

Log.

Eniwetok Lab.

Vol. IV

Aug. 11, to Sept. 20, 1955

UNIVERSITY ARCHIVES
RG UNIV. OF WASH. LIBRARIES
Location ~~Special Files~~ APFL
Access No. Box 1
Folder Daily Logs, 1954-57
VOL. 5

410689

BEST COPY AVAILABLE

APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Blower Janet Date Aug. 11, 1954
Personnel Louman & Welander Weather Overcast, Wind ENE 7 knots
Water conditions Fair

Radiation level(s)

Operations:

Trip to Janet for Rats 0815 to 1030.
Louman, Ghannel & Duprey. 3 rats shot in 35 min.
many seen.

Welanders worked on face mask; constructing
wire frame to hold glasses from a design by Dr. Nash,
or Enivetsals.

Proceeded rats in afternoon.

Construction on lab is at full tilt. New slab
of concrete poured for south porch. Louman
constructed on north side of present porch. Salt
water plumbing being changed to get a head (from
unventurial?).

Would you send the counts on fish taken off Perry Id.
lab (card numbers 12421 to 12445 inclusive) and
Deep Entrance (card numbers 12561-5, 12571-80, 12631-
12655). Some people here are getting curious as
to just what they are eating.

CONFIDENTIAL USE ONLY
U.S. DEPARTMENT OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Sluice, Belle Date Aug. 12, 1954
Personnel Laurman & Welanders Weather Slightly overcast, no rain
wind about 5 knots ESE
Water conditions Fair

Radiation level(s)

Operations:

Weekly trip to Belle: 0800 to 1100 Laurman, Bradley & Welanders

Bradley caught 3 sharks (small), several goatfish & convict surgeon with the throw net.

Periwinkles outside of Area F; kill was good but mostly very small fish, signs indicating a recent spawning & hatch (Chromis).

It is much easier to obtain algae, etc. at low tide than any other time. In the case of the fish in Area F there does not seem to be any ~~particular~~ certain time which poisoning is most efficient. One only has to take care that the area does not have too much current, i.e. near the end of the islands in the channels.

Fish, invertebrates, algae & plants preserved in oven. Took rubber boat to town shop for repairs.

Coenobites were scarce - took two ~~samples~~ specimens of usable size.

Birds were not in evidence today. Saw only two fairy terns at a distance. D. bird approach the island.

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Date Aug. 13, 1954
 Personnel Louman & Wehler Weather Clear, Wind 16 knots ENE.
 Water conditions Choppy.
 Temp 80° to 97° F

Radiation level(s)

Operations:

Packet collection of Aug. 12 from Belle. Buffered all samples, ready for mailing, including those taken Aug. 12; contents as follows.

Organism	Card Nos.	Box # (small box)
Fish	12556-12685	1
"	12686-12820	2
Invert.	11189-11272 + 11288-11297	Box #3
Plankton	8241-8252	in box #3
Water	9791-9804, 9809 + 9810	in box #3
Plant + Algae	10024 - 10107	" " #4
Soil	9805 - 9808	" " #4
Rats + birds	13001 - 13098	" " #5

Louman worked on heavy curves, wrote letter, weighed eggs. Took 1 roll 36 exp. Kodachrome (35mm) and 1 roll 16mm 100ft. to Dunwoody for processing.

Picked up rubber boat at tire shop. Hope the patcher held.

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Edna Date Aug. 14, 1954
 Personnel Townsend & Delander Weather Partly Cloudy
 Water conditions Wind ENE 12 knots
 Air Temp. _____

Radiation level(s) _____

Operations:

Picked up the following plants to set out at Edna
 Plants grown
 2 *Tournefortia*
 2 *Scaevola*
 2 *Mesembryanthemum*
 1 *Fimbristylis* (sedge)
 2 *Lepturus*
 2 *Portulaca*
 2 *Coconuts*
 1 - small, ground hugging plant to be identified later
 (called X)

Arrow root tubers picked up at Bikini rotted after planting near lab. many of the plants around lab. probably ~~the~~ killed by too much DDT?

The above plants will be placed at definite points near the survey stakes ~~so that~~ they can be distinguished from plants which are indigenous to Edna itself.

All tide took some photographs in and out of Reef.

Processed 3 sharks from Bell; 2 tuna, 5 mackerel + 3 Jack from Deep Entrance.

Took counting tanks to be filled, fixed the ratio, and worked on the counter. Still having found in trouble. It still counts but successive 1 minute counts may be different by 20% w/ the indium D+E standard. No good. Weighed bags part of the afternoon

OFFICIAL USE ONLY
 UNIVERSITY OF WASHINGTON
 APPLIED FISHERIES LABORATORY
 SEATTLE, WASHINGTON

Locality Elmer & Edna Date Aug. 16, 1954
 Personnel Louman & Welander Weather Overcast, Wind E.
 Water conditions _____

Radiation level(s) _____

Operations: Introduced land plants on Edna as follows

Genus	Locality
1- Scaevola	Stake 100' west from survey point.
1- Coconut Palm	" " " " " "
"	" 200' W " " "
1- Scaevola	" " " " " "
Portulacca	300' " " " "
Plant X	" " " " " "
1- Triumfetta	" 400' " " " "
1- Fimbristula	" " " " " "
1- Mesembryanthemum	0' (survey point)
"	0' " " " "
1- Triumfetta	" " " " " "
1- Lepturus	100' from survey pt.
1- "	" " " " " "

Plants all from Elmer, obtained Aug. 14th.
 Class photographed by Frank from 1000' with Speed graphics.
 Ralph Please note! Dr Frank Tolant & A. P. Welander
 now belong to the 17 fathoms Club. as of Aug. 15th.
 Welander started to prepare preserved fish for exhibit,
 with labels, etc.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Edna, Edna & Clara Date Aug. 17, 1954
Personnel Townsend & Welander Weather Partly Cloudy, 50-60 in afternoon
Water conditions Fair

Radiation level(s)

Operations:

Left 0815 for Edna. Arrived at Edna 0845. To determine readings at site of the introduced plants as follows: 4W- *Trinajetta* 80R/hr, 95BR; 4W *Gimbricoides* 100R, 125BR; 3W- *Portulaca* 70R, 95BR; 3W- plant X- 80R, 105BR; 2W *Coccoloba* 60R, 85BR; 2W *Scaevola* 80R, 110BR; 1W *Scaevola* 100R, 130BR; 1W *Coccoloba* 120R, 180BR; Survey point *Messerschmidia* (S. of stake) 90R, 125BR; Survey point *Trinajetta* 120R, 160BR; Survey point *Messerschmidia* (N. of stake) 150R, 200BR; 1E *Lepturus* 130R, 180BR, 1E *Lepturus* 160R, 220BR

Walked & swam, towing inner tube loaded with gear, directly toward outer reef from Edna. Between Edna & the outer reef noted considerable silt, mud & sand with some coral rubble under which small fish were taking refuge. As we approached outer reef the rubble increased to a point, near the reef, the sand was completely covered by coral rubble & silt. No living invertebrates were seen until reaching the outer reef a number of sea urchins were noted & some hermit crabs. Hermit crabs were present in this rubble area as were increased numbers of fish such as parrotfish, wrasse, groupers, surgeonfish, goatfish, triggerfish, lionfish & puffers.

Moving south west just inside the rubble area & then diagonally across the reef toward Clara we encountered a number of animals, as follows:

Tridacna crocea seen in a hole about off tip of Edna on between Edna & Delaney reef. Small about 2"

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____

Date Aug. 17, Continued.

Personnel _____

Weather _____

Water conditions _____

Radiation level(s) _____

Operations: (1 1/2" across)

Small live coral, appears to be Pocillopora near the shore.

Shells seen off middle of Daisy.

Many small Tridacna near outer reef area off southern tip of Daisy.

Live Porites seen off southern tip of Daisy. (Refer to sketches of this date on plastic.)

Frank + Art intend to leave on or about the 11th of September. Frank would like to ~~go~~ to Los Angeles to see Steve, at least that is the tentative plan. Art would like to come straight home either via San Francisco or ~~direct~~ direct to Seattle from Honolulu - whichever is preferable. Please get up the flights as you wish from there + let us know what gives.

We would like to know when Kelly will arrive approximately, as we would like to plan the field trips accordingly + invite him on the Circuit tour + probably the major collection at Belle with him along we can do much better than with two.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Slower Janet Date Aug 18, 1954
Personnel Laurie & Welander Weather Cloudy, winds variable
Water conditions Variable

Radiation level(s)

Operations:

Welander, Bradley, Bob Stafford, + FGL left 0815 for Janet
to collect rats and fish. Took 3 rats, 2 ♀, 1 ♂ in the area
between the blackhouse & the bunkers to the NW.

In P.M. dissected & weighed rats. Made arrangements to
run some experiments on the shielding characteristics of coal
soil.

Received Laurie's letter concerning the
new schedule. It looks fine to me - in
fact there will be time to make more observations.
Then noted & we will supplement accordingly.

If it is all the same to you, I (Laurie) would
prefer to stay overnight in Honolulu & then fly
direct to Seattle. At present we will have to
wait for Sept. plane schedules which Smith
will obtain as soon as possible. Then we can let
you know. Could you provide our tickets via
commercial ~~airline~~ from San Francisco
or Honolulu?

RECEIVED
AUG 19 1954

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer, Belle Date Aug. 19, 1954
Personnel Lawson & Melander Weather Overcast - Cloudy, SW wind.
Water conditions Lagoon rough.

Air Temp. 72-94°F

Radiation level(s)

Operations:

Trip to Belle 8:15 to 11:15. with Bradley
Bradley caught goatfish & Crinoid sponge with
the throw net. Collections of algae, clam, sea
plant & birds made as usual.

Processed plant, algae, invertebrates, and
finished processing Janet rats.

Arrangements are being made to sample spot
fish caught at Eniwetok. The Atkins is in
charge and will call when they have a good
sample of fish in the refer. One of us will then
go to Wotok & sample the muscle tissue of
the fish which will have a number, location
of catch & date of catch. Samples will be taken
back in small plastic bags in the jug-a-bug &
weighed here at the Bio-med. lab. The fish will
be weighed or length taken, whichever is most
convenient, at Wotok.

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Edna, Edna, Pinar, Pinar Date Aug. 20, 1954
 Personnel Tomman & Webster Weather Clear, no wind. Hot
 Water conditions Calm

Air Temp. 84° - 94° F

Radiation level(s)

Operations:

Frank took aerial photos of Edna, Pinar & Clara. Developed negatives & printed some pictures first rate.

Processed fish & birds from Weekly Bell's Collection. Entertained the usual number of visitors with our tall stories.

Brief respite in afternoon, when building was being sprayed, spent on reef. At low tide water was so hot in some ^{shallow} areas that some of the blennies were dying.

The new porch with lounge is complete, the new air conditioning system is in & working fine, our new shelves are up in various places in the lab. Frank & I will now have to rearrange the furniture & set up our areas of work. Workmen are packing the grounds outside & the shipping boxes will be stored with our tag of ownership. To obtain the boxes we need only call the Construction office.

Went for a swim at 4:30 with Eorge Webster.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date July 21, 1954
Personnel Lawson & W. Chandler Weather Partly cloudy, showers
Water conditions Rough, Wind ENE 10/11
Air Temp. 80-91°F

Radiation level(s)

Operations:

Packaged the Bell collection of the week. Arranged for all day trip to Clava & Bell Muddy for the succession study.

Cleaned up area outside & on the "lawn" Frank mounting photos of the slides of the 3 islands, Edna, Daisy & Clava. Also the color shots of these islands & Bell (from the air) for classification.

Started to clean up the lab. ~~Had~~ ~~having~~ noted rumors that Helstad & Hather are coming so we want to be prepared.

In AM ran absorption curves on Eniwok soil for γ radiation with Bob Taft. Used a 92.5 mgn $Ra D+E$ source and the Juno to do the work. Used cardboard boxes full of soil to run the curves. The thickness of soil absorber used ran from $3\frac{3}{4}$ " to 27". The curve followed the expected form. Check used in the rat paper and Ralph may find use for it regarding plant roots.

Locality Elmer + Miller Date Aug 23

Personnel Louman + Williams Weather Rained so hard there was no casting.

Water conditions Rough

Radiation level(s) _____

Operations:

Left Elmer at 0815 for Clara. Arrived at about 0945, picked up inner tube left there Aug 17 and loaded equipment onto the tube. Went straight out toward outer reef from middle of Clara to a distance of 1/2 - 3/4 mile. Arrived in the area of the reef just inside of the edge where the currents have scoured a channel 4-6 feet deep parallel to the edge. About half way out ran into a large congregation of *H. zera*, ~~about~~ about 50 feet ~~wide~~ into several large clumps of *Heliopora* (?). At least it was blue-green w/ a columniform configuration. We are at a definite disadvantage on identifying these corals since the specimens with identification that were supposed to have been here are no place to be found except for 5 species. In addition to the *Heliopora* there were occasional occurrences of a yellow encrusting coral which in each instance was growing on the under side of side of the rocks. About 150 feet on out we found large patches of a brilliant purple coral which also appeared to be an encrusting type. Just inland from the channel parallel to the reef edge we ran into several live spider snails, turban shells ^{cncom} and hermit crabs. At about 0945 a storm closed in on us, the likes of which neither of us had experienced in the field in ~~the~~ Elmer. I had the rope from the inner tube attached to my ~~own~~ own life belt and when the wind hit I was for

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality _____

Date

Aug 23 (2)

Personnel _____

Weather _____

Water conditions _____

Radiation level(s) _____

Operations

at a tide. Finally we got the raft tied to a coral head and waited for the rain to let up. Our range of vision was about 50 feet so that we could see neither the island nor the edge of the reef. The storm was so noisy we couldn't hear the beavers either. Soon we were so cold we decided to move on any way and, after about 45 minutes of feeling our way along the reef, ended up heading right back to Clara. The rain let up a little so we started out for Belle again after focusing the islands.

About $\frac{1}{3}$ of the way from Clara to Belle + $\frac{3}{4}$ of the way to the reef edge we ran into several growths of yellow coral, some of which were solid living heads 10 to 12 feet in diameter. It looked like yellow ^{Porites} ~~stony~~ coral. In addition most of the corals seen off Clara were fairly abundant. There was also quite a bit of a fine ^(Sarcophyton?) ~~swaylike~~ coral, with ^{Peripora} stems about $\frac{1}{8}$ - $\frac{3}{16}$ " in diameter and growing in a branching configuration 4 to 8" tall. Half way between Clara + Belle we saw several mushroom corals and a few armless starfish.

The regrowth of corals in the devastated areas does not present a distinct border of reinvasion, but rather is very patchy in nature. Often in areas of good growth there will be spots 20-50 feet in diameter in which regrowth is not occurring. It looks to us as if silting is the main cause of death outside the burned

OFFICIAL USE ONLY
UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____ Date Aug 23 (3)

Personnel _____ Weather _____

Water conditions _____

Reduction level(s) _____

Operations:

area. In those areas where surge currents and ~~other~~ ^{wave} action has cleaned out the silt, regrowth is pretty good. In some places, though, rip currents have caused eddies w/ the resulting accumulation of silt and all is dead.

In general the reef $\frac{1}{2}$ distance between Belle + Glen is very similar in repopulation all the way to the west end of Belle.

As we walked and swam out from Glen we noticed that small fish (channels, wrasse, small surgeons) predominated inshore and as we moved out to the edge of the reef the fish were larger and more species were present. Toward the outer edge the surgeons were very abundant & large, ~~and~~ ^{and} goat fish up to 2' in length were seen. Large schools of 12" ^{jeff} (50-50) were present and all of the fish we usually find were seen, especially large goat fish, large groupers, and snappers. The only thing we didn't see a sign of was moray eels. It looks as if the fish in that area are probably coming up over the edge of the reef. Except where food is scarce inshore I can't see why they don't move on in.

Two miles farther (and three blisters on my toes from ^{PT} ^{ES} ~~salim~~ fins) Art and I tented at Belle.

We didn't know that Ernie Wykeup had been worried about us and had called the helicopter to find us with an ~~all-hands~~ w/ a duck ~~grinding~~ by. Consequently we were very 15

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

82

Locality

Date

Aug 23 (4)

Personnel

Weather

Water conditions

Salinity level(s)

Operation: Surprised when ~~when~~ our 1500 pickup by helicopter was interrupted by his landing at 1300. We had been ashore only 5-10 minutes when he came and since we were pretty well pooped we got into the plane. I thought the bird was really getting ritzzy since they had hot coffee & blankets for us and informed us that they were having a hot lunch waiting for us back at Elmer. I guess Ernie had visions of our ending up in the middle of the lagoon.

In the PM we cleaned up the lab (or started) in preparation for Dr. Halstead & crew who arrive tomorrow for the next chapter of Wale's life.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY

OFFICIAL USE ONLY

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Date Aug. 24, 1954

Name Hlander & Larman Weather Fair, partly overcast

Water conditions Wind ENE 10 knots

Temp. 74° to 92°

Salinity level (a)

Operations

Cleaned up laboratory. Consolidated Applied Fisheries property to make space available to others. Moved much of our material & work space to ocean side of Lab.

Frank cleaned all glass ware & suggests that we are in the habit of leaving dirty glassware when they have finished a piece of work. I intend to break the habit, or else? Damn! I'm sticking myself to paper cups. Amen!

There is a trip coming up, to Bellingham probably the 26th of Aug. to monitor Engine of Frank & I will go & collect fish & other fauna & flora. It will be a one-day trip by plane.

Obtained a large barrel & am proceeding to fill it with preserved fish among which is a Whitfish, a Trigger fish & the like.

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Edna + Edna Date Aug 25, 1954
 Personnel Louman + Wehlander Weather Partly Cloudy Wind ENE 10 knots
+ Bob Stafford Water conditions Fair

Bathym level(s)

Operations

Left Edna for Edna 0815 arrival about 0845.
 Made thorough search for new land plants + checked condition of introduced plants. Found a new ~~grass-like~~ plant about 3" high at or near western tip of island. ~~Some~~ Several onions are growing on southern side of island about 100 yds east of l.u. The introduced plants are still alive except the 2 *Messerschmidia* - these appear to be dying.

Fish apparently new to the area are ^{groupers} *Fluorocae*, *Blenni* + a blue fish. One large pack of a large shark were seen off the right formed by the northern sandbar of the island. Incidentally, this area seems to be changing in size + changing shape + the island off it is getting larger. Apparently sand is being blown up out of the crevices into the area.

Wollet + goatfish are plentiful all around the island. 2 species of gobies are as abundant in this salt + sand as anywhere we have observed. *Caenid* surgeonfish are beginning to move in + *Caenid* fish were seen in the deeper areas between Edna + Daisy.

Faulk shot his first bird (a sooty tern) + several others were seen over the area.
 Algal growth + invertebrates seem to be much the first visit to Edna.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Ednae Date Aug. 26, 1954

Personnel Lawman & Wolanski Weather _____

Water conditions _____

Refining level(s) _____

Operations _____

Worked up specimens collected at Ednae. Manned fish & processed all specimens to oven stage.

Prepared for the trip to Bikini on Aug 27 with Bob Taft & 3 others who were to assess damage & monitor the island for a future project. We think it's a good opportunity to gather a variety of land plants & other material.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Elmer, Bikini, Kwajalein Date Aug. 27, 1954

Lowman + Wilander Weather Variable

Water conditions fair

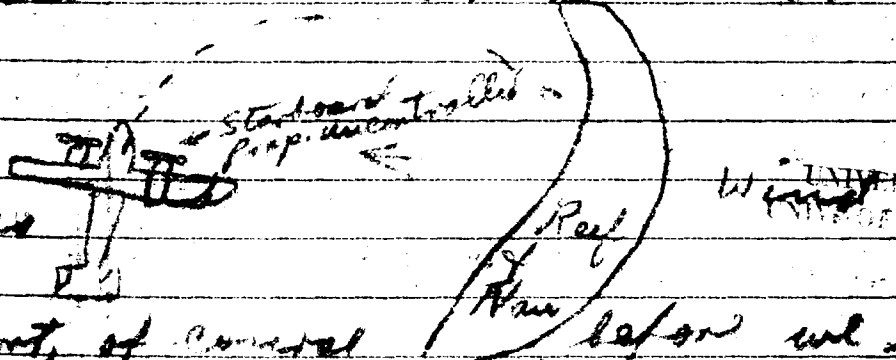
Level(s) low, about 5 m above low at Bikini.

Observation

Left Elmer with Bob Toft, Mrs. Blakeman, Mrs. Keating + ... at 0645 for Eniwetok. Took off on PBM ... 0815 + arrived at Bikini, low sea about 1000. ... we got ashore in rubber boat crew on plane ... with very pistol + some time later informed us they had ... with an uncontrollable pitch. They sent work to King ... plane was coming out to watch our take-off ... Crew worked on plane several hours while we ... fish, land plants, invertebrates, algae, etc ... collections on the water made mostly ... side. Due to surf + turbidity of water fish ... was not large. A good sample of land plant ... made, however.

Went out to plane about 1430, stowed over ... + strapped ourselves in. On Grumman ... circled over head while we read + ate ...

... were ... take - ... stand ... wind ... Reef ... before we went ... Plane got up speed to 60 knots but ... was needed so we finally had to ... ourselves + ... the Grumman



OFFICIAL USE ONLY
WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality

Date

Aug. 27, Continued

Personnel

Weather

Water conditions

Salinity level(s)

Address via rubber boat (which we had to pump
up) & carry food, water & a new propeller
to the P.C.M. We finally left Bikini at
10:00 & arrived at Eniwetok at 2100 after being
about a landing at Eniwetok. We put our specimens
in paper & began to try to get back to ~~the~~ ^{the} water
under, some without I.D. cards & with ~~some~~
knives, etc., etc. MATS gave us
a letter so we went to bed at the B.M. about
11:00.

UNCLASSIFIED
DATE 10/15/83 BY 1043

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Kwajalein Date Aug 28 1954
Name Welman + Lawson Weather Clear
Water conditions Smooth

Time (h)

Operator

0930 reported to duty officer at Kwaj who suggested
that we send a swif to Ernie Wynkoop for clearance with
authorization for MATS travel back to Eniwetok. The MATS
lgt said they thought they might let us on the flight
if we got there. Ate breakfast and went to Macy's of the
Islands for tooth brushes etc. The OD had called over to the
mess when we arrived they met us at the door and went
with us noting all we had bought and the prices
of paper. When we had finished buying everything
we had to pay for (we lost one in the process at
the chief asked if I would sign for the stuff I
did and then he informed us that the things would be
paid for out of recreation funds. We said to heck with that
we had a couple of hundred dollars ^{among} us
and that we were paying our own way. He was dumbfounded
and the OD had told them we had lost everything we
had in Bikini. We retraced our steps and paid for our

At 1130 the clearance + flight authorization came
from Ernie. MATS now informed us that they would let us
on the plane since Ernie didn't send a travel order
nor did he state specifically that the AEC would
authorize MATS. Then the lieutenant showed what he was
saying by stating "Even if they had sent the number
travel order we wouldn't leave you on - You can send

~~SECRET~~
UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____ Date Aug 28 (pg 2)
Personnel _____ Weather _____
Columbia _____ Water conditions _____

Exclusion level(s) _____

Operations
and orders by twice, you know. Commander Doortzen turned purple and we went back to flight operations. He was of the opinion that the airforce boys in MATS were using us to throw a few low blows at the Navy. From where we stood it looked the same way - except we were the ones that were being hit.

The Super Constellation came in at 1230 and Doortzen introduced the plane commander (who was a navy officer) and told him what had happened. He told us to get our gear and be ready to board the plane at 2:30 PM. MATS was pretty sure and said we couldn't get on any way but they were finally informed that the plane commander was in charge of operations. They wouldn't put us on the manifest and as we boarded the plane the MATS lieutenant informed us that in any accident we would be considered as stowaways. The navy officer with us just sneered at him and we boarded.

The plane stewards were slightly shook up when we were not on the manifest boarded. They were really worried when they saw my shot gun and our knives. We landed at Eniwetok at 5:30 PM and were met by a Sergeant who whisked us past the MPS and over to the truck.

We arrived at Perry at 6:20 and were met by Ernie and Marie who had heard practically nothing from us for 3 days. They didn't even know if we were on the Constellation.
on the manifest

[REDACTED] 11
UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date Aug. 30, 1954

Personnel Lawman & Welander Weather Windless

Water conditions _____

Radiation level(s) _____

Operations:

Yesterday (Sunday) Lawman, Welander, Thomsen & Bradley went down to 50' in area Elmer. Lawman wants to join the 17 Father club if is well on his way. Had some nose bleed upon returning to the surface.

Monday

Lawman took an L-20 to the Belle-Edna area and shot the inner reef from the crevices just west of Belle. Also photographed the area between Belle and Clara. Came back and developed the negatives and printed contacts. All shots good.

Welander dissected and processed Bikini fish and packaged the birds.

All helicopters are grounded indefinitely due to some mechanical trouble in the tail rotor.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date Aug 31, 1954

Personnel Lowman and Welander Weather Clear

Water conditions _____

Radiation level(s) _____

Operations:

Welander, ~~Gibson~~ ~~McIntosh~~ ~~DeSoto~~ and Lowman worked on plants from Borkini, algae, and fish. Plants collected at Elmer were portulaca, coconut, pandanus, triumphetta, Scaevola Guerrandii, Messerschmidia, Lepurus, Papaya, Ipomea, one unknown plant #10179 + 10180 (preserved a specimen for identification), and arrowroot.

UNIVERSITY OF WASHINGTON

OFFICIAL RECORD

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer, Platte Route Date September 1, 1954
Personnel Welander & Lawson Weather rainy
Water conditions _____

Radiation level(s) Background counter room 23cpm

Operations:

The counter is now in operating condition. The trouble was that the scalers were not sensitive enough (sensitivity according to manual .25-3.0v). Didn't have any way to check sensitivity of the scaler but since all tubes tried w/ it didn't start counting until 300 volts above their claimed plateau, decided to increase the sensitivity by changing the divider network in the amplifier stage. The sensitivity is probably between 0.1-0.5 vds now and the plateau is good. However, the tubes used before at the higher voltage aren't very good now.

Started making enlargements from the aerial shots and putting together a mosaic. We will soon have a map from Belle to Edne w/ all the reef included that shows every coral head. Art and I want to plot the re-entrancy of corals and clams etc. directly on the map. It is a job but is the only way to do it as far as we can determine since observations in only a limited area are fouled up by floods of silt or from denuding by means of what was sand and silt bars. From our long travels up and down the reef we've gotten a definite impression that the landscape is moving around too much to count on using a limited area. From our biased point of view a study of the lagoon marked on maps at successive dates will give more information.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

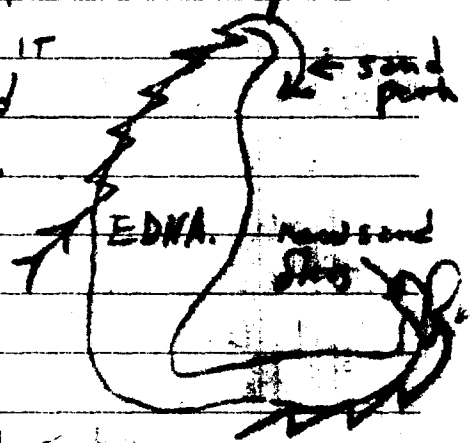
Locality Edna Date Sept 1 (continued)
 Personnel Welanders + Bowman Weather very
 Water conditions _____

Radiation level(s) _____

Operations:

Even the islands are moving around. In six weeks the west end of Daisy has moved seaward between 30 and 40 feet. The long sand spit on Edna is moving westward and the hole that was at the tip of the spit is entirely filled with sand and gravel now. The spit is also building up seaward and before too long should form a continuous beach out to the small sand bar that is a couple of hundred yards seaward on the outer reef. In addition the entire line of Edna is slowly moving seaward. Our iron stake that was at about the high tide line is now out in the water at low tide (except for very low water). It looks like the beach has moved about 4-5 feet inshore. As usual I watched the erosion process the other day. The breakers from the lagoon pick up the sand and carry it ~~straight~~ ^{diagonally} up the beach then drop it straight down the beach so that it runs along the edge of the island and eventually dumped around the end.

Got made plankton traps around at all with Dr. Blake + Mr. Maeda left at 0800, hauled traps for 30 minutes in wide entrance beginning at 9:00 am. Dr Blake caught a *Stomatopoda* in wide entrance.



UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____ Date Sept 1 (continued)
Personnel _____ Weather _____
Water conditions _____

Radiation level(s) _____

Operations:

Nets out at LeRoy 11:00 am for 20 minutes.
No wind, (overcast skies) so used 1 engine of
M-boat alternately in & out of gear as nets neared
the surface or went too deep. Obtained large samples.
One ² dog tooth tung & one ³ machaval caught off LeRoy.
One small ⁴ brite caught between LeRoy & Belle.

Nets out at Belle 12:32 pm 15 minutes towing as above.
No fish caught large brite off ~~LeRoy~~ Janet.

Nets out at Vera ~~1:01~~ pm for 15 minutes.
One small brite caught leaving Vera.

Nets out in Deep Entrance 3:38 pm for 15 min.
No fish seen or taken in this area after trolling
up & down the passage.

Used M boat # 274 with George Clark as
skipper & Ted Morrison. Former very accomodating
& handled the nets very well with the single
engine.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date Sept. 2, 1954
Personnel Towman + Weather Overcast + Rain
Welanders Water conditions Calm

Radiation level(s) 23 cpm in water

Operations:

Towman preparing mosaics of aerial shots of the reefs & islands from Belle to the target area.

Welanders dissecting, weighing fish caught during the plankton trip around the atoll. Plankton filtered & gross samples removed for assay. Remains preserved for identification. Hauls at Levoy quite different from those made at other areas in type of organisms.

Filled the adze hung at the machine shop where the compressor is now housed.

~~CONFIDENTIAL USE ONLY~~
UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Date Sept 3 '54
Personnel Welander + Lawman Weather Cloudy no wind
Water conditions Smooth

Radiation level(s) Surface near 25 c/m

Operations:

Dissected 3 ghost crabs and 3 seaweeds from Bikini
Worked on masses.

Processed more fish from Emirata I. sent
over by Lt. Allan Shover. Bob Taft gave
of his techniques for processing mussel
samples. He has to "decide" whether the people
here eat fish or not if he can get the word
from the Division of Biology & Medicine.

At 4:00 pm we were going. Frank & I went
to 100', both our pressure gauges checking right on
the nose. With us were Buckley, Bennett, & Stafford.

UNIVERSITY ARCHIVES
UNIV. OF WASH. LIBRARY

~~CONFIDENTIAL USE ONLY~~

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer, Belle - Sea Date Sept. 4, 1958
Personnel Lawman & Welander Weather Wind about ENE clear
Water conditions _____

Radiation level(s) 0.23 cpm at lab.

Operations:

Frank worked on photographs then at 10:00
left in L-20 for more aerial photos. They then
stayed clear just long enough to finish the
self area from Belle to Target. Frank now sitting
out to finish & complete printing of the pictures of the
area.

Packaged all material from the day's work
& dissected muscle tissues from 3 yellowfin tuna,
1 bluefin tuna, 1 large mullet & 4 blue mackerel
caught by Military on Ford in Wide passage.

Dr. Hirth, Dr. Matheson & another are arriving on
today's plane & will be here about 10 days.
Taking inventory & arranging their equipment in
the Lab. & building 511.

Lawman, Garrett, Bradley, Staffal & Welander went
spear-fishing at 4: pm to a depth of
1135 feet quite easily. Picked up some *Habib*
at that depth with "leaves" or segments more than
1" across. Also found *Caulerpa* & one other
type of *Junkenia* vintage being an *amator* algae.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date Sept 3 '54
Personnel Welander & Lawman Weather cloudy no wind
Water conditions Smooth

Radiation level(s) Count over 25 c/m

Operations:

Dissected 3 ghost crabs and 3 sea cucumbers from Bikini.
Worked on masses.

Processed some fish from Eniwetok. Sent
over by Lt. Atkins. Showed Bob Taft some
of his techniques for processing muscle
samples. He has to "decide" whether the people
have eat fish or not if he can get the word
from the Division of Biology & Medicine.

At 4:00 pm Mike and I went to 100',
both our pressure gauges checked right on
the nose. With us were Buckley, Garrett & Stafford.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elnor, Belle - Etn. Date Sept. 4, 1954
Personnel Larman & Welander Weather Wind about ENE clear
Water conditions _____

Radiation level(s) 2.3 cpm at 100'

Operations:

Frank worked on photographs then at 10:00 AM left in L-20 for more aerial photos. ~~He~~ ~~stayed~~ stayed clear just long enough to finish the self area from Belle to Tangle. Frank was setting out to finish & complete printing of the pictures of the area.

Repacked all material from the drying area & dissected muscle tissues from 2 yellowfin tuna, 1 bluefin tuna, 1 large mullet & 4 blue runners caught by Military on food in wide passage.

D. Hiatt, W. Matthews & another are arriving on today's plane & will be here about 10 days. Taken inventory & arranging their equipment in the Cabot building 511.

Larman, Barrett, Doadley, Stafford & Welander went aqua-buoying at 4:00 PM & went to depths of 135 feet quite easily. Picked up some Halimeda at that depth with "leaves" or segments more than 1" across. Also found *Caulexpa* & one other algal funghi ~~the~~ vintage being an amateur algalist.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality S. Linn Date Sept 5th. Sunday
Personnel Larman & Welander Weather Fair
Water conditions Wind ENE

Radiation level(s) Blog 25 up at Lab.

Operations:

Frank worked all day & Evening on photography except for about 2 hrs in the afternoon we went aqua-logging with Wynkoop, Edwards, Larman, Welander & Larman. Welander worked around lake taking samples for the fish exhibit, packaging material from the ~~of~~ oven & getting cards & samples ready for shipment.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Labor day

Locality Elmer - Date Sept 6th Monday
Personnel Lawman & Welander Weather Fair, Some light rain
Water conditions Fair ENE Wind

Radiation level(s) Stop at 13 at lsd.

Operations:

Lawman worked on photographs all day & evening except time out for aqua-bung trips.
Welander filled aqua-bungs.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

~~CONFIDENTIAL USE ONLY~~
UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Edna + Belle Date Sept. 7, 1954
Personnel Looman + W. Landree Weather Fair
Water conditions SE wind

Radiation level(s) 25.5 c/m by at Piermed. Lab.

Operations:

Major collection at Belle. Left 0830 for Belle. Collected algae in area E, F, + G. Invertebrates; Fish in area F; birds + land plants. Left Belle at 1500. Noted great deal of silt + turbid water stirred up by SE wind onagoon side of reef.

The possibility that a great deal of damage is produced by silt should be examined, especially in reference to coral. On the trip out Frank got shots from 2000' over Edna + Daisy to fill in the reef picture.

2 millimetric + 10 mm beta at Belle

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Date Sept. 8, 1954
 Personnel Lawman, Bohannan, Schumler & Klauer Weather Fair, partly overcast
 Water conditions No wind in morning
ENE afternoon.
 Radiation level(s) 25 cm at 1000 ft. Air temp 75-96°

Operations:

Things needed for the boat:
 6 - Hunting knives with sheaths.
~~1 - 1/2 gal. oil~~ arrived today.
 2 - Ektachrome film Metal clip boards (plastic),
 4 x 5 film packs.
 Ralph, Kelly, Robinson & Jugulins arrived today.

Samples & Cards sent to Lab. in Seattle
 Fish card numbers: Samples 12821 - 12945,
 12946 - 13000, 14001 - 14015.
 Invertebrates 11298 - 11345
 Plants :- 10108 - 10115
 2nd Cambrian 8251 - 8262
 Rats & Birds 13099 - 13175
 Remains of plants in vials collected Sept. 1, 1954
 Water samples 9811 - 9826

Samples for chemical analysis:
 Goulet spec. #766 - muscle, gut & liver
 Bassacuda - 759 - muscle
 Shark spec #501 - liver

Sorted the new specimens, and several boxes in briefing
 them on the work of the lab. then as I started
 processing the major bottle collection made
 yesterday.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Edna + Edna
Locality Lawman Palumbo I.B. Stern (Procurement) Date Sept. 9, 1954
Personnel Barham + Welander Weather Hot, very little wind ESE
Water conditions Fairly calm
Temp. at 100 79° - 100° F.
Radiation level(s) Counting Room Bldg 23-1ms

Operations:

Trip to Edna 0830 (10:30 after 1/2 hour late)
surveyed all the plants new + old + intro-
duced. Counted about 40+ new plants most
of which were on western half of island. Photographs
taken of approx. 40 plants + all the intro-
duced plants with notes on their conditions.
Waded out into the shallow area around
Edna on the North side noted the change in
the sand areas, the pool just north of Edna
is now entirely covered by sand + silt. Quite
a bit of algae is growing in this area, ~~but~~
it looks pale + bleached + probably dying.
However, there ~~was~~ were healthy looking patches in several
places, *Sargassum muticum*, *Ceramium*,
Sargassum (?), blue green nostocum which formed a
squashy matting on the area from shore
to the loughs that we looked; some *Hydroclathra*,
Sargassum, and *Sargassum solidum*. It appears
to me that the algae has been killed, but is
reappearing again at a rapid rate. The next
observation in this area will give a better indication
of reinvasion or recession of these plants. This area
reminds me of the tide flats at the north west tip of Point as observed
about 2 months ago. No coral insects were seen, except for
1 grey crab about 2" across the back. Newly germinated plants found
in drift area - seeds waded up etc.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____ Date Sept. 9, 1954 Boat

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

Nothing unusual noted in invertebrate
fish & other items.

Left Edna 1115 & returned making Eagle, King
rays & sharks on the way as well as
a large Monte ray near inside Point.

Worked in the Lab in the afternoon, Frank
in the photo. Lab. ~~the~~ Processing.

Oyua - King Trip 4:30 pm to 5:45 to
140' feet with ~~down~~ Palumbo & Welandor
going down. Brought up specimens of
seal & Invertebrate, ^{Lyngbya} Halimogys, 11 mounds, Heparty, ^{injection}

Evening: Welandor wrapped fish for shipment
home. Palumbo, Barbara helped Frank
at Photo Lab. then came down & worked
in Bio wet Lab. on Ecto specimens.

Palace fish may be obtained from Eymwalek
(Fred) by either calling Sgt. Poremion or Lt.
Athens (Fred 4192) at Special services. They have
a special cooler in which tuna & mackerel
& other fish will be stored. They will either send the
tissue (muscle) over if requested or you can make
the trip to Watch with a jugalug & plastic bags
& obtain as much tissue as required.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer & Daisy Date Sept. 10, 1954
Personnel Lowman, Palumbo, Weather Calm Hot
Welander, & Bonham Water conditions Calm
Lab: 78° F min, 97° F max.
Radiation level(s) Counting room bg. 24/min in 1 hr.

Operations:

To Daisy by helicopter 0800 Land plants common at high tide line along NE shore: rare or lacking elsewhere. Fungus on driftwood or root near S end. Ghost crabs abundant; fresh holes spaced < 10' along lagoon shore and commonly elsewhere on shores. Along lagoon shore from point opposite big pipe NE for 300' in intertidal area counted 12 sea slugs (Tectibranchiata) alive and 3 dead. Wading in this vicinity, saw many hermit crabs, one poison spine urchin. On NE shore Art found a white, warty crab, 2 1/2" with large manus that burrowed quickly in the bottom sand. Art, Frank, & Ralph aqualunged at ^{lagoon} reef edge around coral head opposite SW tip of island. In spite of calm weather they contended with the surf. In 20 minutes no coral (living) was seen; only algae and fish (surgeon). Ralph found a cluster of cat's eyes and brought back a pocket-full. N.E. & S. much algae and many small fish. Living algae present were: *Halimeda*, *Stylosa*, *Polysiphonia* in great numbers, *Rhizoclonium*-like mats, *Microdictya* or *Cladophora*, and some brownish *Selenospira*-like clumps. The land plants were confined to the high tide drift line on the NE seaside of the island w/ the exception of 1 seedling on the lagoon side near the high tide line center of island. Also the brown gill fungus on dead *Messerschmidia* wood. The plants included: *Sesuvia*, onions, *Messerschmidia*, *Lepturus*, *Boragin*, *Justicia*, bean, and an unknown w/ odd *Cotyledons*.
also *Trientalis* and *Fimbristylis*. 40

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

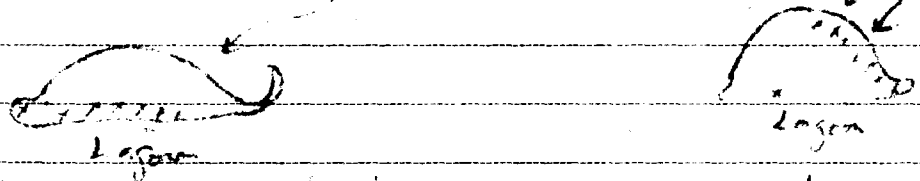
(5.2)

Locality ELDER - Daisy Date 10 Sept 1954 contd
Personnel _____ Weather _____
_____ Water conditions _____

Radiation level(s) _____

Operations: _____

There were many plants approximately 50 in number ranging in size from barely visible to a patch of *Lepturus* (bunch grass) 10" in diam. These plants were all healthy except for some reddish bunch grass, brown tips on the *Pandanus* leaves, and brownish leaves on *Trinitta*. A sea bean 5" high w/ 2 sets of pinnate leaves was photographed, as was the fungus and a *Pandanus* plant. The pattern of distribution was similar to that on *Edna* at the high tide level, but the location or concentration of plants differed. (On *Edna*: _____ on *Daisy*: _____)



These appear that the seeds are drifting in and from along with being covered up too much or being blown away. Marked plants in the central area would indicate death of all seeds present before the shot either by physical removal, heat radiation etc.

We were not able to study the seaward ~~side~~ side flats as time ran out.

Frank & Kelly worked till late on photos
Medical group gave party for Al & Frank - Farrell & Kelly, Papp. Welcome - good stuff!

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer, Friday Bay Date 11 Sept 1954
 Personnel Borham, Polunbo Weather 7(11) - 96°F
Welander, Lewman Water conditions Calm

Radiation level(s) Counting Room Bldg 24

Operations:

Lewman finished work in photo lab & cleaning up poods and ends, as did Welander. Lewman and Polunbo tried to find a hole to "crawl" to but couldn't do better than 150 feet; came up just as 12 o'clock whistle blew and it was a mad scramble to get to lunch before the door slammed on us - as usual. Parking was completed by L & W just as Buck came to pick them up at 8:00. T. grateful for shells (four or five bound ones at least) and said return to lab by B: P to continue working up Belle collection. Swimming at the minimum with a few minutes equalizing practice.

Checking requests of Sept 8th.

Ask Frank what is needed as to Extachrome film

6 - 4x5 Film packs Super XX

Metal clip boards - Ask Art

Also - Acquiring spare parts - see list

Include rubber diaphragm regulator

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Fishing Barge Date 12 Sept 1954
 Personnel Benham, Palumbo Weather 77-16 (2 days) Wet all day
 Water conditions Rough

Radiation level(s) Plsd in Counting Room - 24 c/m

Operations:

Kelly spent from 9-11:30 am on fishing barge trip - Jersey Channel - collected various samples of fish from fisherman. Tissues were cut out and placed in profilm bags + kept in jugalug. Processed all tissues during pm. 2 jacks; Strapper, yellowtail, remora, and a half beak.

Palumbo worked up during am and pm all the land plants collected Belle Sept 7th by 2th.

Summarized the collections "other than daily" in order to plan future collections + observations. Looks like a circuit tour is demanding attention as well as a Belle observation trip. (50) week of the 12th will take care of these two items.

Talked w/ Mr Wytkop and Johnny K re change in vehicle. At present our transportation is limited to very tough starting, and forward progress only - in low and second.

Kay: Kelly would like you to find + send out his rubber lettering or printing set. Or, such a set can be obtained at Sears for about \$4.00 -

This set contains about 10 of each letter and would be useful in making up our own stamps so you all can read our (mostly my) cards.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date 13 Sept. 1954
Personnel Palumbo & Barnham Weather Cool 74-86°F. ENE
Water conditions Rough

Radiation level(s) 1 hr bg; 25.6 c/m

Operations:

After a very wet, rainy night, the jeep failed to start; Ralph called garage. They towed us there and replaced plugs and worn transmission parts in 1½ hrs. Later, the motor pool brought a ½ ton Dodge Power Wagon, ^(gone 1800 miles) with 4 wheel drive, 4 speeds ahead, and power winch on bumper as being the most reliable transportation they had available. Their smaller pick-ups are shot. This is a nice, new, with closed cab, spotlight, and open bed. They said loan cars are available in case of breakdown. Just call Motor Pool, not garage. We need new drivers' licenses for this big truck, but Ralph does not have one and K.B.'s expired in March. Received large wall clock, electric, from Supply, for lab. Ralph arranged for a morning observation trip to Belle by 'copter. KB checked out from photolab 25 sheets 4x5 SXX, one roll 20 exp. Plus X 35 mm, 1, 36-exp. roll Kodachrome; 1, 100-ft. roll Kodachrome 16 mm.

In lab, sealed and mailed samples:

Birds 13176-13183 (8)
Invertebrates 11346-11424 less 3 shells (76)
Fish 14020-14095 (76)
Plants & Algae 10189-10247 (59)
Water cards 9827 & 9828 (Samples not found)
Coral from Rongelap (identity not clear)

Ralph wrote Laureri
KB a little stupid
about sunshine on
fishing barge; legs,
not bad.

Penny algae samples of 9/9/54. 140ft processed pm

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer & Belle Date 14 Sept. 1954
Personnel Palumbo, Biggar, & Bonham Weather Sunny, ptly. cloudy 77-92
Water conditions Moderate. Wind 10-15 NE.

Radiation level(s) 24 c/m for 1 hr.

Operations:

Frank: Lyle Dunwoody asked if you left a copy of the statement of transfer of photo equipment here at lab. It should include films and cameras. If you want to keep it send a typed copy for the records here. If it is here, where?

With Mr. Leonard A. Biggar, visiting H & N man, left Elmer 0830^{for Belle} by 'copter, spotting sharks & rays. Circled & photographed 4x5 dock on Runit. Located and photographed from about 30 feet^(suspended still) manta ray off Janet, lagoon side. Poor, because the clear view from higher was blurred by waves from the wind of the 'copter when it was lower than 50'. Photo of 1005 area from 30' as we landed on Belle (4x5). Belle lush. Insects: caterpillars, ants?, earwigs, grasshopper, moth, large butterfly. Helped Ralph take 11 Robot shots. Invertebrates: chitons (with concealed plates), sponges, many ghost crabs, Tridacna, Hippopus, Ptycodera, Coenobita and Calcinus, Porites of finger- and encrusting types, Heliopora and Acropora invading slowly; hairy spider crab, tiny nudibranch, Holothuria atra, ~~the~~ sp. and a gaudy giant cucumber 4x14 inches bedecked with colored round spots (Robot color shot). Only insects sampled. On flight home at 1130, again circled manta at Janet, photo from 75-100' with shadow of plane showing. Pilot said plane 34' long. He estimated manta at 6' to 10'; conservative fellow! Tally both ways, only: Shark 15, sting rays 6, Eagle 6, Manta 2 (divide by 2). In P.M. developed and printed Bradley w/75' shark, and 5 aerial shots. After dinner Ralph & Lyle tied Ernie and Kelly in horseshoes. At lab, wrote log and prepared for tomorrow's circuit tour. Hard rain with lights

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____ Date 14 Sept, 1954 (contd.)

Personnel _____ Weather _____

Water conditions _____

Radiation level(s) _____

Operations: westerly wind. - very low tide today

Most of time at Belle was spent photographing tagged plants, observing others, and skirting shore line of Areas E, F, and G. The island appears from air to be very lush, much greenery and very few spots for copter to land. Inspected plants in Areas C and D and found them all in excellent shape. Flowers were seen on *Messerschmidia*, *Scaservola*, *Portulaca*, *Gnettarda*, *Fimbristilis*, *Triumfetta*, and *Boerhaavia*. Flowers were present on the sprouts of plant "1319" in area D. Plant 1261, a *Messerschmidia* is typical of the plants recovery, on 6-18-54 it was 6" high and this date plant is about 12" with many healthy leaves. Some *Triumfetta* and *Boerhaavia* plants looked yellowish and a 6" *Gnettarda* plant that was yellow and mottled was taken for leaf autoradiograph and sampling. Soils were taken in area D and area E and 1". Largest plants were about 3 ft high, but very healthy looking. Algae were collected in area F for identification. There were examined on and some included: *Habrocladus*, *Opuntia*, *Diclyota*, *Sphaerococcus*, *Chlorocytisum*, *Platymonax*, *Polyisophonia*, *Dichosphaeria*, *Bryopsis*, *Microdictyon* (?) and three still unidentified. These algae all so far from shore low tide and healthy or at least living. A bracket fungus was found, photo'd, and sampled. No abnormalities noted, excepting one long member of the *Sunshine Club* + a doctor's carriage. 46

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer + Circuit Tour Date 15 Sept. 1954
Personnel Bonham, Palumbo Weather Good 75-92° F
Blake, Bradley Water conditions Moderate
Wind ENE

Radiation level(s) 1 hr. Bgd = 24 c/14

Operations:

Received from UW: 15" telephoto lens, "aqualung" tools, and Scrips Inst. instructions for overhauling aqualung. Thank Marian Frank: George Bernier would like the pink receipt for pictures kept here at the lab. If you took it with the big stack of prints as he thinks you did, could you send it to us (KB) Also received 2 plankton buckets and 2 collars; 1 plankton bucket w/ net.

Takeoff ~~at~~ at 0922 (On Blake holding by ~~overhauling~~ dental job) Capt. Gore piloting. Stops made at Bruce, Vinar, Olive, Alice, Jerry and Henry. Palumbo and Bonham took survey June #89 readings - only 2 readings were found at Alice @ 1" x: 9-7, P-12; r-2; @ 3' x: 9-14; P-10; r-2. all other islands read 0. Soil at beach and land also taken. Samples and cards will be ~~made~~^{made} and you all can decide desirability of making plates. Forget what decision was made re soils.

* Please inform in time for next tour in October. Algae and Sea cucumbers sampled. Counted Rays etc as per ADW's instructions: Sharks 40; Sting Rays 5; Eagle Rays 25; Manta Ray 1; Turtle 4. Return Elmer 1402. NB. It requires 7 seconds for green Coconut to hit the fun 500ft (KB found 549). Started working up Sea cucumbers, packaged yesterday's samples, put soil samples to bake etc.

Ed: Could you please check the photo file and let us know what inverts out here have not been photod. Kelly does not want to duplicate unnecessarily.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date 16 Sept. 1954
Personnel Bonham, Palumbo Weather Fair 74-95°F
Water conditions rough, moderate

Radiation level(s) 1m - Bkgd 25 c/m

Operations:

Processed algae and sea cucumbers of yesterday's circuit tour. Started decay curves, will run all plates in box once every two weeks unless notified otherwise. 6 negatives, prints & receipts for same mailed registered mail, confidential. Kelly rigged up 15" lens in graphic for Tomorrow's trip to Belle. Set up 6 small aquaria on water table after carpenter had drilled drain holes in side and bottom.

Carpenter also brought a piece of bakelite for desk top - Tested its resistance to various chemicals including KI, Ethylmethylchloride, Alcohol, NaOH, Conc HCl and Sulfuric. Only NaOH marred the surface. Piece 35x45" will be used to cover three desks.

Spent one hour in organizing instruction w/ Jerry and John (Recreation - H&N). Looked nothing. H&N may OK use of aquarings & the Rec boys want to know the score.

Got gallon of Sani Chlor ^(from warehouse), pencils, & paper clips, ^{@ Ralphs + Kelly's drivers' licences} from Smitty.

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer & Belle Date 9-17-54
 Personnel Palumbo & Bonham Weather Good, almost no rain. 78-88 E, 15 mph
 Water conditions Moderate

Radiation level(s) Parry Is. 24

Operations: Left 0840 by helicopter w/ Bob Taft, H. D. Burgess, and Don Layaou who got off ⁰⁸⁵⁷ at Edna. (Not much chance to count ray with them aboard). Raised floor board for aerial photography and took Belle from 1000 ft (primed shutter?) and 2000' (3 shots) on 4x5 w/5" lens. Landed on Belle 0920. Ralph observed & photographed plants while KB walked around the island. Exposures #1-#12 of plants; #13 & #14 of 2 pumpkin starfish. At 1110 Ralph w/ shorts, knife, & net bag, & KB with hat & coveralls, both w/ masks, started out from H across to outer reef toward largest rock (with dead barnacles). Distance scaled from Frank's aerial map, using Lauren's map and Ed's slide rule, 3600 ft. to reef. Reef progressively more productive farther out. New coral growth well in, but richer, out. Many fish, large & small. Scattered *Habituca* (10-20 seen) and 2 large black cuc's with rows of large tubercles. Two ^{Octopus 10" long} large ^(2-ft) starfish, 16-rayed, w/ 2" spines, $\frac{1}{2}$ way across reef. Many pools neck-deep for KB; Ralph swam. Took slate urchin from reef. If all the dead coral was alive before the tests it must have been a beautiful sight! Very fine as it is. Patches of coral living everywhere. *Acropora*, *Porites*, *Pocillopora*, *Helipora*; large, cushion types, encrusting, and soft corals. Abundant poison-spined urchins, up to 10" spines; no banded spines seen. 2 pumpkin stars carried from ^{near} outer reef to shore to photograph (930' W). Arrived Belle H, 1345 hrs. Left Belle by 'copter 1452, Arr. Elmer about 1530. Truck would not start; called Motor Pool. Took Kodachrome roll of 9-11 to 17-54 ^{DK-35-36-FL} to Dunwoody for processing. Rollovered w/ 3 shots of lab including Ralph at back. New 36 exp. roll used today at Belle. Motor Pool lent us jeep, took truck. Log of Aug 23 ^{UNIV OF WA} describes previous observation trip on reef. Today saw many *Tridacna* and

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality _____

Date

17 Sept. 1957 (cont'd)

Personnel _____

Weather _____

Water conditions _____

Radiation level(s) _____

Operations:

a few *Hippopus* and *Plat.* all healthy except for some *Bombina* + *Portulaca* and one *Messerschmidia* #1408 -

The algae close in on the outer tide flats is very meagre. This poor looking and limited in diversity. One can find small patches of *Dicranodactylon* 1-2" wide and tall, and *Halimeda* 3" tall x 2-3" diam; and bottom cover of a most oceanic blue-green ^{and yellow} *Alga*. As one proceeds outward toward the reef, the sizes of the patches increase as does the variety of species. *Cantopora* is very abundant however, in the 300 ft. travelled I saw only 9-10 patches of *Cantopora novilliana*; the *Halimeda* patches included some *H. opuntia* 10" tall and 1 foot across, *H. stepana* up to 5-6" tall in patches 6" diam, a *Halimeda* (probably variety of *opuntia*) of very small segments almost a foot tall + in large patches about 1/2 way out saw 1 clump of *Lantern* (sand alga) 5" tall x 7" across + healthy looking - saw more of it near the ridge, a couple clumps only. Saw lots of *Dictyosphaera* and *Murchisonia*. The most seen out here this year, especially *Murchisonia* which covered in the coral heads 3 ft. around. The *Dictyosphaera* was mostly very small, still in the juvenile stage. *Pocockiella* was seen in among the dead coral. some blades were 6" long. *Udotea* was found in abundance also some blades up to 2" across. One small clump of *Rh. julia* was found in clumps of

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality Elmer Date 18 Sept. 1954
 Personnel Palumbo & Bonham Weather Deluge & wind last night. Early, rain; then sun. 79-90F
 Water conditions Moderate. Wind E 10 mph.

Radiation level(s) Counter bg. 24/m (for 1 hr)

Operations: Developed 4 negatives taken of Belle yesterday. Shutter not primed on 1st. Others fair, but on the two vertical shots, slightly blurry due to vibration. Oblique shot, crisp. Will not print them, but hope to retake in a month to show vegetal changes. If ever printed, a photo sheet will have to be made for each. If not printed, they need not go through classification red tape, but must be kept until officially destroyed under supervision of security personnel.

* Frank: Letter to KB from Wynkoop says to change classification from "Confidential" to "Official Use Only" for LRD-FP-2, 2568, 10711. George says to criss-cross out all but "Without Title", and stamp OUC, on envelopes, prints, and pink data sheets.

Motor pool returned truck with new condenser coil. Finel

Received from U. of Hawaii, Marine Laboratory 1 x 5 gal 95% ethanol, and 2 x 1 gal absolute ethanol. Supply said box had been here a couple of days, but he could not find us in.

Sgt. Prunier of Special Services, Fred, Phoned (3169 or 3184) to learn counts of tuna they had supplied; presumably these were the samples and cards mailed 8 Sept. He wants to use the fish which are choking his reefer. Counts of plates 12568, 12572, 12577, & 12631-40 suggest that muscle of these tuna, groupers and jacks yields uncorrected counts of from 120 to 7900 per gram, average 830. Omitting the highest which is 10 times the next highest, average 240. Total correction will probably be from 5 to 10, so these would be averaging from ^{1000 or} 2000 to 8000, with occasional fish yielding from 20,000 to 100,000. We shall suggest abstaining from eating these fish for a while. Sgt. Prunier

UNIVERSITY OF WASHINGTON

APPLIED FISHERIES LABORATORY

SEATTLE, WASHINGTON

Locality _____ Date 18 Sept. 1954 (Cont'd)

Personnel _____ Weather _____

_____ Water conditions _____

Radiation level(s) _____

Operations: says he will freeze fish entire from now on for a while and we may get entire series of tissues from those we want. He tagged his fish with a number. Was his number recorded? He wants to eat those fish with low enough counts.

Ovenized cucumber samples, ¹¹⁴⁷⁶⁻¹¹⁴⁹⁹ on bottom level; sacks melted. Counter gave about 500/min for Ra D+E @ 1200V, top shelf. Finished cucumber cards and sealed samples.

Portunbo spent entire day in sick fighting bad case of flu or something. Must have been awful sick - missed breakfast and lunch! Headache, aching bones, brick in stomach, and weak all over.

UNIVERSITY OF WASHINGTON

UNIVERSITY OF WASHINGTON
 APPLIED FISHERIES LABORATORY
 SEATTLE, WASHINGTON

Locality Elmer, Fish barge Date 19 Sept 1954
 Personnel Benham, Palumbo Weather 77-89
 Water conditions Moderate

Radiation level(s) None - 1 hr. 23 c/hr

Operations:

Kelly off to concrete barge for fish. Ralph to Lab to check counter trouble and write code, package samples + catch up on observations etc. The counter started acting up yesterday when Kelly noted the R. D. Standard counted 589 cpm - on two counts. So then ran counts at different voltages. Results:

1250v (2min) 218	1300v 1041
1280v (2min) 522	1350 2000

So ran another series.

1280 (2) 433	1310v (5min) 1322
--------------	-------------------

1300 (7) 1138

So ran counts for 25 min at 1250 volts and tried again

1250v (10min) 2037

1280v (10min) 2063

1300v (10min) 2105

1320v (10min) 2117

} So will operate at 1280v as suggested

On Parry Fishing Barge (P.F.B.), sampled 1 ^{*Capane melampygus*} hck, & 1 Uku, Aprion virascens. Saw also, Gnathodentex, Lethrinus, Siganus, other G. melampygus, "pink lady", and a 12-16 puffer Tetrodon hispidus caught. In the puffer's mouth was a living, white isopod 2" x 3/4" (preserved). Bradley saved the puffer's teeth. In its dig. tract were 30± small (1 1/2") starfish, and vertebrae, jaws, & teeth of a small shark. Ralph & P.B. dissected & filled out cards for plates 14096 - 14125 which include besides above samples, 3 yellowtail and Tuesday's gar fish contributed by Bradley.

UNIVERSITY OF WASHINGTON
APPLIED FISHERIES LABORATORY
SEATTLE, WASHINGTON

Locality Elmer Date 20 Sept. 1954 Mon.
Personnel Bonham, Palumbo Weather Muggy. Wind very slow. 77-91
Water conditions Null

Radiation level(s) 13Kgd. 1hr 22 c/m

Operations:

Frank: Apologies for inquiry of 14 Sept. re statement of transfer of photo equipment. It was in front of loose-leaf 8 1/2 x 11 notebook. Aligned prism in right side of Spencer dissecting scope which was loose and had been chipped at the edges. Tightened base. Switched counter decade circuits: Units over to 100's position; 100's to 10 position; 10's to unit position; because units had been sticking on 9, giving erratic low counts. Seems to be ok now. Packaged yesterday's samples

Doc: Ernie Wynkoop has no knowledge of the letter supposedly sent to all AEC biologists coming out here and advising them of boundary lines set up for our work. Hiatt Krien about it when I talked to him one time. I suggest Wynkoop be informed or reminded as soon as possible as Halstad et al will be in early October.

Made collection of algae, sea cucumbers (2) and sand at Elmer for circuit. Sea cucumbers scarce, will have to plant some for future collections. Agriogypses collected for counting here and for routine counting. Processed all samples this AM. Workers have completed putting in more shelves on my request. now we AFL people have shelves in our areas.

Set Angus - Hook Special Service called to notify us of the 23 to 25 Yachinm tuna he has for us. Will pick up this week later. Kelly Sewed plankton net collar on for manabucket. Counts remainder of sport fish. Counts were low ranging from 10 to 26 c/m plate. Kay, would you please send