5 = 1 mr/hr.
" " Cobalt = 1½ "
Calibrant tint Mark = 1½ "
" Cobalt = 3C "

Along reef toward Pier MX-5 = off scale > 20 mr/hr.
At Each Mark of Pier " = 3 mr/hr.
Along reef from Pier to end 55 mr/hr on Cobalt.

At 30C - ½ brownish sea bass Epinephelus fuscus was caught off the deep pier today and brought to M. Sea Station. Lily ... gill ... Sam separates down to 11-19 ... Lead to pickup ... and ... Sam. Ilya ... over 10 mi. ... [illegible]

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Locality EIMER Date May 20, 1956 Sun.
Personnel Bonham - Palumbo Weather Rainy
Water conditions
Radiation level(s)

Operations:

A.M. Lab routine
P.M. Printed Ponape pictures - John Harding

ed then Unclassified, ~~C~~ Official use Only -
On following day (extend line to use the space), 21st, we weighed note Na CO_3 standard following the idea used by NYOO for calibrating their counters. This laboratory has recently determined the emission rate of this 1.3-1.4 mev β to be 197 d/m/mg. The counting efficiency may be determined by making a standard plate to simulate the amount and spatial distribution of the material being counted on samples. On their tape strips of samples there is introduced an occasional standard of this kind, as well as blanks for bg. ~~The~~ A standard simulating our samples and containing the entire plate 455 mg (±50 d/m); counted in our 3 units, thus gave efficiencies for: EMBL-1 = 16%, EMBL-2 = 16% and EMBL-3 (Kure Atoll) = 12% (because the sample here is more distant than in 1 & 2). Our greatest source of error is in the spatial distribution of the samples on 1½" plates prepared as they are for these 1" tubes. The counting on these 1" plates would be better, but we consider the evaluation of the 1½" plates to be only rough indication of the full radioactivity.

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Locality Elmer--- Date May 21, 1956 Mon.

Personnel Bonham - Palumbo Weather Clear mostly

Water conditions

Radiation level(s) 19-26

Operations:

Every body up early.
Lab routine all day
During the evening Col. Schmitke (DMA), A.D. Epley (HQ-7) and Col. J.D. Faulk (J-3 HQ) visited the lab to inquire as to the progress being made on expediting material to go shipboard.

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Locality Elmer — Date 5-22-56 TUES.

Personnel Palumbo & Bonham — Weather Mostly cloudy

Water conditions Moderate - rough

Radiation level(s) 17.26 Rg.

Operations: Counted decays + [illegible] boards.
Collected Asparagopsis sponges, Ptychodera, and a Solaris from Lab. Reef for monitoring; counted almost background.
Received TWX that shipment delayed; ETA 6th or 7th; no information on box designations needed by Schmitke to transfer to air shipment at Hawaii, as would be necessary to get it here by the 6th when Walton is due. To elucidate, if shipment were to arrive Elmer, 6th-7th and required 2 days to off-load, the Walton, arriving 6th would be idle 2-3 days, which liason personnel very much want to avoid.

Continued Asparagopsis work

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Locality Elliot Date 5-23-56 Wed.

Personnel Palumbo + Benham Weather Partly cloudy

Water conditions Rough.

Radiation level(s) 20-25

Operations: Sampled Asparagopsis & sponges on fish-Reef - Sponges = 40 c/m/g wet.

Received mail from Lab: Vouchers signed & returned; letters from Ed re. standard RaD+E 1306 + " " " " samples sent to Lab. Mailed 3 days' log sheets to Seattle.

Received 1 Roll coaxial cable for LRD from N400 Janet

Ran absorption curve on red pigment of Asparagopsis which was reading 5,000 c/m

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Locality Elmer-- Date 5-24-56 Thurs.

Personnel Palumbo & Bonham Weather Partly cloudy

Water conditions Rough (5'-8' waves)

Radiation level(s) 17-27 c/m Bg.

Operations: Copepods and sponges from lab cultures counted with 22 and 60 c/m/g, respectively counted keys & standards

Received 3 boxes shipped May 15, 1956 from AFL, Seattle by air.

Box 1 1 Nuclear Chicago radar; 4 intake tubes

" 2 1 " " " " model D 181

3 2-5 Gal plastic plankton bottles

4 1-4 " " " " ; 72 2" sq mm plastic bottles

1 spare pair for winch.

5 6 water sampling bottles & messengers; 700 sieves, 1 Nisperson tool, 4 plankton net covers; 1 Hitton pail; 1 dial scales

6 1 Radiation shield

7 1 " " ; 12 RCA tubes; 1460 cells-keys (1-29)

8 1 meter stick; 4 1-gal jars, 2 bx. Lugol's; 4 pressure regulators & spare parts & tools; 11 lbs phytoplankton netting; 1 copy Diving Directions; 3 thermometers.

9 1 Sea-Gull water tube.

We have the tube for counting cells (and marbles) but I want one to be for living — the tube we have now I will use for counting chaetoceros and the long, apparently in the living Gough tube for that housing. If an intermediate sized one is needed a quart tube not should be bought that is 1 inch outside diameter and not over 7 mm long before its diameter decreases, since it is that far from the

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Locality --- Date 5-24-56 Th (Cont'd)

Personnel Weather

Water conditions

Radiation level(s)

Operations: End of the leaving to the inner supporting spurs.

The high voltage on the second dewar of EMBL-2 went off and the NOL electronic experts say it is in the transformer. They will run it down some evening when they get time.

Left just primarily for tomorrow's trip to the entire area - Edna - New Eniwetok.

Accumulated dosages: Bikini to 50 mr; KB = 70 mr, to date, as per Rad Safe report.

Set mission badges out and pocket dosimeters at Rad Safe for us and Lewis F. Blake, and Francis W. Eudaly who will go along for fishing tomorrow 0900 - with UDT men, Schlegel and Hazelwood to help pick up sediment trays in the lagoon. After which we used up a full tank looking around. Collected sand sample, Halimeda, water, and coral at 35 ft. depth. Broke starting cord on Gilmer motor. Also collected helmet shell, fungia, a gorgonacea, and 1 Conus marmoreus. Halimeda shorter than same collected on outer reef on Elugelab.

Rain meter used for last samples since other Two scales broke at 10,000 c/m.

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Locality Elmer, Edna, Flora, lagoon Date 5-25-56 Fri.

Personnel Palumbo, Bonham. Weather Good; mostly sunny

Fishermen: L.F. Blake & F.W. Badali Water conditions moderate, lagoon

N.Y.O. - E.K. French. w/ slight swells.

Radiation level(s) 50 mr/hr at Flora

Operations: Finished assembly of gear, etc. and personnel. Departed Elmer 0800 by M/boat 213 w/ DUKW 349 aboard. Ran directly to Gene; Off Tilda Blake and then immediately Badali caught bonita, but Blake's only, was landed. Blake caught a jack off Gen Inlet or Gene. M-boat landed the DUKW w/ passengers at Gene; sailed to 1030 hrs. to Inlet of Flora (New Engelab) which is now much higher and more extensive, having been built up by surf from the lagoon side. Landed, and walked the beach to opposite E end of Edna. Coral colonies of pink color 1"-2" diam. Cemented clams about same size. Probably surf rather than radioactivity limits growth here. Collected coral, clam mantle, Heliotrea on outer reef, and Heliotrea in narrow boulder area outside Flora. Drove to sand spit of NE Edna where retrieved 9 primacarded fish, getting mainly needlefish, small crabs, gamefish and more tiny fish. Collected hermit crabs at Flora. Ralph surveyed plants on Edna. Collected 3 plant specimens. DUKW departed Edna 1215 for Gene landing at mainland, courtesy of Jan Jo-Ann UNIV. OF Departed Gene 1336 w/ M-boat w/ DUKW. Plankton tows: #. Off Gene Inlet 1345-1400; # from Mack tower in lagoon (Off Edna) 4

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Locality --- Date 5-25-56 Fri (Contd)

Personnel Weather

Water conditions

Radiation level(s)

Operations: running south 14:50 ~~1512~~, and then
[illegible] in Dap P. Lunce running E
from small red buoy to [illegible] Point (S)
until 1607 - 16:32 (25 min) Coast
[illegible] (in "lagoon") mainly foraminifera and
fish eggs; many algae [illegible] in D.E. haul
water temp 32.5°F in lagoon hauls, and
32°F in D.I. Arrived Elmo 16:50; mounted
by Rad Saf. "Caphenol", turned in contamin-
ated booties and ~~and~~ mission badges, and pocket dosi-
meters at Rad Saf, and unloaded at lab.

Forgot to say: Badali caught bonito on return
trip off Yvonne, but lacked it. Nearly and ate
only the anterior ~~2/~~ third of it, the rest
being inside the 3-4 foot sand shark that ~~was~~
followed it to the boat.

Mike Alden delivered to us the papayas, 1 ripe
and 2 small green, and 1 green coconut that had
been sent over, courtesy Bob Taft, from the STF
camp that had been to Rongelap.

Worked up some samples.

Photographed a ~~bat~~ bat-tail with an
induced concentric light banded pattern on
dark background; [illegible] taken at 16:10 on a point
on lagoon side of Elmore trip 5-24-56 by
peering through head; A.L.T. 31.35 by artificial
light on daylight Kodachrome, and with camera [illegible]
Monitored general collection w/ PIX-5 very hot.

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Locality --- Date 3-25-56 Fri. (Page 3)

Personnel Ritchie Weather

Water conditions

Radiation level(s) Mij. Richyn (sp?) says by-pass activity around Rongelap village w about 0.03 mr/hr & about 4 x bg. for the instrument he has 2 mile passage with the coconut that we may sample, from Rongelap.

Operations: Collected: bottom sand sample near New Elugelab; algae along reef margin flat; island soil, central survey point Edna; Land plants at 300 w area; and 1 large netted green spherical glassus ballei. Impression of the area visited was one of shifting sands, much barrenness, and no change in reef appearance from last visit of March 1955. Had expected increase in size of coral and algae colonies, but this was not the case.

Collected water samples at Plankton Stations

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aw

Locality Eniwetok — Date 11-26-56 Sat

Personnel Palumbo, & Benham Weather

Water conditions

Radiation level(s)

Operations: Using MX-5, Sr 1746, counted around Lab:

Lab and background	0.03 mr/hr
Collections of coral stored by Lab.	3. "
Plankton nets after rinsing in salt free water, and drying outside overnight #1 (coarse)	3. "
#2 (fine)	5. "
Coveralls (KO)	0.5 "
Shoesoles (KFP)	0.5 "
" " (KB)	1.0 "
Collecting nets & bags	0.5 "
Blasting box	0.05 "
Floor of Lab & 3' from floor	0.05 "
1 meter from Co-60 source, shielded, in doorway between Lab & added room (Fowler's office)	3.0 "
Counting room	0.03 "
Inside of plankton buckets	0.1 "

Returned picric acid, MX-5, & exchanged coveralls.

Prepared plant samples collected at Rongelap by Major Ritchie (Task Force Rad Safe officer). Saving remainder for chemistry if desired.

A 1.5g. wet sample of Rongelap papaya counted background.

Marked logs & letter to Lab. Sponge from Lat ref this area counted 350 c/m/1.5 g wet.

Col Schoettle said 20% of Rongelap natives do not wish to return. Those who do, will, in November if our survey shows it to be O.K.

SL

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Locality Elmer Date 5-21-56 Sun.
Personnel Fiumbo + Benham Weather Good
Water conditions Moderate
Radiation level(s) Bg. 20-30 c/m.
Operations: Counted and packaged samples; filled out cards. Collected and sorted wet from 1-2 b reef Asparagopsis 30 c/m/g net, and sponge.

Sport fisherman brought in 13½" stonefish from reef south of Elmer: WT = 2200 g; ovaries = 55 g; liver = 86 g; dig. tract = 130 g; Stomach empty; no parasites in stomach or gills; froze & kept carcass; made samples of muscle & liver. (Synanceja verrucosa)

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Locality Elmer Date 5-28-56 Mon
Personnel Palumbo & Bonham Weather Partly cloudy
Water conditions Moderate

Radiation level(s) 22-27 Bg.

Operations: Every body up early, and again. Counted decays. Yesterday's Elmer Lao reef sponge sample counted dry 510 c/m net; wet wt = 2g. Mike Olden of NYOO checked EMBL-2 (decascaler) and verified that the high voltage transformer is burned out. It is designated thus:

TTI-2242
Power Transformer
1310 A-10
1-2 117V 50-60 cy
case 2000V RMS start
3 2000V RMS 5 MADC
4-5 6.3V 1A
6-7 2.5V 2A
Primary 1600 V test
Secondaries 5000 V "
Transformer Tech, Inc.

However, Mike says any high voltage transformer that gives: 6.3V @ 1 amp, 2.5 V @ 2 " 2000 v @ 5 ma will do.

One fire cracker and the rate meters are still functional. We have not unpacked the cubic received 5-24-56, but shall do so soon to be sure they will perate. If the scaler EMBL-2 is needed urgently by our group upon their arrival, the first one out might wish to bring a transformer with them. Otherwise it may be procured through regular channels, presumably Hiatt of EMBL manager.

Background gradually increased on the rate meter from 27 at 1200 hrs to 51 @ 1452 hrs. A 1.064 g sponge collected 12.5 hrs, dried in oven for 2.7 hrs, and counted 180 - 50 = 130 c/m @ 1500 hrs.

Sandia men loaned a thermometer ranging -10 to +120 F on the Sandy apparently the only supply on

5.

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Locality Elmer — Date 5-28-56 Mon. Contd.

Personnel / Weather

Water conditions

Radiation level(s)

Operations: Record of our experiments on minnows tadpoles of 5-25-56 to Elmer showed ~~2.25~~ mv./hr. for both of us. This must be diminished because we were about an hour on 56 mv/hr Tuesday.

Background Rate Meter FMCL @ 1746 hrs = 55 = 2 mv. higher than I did the Bryan MBL before noon, @ 0730 = 22 c/m; @ 1500 = 69; 1600 = 84; 1630 = 90; 1655 = 87; 1715 = 88. Apparently Rana utricularia temporarily To swimming this fallout: Began to ~~[illegible]~~ show at noon; peaked between 1600-1700 hrs @ 50-60 c/m on rate meter, the average 55; declined steadily to 40 c/m @ midnight.

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Locality Elmer --- Date 5-24-56 Thurs.

Personnel Holmberg & Brockman Weather Cloudy

Water conditions Moderate

Radiation level(s) Kal. mtr. declined from 41 @ 0600 hrs to 30 @ 1000 hrs
Bg. on EMBL-1 = 31-66

Operations:

Letter of 22nd from Sawyer says Col's Paul & ETA 2nd or 3rd; R.F.B. K.B. should leave 6-7; & Al, Frank, Art, Neal, & he will arrive 5th. We arranged to depart the 7th and should meet the group on Honolulu on the 7th. Our Pan Am departure from Honolulu is 8:30pm on the 7th, arriving SeaTac Fri morning, flight 822; subject to confirmation. Many thanks for the counts/min/gram as of 5-18 to 21 on the invertebrates 1001-1047, Col!

A few days ago the salt water was piped to the west interior tank from the 1¼" line supplying the aquaria, up to the porch roof, over, and down. The pipe used more head than had been supplying the fish aquaria, so today they tied the line into a higher tank near the fish house. The concrete fish pool was filled, and the valves supplying the aquaria were adjusted, but with loss of salinity by fish, a grouper, and a damsel fish. The [illegible] brought a small ~~urchin~~ uninjured stonefish which was put with the other stonefish that had been here some before we moved (and refused food). ~~6 species~~

Sponge from Eat reef [illegible] 4.4 c/m, mit collected Halia, Astrospyga (2), & Ophiodesma for observation.

Background on Eat Water (EMBL-3) rose from 30 c/m @ 1400 hrs to 50 c/m @ 1900 hrs.

Slight hangish fallout this morn - VVCC

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Locality Elmer + Fred Date 5-20-56 W31.
Personnel Palumbo + Bonham Weather Good, almost overcast
Water conditions Moderate

Radiation level(s) High bg. EMBL-1 = 4-4-100 EMBL-3 = 55-60
Operations: All fish except one puffer in aquaria died, as well as 3 crabs, 3 hermit, pumpkin starfish and auger snails. ~~Will have to~~ Changed ~~that~~ salt water supply back again to old pump which is the outflow from channel dredging. New source was sanitary "Bar" in Coulter of LST 618 donated an inch deep of muddy turn but fish landed in the forward gun tub of LST 618 at anchor (1930) last night and was still there this morning. Coulter had him on his hook. It mentioned 1 mr/hr well on IM-83/PUR (an end window survey meter which we could use) 2 snails had perked up mentioned 5 mr/hr and did not fly away until after being passed over it. The 1st bird was frozen; boarded vessel @ 11°21.6' N, 164°32.2'; its feathers were singed.

Developed 2½ rolls 39-exposures each of Tri X, mostly photomicrographs; some macro-specimens. Reloaded 4 cartridges w/ Tri X.

2-g. Sponge from last acp counted 700 on 2nd shelf net and 5800 on 1st shelf dry, of EMBL-3; Aspidosiphon (2g) counted 2500 on dry on 1st shelf of EMBL-3.

Crew Pal to bed with Pneumonia. Shot (1) to help locate fish and what is used to inject. Shot about 1½ feet when used. Some trouble in operation since shot is of good water (left offshore) light and color.

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Locality ... Date 5-30-56 (cont.)

Personnel ... Weather ...

... Water conditions ...

Radiation level(s) ...

Operations:

Finished [illegible] ... a bit muddy. Seals
only 2 or 3 at locks and not [illegible] ... Lower
[illegible] ... Lowered [illegible] ... Installed
[illegible] ... Left [illegible] ... Disco refill ... face
wash ... boat [illegible] ... Lower ... 20 ft with Kerry.
[illegible] ... Stoky ... Chelokatay ... beautiful
[illegible] ... [illegible] ... Lower ... Lower

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Locality Elmer-- Date 6-31-56 Thurs

Personnel Palumbo & Bonham Weather Good

Water conditions Moderate

Radiation level(s) EMBL-1, 9c c/m EMBL-3, 6.6-7c c/m.

Operations: Ran decays; collected Asparagopsis, other algae and sponges on reef.

UDT men, Spiegel & Hazelwood brought in large 36" Tridacna from which a muscle sample was taken, and a large 2' x 6" sea cucumber Thelenota ananas from a coral head about a mile SW of Elmer. The giant cucumber had eviscerated (discarded by UDT) but was still large w/ 1" tubecles, some branched, a typical tomato red color; photos in color & b&w. A green alga Tydemania expeditionaris was attached to the Tridacna above reported previously from deep water lagoon dredges by C. Taylor.

Processed plankton and water samples of 5-25-56.

Met with Major Palmasiano, Hq. U.S. Supply Island Hopping Detail regarding our operations for the USS Bonner and Estes.

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Locality: Elmer
Date: 6-1-56 Fri
Personnel: Palumbo & Bonham
Weather: cloudy, rainy
Water conditions: Moderate-slight

Radiation level(s): EMBL-1 70-84   EMBL-3 55-65

Operations: cleaned 2 aquaria. Tabulated decay & log data. Collected + counted sponge from lab reef

Lt. Dunlap USN conferred about Walton's plans. He is liason for us to his superior Capt. Munson. He will confer w/ Ed & Paul.

Talked to Paul Zigman NRDL - nice guy. wanted to be remembered to Paul Olson.

Film-mission-badge reports for Janet trip of 5-19-56 RFP = 50 mr, KB = 70 mr.

[illegible] 1 liter(?) of fresh water(?) [illegible]
[illegible] to determine(?) [illegible]
[illegible]
[illegible]
[illegible] (6-2-56)(?)
[illegible]
[illegible]
[illegible]

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Locality Eniwetok Date June 6, 1956
Personnel Davidson, Tibbetts Weather [illegible]
Water conditions Moderate
Radiation level(s) 15" 3 hr. EMBI-3 = 50 c/m.
Operations:

Sample collecting
[illegible]

Plotted invertebrate decays: related to 5-5-56: Vera collection ~ -1.2. Leroy tan cucumber tissues ~-0.6. Leroy coral -1.1.

John Harding at Classification explained that each project officer (that is we, ourselves) is responsible for classifying his photographs just as each individual is responsible for what he says in letters. He looked at the two last rolls of film and pronounced them unclassified, OUO.

Lab reef sponge counted dry 8100/2 g. wet.

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Locality Eniwetok Date 6-3-56 Sun.

Personnel Palumbo & Bonham Weather AM rain; PM clear

Water conditions Moderate - Slight

Radiation level(s) EMEL-1 = 62-67 CIIL 3 = 50

Operations: Sponge from Lab reef counted dry 3550 per 2.5 g wet. Cucumber got about same. Froze giant sea cucumber. Cleaned aquaria.

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Locality Elmer Date 6-4-56 Mon.

Personnel Palumbo, Held, Olson, & Bonham Weather Good

Water conditions Slight

Radiation level(s) EMBL-1 = 60 EMBL-3 = 45

Operations: Held & Olson arrived Elmer about 1 pm.
spent afternoon unloading animals
to Farwest Biological Lab.
Captain Wilson T/S Pacific Salvor is in
charge of shipping crew and will arrange
for boat to be fueled the day
prior to loading.

UW

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Locality Elmer — Date 6-5-56 Tues

Personnel Held, Olson, Palumbo, & Bonham — Weather Good

Water conditions Slight

Radiation level(s) 43 on EMBL-3; EMBL-1 = 60

Operations: Collected cucumbers on Elmer- lab & south reef. Col. Thompson returned 2 shell books for Capt Rudolph Draegher, medical officer on the "Estes. These "American Sea Shells" by R.T. Abbott, and "Illustr. Handbook - Shells - Color" by Hirase and Taki have been missing without record since our arrival; glad to see them. Also received another copy of Japanese shell book (same, but different cover) in the mail from Hiatt.

Plate of residue from concentration of 1 liter of tap water counted 75 c/m, net; not all of residue was recovered, probably ~ 50%.

Lab reef sponge, 380 c/m net / 3g; from pool near junker.

Spent afternoon on Walter conferring with Olson, Held, Hiatt, Capt Arthur Emerson, Lt. Comdr. Lt. Thornbrough, Chief Eng. Davies, concerning re-installation of tank pumps, supply, etc. on St. Mary's. Many problems in connection with personnel.

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Locality Eniwetok Date 6-6-56

Personnel Hull, Olson, Palumbo, Weather Good + hot
& Bonham

Water conditions Slight

Radiation level(s) [illegible]

Operations: [illegible] from Lab at 0815 till power off in Lab

Departure of Palumbo & Bonham has been set up for today, after lunch. Tank load of equipment to Walton tied at deep pier.

K.B. carried fish plates 44-49 incl.
" Invert. plates 1154-1187 and
Fish cards 34-49; Invert. cards 1124-1187; also decay plates 1064, 1065, 1116, 1118, 1119, 1120, & 1121, and cards for same.

Package sample of dried fish, coral & Cladophora to station 6 late.

Closed Hold Cover with Straightline and take Palumbo's bar clamp all loose ends keying the tie down.

Palumbo had carrying pole. Stored [illegible] for ride.

Late lunch today. Turned [illegible] RF's departure [illegible]

Em.

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Locality FRASER Date 6-7-56

Personnel Vicq, Seymour, Lowman, McIver Weather

Water conditions

Radiation level(s)

Operations:

A.M. PLANTON TOW, 15 MIN, DEEP ENTRANCE #64 #20 NETS. THIS INITIATES SERIES TO BE MADE ON TUE, THU, SAT. 0800. BOAT HAS BEEN APPROVED BY CMDR PERLEY ON A CONTINUING BASIS - CHECK WITH MARINE OPERATIONS JUST BEFORE EACH TRIP FOR SPECIFIC BOAT NO.

WITH LT. LEE BURKE ABOARD WALTON DETERMINED SUPPLIES NECESSARY TO EQUIP SHIP FOR OUR NEEDS

P.M. LT BURKE CAME ASHORE WITH US. OBTAINED SUPPLIES & PUT ABOARD WALTON. LOCATED WINCH & ACCOMPANYING GEAR ABOARD GAMMON BUT CANNOT UNLOAD UNTIL LATER BECAUSE OF HEAVY EQUIPMENT WHICH MUST BE REMOVED FIRST. LT KORBEL & CPO... THE (illegible) & CMDR FARRAND, USN KEEPING US POSTED AS TO UNLOADING.

SEYMOUR & LOWMAN ARRIVED ABOUT 16:30

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Locality ELMER Date 6-8-56

Personnel SEYMOUR, LOWMAN Weather

OLSON, HELD Water conditions

Radiation level(s)

Operations:

A.M. ABOARD WALTON FOR SEYMOUR + LOWMANS FINAL INSTRUCTIONS ON INSTALLATION OF GEAR. INSTALLATION STARTED BY CREW.

P.M. SERIES OF MEETINGS WITH LT. KORBELL, TOM HARDISON, CMDR [redacted] Litchfield 7.3, + LT. CMDR FARRAND RE UNUSUAL SITUATION DELAYING UNLOADING OF GAMMON. CONCLUSION & DEPARTURE OF WALTON WILL BE DELAYED UNTIL 12 JUNE BUT WILL BE AVAILABLE FOR A FULL TEN DAYS AT SEA.

SCINTILATION PROBES + ASSOCIATED EQUIPMENT DELIVERED ABOARD WALTON.

COLLECTED ASPARAGOPSIS SPADDLE ON SEAWARD REEF FOR REP AT 1600.

LT. BURKE (WALTON) VISITED AT BARRACKS ALONG WITH BOB GILKEY.

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Locality ELMER Date 6-9-56

Personnel Donaldson, Welander, Seymour, Olson, Lowman, Hines, Held Weather Clear Water conditions Good

Radiation level(s)

Operations:

AM Donaldson, Welander, Hines arrived about 0700. 15 min plankton Tow #6 & #20 ½ meter nets deep entrance between 1st & 2nd channel buoys - too much swell & tidal current here to make this practical as a regular station although a good haul was made - try further inside lagoon next time. Lowman, Olson, Welander aboard Walton to set up gear. Donaldson, Seymour, Hines met with 7.3 personnel & Cmdr Emerson (CO/Hq) and determined ships track. Departure set for 6/11 PM.

PM Collected Asperoppsis & Sponge from seaward reef for RSP & KB. Picked up additional supplies for Walton from J-4. All except Held spent afternoon aboard Walton. All gear except winch unloaded from Commo by 2200. Scheduled for transhipment to Walton (Ferrand 7.3 & Bill Roher (H&N have made arrangements).

Conference on Marine Survey held in 7.3 quarters with Capt. Manson, Ltcm Ferrand Ltcm. Perley(?) Cmdr Emerson (Capt. Walton) Dr Shelton (HQTF 7.0 Fallout Detection Unit) Eisenbud, Graveson, C. O'Brien, Hines Seymour and Donaldson. Past experiments were discussed and movement of water predicted. After consideration of fallout, drift, working time, subsequent experiments, speed of the ship, working Time

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Locality EIMEL - WALTON Date 10 JUNE 56

Personnel DONALDSON, HINES, SEYMOUR, LOWMAN, WELANDER, OLSON, HELD Weather GOOD

Water conditions GOOD

Radiation level(s)

Operations:

LAST OF GEAR UNLOADED FROM GAMMON + TAKEN TO WALTON BY T-BOAT AT 1300. [redacted] DISCUSSED OVERALL OPERATIONS + PROCEDURE FOR WALTON TRIP + OFF SITE TRIPS TAKING ADVANTAGE OF WEEKLY SERVICE FLIGHTS FROM ENIWETOK TO WOTHO, KUSAIE, KWAJALEIN, PONAPE, RONGERICK, TORAWA, UJELANG,

Worked on installation of gear on Walton.

Letter from LRD to Robt. Boss regarding proposed track of ship & transmittal of information.

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Locality ELMER - WALTON Date 11 JUNE 80

Personnel LRD, NH, FGL, AHS, ADW, JRD, ~~CH~~ Weather Good

Water conditions Good

Radiation level(s)

Operations:

Installation of gear on Walton. Dry runs with water bottles ~~&~~ while ship at anchor (depth about 150'). Picking up last minute supplies. All except 2-4 left personnel pier in Walton's whale boat 1545 to meet ship at refueling barge. Expected to return to Wetok for 4 hr refueling stop Sat. 16 JUNE.

Letter from LRD to Thos. Hardison requesting off-site flights. First set for 18 JUNE - ~~CH~~ & Bob Toft to Walton.

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Locality Elmer — Date 12 June 56

Personnel Held (LRD, DHS, NH, FGL, BDW, PSO aboard Walter A. Cox) — Weather Heavy rain in afternoon

Water conditions good

Radiation level(s) Bg

Operations:

Plankton Tow 0800-0900 deep entrance. Asparagus collected on seaward reef 1130. Carpenters started building shelves in storeroom. No detectable fallout by 1830. Wrote letter to J-4 in LRD's name authorizing CDD shipment of samples & equipment from Oakland to Seattle by motor transport.

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Locality E-LMER Date 13 JUNE 56

Personnel HELD (LRD, AHS, HGL, ADW, PRO, NOH aboard Walton) Weather

Water conditions

Radiation level(s)

Operations:

EMBL COPY OF TAYLOR PLANTS OF BIKINI FORWARDED TO LCDR T.S. HANSON, JTF 7 REP BIKINI C/O CO. H.R. FLEMING BLDG 221 ELMER for ISSACS (Scripps) Telephonic request.

Collected Asparagopsis for USP

Worked on cleaning up lab.

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RS RB

Locality ELMER Date 14 June 56

Personnel Held (LRB), Ayers, NDW, F&L Weather Intermittent Rain

PRO, Noll (Dave Walter) Water conditions generally Calm, occasional squalls

Radiation level(s)

Operations:

Prepared specimens from Henry collection of 4/28/56. Circumstances forced delay of plankton tow until 1600. Asparagopsis collected after plankton tow. Walk-in freezer burned out compressor - fish mighty ripe - will discard after they have been refrozen. Dr. Biggs VCRL medical physics visited lab, went along on plankton tow.

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Locality Elmer Date 15 June 56

Personnel Held (LRD, DDW, FGL, AHS, PRO, NOH aboard Walton) Weather Good

Water conditions Good

Radiation level(s)

Operations:

Classified letter regarding reports rec'd—in safe. Set up Geo. Evanier for photography aboard Walton through Newman, J-6, + Walton, H&N; Ø boat to meet Walton at refueling barge through Lt Blaise, 73. Lt. Dunlap, 73 called back in afternoon to "tentatively confirm" boat for 0900. Continued preparation of Henry 4/28/56 material. Asparagopsis collected for RSP 1730 — haven't been able to find a Sponge for K.B.

2130 rec'd message from Walton through 73 requesting transportation from Walton to Parry & inclusion of Hines on Walton trip 18 June. Harbison off island-Ed Butts will try to make necessary arrangements

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Locality Elmer Date 16 June 56

Personnel LRD, ADW, FGL, AHS, PRO, NOH, [redacted] Weather good — showers

Water conditions good

Radiation level(s)

Operations:

Walton in to report 0930. Met at refueling barge on arrival by [redacted] & Geo Bemis. Olson stayed aboard with Bemis to take photos of installations. Rest of party ashore to obtain supplies, check on continuation of course etc. Party returned to ship about 1500. Hines & [redacted] remaining at Parry. Plankton tow 1530 followed by Hyperiopsis collection. Notified Watho plane will leave tomorrow AM - 0830. Will be picked up for return 18 June about 1400. Packed for Watho trip.

KB

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Locality Elmer – Wotho Date 17 June 56

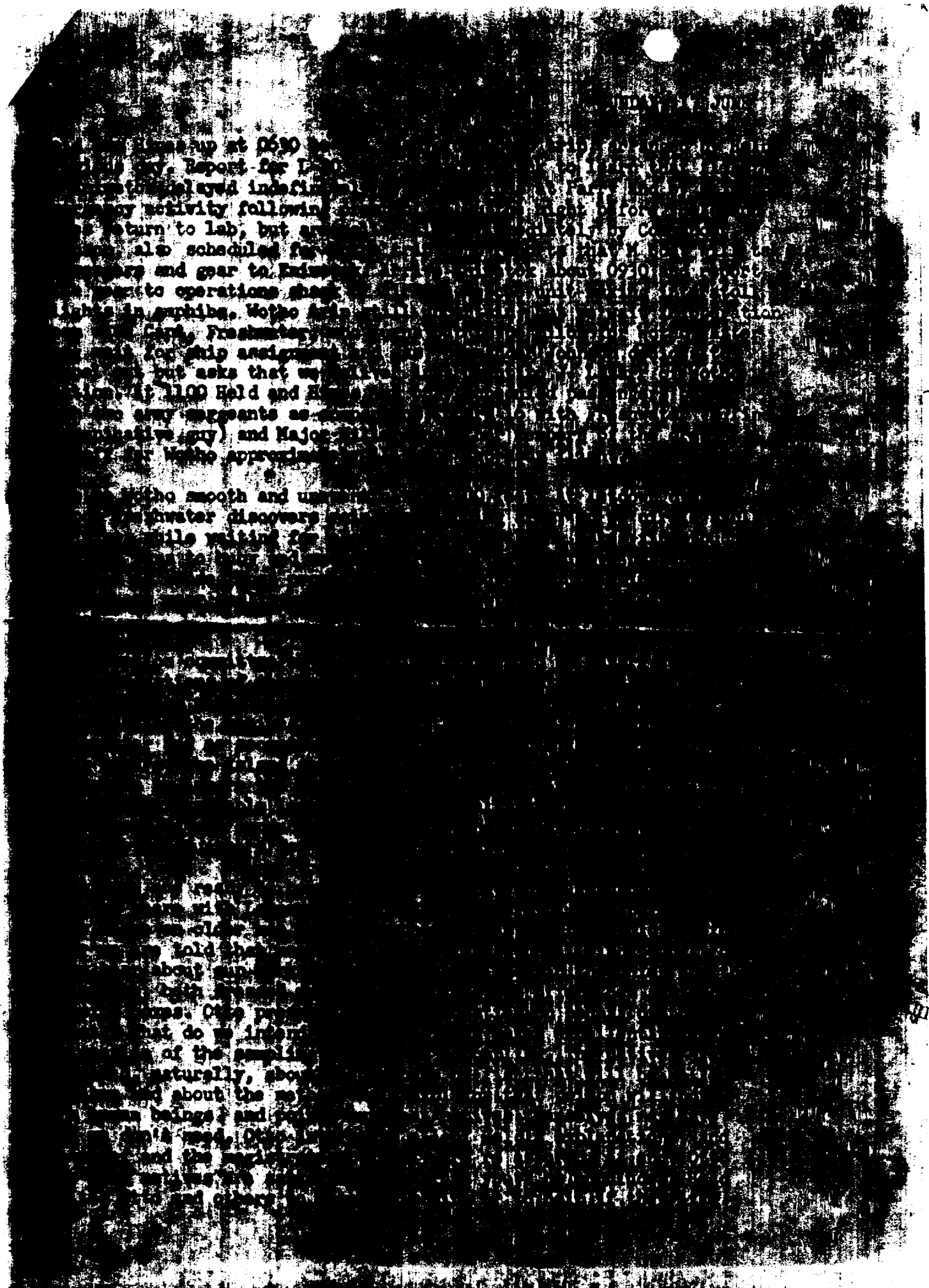
Personnel NOH, ~~[illegible]~~ (LRD, AHS, PRO, ADW, FGL aboard Walton) Weather Good (Storm last night) N Winds

Water conditions

Radiation level(s)

Operations:

T.O. ~~for~~ Wotho delayed until about 1100 – 2 hr trips. See attached note by Hines.



The Wotho lagoon is small, quiet, and very beautiful. The poisoning was conducted in the afternoon at two small coral heads about 300 yards down the lagoon beach from the pier, and Held and Hines were assisted by Otto, Stephenson, and several other volunteers, native and otherwise, who were interested in the process. The waters are so still that the rotenone hung beautifully about the coral, but despite this the catch was not large and the fish disappointingly small in size and variety. By 1600 the first collection had been finished and Lazarr offered to take Held and Hines on a short tour of the island by weapons carrier while he set out some instruments in anticipation of a shoot Bikini shot the following morning. We visit power and communications stations at distant corners of the island, returning just in time to change for dinner. Held uses this during island tour to pump Otto about native knowledge of coconut crabs.

The Wotho station consists of [redacted] house, a cook shack built on the [redacted] small recreation room-library [redacted] housing and mess [redacted] center of this station area is a community yard consisting of a large of approximately 30 by 40 feet, and in this area all personnel, including the natives, gather for movies, meetings, etc. The tents actually are wooden frames set on concrete slabs and are designed to sleep ten men in cots along the walls. As presently arranged, however, the Lazarr tent, [redacted] Held and Hines occupies includes counters and weather [redacted] and other [redacted] benches at the far end. The station area is clean and nicely maintained.

After dinner Sunday evening [redacted] natives, including the babies, began to arrive [redacted] the movie, the men and [redacted] and the little boys and [redacted] in old copies of American [redacted] natives gathered for the show -- thirty-[redacted]

About 2100 Held and Hines [redacted] with lanterns and packs to look for coconut crab, the [redacted] that Held has been hunting. We took the road that we had covered [redacted] the afternoon by jeep, walking along behind the light from the lantern and going into the brush now and then when Held spotted [redacted] of interest. Eventually we gathered six crabs, one a female [redacted] plus a few other specimens. These Held put in the reefer in the cook house [redacted] and about midnight expecting to be called early for the Bikini shoot. Lazarr had said he would get us up to watch.

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Locality WOTHO — ELMER Date 18 JUNE 56

Personnel NOH, EH (LRD, AHS, ADW, PRO, FCL aboard Walton) Weather good

Water conditions good

Radiation level(s)

Operations:

See attached notes by Hines

[illegible] 18 June 58

The Bikini shot is scheduled [illegible] hour before this to get his instruments ready. [illegible] are out of bed in plenty of time to go to the beach to watch the shot, but nothing happens and Lazarr later reports that there has been an indefinite postponement.

After breakfast Held completes sampling of fruits and vegetables, takes a soil sample, arranges for a plankton tow behind the 3 h.p. outboard, and gets in touch with Otto who had promised to lead an expedition to hunt small coconut crabs. The plankton tow takes place at 0830 and the samples are stored with the [illegible]. Shortly after 0900, Held and Hines then get on long pants and meet Otto on the island road for the coconut crab hunt.

Otto leads us diagonally across the island into the copra areas where there are piles of coconut husks at frequent intervals. These he searches, with help from Held and Hines, but search is not very productive, however, for few crabs are found and none is smaller than those discovered the previous evening. [illegible] however question Otto at length about the crab, the native use of it, and other things.

The Wotho village, [illegible] road, gives [illegible] than coconut -- [illegible]. Livestock [illegible] pigs are small, for the [illegible] fruits. The Wotho church [illegible] which building across [illegible] similar -- but [illegible] lagoon side.

Otto shows Held and Hines [illegible] The church is almost bare of [illegible] and decorations. [illegible] speaks from behind a small, plain table covered by an altar cloth containing a scriptural quotation embroidered in Marshallese. The wall at the altar end of the room is covered by native mats in which patterns have been worked, although mats on the other walls are plain. Otto points out which of the timbers of the main structure are Marshallese woods and which are American, meaning driftwood. He also shows us the notched and decorated timbers at the rear of the church that are maintained, he said, in remembrance of the dead. There is, as at other atolls, no common burying ground, the dead being buried in small family plots.

Held and Hines had met the Wotho minister on arrival at the atoll and Mr. Hines had sat with him and his family for a time before the movie the evening before. On the way back from the crab hunt we met him again as Otto went from one house to another inquiring if there were shells or Wotho handiwork available for trading. On learning what Otto was doing the minister and Joseph, the judge, bring out a colored belt decorated with shells. Otto explains that they want us to have the belt. We assume that the belt is something for which they would be glad to have a gift in exchange, but Otto, interpreting, explains (in loose quotation), "They say they want you to have this as evidence of friendship between your nation and Marshallese." We thank them, through Otto, and tell Otto that we shall send something for the church as a gesture of friendship [illegible]

Held and Hines, before [illegible] get a small supply of item intended for trade with the [illegible] needles, thread, candy, buckles and so on. These we gave to Otto to [illegible] as he saw fit, we being frank about our interest in obtaining shells or other items of interest. The result of this is that Otto [illegible] nasty bats, gathers a belt, [illegible] and a bracelet from the house of his sister, a large conch shell from another house, and three beautiful [illegible] that he promises to clean and give to us -- from his [illegible] of the belt that the minister gave us, comprise our stock. Meanwhile, Otto's sister is much interested in white thread [illegible] she says, the copra boat has only black thread or none at all. Accordingly, we assure her that we will send along some additional [illegible] on our return to Eniwetok. Joe Lazarr also wants thread or other items to give, so an arrangement is made whereby we promise to send to Lazarr the gift for the native church, the thread for Otto's sister, and the thread that Joe himself wants.

We discover, on our return to the station just before noon, that the captain of the plane wants to leave by 1330, if possible, for the trip to Eniwetok. Held, hoping to pick up a [illegible] for Bonham, had asked Lazarr if we could use the jeep for a final trip to a small reef where Otto said cucumbers were plentiful. After lunch we wait for the jeep, which is on an errand, and get the gear and samples ready for transfer to the plane. The [illegible] arrives, Joe returns and Lazarr drives us to reef -- [illegible] hands in vain search for samples. We return, load gear into small boat, [illegible] returning to Eniwetok, say goodby to [illegible] and set out for lagoon to board plane.

The flight to Eniwetok is short -- [illegible] and thirty minutes. Uneventful. At airstrip we find L-20 waiting for us. Load [illegible] gear in truck and get aboard for quick hop to Parry. Gear comes by [illegible] boat and this we pick up (after shower and clean-up) and take to lab. Plankton nets are washed, cards and made, and miscellaneous samples are stored in reefer and elsewhere before chow time.

Miscellaneous:

The Wotho chow was superior. A single cook, working seven days a week, was putting out meals that were invariably good.

The lagoon at Wotho is not large but it was as quiet as any we have seen. The rotenone clouds hung in the water for long periods, the dissipation being even and gradual.

We had promised the natives that they could have any fish we did not need, but no arrangement was made as to who was to collect. Only Otto showed any interest in gathering the surpluses, the other natives apparently being content to let the whole matter drop.

Wotho natives have no boat of any kind. There is no boat builder at the atoll and a whaleboat left at the island five years ago apparently has been permitted to decay without any use whatever. Someone (probably Stephenson) reported that the island council was reported to have about $1,000 in the treasury that might be used for purchasing a boat, but meantime interisland trips apparently are made altogether in the 3 h.p. outboard when it is not needed for official duties.

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Locality ELMER - HENRY Date 19 June 56

Personnel NOH, CH (LRD, RHS, ADW, FGL, PRO aboard Walton) Weather good

Water conditions good

Radiation level(s)

Operations:

See attached notes by Hines

KB

TUE 1, 19 JUNE

Held and Hines on plankton tow (Elmer to red buoy) from 0800 to 0900. Take trolling rod and get 4 pound yellowtail on way out to tow area. Return to lab shortly after 0900 and spend morning processing and packaging and in general work. Held makes arrangements for overnight trip to Henry, setting up helicopter for 1600 and checking at security office about meals and so on. Two times during day Held forced to stop work to brief visitors, the second group consisting of admirals and generals killing twenty minutes between appointments.

Mr Reel AEC Finance Director for Mr. Cook brought down by Ed Butts

After lunch Held notified helicopter takeoff moved forward to 1530. We pick up lunches and report to operations shack at 1500. Smooth ride to Henry landing area at far end of island. We pack gear to camp site, get established there, and then walk down to far end of island for afternoon survey of former road.

Many larger crabs noted on island, but few females and few small crabs of interest. We spend half hour observing crab climbing tree. Held stung on top of head by wasp. We return to camp, erect tent, and collect beach boxes for table and chairs for supper.

ocean

At dusk we walk down ~~lagoon~~ side of island, picking up occasional samples from reef. At one point we find large spread of letters and other characters carved into coral slabs, some of the characters apparently being Japanese. After dark we start down island path again, using coleman lanterns supplemented by electric lantern. The colemans provide a fine spread of light, but there are few crabs of interest although we see some of magnificent size. At the completion of the island survey, we return to camp and stow ourselves for the night in sheets that Held had brought for cover. Used tent. many pup tent. proved highly desirable

Between 0700 and 0830, when the helicopter is due to pick us up, we clear away three piles of coconuts looking first for a female with eggs and then for any young crabs or other items of interest. Held finds the female, but there is little else in the vicinity.

Miscellaneous:

Japanese characters and Marshallese names carved in coral might prove of interest if there was time to investigate.

The island road, which Held says was virtually clear in November, 1955, now is so overgrown as to be almost totally obscured in places. The landing area on the tip of the island also is covered by new vegetation.

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Locality Henry — Elmer Date 20 JUNE 56

Personnel NOH, CH, CLRD, AHS, ADW, FGL, PRO aboard Walton) Weather Good

Water conditions Good

Radiation level(s)

Operations:

see attached note by Hines

WEDNESDA 20 JUNE

The search in the coconut piles producing nothing but the single female with eggs, we load gear, strike camp, and carry all baggage to the landing area. Helicopter arrives promptly at 0830 and we are back at Parry by 0900.

We deposit gear and samples at lab, Held making special container for female coconut crab. We work at lab for balance of morning, Held writing samples and Hines with notes of activities of week.

Before lunch we check for mail and go to commodore's office for word on the arrival of the Walton. In afternoon, Held returns to lab while Hines, who had hit the sack for a few minutes, while Held got a haircut, slept until 1500. Held tunk takes eggs from coconut crab and begins studies of them. Hines continues notes. We return to barracks at 1800, go to chow, and then to show with Bob and Karen.

After movie we talk until midnight with Bob and Karen while Held weaves hat from coconut frond brought back from Henry.

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ocality ELMER Date 21 JUNE 56

ersonnel NOH, LRD, AHS, FGL, ADW, PRO, ~~ED~~ Weather Good

Water conditions Good

adiation level(s)

perations:

See attached notes by Hines

THURSDAY, 21 JUNE

Walton due today. Weld and Riggs cut for plankton tow at 8:30 (Elmer to red buoy) and then proceed to Walton, which is anchored in lagoon.

Gang on Walton already has much of gear disassembled and packed. Since other transportation than Rboat needed; however, arrangements made for U boat at ~~1200~~ 1330. Gear packing finished while crew removes welds from probe tank and winch. We wait aboard Walton until U boat arr ives, having lunch on board and planning to join Walton crew in picnic on Friday.

U boat takes equipment from Walton at 1330. Emerson arranges for copies of overlay of Walton survey to be delivered Friday. With gear and equipment ashore, survey party goes to barracks while fork lifts take gear to lab.

Weld arrives at lab just in time to intercept visit by Admirals Strauss and Handley and other members of their party, to whom he explains lab operations. Clinton Anderson, also a member of the party together with Dr Ogle.

June 22 & July 10 A.H.S. FOR RFP

JUL 16 1956

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Locality Eniwetok Date 22 June 56

Personnel LRD, RHS, JOH, ADW, EGL, PRO, ~~CH~~ Weather Good

Water conditions Good

Radiation level(s)

Operations:

Preparation & counting of Water samples. 1630 to Japtan for picnic with officers & crew of Walton. Returned to barracks about 2000 with Emerson, Thoudyke & Burke of Walton & spent the remainder of the evening conversing.

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JUL 16 1956

Locality Elsitar Date 23 June 56

Personnel LRD, ADW, AHS, FGL, PRO, NOH, ~~CH~~ Weather good

Water conditions good

Radiation level(s)	time	0825	1200	1500	1700	1740	1800	2220
Operations: C/m	#1	44.1	44.2	42.3	43.2	41.1	42.4	40.9
	#2	33.7	34.4	33.3	30.8	32.3	33.1	32.6

0800 AHS, NOH, ~~SH~~ Plankton Tows. Day spent preparing samples, counting, evaluating data by all hands. Asparagopsis collected.

Letter to Dr. Boss from LRD re return of Walton to Eniwetok & sending of plankton & water samples to Dr Parker. Summary sheet of radioactivity ~~in~~ in Walton samples enclosed in letter to Boss.

Samples (9 plankton, 1 water, 1 filter paper) sent to Dr. HM. Parker, Hanford, with covering letter by LRD.

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cality Elmer — Date 24 Jun 56 - Sunday

rsonnel LRD, NOH, FGL, ADW, AHS, PRO, EH — Weather good

Water conditions good

Time 2057

diation level(s) #1 42.0

perations: #2 33.0

AM. Chores & continued sample preparation & counting at lab.

PM - AHS, PRO, LRD, NOH, FH - excursion to Fairview PX

Meeting of entire group on return regarding future plans.

NOH to depart for ZI Thu 24 June

AHS " " " " Sat 30 "

FGL & EH " " " " Thus 5 July

Decided to start 24 hr counting until Walton samples completed.

Following Wotho Plants weighed wet & dried!

1 Breadfruit - 306 gms; 2 segments Keys Pandanus, ripe - 260 gms; Caulerpa urvilliana - 23 gms; Arrowroot tubers, washed - 34 gms; Morinda, 3 fruit - 60 gms; Halimeda - 8 gms, Messerschmidia, terminal leaf clusters w/stems - 73 gms; Cocounts, 2 green, served in mess hall, meat only saved - #1 102 gms #2 57 gms 159 gms.

KB

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JUL 1 0 1956

Locality ELMER Date 25 JUNE 56

Personnel LRD, NOM, ADW, AHS, FEL, PRO, CH. Weather Good

Water conditions Good

Radiation level(s) Operations: C/m

Time	0450	0815	1210	1956
#1	41.6	39.5	39.4	35.9
#2	33.6	27.8	29.5	30.8

Continued preparation & counting of Walton samples & evaluation of data. Collected Asparagopsis & 2 sea cucumbers (H. stra & Actinopygia m.) for KB.

Hines checking out for possible trip home tomorrow.

Took Operational Summary of Melta trip to J-3 with copy to 7.1. Capt. Monsen promised to get copies sent to the Chain of Command and to the Melta.

Seymour & Donaldson had conference with Dumas Cuny and Dr. Ogle 7.1 on program and reports. Attention was called to 7.1 request for program summary within 15 days of last shot.

Reducing Reports - distribution.

1 AEC - DMA
1 Headquarters - ASWP
2 TF - 7.1
1 D division Los Alamos, attn Jim Connolly
5

1 AEC Bird + Ind.
1 " Hanford
1+ A.F.L.

Classification to be Confidential

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Locality ELMER - JANET Date 26 June 56

Personnel LRD, ADW, DHS, NOH, PJO, FJL, CH Weather Good

Water conditions Good

Counter BKg #1 0212-39.7; 0605-40.0; 1213-42.2; 1658-117; MAX at 1730-154
C/m
Radiation level #2 0217-31.8; " -27.4; 1313-29.0; " - 50.7;

Operations:

deep entrance, red buoy.

0800 Plankton Tow A-4 45 minutes at trolling speed. Current large - no tows.

PM Rus collected Asparagopsis before detectable fallout observed.

When radiation levels approached twice bg all samples were sealed against contamination, including plates already prepared.

NOH requested to be available for special flight to ZI which may depart PM of 27 June.

Counting of water samples delayed until background becomes stable again.

Lowman & Hines to Janet by L-20 1300-1600. Observed rats - collected four + plants - tricuspetta, sida, Cenchrus, Lepturus, Fimbristula.

Circled Mike Crater on return.

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JUL 16 1956

Locality Parry --- Date 27 June 56

Personnel Hines, Ludd, Olson, Leonard, Seymour, Rolander & Markham Weather Hazy - clouds

Water conditions moderate.

	1800	2110	2132	2154	2215
Radiation level(s) #1	43	47.1	46.7	45.2	42.7
Operations: #2	31.4	39.9	37.1	36.4	32

Left w/ data sheet Walton survey from LRD to Ross. Hines departed Flower for ZI about 1500. Continued Processing & counting Walton samples & evaluating data.

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JUL 16 1956

Locality ELWHA-ER Date 28 JUNE 56

Personnel LRD, FGL, AHS, PRO, ADW, SH Weather Good

Water conditions Good

0706

Radiation level(s)

Operations: #1 40.1 #2 30.2

Completed counting Walton samples 1312. Seymour & Held made repeated plankton tows in deep passage w/ 2 ½ meter nets (#64 mesh) - total of 10 paired 15 min hauls (20 samples). Continued plotting & evaluating Walton Data. Packing Walton gear.

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Locality Juno — Date June 30, 1956

Personnel Kelly, Lawrence, Olson, Weather Fair

Seymour, Wahrlich, Knudsen Water conditions moderate

Radiation level(s)

Operations:

Continued work on the Malta - Yakutat oceanography and Kiid sorting up the plankton data. Townes - Welander trying to work out some method of using the pork rinds and Nisqually - Knudsen sorting a survey of the data.

Seymour and Kiid took plankton tows in the Lynn Passage 7:15 - 8:30 a.m. Vessel prepared for shifting to G.F.L.

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Locality Yukon — Date July 1, 1956

Personnel Heed, Lawson, Olson Weather Clear

Seymour, Wilson & Dreska Water conditions Turbid

Radiation level(s)

Operations:

Held field day, with aid of NPO personnel cleared out stockpond and moved equipment packed on second main runway this AM. Exhibit was stored in the northeast corner of the room in a net pile. Pack and yard were cleaned up and excess boxes, etc. burned P/U

Continued work on Walton site with good success in getting the final antenna post ready for equipment. Two rock for marking by the technical experts.

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Locality Elsie — Date July 2, 1956

Personnel Neil, Lowman, Olson, Seymour, Wilson, Smallen Weather Moderate - Rain

Water conditions Moderate

Radiation level(s)

Operations:

Continued to work on the Walton data. Wilson working on the white fish. Neil working on crabs. Seymour and Smallen worked the [illegible] in the E.M.B.L. for sponges. None were found. Olson entered a number of small fish in the [illegible] plot. Not much detail in the [illegible] on the fish. Sometimes 6 out large number of small fish. The feeding habit is unbelievable - it is all fish. One out of the food fish disappearance

Col Shiner, from Cornell of the Hanford Works, Richland Wash visited the laboratory. Dr Langston accompanied Col Shiner.

Dr [illegible] [illegible] were made on Seals, Sea Lions, Porpoises, and Baleen plates U.D. Type specimens and Pat Dawson with the assistance of Wright and Scattergood [illegible]

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Locality Clam — Date July 3, 1952
Personnel Bill, Forman, Olson, Seymour, Neander, Knudsen Weather Rain
Water conditions Moderate
Radiation level(s) Background 060
Operations:

Completed work here at Watch Lite and prepared recovery station title at tidal Seymour Depot. Put 2.T with time weight samples, 1 and 2 in "Test Station" today. Left Pony at 2000

Amount of Asterias collected, was killed, most cold, weighed and sent to Ralph via Seymour

Background on #2 counter

0730 - 509 c/m
0835 - 420 "
0850 - 1029
0930 - 723
1010 - 600
1100 - 440
1800 - 235

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Locality Perry + Jan. St. **Date** July 4, 1956

Personnel Ikeda, Inman, Olson **Weather** Cloudy, cool

Wilson & Knudsen **Water conditions** moderate

Radiation level(s) Tides falling slowly 0945 - 123 c/m

Operations:

Picked up boxes at N-4 for counter. Packed the ten Nichols - Chicago in insulation and placed them together with the two pigs in special boxes. All boxes were placed in the in coolant room.

Box of salt water seals was obtained from N-4 To give to the natives on Wells and White Valley Williams wants a live seal skull.

Inman, Ikeda & Knudsen left at 2:00 pm for Janet by Copter. Collected live rats & 2's and mailed for analysis. Copter did not finish up until 7:45 pm. Radiation 300 mr. Oil required to start is Mad-Sep shows.

Arrangements made with N-3 for the official trip to Hawaii. Maj Mark and Sgt. Johnson went to our atoll trips. Special rules must be written for each trip.

Autopsies collected.

1 ♀ rat - 6 embryos 1 ♀ rat 3 full grown embryos saved for chemistry

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OCT 16 1956

Locality Parry I - Kusaie Island Date July 5, 1956
Personnel Hild, Lawman, Olson Weather Cloudy
Wolanski & Donaldson Water conditions Moderate

Radiation level(s)

Operations:

Hild, Lawman + Wolanski left by M boat at 0700 to take a flight to Kusaie at 0800.

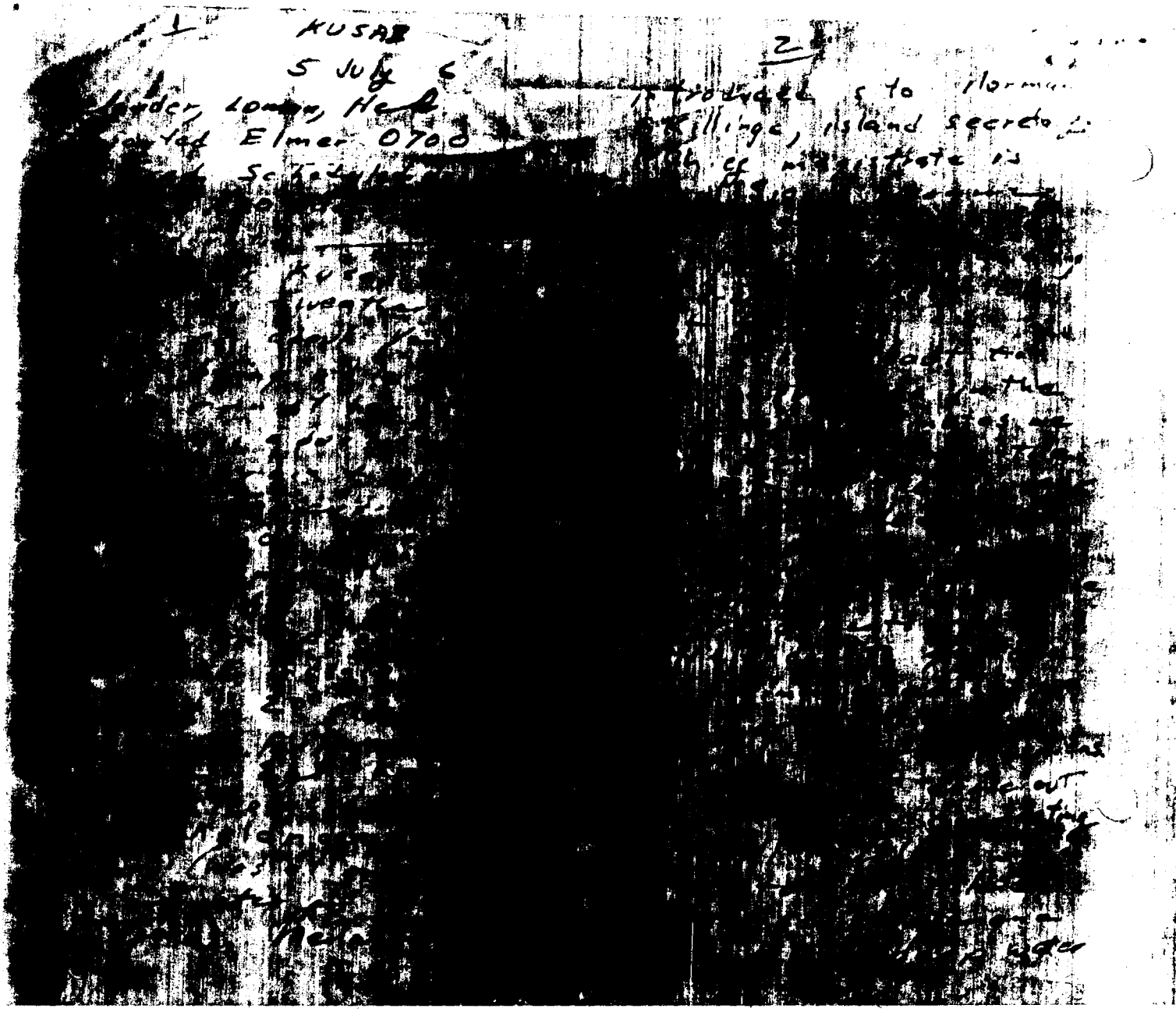
Olson collected Asperagopsis on morning low tide and dried for packing for shipment.

Donaldson and Olson by M boat for plankton collection in the Lelu entrance. Tow made on incoming tide

Lt. Col. Blue D.M.A. came by the Laboratory (EMBL) to discuss the Rongelap fall out and return of the natives. & took the position that Bur of Bio. Med would be able to make a decision after we have completed the resurvey - any other action would be premature. Bob Gresson showed data from Rongerik with additional fall out from the present series showing increased levels from the present series.

Henry Sadowski, 33 Hendrix Street, Brooklyn 7, New York would like to have copies of the Kusaie pictures. #G.L.

99



KU AB
5 JUN 52

5

There were occasional burrowing sea anemones with an expanded diameter of about 6" + with extremely sticky tentacles.

Grapsus was noisily evident in the crevices of the causeway which was built of corralline rock.

Frank took a photo looking from main island to small islands.

After lush pastoring returned to base. Then John Melander had fruit + hermit crabs brought to us. There are also coconut crabs used for food but could not get any. Fruit brought: bananas, breadfruit, papaya, coconut, pineapple, lime, grapefruit (like green). Apple (not anything like our

6

apples - will have to photograph or describe in more detail after cutting open + a large fruit (about size of breadfruit,

The hermit crabs they brought appeared to be coking two very small ones at that. So we went again, and got a couple of large ones. Found many of the usual coconut but did get some large specimens of a smooth clawed land hermit. Crab (Cardisoma) is on the island living on John Melanders leftovers.

7

Melander says timber for dock sawn from old mangrove trees + resistant to rot. Freight rates Ponape - Kusai are 5=/ton

Took off 1615 hrs.

Population, according to Melander, is a "little over 2,000."

8

SA-16 CREW - KUSAI TRIP

Pilot	Capt.	Robt. E Freshwater
Copilot	1st Lt	Ray E Dowell
Nav.	1st Lt	Dallas D. Sawyer
Engr	S/Sgt	Robt. L. Reynolds
R O	S/Sgt	Norman L. Baldwin

+

Maj. Powell

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Locality [illegible] Date 6 - July - 56

Personnel [illegible] Weather [illegible]

[illegible] Water conditions [illegible]

Radiation level(s)

Operations:

Wet wts of samples collected at Kusai 5th July

Turbinaria: 35.46 gms. Sponge 17.00 gms

Halimeda: 43.72 " Breadfruit 261 gms

Sea Cucumber (Body wall) 29.51 " Papay, Green, entire 241 gms

" " (Gut + contents) 32.18 " Orange, entire 330 gms

Soursop 261 gms Mountain Apple 54 gms

Pineapple 214 gms

Bananas, green, peeled (8) 218 gms

Coconut Milk (green) 284 gms

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[illegible] 10 feet. Explored at 95 [illegible] 75 ft. in Transit. With Island bearing at 113° [illegible] light of Sue with [illegible] at 1.35 Island [illegible] is clear of the six fathom depth [illegible] This is [illegible] the [illegible] [illegible] [illegible]

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JUL 16 1956

Locality: Tarawa [illegible]
Date: 6 July (cont)
Personnel: [illegible], [illegible]
Weather: Calm
Water conditions: Smooth

Radiation level(s):

Operations:

The road [illegible] through a number of villages. The [illegible] [illegible] [illegible] the British [illegible] [illegible] [illegible] [illegible] [illegible] social [illegible] of people, the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] ?

[illegible] [illegible] [illegible] and the [illegible] [illegible] the native [illegible] [illegible] [illegible] [illegible] fish, [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] in [illegible] [illegible] many hundreds [illegible] by day and by night. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] catching fish with [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

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Locality [illegible] Date 6 July 1954

Personnel [illegible] Weather [illegible]

Water conditions [illegible]

Radiation level(s)

Operations:

[illegible]

[illegible]

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Locality [illegible] Date [illegible]

Personnel [illegible] Weather [illegible]

[illegible] Water conditions [illegible]

Radiation level(s)

Operations:

[illegible]

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SEATTLE, WASHINGTON

Locality: Parry Island

Date: [illegible]

Personnel: Donaldson, Seymour [illegible] and [illegible]

Weather: [illegible]

Water conditions: [illegible]

Radiation level(s):

Operations:

[illegible] at [illegible] am [illegible] left the [illegible] [illegible] the [illegible] long.

Visited with [illegible] Walters [illegible] [illegible] to Parry [illegible] for a trip to the [illegible].

Art and Dud working with fish collected at [illegible] preparing tissue samples.

Donaldson made an [illegible] of the [illegible] beach of Parry Island to evaluate the death of numbers of [illegible] spiny lobsters.

A total of 188 dead were counted along the beach. Of these 30 were at the north [illegible] end and 158 on the beach at the south [illegible] end. No [illegible] lobsters were found on either side of the [illegible].

[illegible] that [illegible] has killed off the population in the [illegible] [illegible] and flow of effluent [illegible] area [illegible] effect [illegible] of the normal [illegible] population of lobsters. [illegible] for [illegible].

[illegible] brought up [illegible] the first time in the past month.

100 c.c.
7-16-56

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Locality Parry Island — Date July 9, 1956

Personnel Olsen, Wheeler & Donaldson — Weather Showers

Water conditions

Radiation level(s)

Operations:

Geer - please order the collection of plots and photographs "Bikini and nearby atolls: Part I, Geology: Plates 65-73 and charts 1-11 - U.S. F.S. Professional Paper, 260-A" 1954.
Ups early, very spectacular sight,

Plant material collected at Tarawa July 1 - 7, 1956

Coconut milk		Bikman Island	160 c.c.	
"	meat	"	"	39.7 grams wet wt.
Limu	opio	Ataiang	"	17.5 " " "
"	pulp	"	"	50 grams " "
"	scum	"	"	1.4 " " "
Banana	opio	Bitaetoni	"	30 " " "
"	pulp	"	"	36 " " "
Papaya	skin	Atachiro	"	58 " " "
"	pulp	"	"	100 " " "
"	seeds	"	"	4.5 " " "

Material mailed to A.F.L.

1. Envelope ① Lizzie ② Asphyxiation
2. Package - ① Anton tubes 1" x 2" tubes - for F.F.L.
   ② Marks fish samples - fish material + plate cards 50-54
   c. Kwasi fish samples - plate + cards 55-60
   d. Kwasi Crab samples - fish
   e. " Milk plant - material
   f. Joint - rat samples 4-29-56 - 5-11-56
   g. Kwasi - Rat Organs [illegible]

101

Read 7-16-56

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Locality Perry Island Date July 9, 1956 (Cont)

Personnel Weather

Water conditions

Radiation level(s)

Operations:

Livers collected at Kusaie 5 July 1956
(a) Skin of liver 17 grams wet wt.
(b) Gall " 31 " " " } put in oven
(c) Intestine " 1 " " "

Tarawa samples processed for drying
5- Limit crabs dried entire or with legs and abdomen removed and dried.

1- sample Algae- green sea lettuce
1 cucumber H. atra
a. integument
b. gut
c. gonad.
1 cucumber H. atra
(a) integument
(b) gut
(c) gonad
1 Actinopyga - 2 gonads
1 Tun egg
a - shell
b - yolk
c - white
Wheeler processed Tarawa fish for background counting and returned for chemistry oil removed.

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1000
7-16-56

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Locality Puget Sound Date July 10, 1956
Personnel Donaldson, Olson, Welander Weather Showers
Water conditions moderate.

Radiation level(s)

Operations:

Donaldson and Olson collected plankton in the
Kilisut passage at 0630 to 0840 hours.
During the morning a conference was held
on the Sept marine survey with Dr Ivester, Cleaver
& Bonnell. Capt Coleman USN ret-3 Lt Col Donald and
Lt Col Raymond, U.S. marine corps. and L.P.D.
The discussion largely hinged around the date for
starting the survey, the area to be covered, and the
vessel to use. Sept 1 was the recommended starting
date if the test go as now planned it should be
possible to get underway by that time.
The question of the retention of the nutrient
zone after the test program was completed was
discussed. I felt the position that such a decision
was a political one not a problem for fishery.
Fish were mentioned as possible agents in
question. My comment was that the fish do not
respect restricted zones and were merely
migratory, moving from east to west - in and
pass through the zone and into open waters.
Prof Ippen M.I.T. asked me if I'd like to stay
at the E.M.B.L. while grading the test fish
in the food tanks.
Water bottles were hoisted up at the
meeting ship - and water being for the algae
cells was had and a determination of the

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July 11-13 AHS FOL.

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Locality [illegible] Date [illegible]

Personnel [illegible] Weather [illegible]

[illegible] Water conditions [illegible]

Radiation level(s)

Operations:

[illegible]

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ality Lake — Date July 14, 15

sonnel Lowell, Chiggs, Nichols — Weather

Clay, Pratt, Dean — Water conditions

diation level(s)

erations:

Ran a line across lake and buoyed it to the
east of the mouth of the village.
Dean was not out about an hour before
he saw the rise edge of the net pull
of fish was noted. Most of the fish
net for this catch. A few were entangled that
were in the usual collections.
The net ripped from the usual rough
water in the lake & pushed along by the
current. We were told that usually the net
so ripped that can not be used it
and I (or the) caught the main site
left much of the region fish.
The net was then taken to the mouth
stagnic creek & all but a few were spilled.
After the net was moved to the lower lake
for a check, one of the other net was
in the morning & net to visit the Pickles,
Pyramid Village & near the edge of the Cedar
was a shocked catch of fish at the by-products

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Locality [illegible] Date July 13, 1956

Personnel [illegible] Weather [illegible]

[illegible] Water conditions [illegible]

Radiation level(s)

Operations:

[illegible]

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RP
AHS

Locality [illegible] Date [illegible]

Personnel [illegible] Weather [illegible]

Water conditions [illegible]

Radiation level(s)

Operations:

[illegible]

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RR.
AHS.

Locality Perry Island Date July 15, 1956 (Sunday)

Personnel Alton, Windsor, Smedes Weather Calm - bright

Water conditions

Radiation level(s)

Operations:

Cleaned up laboratory put away Tanner equipment and table cloths.

Continued to process Canopus fish, fruits, invertebrates

Sea Cucumber H. atra integument 82 grams wet wt.

" " " " Gut 83 " " "

" " " " Gonad 11 " " "

" " " " Integument 5-4 " " "

" " " " Gut 6.1 " " "

" " " " Gonad 6 " " "

Giant clam Hippopus mantle 19.3 " " "

" " " " muscle 11 " " "

" " " " kidney 4.8 " " "

" " " " Gill 3.1 " " "

" " " " Visceral mass 13.5 " " "

Algae Halimeda 51. " " "

" Turbinaria 5. " " "

2 Crabs - discarded entire - not weighed

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RP
KB.

53

Locality Parry Island Date July 15, 1956

Personnel Knudsen, Olsen, + Weather Showers

W. Sanders Water conditions Calm

Radiation level(s)

Operations:

Ant packed fish for shipment to the lab.

H-N Cam with a fork lift and put the winch in a crate which we left on the porch in the most protected place.

The water sample bottles that had been to the shop for repair were placed in the locker with the ships gear.

Cl Camping equipment was cleaned up and packed in the loft for storage. All items were check in except the electric light that was held out for future use if needed.

The tarps for the probe was cleaned and sealed to await the Supt / survey.

Conference was held on Sept mi survey notes again I tried to emphasis the need for an adequate boat to do the job with a time allowance sufficient to accomplish the mission.

The real problem is to get a ship with a fuel range sufficient to stay out for a time and not have to return to Kwajalein for fuel. The best proposal seemed to be one of a zig-zag course to Guam of about 2500 mile and fuel with a return zig zag course to Eniwetok Clarence Brockhurst, Munson, Coleman all took part.

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Read
Jul 6/23 - 56

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Locality Pony Island Date July 17, 1956

Personnel Donaldson, Olson, & Weimer Weather fair

Water conditions calm.

Radiation level(s)

Operations:

Calm before the storm was rudely upset by a wire from Paul B. Pearson requesting a plankton, fish, water survey along 162° E to outline level of radiation. This to be done at D+4 days. Dr Clausen, Hadish Capt Coleman, Donaldson, wasted most of the day trying to think up all the reasons why such an operation was impossible not feasible, etc, etc, etc. A long wire of explanation of position was sent Dr Pearson saying in general that facilities people & time were not available now. It was also pointed out that this would delay the Rongelap survey to late Sept or Oct. It was pointed out that the plankton collected in the deep entrance was as good or better index of ocean plankton than a few samples made in the open ocean. The impossibility of collecting fish in the sea from any of the navy facilities was also pointed out. I suggested chartering a Japanese vessel to do the job - that was a "popular" comment.

Plankton tows were made in the deep passage at 0925 - 0945 lots of jelly fish in the tows.

Asprocyprus was collected on the outer reef at 1730.

Packed for the Ujelang trip scheduled for tomorrow

Rongelap trip was rescheduled for D+1 and D+2 an C.I.R. 16 will be used and make two flights

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Recd July 20, 1956
AHS
RP
FOR
KB

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Locality Pacific Islands Ujelang Atoll Date July 18, 1956
Personnel Donaldson, Olsen - Weather Calm - showers
Wilander - Water conditions smooth

Radiation level(s)

Operations:

Left Parry at 0800 by "N" boat with jeep load of gear for Fred. Joined at Fred by Dr L. Blake. Left ground at Fred at 0900 by RSR-16 and arrived at Ujelang atoll at about 1000. Plane taxied up to a quay and passengers and crew were carried ashore in small skiff powered by outboard motor.

A ship belonging to Snipes was reported as having drifted over from Calypso and was in the atoll after some months of it being lost and drifted out to continue its voyage.

The camp at Ujelang is operated by 14 Marshallese for Rad-Safe. There are 3 Americans, one Public Health doctor and 3 navy men stationed on the atoll who have the usual field equipment, tents in huts, with generator, evaporator, etc.

Collections were made on or near the main island (Ujelang Island). Fish collection were made on a rising tide on a creek on the lagoon side east of the village. Permission to collect were obtained from the ship. A carton of gums and salt water creek fished carrying the ship that collections were ok. Crabs and my scuba gear with the fish and many fish the [illegible]

Return flight 1500 to 1600 - Radiation [illegible] by 1700 time to put away gear and [illegible]

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Received July 25 1956
AHS
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Locality Parry Island — Date July 19, 1956

Personnel Davidson, Olson + Weidler — Weather Calm - light

Water conditions Smooth

Radiation level(s)

Operations:

Plankton collected 0820 - 0840 at slack tide, large numbers of jelly fish in the collections.

Asperagopsis collected at 0800 from outer reef.

Collections from Upiling were prepared for drying.

Bulk samples

Coconut meat	115 grams wet wt.	
Water (3 coconuts)		
gomed	10.0 " " "	
Integument	114. " " "	
Liquid content	144 " " "	
Pandanus - fruit	923 " " "	
Papaya fruit	328. " " "	
Breadfruit	273 " " "	
"	330 " " "	
"	200 " " "	
Arrowroot (old)	45.6 " " "	
" " (new)	97.0 " " "	
Coconut milk	360 ml.	
" meat	94 grams " "	

Hermit crabs 1 large + 6 small dried entire.

Conforms on D+4 survey with comment of the day with Clam, Albert, Coleman, Debrudem, etc. decided to try and get shipload for canned survey to start about August 8-10 and include a margin to be representative. Clams left for Washington at 1400

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Rec'd July 25 1956
AHS
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Locality Camp Island Date July 24, 25, 26
Personnel Donaldson, Olson, + Nilsson Weather Showers
Water conditions First white caps in water

Radiation level(s)

Operations:

Another conference with Capt Coleman, Col Coleman TU-3 Cdr Bankhardt O.M.a. Dr Albert B.+M. and L.R.D. All the problems and possibilities of a short survey were discussed. Capt Coleman relayed the message Adm Wehrling that the tug requested for the short or combined survey was not available. In fact no ship is immediately available. NTLF 7.3 strongly recommended that data on fallout in and on water be attained from ASWAP programs of NYOO, N.R.D.L. and Swifts. They hope that Dr Clews and Dr Albert will convey the info to D.B.M. I suggested a meeting in Washington between Aug 10 & 15 to review our data now available and discuss additional problems to be developed during the Sept survey.

Sent wire to A.F.L. on return of L.R.D. and A.D.W. and requested Sorensen and Forman rep. to be scheduled for Aug. 1-3.

Shipped samples of algae J193-3195
Plankton 6064-6070 (omitting 6068)
Fish 74-80

119

120
H9

KB

N.C.E
July 27

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Locality Perry Island — Date July 21, 1955

Personnel Donaldson, Olson, Y — Weather Nat. little breeze.

Welander — Water conditions Calm

Radiation level(s)

Operations:

Plankton was collected on a outgoing tide between 0935 and 0955.

Asperagopsis was collected at low tide on the intertidal.

Message 17 (Twx) at 0536

TWX received from Dr Donaldson B.M. with list of items to collect at Ponzelak with order of preference. Twx from 73 re assigning a vessel for 5 Sept and out lining the time and conditions for trip to be arranged by us as soon as fuel situation is completed.

Supplies were obtained at N-4 and pipes were cut by N.T.S. for soil samples.

Background at 0500 314
1600 567
1700 1463
2000 7658
} on counter

1800 - 25 mr on finding 15 mr outside - survey meter
2000 85 mr " " 10 " " "

Levels of background stayed about the same during the night except for drops during showers.

Summary of Project 35 activities past and planned turned in to T.I. (Lt. Col Cross) This is the requested summary.

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Rec'd 7/11/56 Carbon Copy - DHS FOL
Original to Lt Col Cravens
as requested. July 21, 1956.
KB
RP
DS

Subject: Outline of report of Program 35 of T.G. 7.1

To: Commander Task Group 7.1

Objectives were to measure the amount and distribution of radioactive materials in the fauna and flora on the islands and waters of the Pacific Proving Grounds and adjacent areas.

1. Pre test surveys were conducted to determine the level of residual contamination from previous test programs.

2. Marine Survey: During the period of June 11 to 21, 1956 a survey operating on the U.S.S. Walton (D.E. 361) measured the radiation in plankton, water, and fish samples. Fifty three stations in the area between 11° to 14° N and 159° to 166° E were covered during the 3300 mile cruise. A continuous record of the radiation in the surface water was obtained with a probe. Plankton samples from oblique tows to a depth of 200 meters and water samples from the surface, 25, 50, 75, and 100 meters indicated radioactivity at each station. Highest radiation readings in plankton and water samples were from stations north of Bikini Atoll. Radiation decreased in amounts around the edge of the survey area.

3. Algae have been collected on the reefs of Eniwetok and the level of radiation, especially the short lived materials, as I^{131}, determined.

4. Plankton samples from the deep passage at Eniwetok were obtained on a three times a week schedule. Such samples should be useful in evaluating the drift of radioactive material from Bikini.

5. Foods of the native people of Wotho, Tarawa, Kusaie, Ponape and Ujelang were monitored.

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6. Residual radiation in the soil, water, and foods of Rongelap Atoll is being evaluated prior to the return of the native people.

7. Post test surveys will be conducted of biological contamination and the movement of radioactive material around and out of Eniwetok lagoon.

8. Rat populations on Janet will be studied to evaluate numbers of survivors, level of food contamination, and amount and kind of radiation in various tissues of the residual population.

9. Post test survey of Bikini Atoll will be conducted.

10. An oceanic survey will start on September 1,1956 at the eastern edge of the mass of radioactive water and proceed to the western edge of the contaminated water mass. This survey will be similar to the one conducted June 11 to 21, 1956 but extend farther to the west.

Director of Program 35

Lauren R. Donaldson

Redraft - Day 2

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Locality Rongelap Island Date July 22, 1956 (Sunday)
Personnel Donaldson Olson & Nielsen Weather Showers - rain
Water conditions Moderate to high

Radiation level(s) 0700 - 991 R/hr, 0900 - 1475 R/hr, 1100 - 870 R/hr
1500 - 744 R/hr.

Operations:

Eighteen of eighteen - at 0656 (Hrom). Not much of a swell was estimated about 4-5 feet rise and fall.

Dr Albert DBrm came to the laboratory to talk over again the request for a short survey and to show me a copy of a wire he was sending to Denham saying Bob Knapp could collect water samples from TU-3 and after analysis at NYOO send in the data to DBrm. Dr Albert was concerned about the level of fallout on Rongelap.

Met radings at 3' gamma - mlp.
25 mr in the building 218
100 + mr in the vicinity - outside.

Arranged for Rongelap trip with my Geo Marx AN/PDR-T3 Packed collecting equipment ready for a 0600 departure.

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AHS FOL B RF

Locality Pony - Ponglap Islands Date July 23, 1956 (D+1)

Personnel Donaldson, Olson, Wilander, Taft and H. Malloch Weather Rain

Water conditions Rish.

Radiation level(s) 13 mr inside 95 mr outside with survey meter - Counter 5225 at 1815

Operations:

Left Pony at 0600 for Fred in rainstorm departed Fred at 0700 for Ponglap arrived at 0930 and were on the beach by 1000. Left Ponglap 1520 arrived Fred 1725.

Taft and Heffner surveyed the island with a Beckman MX-5 with tube < 28 mg km^2.

Readings were obtained at 1" and 3' shield open & cloud.

Station #1	grassy area in clearing under adult coconut trees	1" 1.5	D+ .4 X
		3' 1.	" .4 "
" #2	Eating house - construction site	1" 3.0	" .5 "
		3' 2.0	" .4 "
" #3	Under pandanus in fallen leaves	1" 4.5	" .7
		3' 3.0	" .5
" #4	Low grassy area near beached well	1" 1.1	" .4
		3' 1.0	" .3
" 5	Under Pisonia trunk	1" 1.3	" .3
		3' 1.1	" .3
" 6	Under Coconuts	1" 4.0	" .4
		3' 1.7	" .3
" 7	High tide line ocean side, occasionally washed.	1" .6	" .2
		3' .4	" .2
" 8	Copra harvest area in clearing under coconut palms	1" 4.0	" .7
		3' 1.1	" .3
" 9	Clearing covered with heavy grass	1" 1.5	" .4
		3' 1.3	" .4

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12

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Locality Parry & Piapalap Date July 23, 1956 (Cont)

Personnel Weather

Water conditions

Radiation level(s)

Operations:

Station #10 Arrow root patch under pandanus and coconut trees — 1" 2.0 R.Y - .5 R; 3' 1.5 " - .3 Y

" #11 Sand at high tide line — 1" .8 " - .3"; 3' .7 " - .2"

" #12 Under Guettarda & dead leaves — 1" 3.0 " - .5"; 3' 1.5 " .4"

" #13 Top of coral ridge in Scaevola thicket — 1" 1.0 " .3"; 3' 1.0 " .3"

" #14 Under pandanus growth & dead leaves — 1" 4.0 " .7"; 3' 1.5 " .4"

" #15 Fine sand under Scaevola — 1" .8 " .3"; 3' .3 " .2"

" #16 Under coconut trees in coconut harvest area — 1" 6.0 " 1.0"; 3' 1.8 " .4

Soil samples were collected in 1 gal pails for shipment to NYOO.

1st sample collected about 100' from lagoon near the village. Samples were collected from 1 square foot at 0-2"; 2-4", 4-6" depths.

2nd sample collected in the native village near Pajaya, pandanus and arrow root sampling station these soil samples also contain 12" x 2" at 0-2", 2-4" and 4-6" depths.

A third set of soil samples were obtained by using a pipe of about 1/2" inside diameter into

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Locality Parry & Praslin Date July 23, 1956 (cont.)

Personnel Weather

Water conditions

Radiation level(s)

Operations:

the ground and upon removing the ends of the pipes were sealed with corks thus retaining the sample in the same position as when ~~taken~~ taken.
These samples are to be separated into 2" depths for drying and packaging. Rications sampled:-
1. Inter tidal area - on the lagoon side
2. Area to high tide line " " "
3. Back of village, about 1/4 the way from the lagoon
4. & last drying area near 2nd well.
5. Midisland clearing among coconut trees.
6. about 50 yds from ocean side of island.

Fish were collected on the coral area on lagoon side in front of the village. Fish were scarce on the coral as the tide receded. No Clams were obtained. Hermit crabs were obtained were obtained in the coconut grove and on the ocean side of the island. No cucumbers were obtained on the lagoon side. ~~one~~ special trip was made back to the ocean side for cucumbers.
Fruits were collected in the residential areas.
Flight back to Eniwetok uneventful arrived back at E.M.B.L. at 6:15 - put the collections away.
Soil samples were put to dry in incubator other samples could not be dried because of high background at E.M.B.L.

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Locality Parry Island, Kabelle Island Date July 24, 1956
Personnel Knudsen, Olson & Wheeler Weather Good
Taft & Calkins P.H.S. Water conditions moderate

Radiation level(s) At 1715 survey units reading 10 mr inside 55 mr net ride, counts at 0605 - 2580

Operations:

Left Parry at 0600 by m boat with two jeeps arrived at Kabelle at 0930 and were in the truck at 1000. Taft and Calkins monitored the island with a Beckman MX-5 with tube of < 28 mg/cm². Stations are indicated by number in chart.

1*	High tide line over sand	1" .7 mr β+γ	.35
		3' .5 "	.3"
2*	Among coconut trees	1" 9.0 "	2.5 "
		3' 5.0 "	1.5 "
3*	Under edge of Scaevola (Not quite vegetation in general. Low ground covered with dense vegetation)	1' 20.0 "	7.5 "
		3' 9.0 "	2.0"
4*	Under Guettarda on talus slope	1" 6.0 "	1.0
		3' 4.0 "	.6
5*	Heavy clearing	1" 8.0 "	4.5
		3' 1.0 "	.5
6*	Under Scaevola middle of dead foliage	1" 16.0 "	6.0
		3" 8.0 "	4.0
7*	Portulaca - grass - heavy clear	1" 2.0 "	.5
		3' 1.6 "	.5
8*	Bare ground in clearing	1" 5.0 "	1.5
		3' 4.0 "	.7
9*	Open place in low Guettarda	1" 10.0 "	2.0
		3' 4.0 "	.6

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Locality Penn. Cove Nichols Date July 24, 1954 (Sat)

Personnel Weather

Water conditions

Radiation level(s)

Operations:

10. Under Peonia in bird netting area 1" 7.2 Bx+γ 1.2 r
3' 4.0 " 2.5"
11. Bare ca 2 40' from high tide 1" 2.0 " .4"
3' .9 " .4"
12. Living in Mesembrianthemum 1" 5.0 " .8"
3' 2.0 " .5"
13. Under Peonia in bird area 1" 10.1 " 2.2"
3' 5.0 " .7"
14. Under Mertensia near bird 1" 6.0 " .8"
3' 4.0 " .6"

Fish were counted in the channel between the island and the mainland. Three and seven edge pea the east area. Three at mouth of pea and part of the island.

1st bird count on second tree east 1 on first 2-3" log first 2-4", and 1 on first 4-6" for 11 pea.

2nd bird count on high tide tree west 1 on first 3"-2", log first 2-4" + 1 on first 4-6" Bird count in high 1½" tree east of tent.

1 Mertensia area in high tide
2 near high tide on the open side
3 below low tide on open side of pea
→ 5 Under trees
6 Under trees in bird netting area
→ 4. Near mid-tide

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Wed July 27 '56

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Locality Penn - Kabella Date July 24, 1956 (Cont)

Personnel Weather

Water conditions

Radiation level(s)

Operations:

10. Under Peronia in bird nesting area 1" 7.0 B+Y 1.0 Y
3' 4.0 " 2.6"

11. Bare sand 40' from high tide 1" 2.0 " .4"
3' .9 " .4"

12. Clearing in Mesembrianthemum 1" 5.0 " .8"
3' 2.0 " .5"

13. Under Peronia in bird area 1" 10.0 " 2.0"
3' 5.0 " .7"

14. Under Pentadii near bird nesting area 1" 6.0 " .8"
3' 4.0 " .6"

Fish were collected in the channel between the inside island and the mainland. Clams and cucumbers edge from the sand area. Crabs and conchs from mid part of the island.

1st soil sample in coconut grove about 1 sq foot 0-2", 1 sq foot 2-4", and 1 sq foot 4-6" for N.Y.D.

2nd soil sample about high tide line on beach near 1 sq foot 0-2", 1 sq foot 2-4" & 1 sq foot 4-6". Soil sample in field 1½' distant due in soil.

1 Mid tide zone on lagoon side
2 Above high tide on the lagoon side
3 Anchor for the lagoon about 6 feet among trees
→ 5 Under coconut trees.
6 Under trees in bird nesting area
→ 4 [illegible]

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Rec'd July 27 '56

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Locality Puget Sound Date July 25, 1956
Personnel Coast & Geodetic Survey Division Weather Hazy
Water conditions moderate

Radiation level(s) 0.035 roentgen units 5 mx inside 4/5 mx outside
Operations: counter background 1763 at 1930.

Decided to go and take to H.M.S. Royalist some Pacific specimens for processing [illegible] Contamination by Bikini and Eniwetok.

Dr. Tamiya had 2.1 D.N.A. visited ship to discuss our program - Two things we have and 2 things we hope it accomplished - the survey [illegible] mackerel

Lt. Cdr. K.N. Walton 7.3 Sci. aid to Adm Willing visited the lab to repair on the ship for the Salt I survey. The ship assigned - DE 699 Marsh a twin diesel ship with a range of 6-7 days at 12-14 knots. Ship is assigned to the 7th Fleet. Cdr. Walton suggested an informal communication to the Commanding officer with the proposed trip and a copy of the Walton collection report. I gave Cdr Walton a list of Golden, Symons, Hall and Hamilton as the persons to contact for support and direction. I also suggested that the 7th Fleet be informed of the visit by [illegible]

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Locality Perry Island Date July 26, 1956 Thursday

Personnel Welton O Laughlin Weather

Water conditions

Radiation level(s)

Operations:

Visited Bob Lawson & still saw a trail from Rogelap Island, 500cc of salt water, 500cc of water, water and 500cc of salt water.

Also saw a trail from Rongelap Island and 500cc of salt water.

Shipped to A.F.L. via air Rongelap plankton samples, distum water, small water and salt water samples.

Lauson left 3 pm with frozen Rongelap samples. Specimens were taken out of Rongelap at five stations & a tank of CO^2 gas run in between packages of samples until refer was full.

Set up trip to Belle & Jan Radsafe reported readings of 330 mr at Belle & 160 mr at Janet. Bob Left reported high counts in water at Belle 200000 c/m/?

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Locality Elmer — Date July 27, 1956
Personnel Olson & Welander — Weather Clear & Some Clouds
Water conditions Calm — no wind

Radiation level(s) ~ 160 mr at Janet ( ) about 250 mr at Belle (160 to 350).

Operations:

Left 0800 by Helicopter for Janet. Stayed on Janet 15 minutes. Saw 3 rats under wooden ties & cardboards. No dead rats. All higher bushes & trees showed heavy damage, otherwise area looked normal — all taller vegetation damaged.

Arrived at Belle about 0900. Tide going out. Picked up 4 Cenobita, 2 sea cucumbers Holothuroidea, Paracentrotus, Echinometra. Fished area inside (lagoon side) of island by laying pairs within 5 - 10' of shore [sketch: island with Point and Point drifted lagoon-wards] to the west. Obtained more than 75 fish of about 25 species.

Returned 1100 arriving 1130 at Elmer.

Processed muscle samples of fish (45 specimens) and the invertebrates & algae.

Land plants at Belle had lost most of their leaves & some height (average height about 3'-4'). Most looked like they would recover. Many full leaves on Scaevola, some sprouts.

Several goatfish, wrasses, (shell fish) alive seen by Paul in pool on island — apparently washed in by waves? Mangroves planted in hole, 4 looked healthy.

Damage to vegetation at Belle negligible compared to after Hector.

No dead birds seen on Belle, Many flying in vicinity.

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EQN

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Locality Elmer — Date July 28, 1954
Personnel Clark & Hubbard — Weather Sun & Clouds
Water conditions Calm
Radiation level(s) 0.2 mr/hr - 25 mr on Cobb lab.

Operations:

Alex Pr. B'lake, 2 others started @ 800 & fished till 130 off Ney Island at north, also dip catches, net & bottle trawl, check of bow but caught only a minnow all morning.

Pelagic removed & preserved. Liver from Bell D. fish — all very fat.

Afternoon: Hand cast Cobb, fish vomer packings.

Packaged tissues from Norpac & BCC.
Plankton tow taken in deep entrance 1110

UNIV. [illegible]

135

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Locality Elmer — Date July 29, 1956 Sunday

Personnel Olson Welander — Weather Sunny

Water conditions Calm

Radiation level(s) .15 mr/hr inside .18 mr/hr outside 0830 1023 c/m

Operations:

Art brought bait to deep water pier for fishermen. End of day only catch was one snapper.

Packed crate for shipment home.

Packaged samples from oven.

Rearranged AFL locker in more orderly manner & stored more equipment inside like plastic bags, log books, plankton gear

@ 1500 took Bob Swanson & Hank Sadowski both NYO down to dynamite coral hole south of CMBL for aqua lunging. Out of three tanks taken down only one worked satisfactorily.

Art purchased cough syrup for ZI today.

KB

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Locality Elmer--- Date 7-30-56

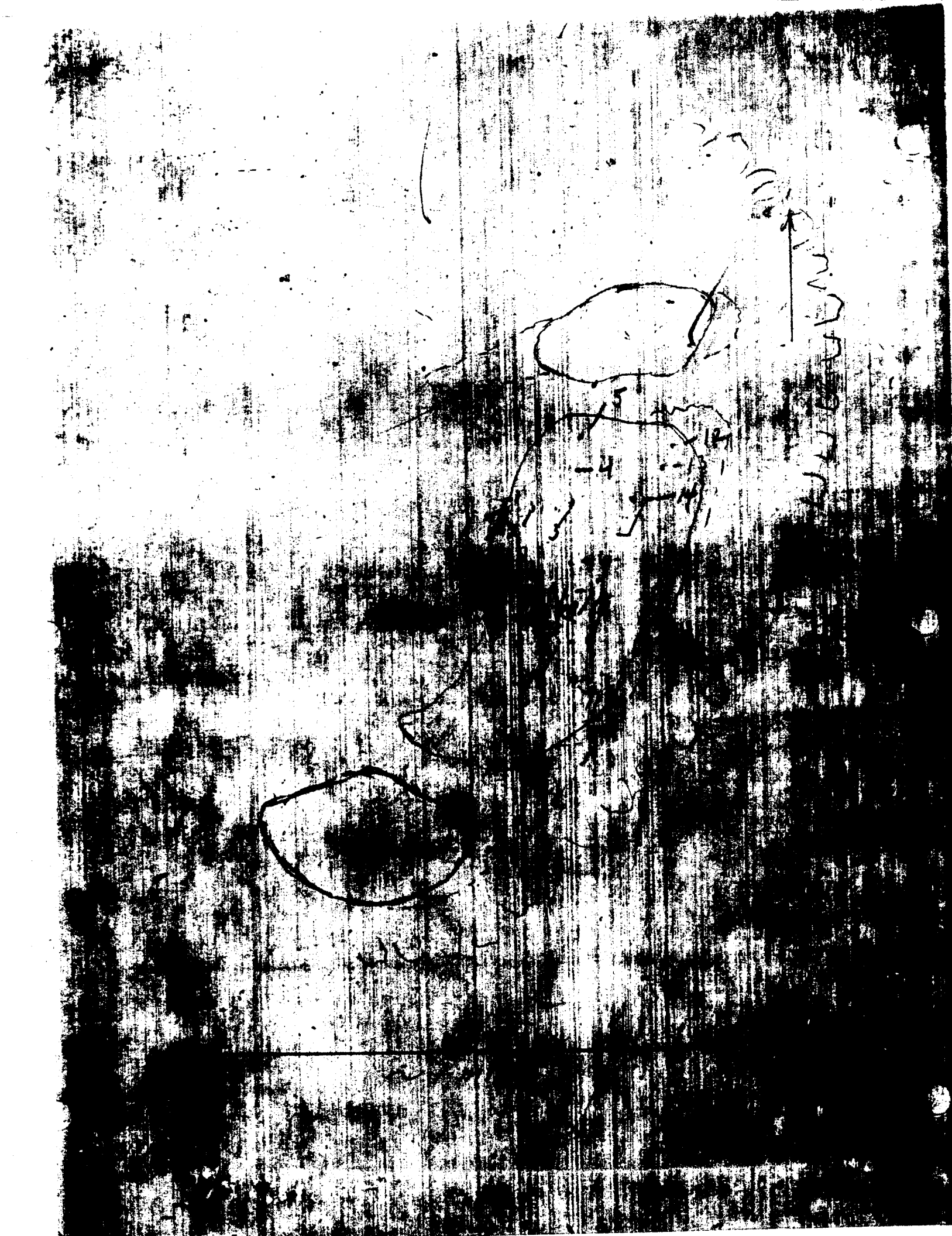
Personnel Olson Welander Weather Clear & Overcast slight Rain

Water conditions Average

Radiation level(s) 966 c/m background. 0.7 mr/hr inside 10-15 mr/hr outside.

Operations:

Check out clog for ZI.
Packaging final samples for shipment home
Delivering crate to J-4 for shipment home.
Straightening up lab & equipment
Contacted refrig regarding deep freeze on porch defrost.
Air conditioning unit gave up ghost. Will require replacement unit.
Returned blasting cap detonator to Hank Burgess, Safety Engineer.
Placed Robot 35 mm camera & shotgun & shell with Security office.
Bulk 100' ft roll 35 mm black & white Tri X left in storage with FU-8. Have 4 rolls Kodachrome with FU-8 for processing




Ronge

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P.P.G. ac DS PRD KB AHS

Locality ELMER- Date 9-17-56

Personnel Palumbo Weather sticky

Water conditions

Radiation level(s) Big counting room - approx 2 4c/m

Operations:

Arrived Parry Island 1100 after being delayed at Hickam 17 hrs. also slight delay at Kwajalein Atoll. Prepared for Deep entrance plankton tow (tomorrow) - Set up rate meter and ran plateau w/ Ra DT E std. set to count at 1350 V. Marsh delayed and is expected 9-20-56.

Lab has been completely revamped and is in fine shape.

NB

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Locality Elmer - deep channel Date 9-18-56

Personnel Palumbo Weather warm w/Rain squalls

Water conditions

Radiation level(s) Bgd Lab - 20-24 c/m

Operations:

0830 Mboat w/Dr Blake to deep channel bay for plankton tow - 30 Minutes - ½ Mile Nets (2) - good haul - fished also until 1100 - Caught in Rex - barge area 1 bonita, 1 Apogon vireseus, 1 jack, and 1 mackerel which got away after landing it - Froze 3 specimens and will take kinks to monitor here. Red Safe monitored muscle from 99th time Caught Sunday a 73, 58, 8, 0 d/m ± ? - Lt. Morgan did this counting for them of Indian Chicago agency.

Processed plankton and water samples during the PM. Preserved plankton "extra" + small "scad" - (re Heath) caught in plankton tow.

Prepared for tomorrows trip to Belle. Patented Lucite for efficiency against K-40 std. To obtain d/m from C/M yields multiply by 2.96 or 3

Water samples from departure bay - particulate fraction = 120 d/m - MF-880 ml pH 5055

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Locality ELMER -- Belle Date 9-19-56

Personnel Palumbo Weather 44° at 3 PM on Beach

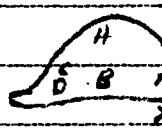
Water conditions

Radiation level(s) [illegible]

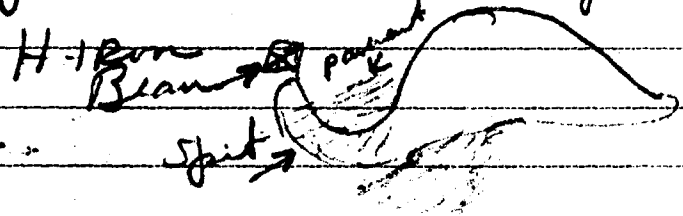
Operations:

C 60 Expedition H-14 Schlanks and Curry
of Red Sea area mapped.

From air Belle looked to be in pretty poor shape - Vegetation bent towards Alice, lots of brown foliage, bare branches and bare patches.

Landed at 

X and walked around area A and made observations of flagged plants, collected a composite soil sample and composite leaf samples of Mesembrianthemum - moved to area H and did likewise. Collected algae in area F, and F-2; most coral heads covered w/ a fuzz of Spyridia or Rhizodonium. Coral colonies also covered and saw only a few colonies that "looked alive". Walked to area C and D via "Empty" Terminal Ants hole, collecting more soil and leaf samples. Stakes in area were either broken off at the ground or blown over and some were blackened. Plants # 1211 gone and # 7209 not discernable since stake blown about 3 Mangroves in hole doing fine. Other is poor. Big Sand spit near Alice changed markedly -



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(P.2)

Locality _____ Date 7-19-56

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

Algae covered area E-1 similar to last observation. Prominent algae were Padina, Enteromorpha, Spyridia and Rhizoclonium. Saw only one clump of Halimeda. Collected samples for plating.

Saw no Tridacna, sea cucumbers, spider conchs, nor hermit crabs in areas E-1, F-1, and F-2. None seen by other two people. I had asked them to look for them before they started out. Schlack and Carey took meter readings across both transects w/ AN/PDR/39 (old TIB w/ modifications) (Fm-Hz)

	3 ft	1"
lowest	38	44 milli
highest	46	60
Ave	40	40
area D	44	60

General condition of plants is poor, but new growth is taking over - leaves to 3" long on new shoots - old leaves holey and dead esp. on Scaevola plants. No flowers seen except on 2 Messerschmidia plants. Tallest plants w/ leaves at 6 ft. but sparse. Pm worked up plants w/ homogenizer - Hab. 87,000 d/m/gm; Scaev. leaves 2400 d/m/g -

N.B. Ebna plants non-existent - looks like a concrete slab - another plants vegetation gone. Most plants mostly burned or brown but Ipomoea looks ok from the air -

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Locality ELMER Date 9-20-56

Personnel Palumbo - Seymour, Hall, Lowman, JR Andelson Weather Fair

Water conditions

Radiation level(s) Bgd 30 c/m in Counting room

Operations:

USS Marsh arrived at 0800. Palumbo met ship at deepwater pier and all hands "turned to" offloading equipment - All gear off by noon. PM spent in sorting & packaging or crating equipment for storage at the EMBL. Items were cataloged and lists will be completed tomorrow. Winch will be sandblasted and repainted. Starting switch needs attention.

Dr. Wolf of DBM here for a few days. Talked with Al re Marsh results.

Frank repaired register on Scale #142 and put all probe equipment in one box - for shipping to AFL if occasion arises.

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Locality ELMER Date 9-21-56

Personnel Seymour, Held, Lowman, J. Donaldson, Palumbo Weather Fair, rain showers

Water conditions

Radiation level(s) Bgd .30c/m

Operations:

AM - Continued storage readying of shipboard material. List completed - in detail -
Session to discuss extra atoll and inter-atoll collections. Frank & Ralph will go to Bikini 9-22-56 (Sat) and stay until Monday afternoon 9-24-56 and try to collect at Nan, Bikini Id, and Fox - Held & Donaldson will finish Belle collections and look at Edna Saturday & work up those collections and the Jemo collections on Sunday, Monday - All hands will work up Bikini Collections Tues - and Conape is set for 9-26 & 27-56
Caucus held to discuss summary of "Marsh" trip -
Packed for tomorrows trips. Frank & Ralph look for sea anemones at South Beach - no luck.
Back in evening to complete details & ends
All leaves Sat. early AM - he hopes -

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Locality Belle, Edna, Bikini Id Date 9-22-56
Personnel J Donaldson, Held Weather Cold & rainy at Bikini
Lowman, Palumbo Water conditions

Radiation level(s)

Operations:

To Belle & Edna w/ Curry & Schlacks. Collected fish & clams, corals, hermit crabs at Belle. Collected fish at Edna. Corals in F-area dead or dying. Deep hole & adjacent reef covered w/ green filamentous algae (Rhizoclonium?).
2PtFGL To Nan, Bikini via gooney bird (A-3) at 0810. arrived at 0955. Via Mboat and Dukw to Bikini Id for collections after making paired plankton tows - 30 min. Collected marine specimens, fish, algae on western tip, also sandy end various land plants & soil samples in central part of island. Most tall coconut palms have had tops knocked off from ~~the~~ blast, but a few have started to grow again. Found many hermit crabs, mainly, pandanus, and a few coconuts - The vegetation in part of island is ~~very~~ lush, many coconut trees, all over the island & other growth optimal appearance.

Survey Meter Readings - MX-5	1"	3'
	ave 3 mr	3 mr
	B	Bv
	Max 6	5

Saw no invertebrates other than collected hermit crabs and Heliopora. Soil profile tables, aerial photo taken. Back to Nan at plankton station. Returned 4:30 pm. Night fishing off pier collected barracuda, also caught bait 14

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Locality Belle - Fox (Bikini) Date 9-23-56
Personnel Lorimer - Palumbo Weather Warm
Holt - J. Davidson Water conditions

Radiation level(s) Fox above 10 m - 1 r/hr - 5 - Blakeman Rad Safe
Operations: reported 30-90 are as high as 500 m/hr 1 week ago
at Belle Collection of Grain was processed -

at Bikini - to Fox where Plankton tows were made
off Fox (20 min) and in Tern Canton (50 min). Fox is denuded
of topsoil, but found Messerschmidia at East end
of island about 3' high maximum and Scaevola
up to 2 ft tall - found 1 patch of Lepturus growing
vigorously behind a bunker. first collection made
off center island lagoon - where algae also were
collected. No rats seen either in lagoon or on
ocean beach. Saw 1 small shark in seaward
tide flats, but missed him (quick pick). Halimeda,
Sphaera, and Padina predominant algae on lagoon
beach pavement and coral heads. Water in lagoon
looked milky. Took 3 gallon jugs full of water off Fox -
to examine plankton vs. organisms in activity. Islands west
of Bikini denuded of topsoil - now are merely
sand spits w/ occasional bunker or shrub here
sticking up out of the sand.

Plankton tows off Nan - deep entrance - in at
5:40 pm. Cleaned up, shoot the coconut crabbing
w/ Hank Romisch, Gilbraith (medic) and Dr. Medved. Got
2 small crabs - also picked up hermit crabs and
ghost crabs on the beach - ocean side beyond
Sta. 70

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Locality Bikini - Bikini (Nan) Date 9-24-56
Personnel Lowman - Columbus Weather fair - rain
Held - J. Donaldson Water conditions

Radiation level(s) Nan - 0.1-0.3 mr/hr in test area

Operations:
At EMBL - Processing of Belle and Edna Collections.
At Nan Rained in Lagoon N.W. Station 70 and south of pier. Rough seas - poor catch. Collected 1 Nan, sponge + Poicillopora. To Oceanside for another passage - no fish caught. Collected soft sea cucumbers, coral and sea urchins. Rained off and on. To northern group for soft samples, Coconuts, Scaevola, and Pandanus fruits.
Take off from Nan at about 1:15pm. arrived Bred at 2:25pm; Elmer 3:00pm. Stored gear and samples, finished odds + ends of Belle-Edna and called it quits. Palumbo + Lowman slightly sick from box trip, especially F62's meat and legs.

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Locality Elmer — Date 9-25-56

Personnel Lowman, Heid — Weather warm

Donaldson, Columbo — Water conditions fair

Radiation level(s)

Operations:

Processed foreign fishing collections -

Bulk samples - net wt -

How Id: Arrowroot coma-scrubbed — 2675 gms

Papaya skin 2270

Seeds 1495

Meat 12,062

[redacted]

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Locality Elmer and Ponape Date Sept 26 1956
Personnel Palumbo Donaldson Held Weather Warm - Fair
Lowman Water conditions Smooth

Radiation level(s)

Operations:

Depperted 0400 from Fred for Ponape by Albatross.
Arrived Ponape 1100 In PM went to the outer reef
and poisoned a coral head inside of reef. Good collection
of fish, algae - also a sponge. Worked by 3 sharks during
part of collection.

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Locality Ponape - Elmer Date Sept 27 1956

Personnel Palumbo Donaldson Held and Lowman Weather Warm-fair

Water conditions Smooth

Radiation level(s)

Operations:

Collected coconuts, ironwoods, ferns, elephant ear, reinwardtia and Calladiums. Picked up runs from fruzer and some coconut crabs. Shopped in the stores and visited the agricultural experiment station. Poisoned for fish in the river above the dam and got only one eel and Gambusia. Got some bananas for eating.

Left by boat for the plane at about 1330 and arrived at Elmer at about 1835. Ate supper and stowed gear away.

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Locality [redacted], Elmer — Date Sept 28 1956

Personnel Palumbo, Donaldson, Held, Lowman — Weather Fair

Water conditions Smooth

Radiation level(s)

Operations:

Processed Bikini and Pinepa samples. Ed & Jack went to Henry by H2e to collect coconut crabs, soil, sea cucumber, and plants.

Ed & Lowman went out by Generator intake and collected some 2 coconuts for Dick Wood, U of W.

Ed and Jack made preparations for departing to 21° until 1:00 AM Sept 29.

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Locality Elmer Date Sept 29 1956

Personnel Palumbo, ~~Dorothy~~ Lowman Weather Fair

Water conditions Smooth

Radiation level(s)

Operations:

Ed & Jack departed 0430.

Ralph & Fox went by H-19 to Jewel to observe & collect rats, plants, and soil, at 0900.

Most of the large Messerschmidtia and Scaevola bushes have been uprooted and torn up. What remains however is putting on good growth and is green. Almost all of the Ipomea vines are dead and the area formerly covered by this species is being taken over by Trumfetta and somewhat by sandburrs. Many of the sandburr plants are dead with the result that the old rat colony area is sparsely covered by this species and the rats appear to have moved out of the site to a new area between the bunkers and the Mike-end of the island. Sand burrs are growing profusely in this area and there is plenty of old lumber under which the rats can make openings to their nests. Only saw two rats - caught one. There are plenty of signs of rats in the area, however, although I doubt if there are as many as there were a year ago.