Log

Eniwetok Lab

Vol. VII

Oct. 29, 1954 to

NOV. 29, 1954

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APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date Oct. 29, 1954, Fri.

Personnel Palumbo & Bonham Weather Some Sun, mostly rain, cool 76-88

Water conditions Moderate

Radiation level(s) 21/m for 1 hr.

Operations: Prepared most (except head, tail, fins) of shark from Ck. of 10-27-54, specimen #1273, for NYOO & UW chem. analysis. Halstead's group used a convenient method of packaging large 50-pound samples of fish for freezing; from a roll ~ 100' of plastic tubing ~ 20" wide (40" diameter), cut an appropriate length for the sample to be packaged, tie off one end, fill like a bag, & tie other end; label. It is a fairly rugged bur. He says Words carries the tubing; reasonable. Filled out yesterd shark sample cards. Conferred w/ Bob Taylor on his compilati of Appl. Fish Lab's Eniwetok counts of edible fish muscle for a le he is composing to Paul Spain. Ralph dissembled and cleaned an aqualung regulator. After lunch, considered chances of rela tively calm weather for plankton trip next week; tomorrow's pr diction, a normal 60°, 12 knots w/showers, but since Blake can't go t we'll wait 'til next week. Reassembed and adjusted "Ralph's regulator so that it "breathed" easily. Dissembled, cleaned, an left drying overnight, a second regulator, #6.

Vol Counts on 1st shelf of dried tissues of convict surgeon rotenoned 10-22-54 on Edna; 10-min

~ 1/3 g. skin = ~~103~~ 83/min ~ 3/4 g. liver = 571/min

~ 1 1/2 g. ~~muscle~~ = 83/min ~ 1 g. gut = 3881/min

~ 1/3 g. bone = 151/min

Shark muscle from Edna 10-27-54 similarly counted, (1-2g.): 199/mi

Bikini coconut (10-13-54) counted 10-29-54. 1gm: 93c/m; 34c/m

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Locality Elmer- Date October 30, [illegible]

Personnel Bonham, Palmbo Weather Heavy overcast, light [illegible] cool, wind 60°, 12 [illegible]

Water conditions

Radiation level(s) .22/hr A-1 hr.

Operations Packed samples & cards for Smithy to mail:

Fish: 14661 - 14715 Sand & water: 9872 - 9885

Rats: 13229 - 13249 Bikini soil, not numbered

Inverts: 11727 - 11802 Plants: 10503 - 10559

Sgt. Prunier phoned that they have sharks, barracuda & [illegible] Passage for us, and will probably get more tomorrow. S[illegible] them up Monday. Geo. Bernier brought today's work: 38 4x5 prints, 18 negs; 2 prints of each neg & 2 prints from [illegible] of crater; 18 neg's include 6 of fish specimens LRD-D-00-[illegible] and LRD-D-00469-16, and 12 aerial shots on 4x5 film pack LRD[illegible] (which we will repay when ours mailed 10-17-54 arrives) of [illegible] taken by Gen: ao 10-28-54. In pm. Ralph worked over [illegible] #3, got socket wrench from tool crib, & guage loan from [illegible] KB. labeled photos, and examined fish literature. Note on card[illegible] for grouper specimen #1114, sci. name is Plectropomus leopardus as determ. from photograph, LRD-D-00-467-12. Total aqualung regulator [illegible] lon down, cleaned (15% nitric acid), adjusted, and [illegible] assembled. 4 [illegible] tested. No broken parts found in regulators. One of [illegible] REC tank valves had stem snapped off & [illegible] not released to user. Kelly loaned to tool solder brush [illegible] piece on - neck. Rcvd copy of shipping [illegible] (papers of barrel of fish (MRI's) and box sent to Lab on [illegible] which left 0.J 28th.

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Locality Elmer - Date 31 Oct
Personnel Benham - Parker Weather Rainy, [illegible]
Water conditions

Radiation level(s) Bg. 1 hr 23c/m

Operations: Tragedy during recreational swimming to Minami, 42, w/ [illegible]
AM at Lab re: King on aqualung/tank [illegible]
broken some time ago. Cleaned up [illegible]
rods loaned to us by Lyle Quasarsky - [illegible]
Kelly's stream cloth technique & Ralph's [illegible]
wash made them look like new.
No luck soldering wing on screwdriver pin in broken [illegible]
Gerry Spitler brought fish incl. large Plectroenus leopardus [illegible]
the fins of a high-finned black surgeon w/ yellow diagonal bars, and [illegible]
in the erected position. When we arrived at Miramar to [illegible] the aq
lungs (Bob Taylor being introduced to them) we were summoned [illegible]
pier by 3 Hawaiian boys who wanted help w/ a fourth who [illegible]
received a shock climbing out of the water on the pier when
grasped an electric conduit pipe, w/ his feet still in the water. They
got him to the sandy beach through the water and started artific
respiration while Ralph drove for the doctor. The poor fellow was
unconscious, but gasped slightly @ 1-2 min intervals. Dr. Albert &
2 assistants arrived and attached their artificial respiration machi
injected his heart, and after a few minutes took him to the hosp
He never came out of it and was pronounced dead about 5 pm.
The aqualungs worked, but it was not much fun in view of the accide
Mailed logs of Oct 27-30. Paul & Ed arrived for a 7:30 supper
@ Parry after which we saw them, a sight for sore eyes!
Gabbed until 11 pm.

[illegible]
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Locality Elmer & Fred Date 11-1-54 Mon.
Personnel Olsen, Heald, Palumbo, Bonham Weather Sunny
Water conditions 15 knot winds
Radiation level(s)

Operations: Spent morning over Frank's aerial mosaic discussing conditions from Belle to crater & inner to outer reef. Decided iron stakes should be inserted at a few stations on outer, middle & near shore reef areas where detailed observations and photos could be made as has already been done at Belle Fl, and that general observations necessarily of a subjective nature should be continued over a large area of reef. After lunch Paul & KB took truck @ 1300 to Fred and picked up fish from Sgt. Edmonson. Collected 25 Canobita under old leaking pallet above HW Bet. tab & spect range. Ground holes in apex of pockets of sand so that crabs can be pushed out at will. Set up in 6 lots on water table.

Fish: 3 female Carcharhinus melanopterus, 34", 50"; 24", 50"; 22", 46". Chanos tol, 2 bonita.

Discussed decay counts and all counting procedures w/ Paul, checked all records pertaining to same, changed some dockings esp today and will count others monthly and the remainder bimonthly. Filing system of safe reviewed

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Locality Elmer & Belle, Channel Id. Date 11-2-54 Tide
Personnel Held, Olson, Palumbo, & Bonham. Weather Rain & sun
Water conditions Rough, wind 60 kt.

Radiation level(s) Bg 2 c/m 1 hr Coconut

Operations: Left Elmer by 'copter 0820, counted sharks & rays circled outer reef of Belle for observation; landed 0843. Helpert & Paul examined & photographed plants; K.B. collected invertebrates & algae in F area. Rotenoned fish, E. of Area F, current [illegible]. Ed found dead fish around hook 45 far as pavement and [illegible] side. Used 2 bags rotenone, producing large kill: 10-lbs of mullet to 1 foot, goatfish, 2-pound grouper, reef halfbeaks to 1' (complete one bag old, 15 on new 7pm) 2 cornet fish 2-ft, convict surgeons, Caranx to 18", butterflies, soldier, blenny, etc. Ed collected clams & snails; Ralph & Paul [illegible] algae; planted 6 mangroves at W end of water [illegible] the water. Ed counted 8 Cenobite (2 of 3 more than 8 remain) remaining under bush [illegible] Pandanus stump, after removing 3 for sample. K.B. photo'd [illegible] heads F 192 on Robert 18 - 42. Left Belle 1400; arr [illegible] Id. (Jeiritu) 1420; Ed & Ralph collected 31 Cenobite. [illegible] of Major McQuown (pronounced, McCune) succeeding Capt. [illegible] as helicopter pilot. Left 1441 - arr. Elmer 1444. Worked [illegible] goatfish. Ed stamped fish cards. Guard questioned [illegible] sides of plants, OVO, out of safe, but seemed satisfied [illegible] Burgess got statements from Ralph & KB re time and circumstances of Sunday's fatal accident; short Rs. Evening [illegible] Land plants collected today. Some ICB fish also. [illegible] Water & soil samples, packed box for Sh. Pk. [illegible] Ed worked on hermit crabs ICB on N Ya'd [illegible] samples. Bags weighed. Brought daily schedule & [illegible] up to date. Prepared for tomorrow's trip to the [illegible] Islands. Saw tomato plant - 12" tall. mold & [illegible] Plant #48 moved on to next [illegible] soil samples to Corvallis

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Locality Elmer, Clara, Edna. Date 3 Nov. 1954, Wed

Personnel Olson, Held, Pakumbo, & Bonham Weather 75-87. Sun 'n it [illegible]

Water conditions Moderate wind

Radiation level(s)

Operations: Postponed flight from 8 to 9am; to order & get lunches; [illegible] reserved passage for Ralph & KB on Fri 5th flight from Eniwetok to Hickam. TWX'd Pan Am for reservations on Tourist (Rainbow) Flight 830 leaving Honolulu Fri. 5th 0900, arr. Seattle 2215. TWX to UW Lab informing of these intentions. 'Copter left Elmer 0910; arr. Clara 0938. Removed [illegible] plants, inflated rubber boat; kicked out toward reef, stopping [illegible] to view sandy bottom w/some coral heads, mostly dead, a few cucumbers (Holothuria) and more described later. Stopped again 3/4 way out; circular area of ten color Prob Caryophyllinae in open end of dead coral tube stalk 1"x8" growing on side of large dead coral head. Anchored near inner edge of rubble area of channel between Daisy & Edna: the usual profusion of sea urchins, mostly poison spine. Paul located a few small <1" Tridacna in [illegible] rocks up to 9" diameter. Within 6" of 2 of these and ~ 100 yards from the surf beyond the rubble, inserted a 1"x4' iron stake [illegible] reef before it hit impenetrable beach pavement and sledge was inadequate. Leaned 2 rocks against it, but it may not survive heavy seas. [illegible] Lunch. Headed for crater; stopped at large coral head in 6' [illegible] found bright yellow tunicate, damaged in removing. Circled [illegible] to E. shore Edna. Landed; examined land plants and algae. A few [illegible] Deflated boat. Then came the rains - and wind! Took refuge in [illegible] this order: K.B, R.R.O, E.R.H, & R.F.P. Paul acquired a rosy hue - not [illegible] discussed feasibility of capturing convict surgeons for biological [illegible] should be easy w/ 25' bag seine to get fragments of schools. Left Edna 1525, Elmer 1546. Cleaned gear, labeled Sunday's fishing [illegible] refer. Blake brought his catch from cable boat trolling: 3 bonita, small bill lip shark (Janet) & 2 pigfish. Labeled these, [illegible]

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Locality _____ Date 3 Nov. 1954, (cont'd)

Personnel _____ Weather _____

_____ Water conditions _____

Reimbursed Blake out of petty cash for his reel (Chuck [illegible] lure) lost while fishing for us on 10-31-54. After [illegible]

Operations: Ralph & Ed repaired aqualung regulator #1.

low tide [illegible] within site of Edna continued many small [illegible] see fish well enough to identify, very few. Eel will be sampled with [illegible] seine. Between stake of beach rock on lagoon side of Edna [illegible] school of small (~3") convict surgeon. Able to wade into school, which should make capturing by throw net very easy. At first opportunity [illegible] obtain adequate sample of live fish, and transport to Edna [illegible] biological half life study. While circling edge of crater saw a small school of Sabotis.

CHARA: General appearance is from [illegible] to more numerous at fresh plants toward [illegible] Extreme W end is almost barren shifting sand. There are small ghost crab holes scattered all over the island. There are streaks of dead fish & other decaying [illegible] to these holes; this may play an important [illegible] in fertilization of the islands.

see next Page

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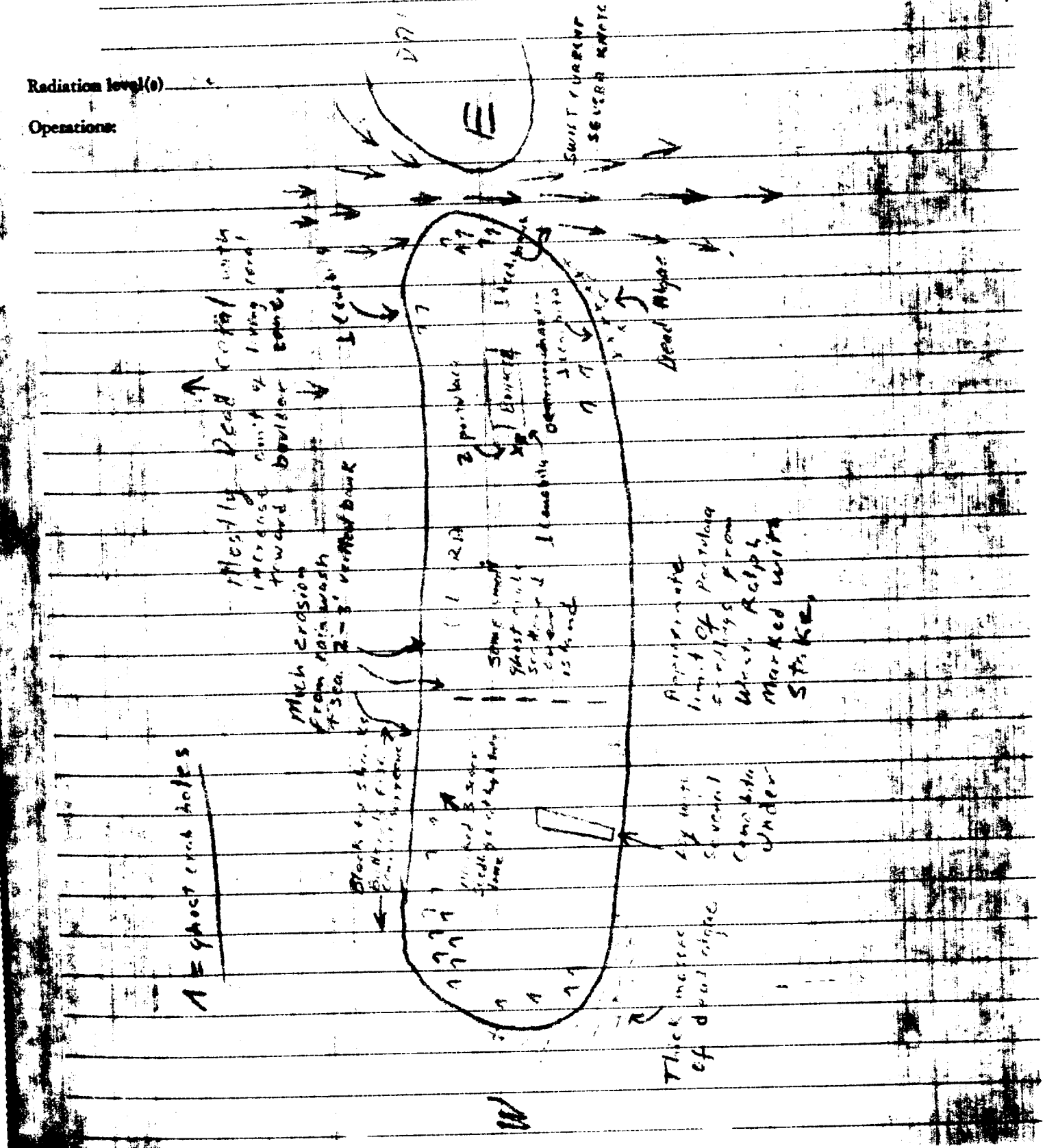
Locality _____ Date 3 Nov Cont.

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:



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Locality Elmer - Date 4 November, 1954 Thurs.

Personnel Held, Palumbo, Benham, Olsen Weather 78 - 90° F, intermittently cloudy

Water conditions Good

Radiation level(s)

Operations: Observing how many cards remaining allotted To each group of samples. Fish cards to 14999, now at 14280 with many to do; Inverts cards to 12000, now at 11200, with samples to do; Plants 11,000, now at 10616; Rats & Birds To 14,000, now at 13250, with samples To do; Salt & Water To 10,000, now at 9892; Plankton to 2300, now at 2273. We desire specific listing on where do we go from here? Ernie Wyncoop & a Mr Larson (HoN) dropped in To Take AEC Aqua Lungs which have been kept here. They plan on storing their lungs so they know where they are. We have six tanks & six regulators here A.F.L. now. Two of the Tanks need minor repair all regulators are working. A directive put out by HoN yesterday forbids HoN men To aqualung. HoN are awaiting confirmation of their insurance. Ernie asked us Today To restrict our activity in that direction; and if it was necessary, have two men together in lungs & one man in boat. Ernie asked Ralph To Talk To Doc about a policy for us here. Ed & Paul expect to have very little use for lungs any way. Mr Bascomb, HoN personnel assigned code names To the two walkie talkie's we have. We are assigned "Butter 1 & 2." That is in case we would use both in our field work. On test, an attempt was made to contact "Drastic #1" (Alaska Operations) by walkie talkie from Belle without success. Yesterday we contacted "Drastic #1" from EMBL loud & clear, but when we attempted to call from rubber boat on outside of Clara we had no luck. We heard another "Drastic station" calling Drastic #1, we should have the relay through them but we didn't. We will try again. Ralph & Kelly are busy checking out from comp Today, they

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(2)

Locality Elmer — Date 4 Nov.

Personnel — Weather

Water conditions

Radiation level(s)

Operations: To depart Elmer about 1330. Ed + I hate to leave

men like them.

laid on plankton trays for Sat bloom

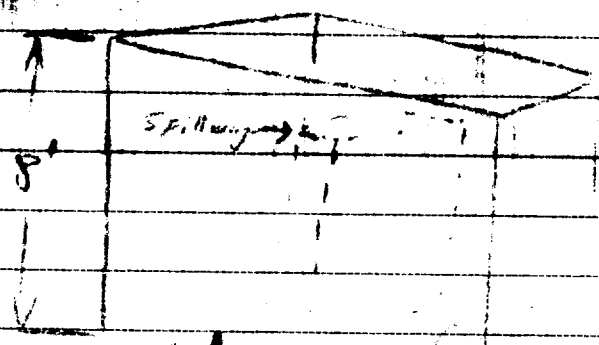
looked over salt water intake system

with Bob Taylor, ACC Radcaps. Made 5 min collections with

0-38 mesh net. Small amount of material including sand grains, many

(< 1 mm) jellyfish, segmented worms, pieces of algae. About 40

counted. Not a lot of bkgnd. Set up is about as



Net rig was built to

submerged against back

of spillway with

net hanging over downstream

side of spillway. Will try op.

with fine mesh net + finer mesh

hand haul. If we get a decent

catch will try a "standard"

set up + determine rates of flows.

Elected not to put water in net aquaria on

water table.

Palumbo + Beckon off on schedule

from Elmer.

Light rain + cool.

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Locality Eniwetok Date 5 Nov 54

Personnel Olsen, Held Weather 80°-90°F Mostly

Water conditions Good

Radiation level(s)

Operations:

Completed dissections of fish, [illegible] invertebrates.

Pkg from lab ZI arrived - 3 rubber stamps, KB's stamp outfit.

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Locality Elmer + Plankton Tows Date 6 Nov. 57

Personnel Olson, Held Weather 79-90

(Dr. Blake on plankton Tow) Water conditions Good

Radiation level(s)

Operations:

Plankton Tows. Departure delayed [illegible] CY30 due to leaky ballast tank in [illegible] assigned. Towed portable radio off [illegible] unable to read us. We could read Practical [illegible] lines in the water all the time - occasion[illegible] Tuna (depth?) caught about ½ way bet Long [illegible] Alice, Bonita ⅔ of the way from Long to Alice, Jack ¾ mile SW Alice, Bonita off [illegible] E of coral head Oscar Tuna & Jack caught on red squid, Bonita on white feather.

Plankton Tow #1, 0930 water temp. [illegible] to #6 #20 [illegible] out and at all stations #2 1015 - 62°F #3, 1215 - 73°F #4. 1445 73°F. #5 1620 73°F. Stations are as all instructed, 15 min bottom at 112, 20 min at 3, 4, & 5. We were back at Elmer 1700, when we shut down to land fish 4 times during the day. Skipper of My boat Rodger, a helper Tony. Most cooperative! Good luck if you use us Today.

Plankton data is showing on [illegible] Tables, They will be emailed before the next Trip.

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Locality Eniwetok Date 8 Nov [illegible]

Personnel Olson, Held Weather Stormy, rain [illegible] midnight & wedge

Water conditions Rough

Radiation level(s) Counter By Alpha

Operations:

Prepared plankton, water & soil samples, [illegible] pelagic fish (plate #'s 14241-14260). Landing trip to Belle p. 7 Nov. Boys on walkie [illegible] replaced by regular crew. Charles Bonnyman arrived ass't REC Resident Engineer, visited [illegible] with Bob Talbot. In conversation with [illegible] from distillation plant at Lunch learned [illegible] oil is seeping through the pores and into salt water well.

96 hr collection of "crud" from salt water [illegible] at one outlet [illegible] rolling cloth stretched over [illegible] cup yielded 1.746 gm dry wt. of very tacky material which could not [illegible]. This is probably mostly sediment in pipe which is loosed when cleaning water tube. No attempt made to estimate water volume which passed through collection site of flow has been highly variable. Separation of material leached from fresh water pumice [illegible] to be done.

Batteries in portable radios replaced. These radios can [illegible] 2 miles; will transmit up to 10 miles. Have had [illegible] boats in area. Plan to try relaying messages to [illegible] Operations.

[illegible]

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Locality Elmer - Belle Date 9 Nov 54

Personnel Olson, Held Weather 75°-90°F.

Water conditions

Radiation level(s)

Operations:

NOTE: DETAILS OF OBSERVATIONS FOR THE WEEK [illegible] WILL BE SUMMED UP FROM DAILY NOTES AT THE END OF [illegible]

To Belle 0830 by H-12. Walk around Belle [illegible] low tide line (0.9' tide). W/ inner tube waded [illegible] to outer reef from "F" area. Olson could have [illegible] the way if he had wanted to. Tide was coming in rapidly so only about 20 min spent on outer [illegible] a coral head in line with F-1 + F-2 [illegible] way back in. This head has a wide variety of [illegible] + algae - will attempt to photograph at later date. Necessary to swim about ½ of the way back. Strong current from the East.

Back on Belle checked tomato plant - one small set. Dug out several holes on the island 10' to 100' from the beach - in most found small Ocypode (carapace width ½" to 1"). At least 15 coconuts growing between pandanus stumps + "H" area. "H" area hole - Seedlings have grown tremendously since pre-shot - photographed like since we already have pre-shot + immediately post shot photos. Search lights low for eggs - no seen. Counted as many as 40 fairy terns at one time. Olson spent about 1½ hr observing fish in deep pool E of "F" area. Zone identifications on following pg. No.

Observations of Fish - from outside Reef of Belle. Zone I - Ground area. One To surf + white water no fish seen. Zone II, Ridge Pavement - Apx One To low water only. Very few Parrots

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Locality Elmer E Belle. Date 9 Nov. Continued

Personnel Weather

Water conditions

Radiation level(s)

Operations:

Fish (Scarus sordidus) seen. Zone III - Boulder Area - No fish seen, most [illegible] dry. Couple of Scalpins ~ 1" long. Zone IV Outer Outer Reef Flat [illegible] Chaetodon auriga & Abudefduf sordidus. Zone V Boat Passage - Fish generally [illegible] around large coral heads, where fish were numerous & large Gnathodentex aureolineatus, Lutjanus vaigiensis (Snapper) - Naso ? - Ctenochaetus striatus. Zone VI Inner Reef Flat Chaetodon auriga, C. ephippium, Istiblennius edentulus, Apogon sandeyi, Pomacentrus jenkinsi, [illegible] Abudefduf biocellatus, A. leucozona, Dascyllus aruanus, Mulloidichthys samoensis, [illegible] Caesio caerulaurea, Synodus variegatus, Epinephelus merra, Cheilinus undulatus, C. fasciatus, Hyperhomphus dussumieri & Aulostomus chinensis. This data also entered in overlay map of area kept here at lab.

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Locality ELMER, EDNA AREA Date 10 Nov 54

Personnel OLSON, HELD Weather 74-76°

Water conditions Good

Radiation level(s)

Operations:

TO EDNA 0900. DROPPED PARTY AT BEACH. THEN MOVED TO SAND (ISLAND) SPIT NE OF EDNA ON OUTER REEF. WE NAMED DUBBED THIS ISLAND "NEW ELUGELAB" Checked Boulder Outer Reef Pavement & inner beach. Walked across reef pavement to a point about opposite center of Dobbs. Drove in iron stake at this point. Also drove in iron stake at point opposite Edna Central Survey Point. Returned to New Elugelab via boulder area. Stiff breeze and strong current with incoming tide made wading across to Edna a bit of a chore. Water quite clear.

On Edna - seeds on portulaca plant being replaced. Coconut w/milk beached between stakes. Good Turtle on E side of transect. Coconut left in place. Many small mullet, sand sharks, Ulva in bight. One netting mullet - went through meshes of three nets. Got one which was enmeshed in algae - brought back to lab alive.

Ralphs stake of E end of Edna could not be found. Fish - Zone III Area contained more fish than similar area off Belle (Yvonne). Predominant fish Chaetodontinus melanopterus. From New Elugelab to Edna. Sand build up areas. Fish not only common to dead coral outcroppings covered with a type of filamentous algae. - Pomacentrus jenkinsi, Hedleyi lucasana, Holichores trimaculatus, Synodus variegatus (Eel). Fish abundant in life off Edna. All information listed on overlay map of area kept at Lab. Also mentioned on 12 Nov.

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Locality ELMER Date 11 NOV 54

Personnel OLSON, MELD Weather 74 - 90°F

Water conditions Good

Radiation level(s)

Operations:

Armed forces holiday - no flying. Cleaned up lab, all small beakers, etc. Took carboy to laundry - will be back Sat. Olson counted decay. Rec'd film from home lab via security. Checked in with Geo Bennier re replacement of probe packet borrowed was made. Worked on field notes.

At dinner Ernie Wynecoop talked to chief of safety at Stev, Henry Sparin, Fire Safety, Steve & Carolyn Gorris, Asst Asst Resident Engineer, into going on trip to Clare-Edna area with us Tomorrow.

Small sample beakers were cleaned by boiling in soapy water on hotplate - Very effective!

Counter is jamming at about 6,000 c/m - Still counting decays most count below this level. We are unaware of any shortcomings in so as long as counter does most of the job for us we will let it. Continuing to weigh plastic bags.

MAILED FOLLOWING SAMPLES TO LAB IT THROUGH ARC AGENCY

CARDS & SAMPLES

FISH 14716-900

INVERTS 11883-873

BIRDS 13250-270

PLANTS 10560-10616

PLANKTON 8273-8282

WATER 9893-9902

SOIL 9888-9892

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Locality ELMER, CLARA-EDNA AREA Date 12 NOV 74

Personnel OLSON, HELD Weather 76°-90°

Water conditions Good

Radiation level(s)

Operations:

To Clara 0930 (copter delayed). With 5 [illegible] + life raft + other gear EH had to ride on [illegible] on E end of Clara Inflated raft + loaded all gear into it. Too low to use kicker so pulled raft to outer reef going as close as possible from bunker. Tied up just inside boulder area. Visitors stayed with raft to try spear fishing in 3' [illegible] boat passage. PRO + EH proceeded to outer ridge pacing [illegible] W along parament to a point opposite the W end of [illegible] intended going further but a storm came up which [illegible] cut visibility to a few feet. Being concerned about [illegible] we returned to them via the boulder area. PRO stayed with them while EH returned to ridge + proceeded E to stake off Daisy which had been placed there 10 Nov. Returned to raft via boulder area. By this time storm had passed. Proceeded by raft, using Kicker, along boat passage to stake set on outer reef opposite Edna. Had lunch here as [illegible] coming in. Proceeded toward EDNA CENTRAL SURVEY POINT using Kicker at slowest speed + laying down with head in water. This is a very effective means of observation in an area such as this where the bottom is mostly the same over a long stretch. On Edna deflated raft + prepared gear for copter pick up. Had enough time left for count of plants at high tide line before pick up which was promptly at 1500. At Ernie Noccop's request PRO tried calling Drastic-1 with portable [illegible]

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SEATTLE, WASHINGTON

Locality _____ Date 12 Nov (2)

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

no contact made. We will therefore cease contact with the radio with us unless we know before hand that boats are working in the N. end. We will carry flares.

Mr Neal Murphy, General Supply Officer, Trust territory, Guam, will be staying in barracks 121 for a few days.

Fish Observations From Clora to Outside reef. Zone VII Cho. todon meyeri, Centropyge flavissimus, Istiblennius edentulus, Apogon sayderi, Pomacentrus jenkensi, P. nigricans, Abudefduf sp. Amblyeleotris periophthalmus, Dascyllus aruanus, Chromis acerolenas (one fish in a 6" coral head) Acropora Hypoplectrus doceasi (Many Schools), Carcharhinus melanopterus, Synodus variegatus, Epinephelus merra, E. spilotoceps, E. meduensis, Caranx melampygus & C. sexfasciatus Zone V - Same as off Belle (29 Nov.) Carcharhinus melanopterus, Caranx melampygus & sexfasciatus Zone IV Abr: numbers of fish than in same area off Belle (29 Nov) Pomacentrus jenkensi, Carcharhinus melanopterus. Zone Area III Almost dry - few tiny sculpins seen on flat. Zone II Fish much more abundant than area off of Belle, Scarus sordidus, Acanthurus triostegus & Mevnyus chaptalii Zone I - Due To surf could not be observed.

Transect from stake to Edna. Area identical To Transect of 10 Nov. from Navy Dock to Edna. This is a general sand buildup area obscuring Zones III II & I. (as previously are concerned - with the exception of bottom diffe. cnts). The native area adjacent to Edna appears to be the same as it was previously. Most fish common to areas Carcharinus melanopterus, Caranx melampygus, C. sexfasciatus, Mevnyus chaptalii, Mulloidichthys zonoensis, Synodus variegatus, Chaetodon lunula, Acanthurus triostegus, Hyporhamphus dussumieri, Aulostomus chinensis, Epinephelus merra.

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Locality Elmer Date 15 Nov 54

Personnel Olson, Held Weather 76°-90° F

Water conditions Good

Radiation level(s)

Operations:

Counted plates for decay. PRO collected [illegible] related data from mullet as request by Vas Ch[illegible] up field notes. Misc. chores. Tom Hardison [illegible] today. Weighed plastic bags. Letter from PHS [illegible] Shipping dept packed up frozen fish crates for [illegible]

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SUMMARY OF WEEKS OBSERVATIONS

Locality Elmer + Fred — Date 14 Nov. 1954 Sunday

Personnel Hold + Olson — Weather Sunny - Fin Showers 75°F

Water conditions Good

Radiation level(s)

Operations:

AM. Noticed good bloom of copepods in salt water [illegible]. They are coming in with salt water supply. Some [illegible] Appear to be Cyprid. Looked through logs concerning [illegible] Edna observations. Going to Weiser PK in PM to map area there.

→ From ERL mosaic we have made a sketch bathymetric map of the area from Balle to Edna + from the islands to the outer reefs. For convenience in description this area has been divided into SIX [illegible] zones. The outer reef has been further divided into 13 sections at right angles to the outer reef from Balle (1) to Edna Slough. Observations from field notes have been entered directly on this map.

In general, we feel that these areas [illegible] were visited previously do not appear appreciably different today, with the exception of those areas immediately affected by the shifting of sand spits. There is a fairly sharp gradient from near barrenness to abundance of organisms on the outer reef edge opposite Edna. Differences between other areas on the reef edge are more than one would ordinarily expect. The silted areas off Edna are full of [illegible] forms of life - just what we don't know. Lizard fish were here seen but many sea-ware tracks indicate the presence of molluscs or hermit crabs. The western most limit of heavy silting has not been determined. Two [illegible] top to do this on Tues. the 16th. Enlarge [illegible]

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(2)

Locality _____ Date 14 Nov Cont.

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

Franks photos would probably help. The clay-like material lies between a thin surface of fine sand & a deeper layer of "coarse" indicates that just about all of the sediments fine material that is going to accum have already accumulated. There are times when the water around the islands cloudy from the surface weather times when it is clear. Same is true at islands in the SE part of the atoll.

(more on following pages)

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(3)

Locality _____ Date 14 NOV CONT

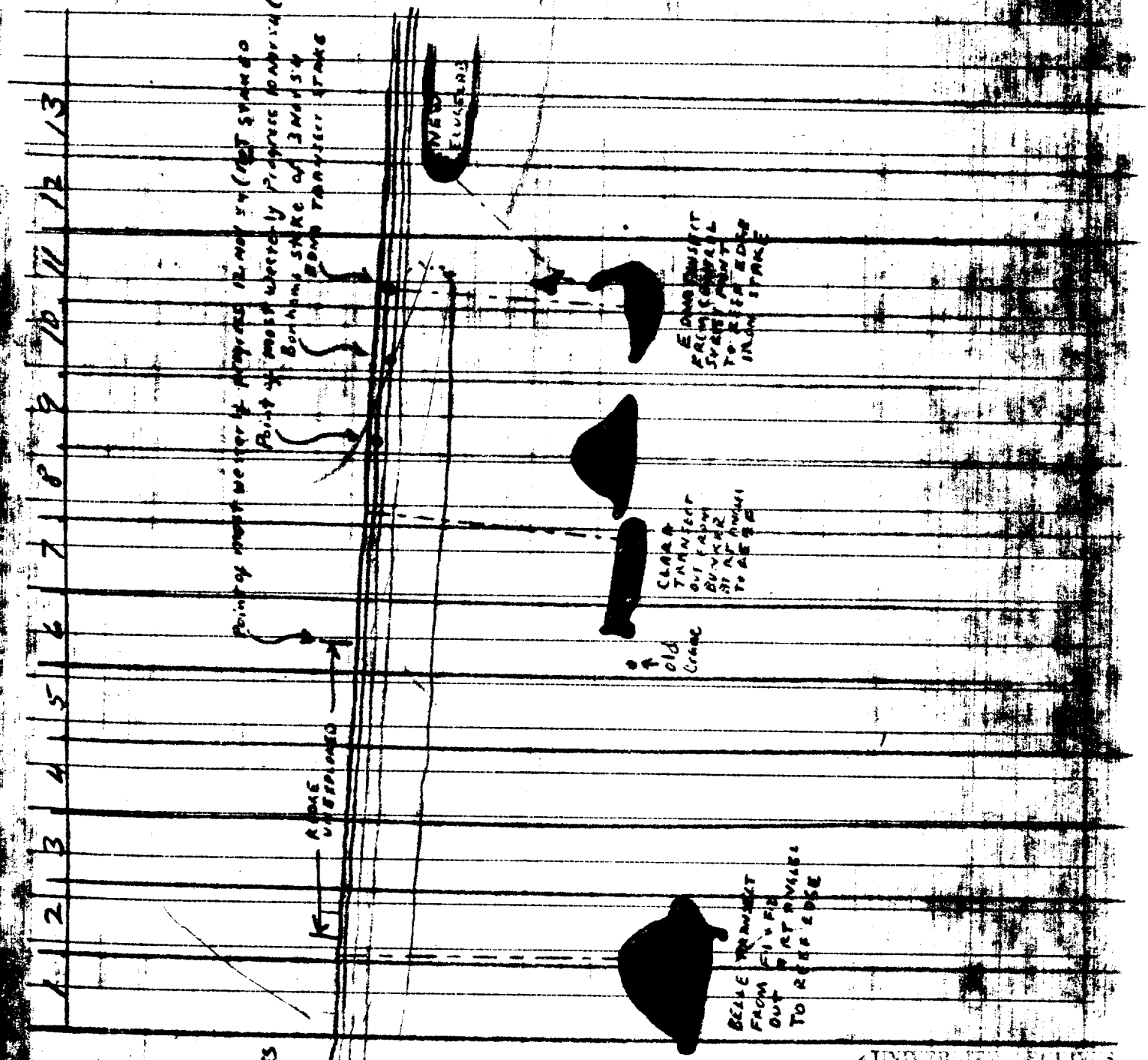
Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:



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(4)

Locality _____ Date _____

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations: FOLLOWING COPIED FROM MAP

SECTORS 1 & 2 ZONE I. Surf too much bubbling for observation. ALGAE: Porolithon (pink encrusting) dominant Cover in scattered patches. Branching red (Polysiphonia). INVERTS: Pocillopora heads (3-8 cm diam) scattered at intervals of 2 to several feet usually in groups of 3 to 6.

ZONE II. ALGAE: Caulerpa in scattered patches in crevices. Porolithon (pink) in small patches where not covered by soft coral. INVERTS: Soft coral, yellow, dominant in a band 10' to 40' wide. Almost covers pavement in patches several feet across. Tridacna imbedded in pavement at intervals of several feet; largest 40 cm long. Pocillopora heads scattered at wider intervals than in Zone I.

ZONE III ALGAE: See ZONE II. 1st Principal differences are: less Microdictyon here, more nostoc, small patches Lyngbia? (Black surface, white under, on rock), Laurencia - one clump seen (pink). INVERTS: Tridacna rare, Centrechinus common but smaller individuals than in Zone II. Echinothrix (banded purple spine) rare but more common than in Zone II. No living Corals. Worms & Small Crabs common.

ZONE IV GRADES between zones III + V - not to be defined.

ZONE V Richest area. Sand bottom, large dead coral heads. ALGAE: Halimeda (3 sp), Udotea (individual fronds up to 10"), Caulerpa (especially near bottom of heads), Microdictyon,

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(5)

Locality _____ Date _____

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

Dictyosphaera (2 cm circles largest), Hostac rare (one 2" diam. Several unidentified filamentous forms. Halimeda is the dominant form. INVERTS: CORALS: living coral only in isolated patches on dead heads. Heliopora up to 18" high 24" diam. Pocillopora rare, small heads, Montipora 3 species, small heads (10" max diam), Porites, heads up to 6" many examples of small heads coalescing. Montipora, encrusting forms, both yellow & purple. Goniastrea largest heads 4", two other species of Faviidae. Fungia rare (2 seen). M. Hispida one encrusting colony 6" x 12" ECHINODERMS Holothuria, common at wide intervals Grey-Brown spotted cucumber, rare (2 seen), Acanthaster, rare, 18" diam Culcita rare Brittle Stars, rare, Centrechinus common, large specimens up to 10-12" diam w/spines. Echinometra, common, Crevices, Echinothrix rare MOLLUSCS: Tridacna crocea, common at wide intervals, largest 3" long, most ½" to 2" Tethys one found under old Tridacna shell. Trochus 2 found, shell height 6 cm. Pterocera common at wide intervals. CRUSTACEA: Dardanus one in Trochus shell, one in Pterocera shell. Many small crabs among algae. Many worms, esp. [illegible] seen but no attempt to identify or estimate numbers.

ZONE VI Grades from ZONE V To shore - much less rich. There is a fairly sharp break at the beginning of the boat passage. Turbo one found

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(6)

Locality _____ Date _____

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

SECTORS 6-10 There is a gradual change from 11 to sector 6 in some kinds of organisms found but not a change in general productivity.

SECTOR 8 ZONE II. THIS IS THE richest area for [illegible] we have seen. Counted as many as 7 crowded together in a single hole. Largest seen 5.7cm long.

6-10 cont: ZONE I Algae Branching red (Polysiphonia?), Dictyopteris (does mostly 1-3 cm diam) in association almost completely cover the area + extend into zone II. INVERTS: Pec. Mpora, [illegible] heads.

ZONE II ALGAE Turbinaria in patches up to 20 sq ft patches often widely separated Caulerpa occasional near outer edge of zone Halimeda in small clumps INVERTS Centrechinus dominant, very numerous Counted 57 individuals in one clump. Limiting factor seems to be number of crevices. Tridacna very numerous imbedded in pavement (See note + data for zone II sector 8) Coral Acropora small, blue-tipped heads common, Pocillopora small heads common

ZONE III ALGAE Nostoc, Microdictyon (coarse, rubbery, light green), Halimeda, several filamentous forms INVERTS Centrechinus very numerous, Echinothrix occasional Echinometra in fair numbers especially under coral boulders. Small crabs, nereid [illegible]

NOTE: Fresh reef scar about 1' square seen in ZONE I Sector [illegible]

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(7)

Locality _____ Date _____

Personnel _____ Weather _____

_____ Water conditions _____

_____ _____

Radiation level(s) _____

Operations:

ZONE IV Grades between Zones III + II - not clearly defined.

ZONE II ALGAE About same as in Zone II sect #1 Dictyota one 2' old Tridacna shell filled with Two Tetrys with reproduction Inverts about same as Zone II sect #2 with following exceptions no Pardalinus seen, several fungia, [illegible] one colony 10" x 4". No live coral seen consistently from [illegible] until in deepest part of beat [illegible] Zone III: Silted, no live coral seen. Did look carefully for algae but much filamented algae noticed on dead coral heads + boulders.

SECTION #2 ZONE II Sand with occasional algae covered [illegible] or old coral heads. Many holes in sand - often several [illegible] sq. ft. Many sinuous tracks in sand - of what? Surface fine to ¼" gravel. Just under surface is almost [illegible] layer overlaying coarser material. Area of numerous [illegible] ends from in line with sandspit on E end into shore.

SECTION II ZONES I + II ALGAE: Caulerpa prominent, [illegible] rare small clumps, Lithothamnion Clark purple, small patches [illegible] Porolithon? (pink encrustation) well out into grooves, Turbinaria [illegible] INVERTS: Tridacna (1-3 cm long) rare, Centrechinus [illegible]

ZONE III ALGAE Caulerpa rare, Nostoc rare, [illegible] Ectocarpus common, Microdictyon rare. INVERTS Small crabs under boulders. Nereid + spionid worms [illegible]

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(8)

Locality _____ Date 14 Nov

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

Sipunculids sometimes in holes in boulders. Centrechinus sp. Echinometra rare, One Octopus approx. 12" spread. SECTION 13 ZONES I + II Mostly bare pare... Lawrencia (red), Caulerpa, Gracilaria (yellow-brown to red) ... scattered clumps; Lithothamnion (dark purple-red) ... Ectocarpus rare. Inverts: Few small crabs ... ZONE III ALGAE As zone II but Caulerpa ... Lawrencia primarily in areas between boulders, Gracilaria primarily on boulders; Ectocarpus common ... Nostoc rare, Halimeda occasional. INVERTS: Small crabs under boulders & associated with ... Occasional small sponges. Occasional ... under boulders.

Many empty turbo shells on ... counted 27 along a line about 200' long on ...

→ stop

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Locality ELMER Date 15 NOV 54

Personnel OLSON, HELD Weather STORMY, FRESH to MODERATE GALE FORCE GUSTS 72° 28° F

Water conditions ROUGH, HIGH BREAKERS WHITE CAPS IN ARBOR

Radiation level(s)

Operations:

Last night recd LRD's letter re UNRRA program. [illegible] requests for special air transportation through T. Hardison [illegible] gone to ZI) as indicated. Requested that copies of correspondence regarding this matter be forwarded directly to LRD. This will be sent to LRD by Hardison when arrangements are completed & confirmed. No difficulties anticipated.

PRO completed decay counts & packing specimens [illegible] Van Cleve, worked on seine & other chores. When [illegible] turns itself off 20 – 40 counts extra are sometimes picked up. Took 15 m. "Plankton tow over spillway at power house with 12" 125 mesh net. Filtered 4 liters of water from water table containing many copepods through #1 filter paper – 4 c/m above background. One gm (wet) algae from spillway counted dry 308 cpm net. Many small worms in the algae – either marine oligochaetes or Archiannelid.

Laid on trip to Elma for 16 Nov – fish passage observations in settled areas as far west as we have time for. Spencer & possibly Duggan will accompany – may have to be called off if storm continues. Helicopters will not be available after 17 Nov for a period of several days. Lone pilot going off island temporarily. We have therefore set up circuit tour for Wed 17 Nov.

5 Dec is a Sunday so PRO & EH will leave for Kwaj. 4 Dec 54. At dinner Hardison said he had phoned Col McGoldrick, COMENT, regarding requested Kwaj – Rongelap flight – no sweat.

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Locality Elmer - Edna Date 16 Nov 54

Personnel Olson, Held Weather 76-33 Stormy

Water conditions Rough - high surf, reef

Radiation level(s)

Operations:

FISH POISONING AT EDIVA IN BIGHT 0900-[illegible]
Further work in the field had to be postponed [illegible]
of rough weather. Fish Kill. Many Goatfish [illegible]
2 Perch (Lutjanus gibbus), 1 Red Speckled Blenny, 2 Conger [illegible]
& 2 Mullet - All are measured and recorded; [illegible] will be
worked up for samples. Much debris washed up on [illegible]
since last trip. Surges came into the bight at [illegible]
intervals - sometimes as much as a one foot differ[illegible]
between high & low. PM - measured fish, took care [illegible]
crabs, weighed bags, prepared for circuit test [illegible]
Tom Hardison & others visited lab.
Nasty weather.

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Locality ELMER - CIRCUIT TOUR Date 17 NOV '54

Personnel Olson, Heid Weather 76-86 rain high winds,

Water conditions Rough

Radiation level(s) See below

Operations:

Island	Time Arr	Time Dep	mr/hr On Island	P.Y 3" MX-5 Mark Hi tide line	
Elmer	[illegible]	0815	[illegible]	[illegible]	
Henry	[illegible]	[illegible]	0.12	0.09	debris on beach
Leroy	0916	1005	0.10	0.30	1.5
Alice	1020	1117	0.7	3.0	
Olive	1130	1200	0.3	0.6	Dead Rats 2.
Vera	1245	1345	1.0	0.3	
Bruce	1356	1458	0.1	0.1	

Sharks - 35 Rays Manta 11, Eagle 9 Stingaree 2

Henry large sea cucumbers, Stichopus sp. under rocks in pools at edge of beach pavement. Many moray eels (gray) in these pools. A species of small sea cucumber in many places on outer reef. Halimeda, Caulerpa & Lyngbia (?) collected on outer reef. The Lyngbia is the soft encrusting type - green outside, white inside. Many Cenobita, 2 small coconut crabs seen. Found chick (Rallidae) at base of large Pandanus at S end of island. Leg broken, injured & bloody. Small fish next to chick. Observed a hermit crab stripping off the husk of a coconut.

Leroy landed on sand spit at N end. Collected Halimeda, Caulerpa & a filamentous algae here on outer reef. Found large cucumbers only at S end under boulders. Saw several sand sharks 3' long here & some large rays. One of the rays gave me a start - swam straight at me at high speed & passed within a few inches of my hands. Birds are nesting here.

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(2)

ocality _____ Date 17 Nov 54 Cont

ersonnel _____ Weather _____

_____ Water conditions _____

adiation level(s) _____

perations:

Alice Looked for algae off south end, middle of island outside, & near the S end on the inside. The best was the best area starting about 150' from shore. Got Halimeda, Enteromorpha, Microdictyon & 2 or 3 other species. Sea cucumbers also in this area. No nesting here although there are many birds - mostly fairy terns.

Olive - Collected on outer reef - Lyngbia (same species as at Henry) Halimeda. In lagoon - 2 or three as yet unidentified algae. Cucumbers from outer reef. Growth of land plants on Olive has been tremendous. Measured one Scaevola leaf - 14" long.

Vera - Collected at S end, outer - Four species of sea cucumbers seen here. Halimeda, Caulerpa, Lyngbia (same species as at Henry). Very strong current on the outer reef sweeping around the S end of the island. Tremendous growth of land plants here too. Many of our stakes along the road are completely covered. Ipomea is ~~is~~ twining from shrub to shrub making solid barriers in places. Brought back some of the 'striped grass,' which only faintly shows stripes at this time, & planted it between the coconut trees at the lab.

BRUCE Collected on outside - Caulerpa, Lyngbia (same species as at Henry) & sea cucumbers. Looked on ~~the~~ inside ~~of~~ the strip also but found no Halimeda. Although the tide was

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Locality _____ Date 17 Mar cont

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

fairly low (2.1) we could not get out to the reefs because of heavy surf caused by high winds.

Water, soil & beach sand (High tide line) samples were taken at all six islands. Samples of all algae found will be preserved for RFP's identification.

A volcanic pumice has been drifting around the atoll ever since we have been here. Today we found some on every island visited. The heaviest concentration is at the N end.

In discussing the general conditions on the islands with Hardison & Co. last night he informed us that there are figures available somewhere which show a heavier avg annual rainfall at the S end than at the N end of the atoll. This would certainly be in keeping with the differential growth rates noticed from casual observation

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Locality Elmer Date 18 Nov 54

Personnel Olson, Held Weather 78-88°F Windy, Squalls

Water conditions Moderately Rough

Radiation level(s)

Operations:

Dissection + preparation of samples of Ulva, Kelp
Giant four Algae + sea cucumbers.
Vehicle replaced with a rebuilt one of the
same type - our ex is going to another island.
Letters from Al + Kelly most welcome.

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Locality ELMER Date 19 NOV 54

Personnel OLSON, HELD Weather 78-88°F Windy, occasional squalls

Water conditions Moderately rough

Radiation level(s)

Operations:

Mailed following samples + cards to Lab 2.1. The AEC Resident Engineer's office:
11874 - 11948 (SNUGGLE), 14901 - 14965 (FISH), 10613 - 10635 (BIRDS),
9903 - 9926 (SOILS & WATER).
Also samples only: 9886, 9887 - we have no record of having sent the cards but assume they were sent with an earlier shipment. These were collected at Bebe, Fel 12 [illegible]
Collected 1 algae for circuit tour - Elmer [illegible] no cucumbers on outer reefs. Poisoned the outer reefs 12 goatfish, one convict surgeon.
Prepared soil & water samples & all samples to date for shipping. Left on L-20 flight to Jaluit for 20 NOV & To Tilpa for 22 NOV. Cleaned up lab.

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Locality Elmer Date 21 NOV 54

Personnel Olson, Hall Weather 74 - 86 Fresh Winds

Water conditions Rough

Radiation level(s)

Operations:

Rec'd 6 Lady fish, T. bailloni from Bikini. Caught 19 Nov off Nan by Chief Steward, 4ST, brought back by Dr. Calvert.

Rec'd from fishing barge, caught this date, 4 rainbow runners, 2 pig fish, 1 grouper.

PRO found that curtains are frozen closed on Speed Graphic when he went to photograph exceptionally heavy surf.

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Locality ELMER & TILDA Date 22 NOV 54

Personnel OLSON, HELD Weather 74-87

Water conditions Rough in AM, quieting in PM

Radiation level(s)

Operations:

AM. Repaired Speed graphic. An over-size filter had been put in viewfinder & had torn & snapped swivel on 1/8 apperature. Ground end off screw & replaced. The beam is near one edge & no light streaks could be seen on the ground glass - seems OK now. Dissected 4 rats, 2 normal ♂♂ (the small R turned out to be a ♂), one large ♂ & one large ♀. The remaining two are in plastic bag in freezer.

P.M. Spent on Tilda-Ursula group. Seal not seen though a few droppings were found on Tilda & Ursula. Fished from causeway - one blacktip shark, 1 Remora, 1 grunt. Hundreds of small fishes seen here.

We are still in the unfortunate position of having only a 'copter & no satisfactory arrangement has been made. We would have preferred to go to the Belle-Edna area today but this was not possible.

Jeeps are available for use on all islands with air strips - get key from Operations Mgr.

Rec'd two letters from AHS.

H & N to supply Prima Cord & Electric blasting caps, will hear further to fill out the complete supplies in that line like magneto etc. Powder man is on vacation until 10 December. Obtained "Blasting Manual" (Dupont)" for Burgess. The Safety Engineer

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Locality ELMER - Date 23 NOV 54

Personnel OLSON, HELD Weather 74 - 88 Rain Squalls

Water conditions Good

Radiation level(s)

Operations:

Dissected fish from Bikini & Concrete barge. Prepared algae from Janet & Elmer. Tried to get Halimeda at S Beach - water so murky we couldn't see. Thick layer of masses of algae are covering the bottom just off shore. The swimming beaches at the beach clubs have been closed because of sewage pollution. We will try to get Halimeda at Miramar Club Thursday at low tide (10.6 ft for this). Got one H atoll on outer reef. Received Deadeyes from Belle which mailed here at Lab.

Talked to Tom Hardison about our budget in view of the fact that we will have to use M-boats to get to the N end. PRO & SOT of this week & possibly the early part of next week. There is currently $9,500.00 ± $200.00. This is about twice the amount that was available. Since we will be using the M-boats we will to make plankton tows at both deep passage stations morning & afternoon of each day out. This is in addition to a regular plankton tow if we have time for the latter. Two to Three sports fishermen are planning to come along & fish the crater while we are ashore.

PRO took scales, lengths, wts, & stages of maturity on a series of Mullet as per Dr. [illegible] requests.

Read Halstead's report - "Confidential" Gives repeated credit to RSP & KB.

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Locality ELMER 4 - AERIAL PHOTOS OF BELLE - EDNA AREA Date 24 NOV 54

Personnel Olson, Held, Geo. Bernier taking Photos. Weather 74 - 58° Occasional Squalls

Water conditions Good

Radiation level(s)

Operations:

A.M. PRO, CON, & GB met pilot Capt. [illegible] at Elmer strip. Designated areas to be photographed, altitudes etc. Left Elmer (4-20) 0840 photographing reef edge from Belle to & including Dem Eluge Isl 0910 (low tide, 1.0 @ 0909) at 500' & 1000'. Photographed Boat Passage from Daisy to Edna at 500' or less. Photographed silting area on seaward inner reef flat from 1000'. Photographed channel between Daisy & Edna from 1000'. Returned Elmer 1100. Had to do most photography between squalls.

P.M. PRO took scales, lengths, wts & stage of maturity of bare mullet & a series of [illegible]. GB & [illegible] flew up island to photograph sharks & rays. Hunting was poor & we had to dodge squalls more than this morning. Covered the reef from Belle to about 3 mi SW of Ake going counter clockwise. Couldn't complete the circle because of persistent storm in the vicinity of Le Roy. Took (many) photos of sharks, manta rays & a turtle. Saw one eagle ray SW of Ake but lost it. Saw & photographed a large manta at dock on Juneau. All taken from 5-[illegible] 70-75 mph. Ground speed estimated at 45-[illegible]

Mailed to lab: Corals & Samples. Fish 14966-15000, Inverts 11[illegible], Algae 10636-10638, 10640-10682, Rad: 13271-13298, Sal[illegible]

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Locality ELMER Date 25 NOV 54

Personnel OLSON, HELD Weather 76° - 90°

Water conditions CALM

Radiation level(s)

Operations:

Thanksgiving Holiday. AM PRE To conduct ... barge brought back several large fish. Cut up Bikini Fish at LST. Caught when blasting head about 1000' of Nan 23 NOV 54.

I have been doing stomach content analysis of Fish taken off Barge. Both after checking stomachs of two Rainbow Runners and finding only gizzards gave up project in that vicinity. Since gizzards were fish from barge that morning it must have been from yesterdays fishing. One ♀ Rainbow Runner caught that had a freshly spawned out ovary. One ♂ Rainbow Runner also taken with ripe sperm.

The fish that gang up about the bow of the Fishing Barge just wait the bait, regardless of what it is. Generally they are Surgeon Fish. Parrot fish are also commonly taken by hook & line, that spends most of meats scraps used as bait.

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Locality Elmer, Edna - Clara Date 26 NOV 84

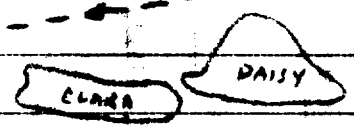
Personnel OLSON, HELD Weather 76° - 92° Rain in [illegible]

Water conditions Good

Radiation level(s)

Operations:

Left Elmer 0800 by M-Boat. P. Plate [illegible] from the mess hall accompanied us to [illegible]. 15 min plankton tow at Deep Pass starting about 0815. 20 min tow in crater starting about 1100. Repeated tow in crater starting 1615. Returned to Deep Pass [illegible] to make a second tow. Fishing was 'Hot'. 3 trolled all the time & occasionally a fourth. While PRO [illegible] were working the reef off the M-Boat [illegible] Gene & Lady Fish or small Viva were caught on bare hook while trolling. Total catch: Bonito-18, Large [illegible] small Viva-2, Rainbow Runner-1, 2-line Mackerel-2, [illegible] Fish-28. All fish were tabled as to locality as caught. PRO & [illegible] dropped off M-boat w/ reef & Kicker in Crater. Followed course indicated in diagram. Tide was 1.8 & water was knee to waist deep in most places between Edna & Clara, 5'-8' deep off the N end of Clara. Observations have been entered on map at lab. There is a fairly clear cut transition area between the [illegible] broken boulders off Edna & dead coral heads off [illegible]. It is in this area that Tubipora, urchins, sea cucumbers are first found along with Halimeda, Hydroclathrus, [illegible]. Abundance of living coral seems to be more closely correlated to depth of water (& possibly movement) than to



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(2)

Locality _____ Date 26 Nov (Cont.)

Personnel _____ Weather _____

_____ Water conditions _____

_____

Radiation level(s) _____

Operations:

distance from Edna. The presence of [illegible] has so far in this months observations been associated with T. crocea.

Even the water conditions on lagoon and ocean side of Elato were fairly smooth. Tremendous breakers were hitting outside reef area beyond Alice around to Runit (66) or below. The breakers were visible all way behind Runit when viewed from boat well out in lagoon. They gave the appearance of a silver express train as they moved down the reef. We thought they were the largest waves seen in that area. Apparently the surf was associated with local weather conditions but some distant disturbance. Heard this pm that there is a hurricane heading toward Guam [illegible] the southern Caroline Group.

Fish seen in the inner reef flat area in transect between Edna and Clara will be entered on overlay map at Lab.

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Locality Elmer - Edna - Clara Date 27 Nov 54

Personnel OLSON, HELD Weather 75°- 90° [illegible]

Water conditions Choppy

Radiation level(s)

Operations:

Left Elmer 0820 BY M-BOAT. C. GOR[illegible]
Dr. Garrett came along to fish. Plankton To[illegible]
DEEP PASS 0830 + 1645, CRATER 1115 [illegible]
Caught 8 Bonito & 1 2 line mackerel. [illegible]
as caught as to location. Gorr, Garrett, PRO [illegible]
as shown in sketch. Details of observations entered on
large map at lab. Found REFS Algae stake app SE
End of E Ina. It was put
in 3 Nov 54 & today was found
covered with a mixture of filamentous
algae - about ½" + thick, covering
entire stake below low tide line.
looks like mostly Enteromorpha. Preserved small sample in
formalin for REF's identification. Tried to wade [illegible]
strong current between Daisy & Clara - swept off [illegible]
carried down stream while water only waist deep.
Laid on the bottom where current slow enough for
us to hang on & watched ripples forming & moving.
The rate of movement of sand & gravel here could be
measured in inches per minute. An aerial photo was
taken of this area earlier this week & should be
repeated at monthly intervals. As yesterday, it
seems that abundance of coral & such algae as [illegible]
Caulerpa is more closely correlated with depth than
with distance from Edna once past the E[illegible]
Daisy

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Locality _____ (2) Date 27 Nov. Cont'd

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations:

Fish observed in path today are listed on overlay map at table.

The Procedures breakers that were so evident yesterday & today the outside reef had diminished greatly, even the local water conditions were quite choppy both inside and out. Both yesterday & today the cable splicer "M" boat Skipper "Chink" is supposed to be here in Eleet. He gave us excellent service. Also yesterday & today we took the walkie-talkie with us in craft and had communication as desired with "M" boats which proved very practical.

Rec'd letter last night from LRD dated 18 Nov. re [redacted] Cancellation of trip to atter[illegible] with NRDL group. Saw Tom Harrison after mail he will cancel travel arrangements for Nov trip & set up Rongelap trip for 16 Dec 54. He will also try to set up a Ponape trip during [illegible] when LRD & BDW are here. As mentioned in a previous letter, Ponape is the principal source of supply of fish, mostly tuna, for the Trust Territory. If it is only possible to make arrangements for this trip before our arrival we will go anyway. Sent TWX to LRD re these matters this morning. Rec'd copy of TWX to Eliff saying Clews will arrive here 2 Dec, Boss & Pearson 8 Dec.

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Locality PIMER, Date 28 NOV 54

Personnel OLSON, HELD Weather 76 - 90° F

Water conditions Good

Radiation level(s)

Operations:

AM. Worked up remainder of field notes from yesterday
PM recovered gear from last night's party — [illegible]
To Dr. Blake & Friedman.

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LAND OBSERVATIONS

Locality ELMER, - EDNA, DAISY Date 29 NOV '54

Personnel _____ Weather 27°-30

_____ Water conditions Good

_____

Radiation level(s) _____

Operations:

Left Elmer by 'copter 0930 landed at Edna. Heavy [illegible] + high winds (35-40 mph) last night carried water to within 125' [illegible] Survey Point + E end of Edna had been completely [illegible] 20' of 200E. 13 stakes no longer had plants near them [illegible] stakes were removed. A tremendous amt of debris [illegible] piled up on the sand spit around the light. New [illegible] are appearing at the high tide line, especially at the [illegible] the debris wrack. All such new seedlings were marked [illegible] stakes of driftwood. Details of the census, location [illegible] are recorded on scratch sheet dated 29 NOV '54 [illegible] other field notes in safe. Introduced plants [illegible] appear to be healthy + growing. Each was photographed [illegible] a measuring tape along side. The Pandanus RFF [illegible] near the West end on the outer shore is now 4½" High. [illegible] Pandanus (re us) is sprouting SE of the first on the inner shore. It has 3 sprouts. The longest is 1½" the shortest still has the [illegible] back. Measured stake 300E; it is projecting 3½" above the [illegible] There is no iron stake at 400W. 2 boards each 16' long [illegible] painted with 2' green stripes (happened to have green on hand) were laid with their length N-S. One at Central Survey Point [illegible] the end 6' N of the stake + One at 300 W with the end 8' N of the stake. These show walk from the air + may help in getting more accurate measurements on Dec [illegible] photos.

From Edna we crossed to Daisy + made a circuit of the island. Details of observations are recorded [illegible]

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