

4

Mc Gill

Finn +

Barbados 81 Personnel

Dave, Ron, Perline

Miss

Alley...

W. M. Rensig

Heather Kaye

Tina Ortiz

Paula Scott

Ann Marie Mah

Mitch Lisak

Tom Thomascik } on tour

Marc Labelle (Nasal-Blennie) off Lab

Michael Spindler - German Plank Forams

Joan Mander

Pat Cotter

Jules Rachesnes (spelling)

Danielle

Kuff Alan Smith

Dale Hollenbeck

Duffy. Peal Corps

Wendy

~~Mark~~

Hazel ...

w Kuff

Lee Drummond + wife ... Anthropology
(Tourism in Barbados)

1981

Jul 1 wed

Begin trip to Barbados '81 for DOC Research
+ etc.

Worked all night on the Microscope for 2W + fitting
into case + fiberglass-Resin case Joints

Tried to get ~ 1/2 hr sleep in + did it but
almost late for Taxi - just got Carbage out, etc
Taxi at \$45.00 - to Dorval OK; Air Canada to Toronto
checked in Duffel Bag through to Barbados - hope it makes
the flight exch. - Bought 1 coffee in terminal for 0.50.

\$8.30
+ 1.70 amt
\$10.00 tot

~~Met~~ he.

Met Heather + family in TO after walk to terminal 1.

+ BIWA check in - all OK - No problems

Flight on Time - Tristar Big body - to Antigua + then Barb
Bought an flight 1 scotch: 1.20 Can
Cigarettes in Antigua 8.00 US.

Changed \$ to Barb in Toronto 64.89 Can → \$100.00 Barb

Arrive Barb OK at ~ 4 pm; Duffel Bag missing;
Reported in to BIWA + Made out paper work
Try to get it via NY since No Tor-Barb
flight till Friday + even then it may not come
Customs passage as late passenger a swap - No
inspection even. ~~At~~ Taxi out to Bellairs
was \$3.00 Barb - Nice ride - w/ 400 grt = \$27.00

In about 5:30; Supper mostly at 6:00 but could not
eat - had a few drinks w/ students + then
flaked out. No Supper at all

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8-38-32

Jul 2 Thurs

Up at ~ 730 BRfast eaten at ~ 800

BRfast Distributed Mats + Mail brought Down - Got assigned lab space + agreed temporarily to eat in Kitchen ~ 8:15 AM

Dive 1 Done w TINA on Avon to Hatchery Hale - 90' deep - TANK

No Boat ch. Used Lab Fins + Borrowed mask + Regulators etc -

2 tank chps (CH + me) Noted plenty of Veronia lacunosa - grooved, C. delatrin Cally. vagus, Cally fallax?, Verony rope, Verony stick, Xestosp mitis, Azelad tan rope, Red Azelad mass in tube form, Hemactyon serox, 'w zooids'

Bottom of Seds very rocky - looked under rock surface + heavy spg cover but No Net spg seen. Nothing else to Note of importance. Tried out ^{New} Light meter - OK + New NIKONS w plus X - Most taken at 4' setting at F-H -

V. lacunosa

V. rope etc ~ 5 shots at ~ 75' OK.

Lunch Back to Lunch - sandwich; Heather calling BIWA, Air Con + Ship Fiddle Around - 3pm took off for Hallett

1. to get Drives License - \$1000 Back OK

2. to get Buttons for Sumpox - OK \$2.60 Back

3. to get Coffee, Rum + Beer at Sumpox \$2100 Back. Receipts

Return - Heather says BIWA will accept \$4800 of receipts for goods purchased - OK. Tomorrow she will do it if no bag yet; - Fred ward for Canoe + Choe

Supper Ate Supper after swim - Chops + Potatoes + Christmas

Eve - have a few drinks + then in

81

Fri
3 July

Up early & to Town (Holetown) to bank & shop.

~~Sp~~ Cashied 1st \$100 Traveler check

Bought - razor 8.70

Toothpaste 2.90

Deodorant 5.80

Gloves 4.95

Shirts 24.00

46.35

& be reimbursed by BWIP

Receipts abundant

Plankton:

a) large Ctenophores
w/ Siphonant

Also bought one Coconut bread \$2.75 No receipt

b) Siphonophores
banned

Worked on Tillmanns paper

Saw lots of

V. take firm

V. rope

V. stick

H. ferox

Neophobus

Desmopsema

Isorochia

Xestospiza Muta

IRONIA Variabilis

Callyspongia

Gelliodon ramosa

V. finger

V. lacunosa group

V. finger, dimpled

Done w/ Heather & her site & morning in PM ~ 2:30-3:45 ~ 40' max
all of my Venopsis tubes pretty well gone - Hurricane

Photog in ~~str~~ outer close up lens but water leaked -?
too hard to tell if focus right

off until ~ 8 pm in Lab

Mixed Develops in Ewe - Warm water or just

Exposed partly in "Darkroom" - can only use after dark.

To test Expressos.

Joan Marsden arrived ~ 8 pm - her & I for supper

Eurythoe & Hermodice

she wants this for larval develop & EM fixation.

Sat '81

4 July

Lab pretty quiet in Am - most students slowed by a party aft campus last nite. Ate BKfst - sat around - very heavy Rain! Around 12:00 the Juffel Bag arrived from BWIA All OK in there.

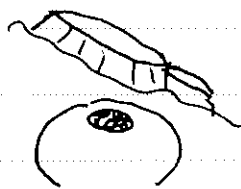
Worked more on Tillmans paper x^2 Tables etc

Put together My Regulator + etc.

Intent to Snorkel out in Moat, shallow platform foiled by Halletown Hole blowout - Water MutKiet almost out to Mortlet. Cold Chicken, ? Salad, Potato salad?

Late Aft Tula ... + Danielle ... Arrived ~ E3
Ate supper with them - No Cookie; Noodle for Mortlet,

5 July Sunday - Cruise on Freya, Bitch + Thom's boat to Maycock's Bay - ^{SNORKEL} Done - Saw rather Flat barren bottom -



Spgo - Xestospira Muta (Low + Flat Form - 1 to shore for long shore current)

Sphaer. verpaci w no cloaca; ridges of Veronica lunata, 

Desmussumma melanota, Callioprope vaginata some, Scutaria fasciata ^{brown} Veronica

a few V. patulana? (soft) tubes (short); Totipotula; very low Veronica rope

Looked like hurricane problem. Back after Bitch + Clean ship Bitch

~ 8pm. Developed Plus X in P.M. Light meter OK in

air if short for ASA 200 + Develop 4 min at ~ 20 degrees C.

Flash too strong - to try a diffuser for close ups

No Supper

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w Receipt



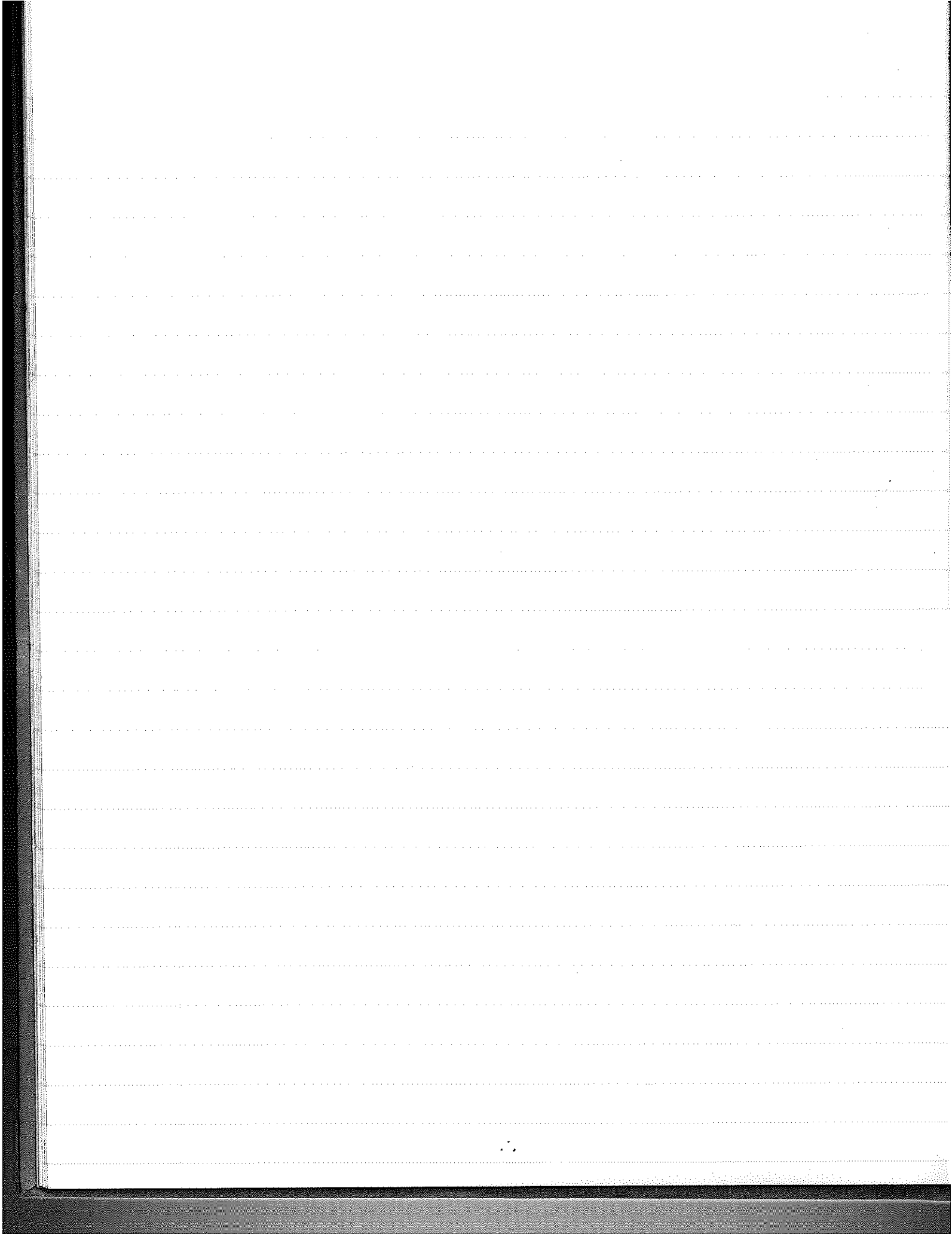
Expenses

- July 1: Taxi ^{CAN} 10.00 | ^{CAN} coffee 0.50 | ^{CAN} drink 1.20 | ²¹⁵ cigs 8.00 | Taxi ^{Barb} 27.00 | ^{CAN} Barb Exch ☐ ?
 July 2: Amnolic ^{Barb} 10.00 | Bats ^{Barb} 2.60 | ^{Barb} Guinness 21.00
 July 3: Razor 8.70, Dead 5.80, Clogs 4.95, Toothpaste 2.90, Shorts 24.00, ^{No Barb} ~~brush 2.70~~
 July 4+5: No Expense? Film String Tape \$17.40 Barb
 July 6: \$75 for Truck Cartage
 July 7: 14.73 propane tank, 17.40 regulator adapter, .45 for Bus
 July 8 - Chazey 119.18 - meal w Joan + I + wine for all.
 July 9: Pail + Alum Foil 8.30
 July 10 - Air letters -
 July 11 - Propane #2 14.73 ; change Formals 10.75

'81

Lab Activities for Charges

- July 1. No Supper but Put up - Did Not eat but was cooked etc.
- July 2. 1st (2 TANKS) Meals B, L & Din (No Lab use)
- July 3. 1st (2 tanks) Meals B, L & D (No boat, No Lab)
- July 4 Sat No Diving B, (~~sandwich~~ made) (D) also Tails
- July 5 Sun No Diving class - Break, (~~lunch~~ ala Tails) D Not Eaten
- July 6 Mon ~~Heater 2 tanks + Boat~~ ^{Mitake} Break! [~~lunch~~ ^{No}] (D. ala Tails)
- July 7 Tues No diving? Break [~~lunch~~ ^{No}] Dinner made up
- July 8 Wed BKfst & Lunch; Dinner Out
- July 9 Thurs BKfst, Lunch, Dinner, Dive Tank
- July 10 BKfst: Lunch, Dinner (Chicken at Home) 2 Dives 2 tanks
- July 11 BKfst Lunch, Dinner by me - 2 tanks 2 Dives



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6 July Mond

Heather Dore ^{9AM} to put 2 tie 1 Specimen into ^{Maycock's Bay} ~~haze~~
Master craft spgs at her site off Bellairs, 50' max

Went in to Bridgetown w aim of

- 1) Getting stuff (Boxes) from Customs - Shed 4
- 2) Getting O₂ Tank
- 3) Getting Propane
- 4) Getting 110 B+W Film for Heaths Camera
- 5) Getting Back BWIA \$ for Lost Luggage 2 lgs.

No Receipt

1st ride in on Jitney down to Square - off to Plantations
Trading Co Ltd - got papers & instructions to go direct
to Shed 4. ^{out of scope} ~~Not Receipt~~ Walked down to BWIA & Harrison Photo
Got \$100.00 Back from BWIA, Harrison No BW film
of 110 format - off via Harritt's Chauffage to
find Shed 4 of port - after some talking we got there.
Heather attended to Customs, we opened crates &
Got all clear - picked up truck there to
bring it & us out & Pick up O₂ Cylinder
Charge to Bellairs ~ \$62.00 to be paid later.
So Got Back ~ 3³⁰pm w Boxes & O₂ Cyl.
Cheap Coleman Propane at Charles & Will Kuen
\$14.73 but did not buy today
Eve start Unloading & then over to Friars for
Cocktail. Porro. Failure; Supper da Jules again
w Omelette & etc. ∴ Good day - 75% Completed Aims

7 Tues
July

'81

Up to rampade. Set up - Gelman Water I OK
Set up the Purge + Seal - Need Regulator adaptor + Propane
off to town ~ 11:30 picked up one propane for \$14.73
+ adaptor at Gas products \$17.40 - all OK - Got Back
~ 1:30 + Set up - Plugged in + Furnace OK - all go
for standards preparation tonight.

Heather off to E-Coast w Joan Macdon.
∴ Ready for Sample Prep.

New Cook in for this week but Not able to Serve
for Supper.

Ate w J + J + D in Kitchen - Meal set out OK - but No
meals until Fri!?

In Evening, had to work to set up Purge + Seal in
Instrument Room - OK all ready to go for standards -
tomorrow began some standards tonight:

a) Made 10% H_3PO_4 soln 8.38 ml 85% H_3PO_4 → to make 71.25 ml 10% H_3PO_4 ^{w Water I water}

b) Sucrose Solns - C-Standards Sucrose $C_{12}H_{22}O_{11}$ FW 342.30

(i) took corrected wt of 0.11885 gm Sucrose + diluted to
^{Vol Flask} 500 ml w 18M52 Water I water → Conc ext calcd 100.084 mg/L

(ii) took ^{Vol Flask} 50 ml of that i soln + diluted to 500 ml again: 10.0084 mg/L

(iii) took 50 ml of ii into 500 ml of Water I ext 1.00084 mg/L

(Let stand overnight to complete tomorrow)

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8 July

Wed

up early at 6:30 to lab - finish up making Sucrose std
'Filled (iii) to mark - with Be **S-1** solns 1.00084 mg C/L

c) ~~used S-1 to~~ Filled **S-1** Ampoules w: (one of 10 broke)

a) 0.2 gm (dipper) of $K_2S_2O_8$ (persulfate)

b) 10 ml of Soln S-1 by oral pipette of 2 x 5 ml each

c) 0.2 ml 10% phosphoric acid.

d) Purged & Sealed **S-1** set of 9 Ampoules - 1st 6 w/o purge
"cons" + next 3 w purge cons - labelled latter **S-1***

e) Made 7 ampoules of set S-2 w 0.50042 mg C/L
w persulfate, 5 ml of S-1 soln, 5 ml Water I water, 0.2 ml Phosphoric
w single ampoule labelled S-2* w slight higher conc
due to addition of 5.1 ml of Soln S-1

Sealed & Purged S-2 set w purge cons OK

f) Took 100 ml of Sucrose Soln S-1 (1.00084 mg C/L) into
500 ml for conc of ~~0.200168~~ 0.200168 mg C/L =
Soln **S-3**

g) Made 7 ampoules for set **S-3** of Std Reagents + 10 ml ea of
soln S-3. 0.200168 mg C/L

h) Made 7 ^① ampoules for Set **S-4** of std Reag + 5 ml of Soln S-3
+ 5 ml Water I water - one 0.100084 mg C/L
① one vial blew out in sealing so only 6 finished.

i) Made up Reagent Blank Set S-5 of 7 ampoules
typical persulfate & phosphoric reagents but only 10 ml Water I
water. - est C UNLIKELY - 0.00000 mg C/L.

j) Made up. Volume Reagent Blank Set S-6 of 25 ~~ampoules~~
consist of 5 ampoules each w persulfate + phosphoric + falling
granules of Sea Water (Lab Table) filtered by pressure syringe

1981

8 July - contd
Wed

on whatum GF/C precombusted 25 ml glass fibre filter:

2 ml (Sea)	labelled	S-6-2
4 ml (Sea)	labelled	S-6-4
6 ml (Sea)	labelled	S-6-6
8 ml (Sea)	labelled	S-6-8
10 ml (Sea)	labelled	S-6-10

} Input direct from
Syringe - standard swimming
into syringe - no
needles!

Ampoule standard Set Completed ~ 6:30 pm consisted of

1) Carbon standards	in 1 mg/l	9 ea	S-1
	0.5 " "	7 ea	S-2
	0.2 " "	7 ea	S-3
	0.1 " "	6 ea	S-4
e) Reagent Blank	→ 0 " "	7 ea	S-5
g) Volume Blanks SW Filt	2 ml	Sea	S-6-2
	4 ml	Sea	S-6-4
	6 ml	Sea	S-6-6
	8 ml	Sea	S-6-8
	10 ml	Sea	S-6-10

total

61 Ampoules ; 286 left OK.

Out to dinner w J+J+D at Chetana Creole +
ended up paying for Tom + J + wine on charge 11:19 AM
OK.

Finished ^{eve} getting ready for tomorrow dive + 1st Collection
Broke 1 syringe in process!

9 July - 1981

Thurs

Up at ~ 7:30 - into lab to get ready for dive -

Washed up glassware + prepared slate, Waited Around -

No Bkfst - 2 pcs of Coconut Bread -

~ 9:30 we got in gear - Equip together OK - ... But Tanks not ready - not filled yesterday P.M. - So waited ~ 1/2 hr OK - ice Pack of Heathers w. hole so ice patch in freezer. Set out ~ 10 AM for Hotdog Hole w. Tina + Heather. Arrive ~ 10:35 + ready to Dive

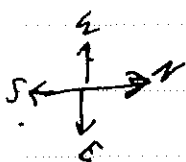
Time in ~ 10:30 - Washed air from plastic zip-loc Nalgene bag w. each Syringe in - took a lot of time (Syringe filled w. Water I Water + Exempted into cap - i.e. No Vac Loc there at depth). Went to ~ 60' + started along

this to East (to shore?). Ran into Group A - ~~Found~~ about 8 firm yellow tubes w. smooth walls  rather small oscula ~ 1 cm diam; max ~ 6-7" high;

Group B - 8 yellow rough-surface tubes (lumpy)  w. relatively soft texture + larger oscula. Set down Equip

noting a few smaller or single/double sets here + there. Took out Syringe 1 + 4 and swam ~ 20' to group 1. Started taking samples at 10:40 AM by 1st rinsing out Syringe 1-2x and then collecting sample rather slowly within 4" of the group A.

Caped it + laid it down. Then took Syringe 4 + rinsed once in Ambient water then drew sample from largest spg^A of group. - Tried twice until satisfied w. slow collection by hand + gravity ~ 1/2 minute long. Caped + gently returned to Equip cache.



9 July 1981 Contd

Thurs There rolled the 2 samples in Zip loc bags w Rubber bands - (Not zip-locked) + got out the other 3. Back to group - Collected similar samples ^{Start 10:50 AM} from next largest sponges - "B" + "C" of the A-group ^{Springs 2-3 up} - only slightly smaller than the 1st sampled. Then took final ambient w Spr 5. at 10:00. Back to cache to roll up samples + get velocity tubes. Measured sponges A = "7" = 11.6 cm/sec
B = 8 = 12.5 cm/sec
C = 6 = 10.7 cm/sec



Measured 2 from group-B also - ~ 5's - 6's = 9 - 11 cm/sec. Then circled area above ^{Mooring} Anchor chain into rubble area - very few sponges up there ^{~30'} - most below rubble / Acropora at 45-60 feet - Collected an Agelas specimen for search for Calimnoid - Uprocked into Bag. Dived to E + found a "good" Yellow Tube - smooth + soft w large osculum at ~ 45' above junction of transect rope - to return sometime - possibly to collect for worm study. Velocity measure good ~ 15 cm/sec. Then back to cache + up to the boat - Great plankton w large ^{Black Spot} Chlorophyll + radiolarians today. Return OK w samples - Rise up + all leaving samples in Bag is slightly Cool water. Finally ~ 1 pm after lunch started Analysis - w clean up of pump tubes etc first Analysis rather backwards by sequence 1-5-4-2-3 in order of collection.

Data Summed over.

Each Spire - 2 TOC samples first - then 2 DOC's via ^{preconcentrated} Glass/film GF/C filter

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Field Sample # 1 9 July 81

1030 - 1100 am

Hatteras Wake, St Johns River

60' depth

Firm Yellow Turb - Smooth;

30 sec per group of 8.

Label as indicated: ☐Ambient Start" Spruce 1 1040 dist ~ 3' ⁵⁰⁰

"1"	1-1T ₁	TOC Not filtered; Weight of SW added: 10.4 gm
	1-1T ₂	" " " " " " 11.1 gm
	1-1D ₁	DOC, filtered; " " " " 11.1 gm
	1-1D ₂	Doc, " " " " 8.2 gm

Ambient 2 END 11:00 taken same Dist.

~~Spruce~~ - Velocity 11.6 cm/sec

5	1-5T ₁	TOC not filtered; Weight of sample 10.5 gm
	1-5T ₂	" " " " " " 10.4 gm
	1-5D ₁	DOC Filtered; " " " " 10.7 gm
	1-5D ₂	" " " " " " 10.7 gm

Spruce A - Velocity 11.6 cm/sec

4	1-4T ₁	TOC No filter, - Weight Sample 10.9 gm
	1-4T ₂	" " " " " " 11.3 gm
	1-4D ₁	DOC Filtered " " " " 10.5
	1-4D ₂	" " " " " " 10.8

Spruce B - Velocity 12.5 cm/sec

2	1-2T ₁	> TOC	10.8 gm
	1-2T ₂		10.7 gm
	1-2D ₁	> DOC	10.9 gm
	1-2D ₂		10.8 gm

Spruce C Velocity 10.7 cm/sec

3	1-3T ₁	> TOC	11.0 gm
	1-3T ₂		10.8 gm
	1-3D ₁	> DOC	10.9 gm
	1-3D ₂		11.0 gm

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9 July contd

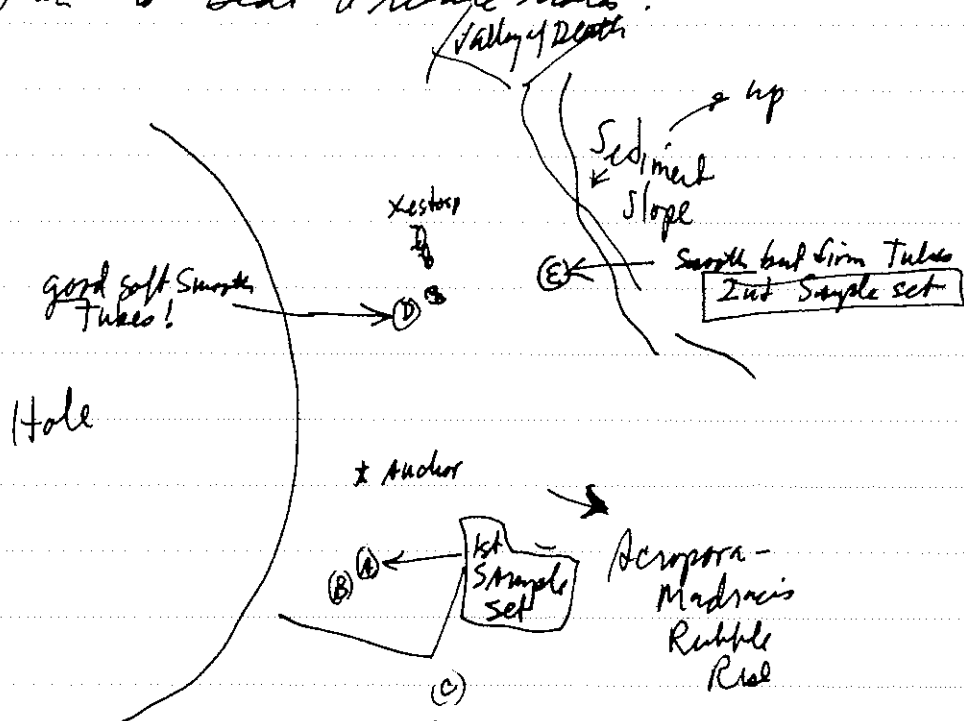
Analysis went fine 2 min intervals smoothly using
5 positions; No problems; all 8 min Purge
All Phosphoric added about 10 min before purging begins.
Finished ~~later~~ Sealing ~ 3 pm.

Cleaned up some - went to Haleson Super Center to try to
order formalin at Knight Pharmacy - then to store for
Alum Ford + Pail - \$8.30

Supper for Joan - shee cooked + I cleaned at Lab

Worked on a sample holder (Pail) in Lab + cleaned the
5 Syringes for tomorrow's sample.

Callinectes → Looked at pair of Callinectes Xporchis from Agassiz Ponds - Not same as
then to Bed to write notes. Coral Dwellers!



'81

10 July FRI

up at 6am - out to head for coffee + wake up; cleaned up + worked on oxygen meter case for an hour - Ready to go about - not quite since Mike + Heather ready by 8³⁰am today - So loaded up + off to Hatching hole - took samples from set of smooth, fair sponge at 55'

See Map

✓ Took 1st Ambient Syringe 4 at sponge set D but after getting ready to take sponge water, found there to be shut down! Drunk! - moved ~ 10' up slope to firm tube set - D. Smooth, Yellow, but not soft.

Sampling Set 2 :

Time 9:35 - 9:45 AM

Syringe 1 - Tall Tube 12" long velocity = 11.2 cm/sec

Syringe 2 - Tall " " " " 9.0 " "

Syringe 3 Short " 6" long " 10.7 " "

↖ Hard to sample w small osculum + lots of Contact.

Syringe 4 Ambient start (at ~ 10' distal)

Syringe 5 " End (at sampled set).

In processing, the ~~set~~ purge/seal set was smelly + had low O₂ pressure - The 1st 6 samples through: set 1 T₁D + set 2 T's were purged at low rate for a long time + sealed in madoquate to Temp Flame. Repairs effected by tightening nuts inside + all went well after 2 hr delay.

10 July Contd

Sample Set #2

Sponge 1. T. Sponge #1

2-1T₁	2-1T₂	2-1D₁	2-1D₂
2-1T ₁	10.6 gm Sample		
2-1T ₂	10.2 " "		
2-1D ₁	11.0 " "		
2-1D ₂	10.6 " "		

Sponge 2 ~~Sponge #1~~ Sponge #2

	2-2T ₁	10.4 " "
	2-2T ₂	10.4 " "
Phase Discontinuity	2-2D ₁	10.7 " "
	2-2D ₂	10.6 " "

Sponge 3 Sponge #3

2-3T ₁	10.5 " "
2-3T ₂	10.5 " "
2-3D ₁	10.5 " "
2-3D ₂	10.7 " "

4. Ambient Start - (Removal 10')

2-4T ₁	10.5 " "
2-4T ₂	10.7 " "
2-4D ₁	10.5 " "
2-4D ₂	10.5 " "

5 Ambient End (at Group E)

2-5T ₁	10.6 " "
2-5T ₂	10.5 " "
2-5D ₁	10.4 " "
2-5D ₂	10.4 " "

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10 July Contd

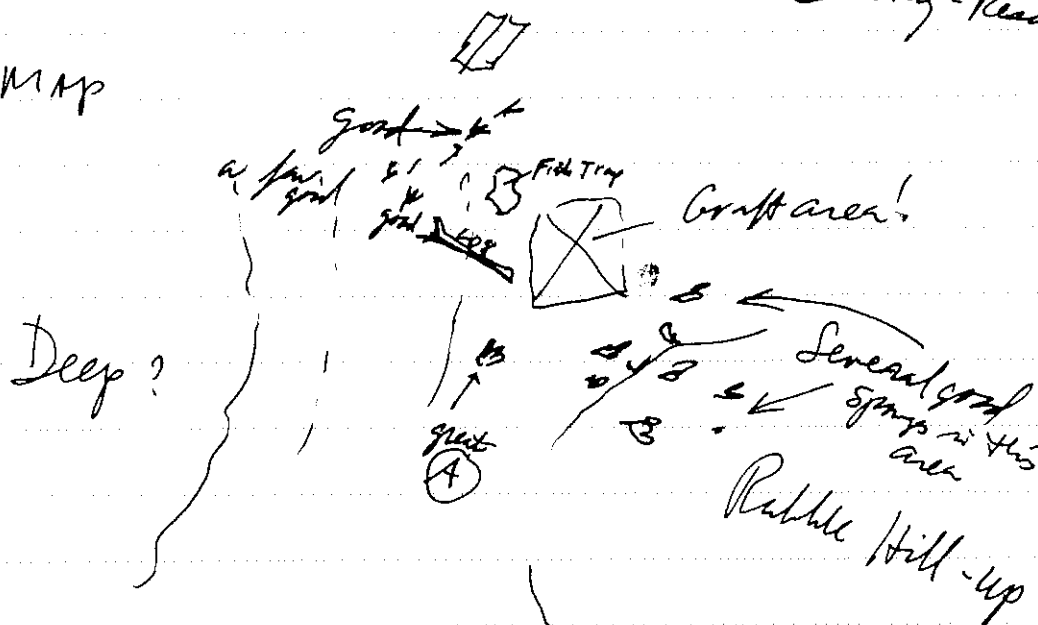
At ~ 4pm Heather + I Fine to graft site
I took the O₂ meter Case + Flashlight for Leak test -
She worked on grafting + I surveyed the area
Lots of Nice Yellow Tubs for sampling

Swam out - No Boat

② Moring - Reach 2

Map

~~Prog~~



② Moring
Cetamara

Saw plenty of Sponges -

Case Well well

Return via shore + Coral reef club to

Wash up. J + D soaked by purple scratch -

Surfer w Foam - Chicken Knead -

They cleaned up + took O₂ meter for use

but Probe No Good - Leak probably
in rear of probe - to do a dissection?

Off to snail pots + Bed!

11 July 1981
Sat

up ~ 730 - coffee, etc - Fix up Springs for next 'C' Collection.
Loaded 20 samples - latched + numbered for sample set # 3; filled w/
the persulfate, weighed them + covered w/ aluminum foil caps.

Then worked on the O₂ meter probe - took it partly apart -
Still electrical leakage between the electrode wires somewhere
inside - dismantled the wire + top threaded stage -

Got the black tanks filled - waiting for the dine. (Tina was
out overnight + in Yate). Finally about noon we are getting
ready to go back out to Hatdog hole for set # 3.
Motor Problems - to fix the ISHP.

Data: Dine Time, Weather + I; Bottom Start ~ 12:25 back
to surf take set "D" on map. - pumping loaded rather
moderate - not top speed but what-the-hell.
Smooth wall, thin wall, soft open

Sequence Started Collecting water at 12:30 - Depth 63'

Spring [3] Ambient start - next to spring - 3"

Spring [1] Fall spring A ~ 14" Velocity 10/hi meters 7.4 c/s; 8 c/s

Spring [4] Fall spring B ~ 14" " 6.8 c/s; 6.8 c/s

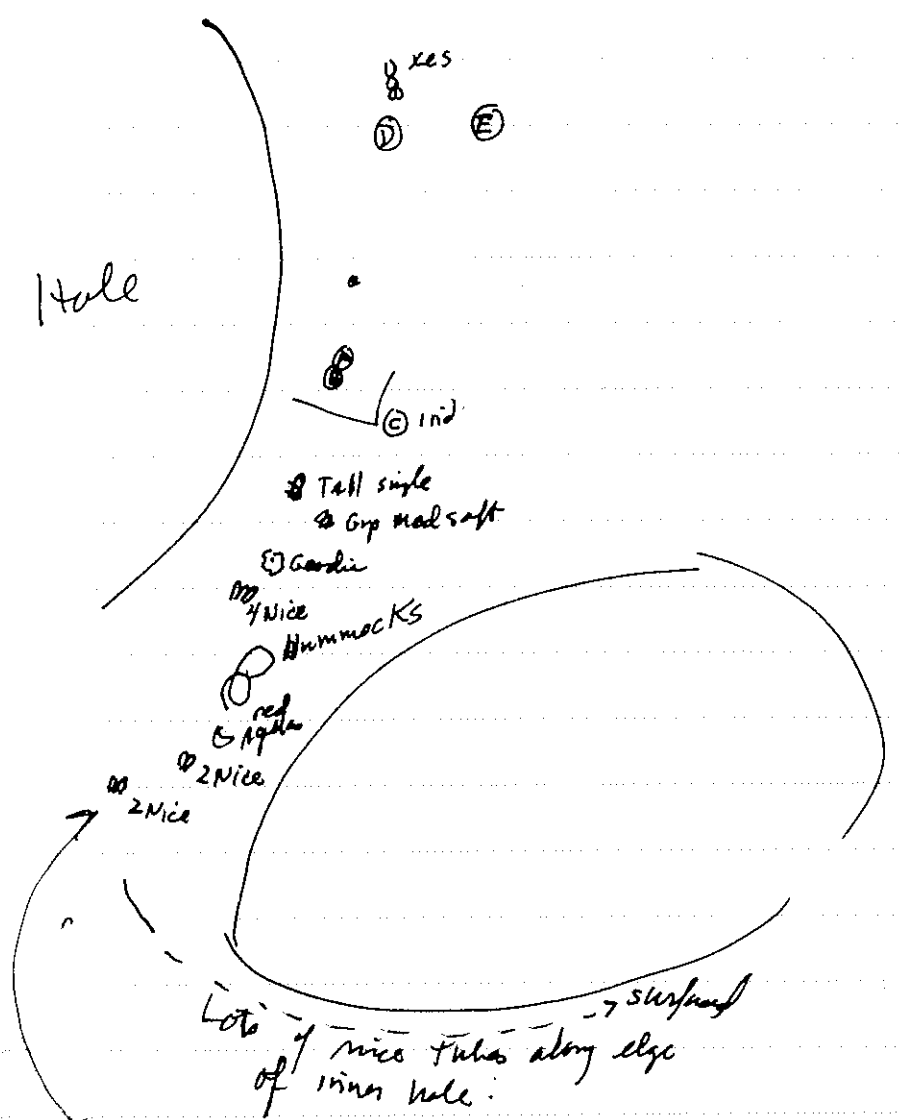
Spring [5] Fall - spring C ~ 8" " 6.2 c/s; 6.3 c/s

Spring [2] Ambient end. next to spring 3"

Time Done after Measuring Velocities was 12:45

After Collecting Set Samples near anchor line & Surveyed -
No big plankton today!

1 hole



Collected one whole spore for Worm Study at .55'
Dive Ended ~ 1:15 pm. - Analysis PM.

'C' Data over for Sample Set 3

1981

Sample Set Carbon 3.

11 July cont'd

Spray # [1] 1st Spray

3-1T1	-	Sample weight	10.7 gm
3-1T2	"	"	11.0 gm
3-1D1	"	"	10.2 gm
3-1D2	"	"	10.3 gm

Spray # [2] Ambient END

3-2T1	Sample weight	11.2 g
3-2T2	" "	10.6 gm
3-2D1	" "	10.3 gm
3-2D2	" "	10.7 gm

Spray # [3] Ambient Start

3-3T1	Sample weight	10.9 gm
3-3T2	" "	10.4 gm
3-3D1	" "	10.4 gm
3-3D2	" "	10.5 gm

Spray # [4] Spray #2

3-4T1	Sample weight	11.3 gm
3-4T2	" "	10.5 gm
3-4D1	" "	10.5 gm
3-4D2	" "	10.5 gm

Spray # [5] Spray #3

3-5T1	Sample weight	10.6 gm
3-5T2	" "	10.5 gm
3-5D1	" "	10.3 gm
3-5D2	" "	10.3 gm

Smooth purge & Seal - No problems

1981

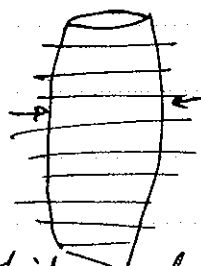
11 July Ctuds

~ 3:45 Cut up sponge for Hutchings

How
labeled?

10 pcs

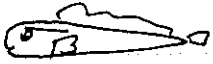
Dia 70 x 70
mm



265 mm

Cut it into 10 smalls about 25 mm thick each.

Preserved in 10% Formalin in SW in Twist Bags & into large container.

Had a fish in  colony in small one -
Mark took care of it - apparently not a yellow-line.
The worm population seemed to be rather slight!

PM - 4:00 Tina, Heather & I out to snail area
w/o boat - off beach - new tanks used

Phot [Saw plenty of sponges - photographed in flash
& short ~~exterior~~ tubes - Plus x - in Flash Diffuser
Tried 1/60 if 22-11-16; went at f16.

Many good yellow tubes in ~ 35 feet still
alive over here - Many again Not active!?

Returned w orange sponge somewhat like ~~Heather's~~ but
not? ; What I thought was Spongia - but Not



ulcan - dark olive w fine ridges - yellow inside
softish.

Back ~ 5:30 good live.

Paula & Dale bought 2nd Propane tank \$14.73
Heather changed Formalin at Knights - to pay \$10.75

11. July Contd.

Eve - I made lunch alone - others went out.

Hester loaded tomorrow's supplies for Set ~~4~~ 4.

I started to try to take apart the O₂ probe.



12 July '81

up at 700 - Coffee + Juice

off to line w heater to her Araft - Mooring site

No Juicy so swam out via Coral Reef - Colony Bank

Photos [w syringe for Set #4 + Heater took the Camera
w short extension tube + Oceanic 2000 strobe
w diffuser. presume Black + White was used here]

Began out ~ 800 Set #4

Began Sampling at 8:30 AM on group of 8

soft smooth Tubes, thin wall at S of graft site

Labeled "A" on map (see 10 July) Depth 35'

Syringes in Sequence 8:30 AM

3 Ambient Start at 3"

1 Syringe #1 tall ~ 14" - Velocity 12 c/sec

4 Syringe #2 " " 14" " 10.7 c/sec

5 Syringe #3 tall ~ 12" slow 5 cm/sec

2 Ambient Stop at 3"

Finished sampling 8:40 AM

After Sampling went to get heater + off to up

Slope to collect Hutelings specimen - took 1

at 25' call it "M1"

Cut off top 65 mm of about 220 mm Tube

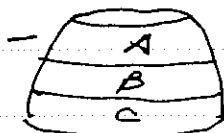
In lab subdivided to

M-1A - Top 28 mm

M-1B Next 22 mm

M-1C Next 15 mm

Preserved in 10% Formalin



12 July cont'd

Sample Set 4

Syringe (Ampules filled & weighed Note before by Heather, & capped Aluminum)

Syringe [1] Sponge #1

4-1T ₁	Sample weight	10.7 gm
4-1T ₂	"	10.4
4-1D ₁	"	10.6
4-1D ₂	"	10.5

Syringe [2] Ambient EAD

4-2T ₁	Sample weight	10.2 gm
4-2T ₂		10.5
4-2D ₁		10.5
4-2D ₂		10.4

Syringe [3] Ambient Start ~~10.7 gm~~

4-3T ₁	Sample weight	10.7 gm
4-3T ₂		10.5
4-3D ₁		10.6
4-3D ₂		10.5

Syringe [4] Sponge #2

4-4T ₁	Sample weight	10.5 gm
4-4T ₂		10.7
4-4D ₁		10.6
4-4D ₂		10.8

Syringe [5] Sponge #3

4-5T ₁	Sample weight	10.8 gm
4-5T ₂		10.5 gm
4-5D ₁		10.5 gm
4-5D ₂		10.5 gm

* about 1 ml of 1
Sample not Filtered

Sealing went pretty smoothly - one sample somewhat bubbled Seal.

81

12 July contd

Finished sample sealing + clean up by Noon.
Went to work assembly of probe - Glass tube broken
No wonder Failure - Built in Design!

Fixed up Ann Maine's Float [?].

photos

Presume
plus X.
B&W

In afternoon late went for snorkel w/ camera
at normal lens - set for 3' (= 4' actual 21W)
w/ strobe diffuser off. Tried Exposure w/
shades as: f22, 16, 11, 8, 5.6, ...
then ~ f11 for Ambient.

Evening - ate Dinner at Lab w/ Joanne - Lamb Chops
Aft Dinner out to Pizza Hut w/ Kib for a drink
spent ~ \$6.00 B&W.

Return ~ 10pm - filled 2 sets of Ampules w/ Heather
for tomorrow - Sets 5+6. - TO Bed.

1981

13 July

Mon

No chg!

up at 7AM - ready to Dive for Set 5
w Henthon - used partial own Black tank for only
short dive out to Hale edge - site South of Lab
Arrive by swimming out - No Boat used! about 7:45am

Dore to find a good group of 5 tubes soft... etc
Data:

Sparging Time 7:50 - 8:00 AM

Depth 25'

Sequence [2]: Ambient Start 3"

[1] largest tube - velocity 10.7 c/sec

[4] next largest Tube " 10.7 c/sec

[5] next med size tube " 10.7 c/sec

[3] Ambient End 3"

Returned to Lab, wash up & get out spargle
Set 5.

After Sealing & Purging - worked some on O₂ probe -
took time off & go to Bank & Cash Travelers checks &
to Halebarn for Chocolate, Cigarettes, ~~of~~ Sarsins & rum.
\$18.84 \$13.66

Then back to start embedding O₂ probe tip.

181
13 July 2001 C Sample Set 5

Syringe [1] Sponge #1

5-1T ₁	Sample weight	10.4 gm
5-1T ₂	" "	10.3 "
5-1D ₁	" "	10.4 "
5-1D ₂	" "	10.7 "

Syringe [2] Ambient Start

5-2T ₁	Sample weight	10.6 gm *
5-2T ₂	" "	10.8
5-2D ₁	" "	10.5
5-2D ₂	" "	10.9

Syringe [3] Ambient END

5-3T ₁	Sample weight	10.6 gm
5-3T ₂		10.4
5-3D ₁		10.9
5-3D ₂		10.9

Syringe [4] Sponge #2

5-4T ₁	Sample weight	10.3 gm
5-4T ₂		10.7
5-4D ₁		10.4
5-4D ₂		10.8

Syringe [5] Sponge #3

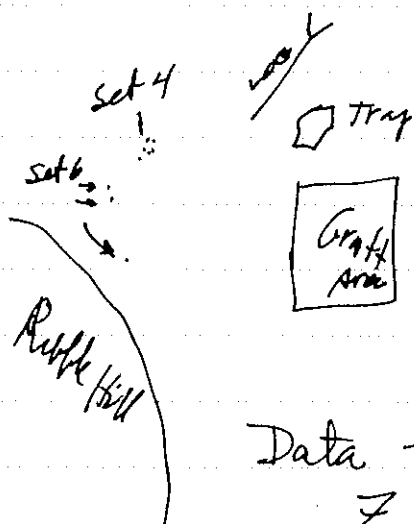
5-5T ₁	Sample weight	10.3 gm
5-5T ₂	N/A - S/A	10.7
5-5D ₁		10.4
5-5D ₂		10.8

* Some purging problems in position #5 due to pinched tube at start & replacement of purge tube

1981

13 July cont'd

In later afternoon went in Heather to bed graft site - using new Fill on Black tanks -
I collected C-Sample Set 6 from 3 separate sponges up just below the rubble hill to S. of her area - fairly close to Set #4 source -



2 were close together but not joined - possibly were in the past - The third was a large solitary lying partly on its side some 8' from the first two - Still very healthy.



Data - Set # 6

Z = 35'

Time: 4:30 - 4:40 pm

Syringe #	[2]	Ambient Start near 1+2	
	[1]	Sponge #1 ~ 14" tall	Velocity 11.6 cm/sec
	[4]	Sponge #2 ~ 13" tall	Velocity 13 cm/sec
	[5]	Sponge #3 ~ 20" long	Velocity 12.0 cm/sec
	[3]	Ambient Stop. near 1+2	

Also collected 4 'tops' of tubes for Hatching set on rubble rise at 25'-28' M2-M4

13 July Contd

Sample Set 6.

[1] Sponge 1

6-1 T ₁	Sample weight	10.6 gm
6-1 T ₂	"	10.9
6-1 D ₁	"	10.3
6-1 D ₂	"	10.5

[2] Ambient Start

6-2 T ₁	Sample weight	10.1 gm
6-2 T ₂	"	10.8 gm
6-2 D ₁	"	10.7 gm
6-2 D ₂	"	10.6 gm

[3] Ambient End

6-3 T ₁	Sample weight	10.8 11.5 gm
6-3 T ₂	"	10.3 gm
6-3 D ₁	"	10.5 gm
6-3 D ₂	"	10.6 gm

[4] Sponge #2

6-4 T ₁	Sample weight	10.6 gm
6-4 T ₂	"	10.3 gm
6-4 D ₁	"	10.7 gm
6-4 D ₂	"	10.7 gm

[5] Sponge #3

6-5 T ₁	Sample weight	10.6 gm
6-5 T ₂	"	10.8 "
6-5 D ₁	"	10.7 "
6-5 D ₂	"	10.8 "

Big problems w purge tubes again - Run on Set of 4's instead of 5's
Samples for Sponges ~~Set~~ 1 + 2 may not be purged evenly.

13 July 81 contd

Mon In Evening a seminar/slide show by Raff Smith
on Algal aquaculture in Philippines.

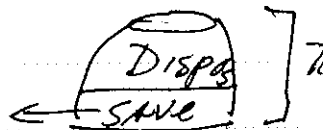
Later we finally had Supper - Jules + Danielle
cooked flying fish -

Worked on probe a little + Heather filled 2 sets
w persulfate for tomorrow - sets 7 + 8.
Fixed M-samples of tissue

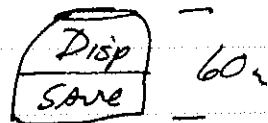
M-2 spec 320 mm long x 100 x 85 clear
Kept ~ 1" wide strip



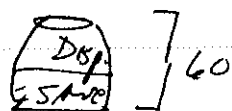
M-3 280 mm long x 65 x 70
Also Kept ~ 25 mm strip



M-4 200 x 70 x 70
Kept ~ 25 mm strip



M-5 175 mm x 65 x 65
Kept ~ 25 mm strip



1981

14 July 1981

Time

Up at 7:30 & ready for dive -
 Weather snowed & I hunkered again w
 only a partial from Yesterday 1200 PSI -
 Port to hole edge S. of Bellairs Reef.

Found a Set of 4 tubes in 25' & worked
 them over for Set 7.

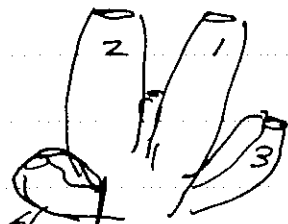
Typical soft smooth tubes w large osc.

Z = 25'

Time 7:50 - 8:00 am

Sequence:

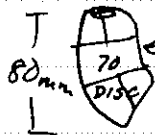
2	Anchor Start 3"	
1	Spray #1 ~ 12" tall Velocity	14.6 cm/sec
4	Spray #2 ~ 12" " "	13.3 " "
5	" 3 ~ 5" tall " "	11.6 cm/sec



Collected on spec for Hutching: whole "budd"

M-6. Z=25'

Measurements:



40x45

saved top 2 pieces.

14 July 81
Thurs

Sample Set 7

[1] Spruce #1

7-1T ₁	Sample weight	10.4 gm
7-1T ₂	" "	10.4
7-1D ₁	" "	10.8
7-1D ₂	" "	10.1

[2] Ambient Start

7-2T ₁	Sample weight	10.4 gm
7-2T ₂		10.5
7-2D ₁		10.7
7-2D ₂		10.8

[3] Ambient End

7-3T ₁	Sample weight	10.7 gm
7-3T ₂		10.7
7-3D ₁		10.8
7-3D ₂		10.8

[4] Spruce #2

7-4T ₁	Sample weight	10.4 gm
7-4T ₂		11.0
7-4D ₁		10.8
7-4D ₂		10.8

[5] Spruce #3

7-5T ₁	Sample weight	11.7 gm
7-5T ₂		11.2 gm
7-5D ₁		11.0 gm
7-5D ₂		10.9 gm

No problems - pump tube seats fixed + ran smoothly!

'81

14 July Cont'd

In PM Heather, Tim & I drove w/ Aron to
Hatchery Hole - I used partial Tank only - the one
from ~~this~~ yesterday of Heather - 1200 Lbs
Went to Collect Sample Set #8 - Into water
~ 2:30 - Moved Clockwise to platform at 55'
+ encountered several groups & solitaries in inactive
state - or at very low level - Found one
Solitary ~ 45 cm tall w/ 5 cm osculum in
high activity & decided to sit on it -
All Samples of #8 from this one individual

Data: Sample Set 8

Depth 55' Hatchery Hole

Time: ~~to~~ 2:38 - 2:48 Sample time

Velocity of Spore 14.6 cm/sec!

Sequence: [2] Ambient start ~ 3"
[1] 1st Spg sample
[4] 2nd spg Sample
[5] 3rd spg Sample
[3] Ambient stop.

Then collected a Hatching Spore (HD-1)
from a small group.

Spg overall tall one: 340 cm

PC returned: 90 tall x 85 x 85 Dia

Kept "bottom" slice ~ 1" thick

Supper: Pork Roast w/ Joan's W. Cake..

Sealed up O₂ meter Probe finally - Maybe will work?

Dissect
Store

14 July Cont'd

Sample Set 8

8) [1] sps Sample 1

8-1T ₁	Sample weight	10.9 gm
8-1T ₂		10.4
8-1D ₁		10.8
8-1D ₂		10.5

[2] Ambient Start

8-2T ₁	Sample weight	10.5 gm
8-2T ₂		10.9
8-2D ₁		10.7
8-2D ₂		10.8

[3] Ambient End

8-3T ₁	Sample weight	10.7 gm
8-3T ₂		10.8
8-3D ₁		10.5
8-3D ₂		10.8 gm

[4] Spongy Sample #2

8-4T ₁	Sample weight	10.4 gm
8-4T ₂		10.9 11.9 ! yes
8-4D ₁		10.6
8-4D ₂		10.8

[5] Spongy Sample #3

8-5T ₁	Sample weight	10.9 gm
8-5T ₂		11.1 11.1
8-5D ₁		10.7
8-5D ₂		10.8

Fine Purge + Seal! In Every one to Coral reef for Inkies
in Health + Time - I paid \$12.39 Barb - NO Receipt

15 July 81
Wed

Up at ~ 8am - bkfst + Ready to Drive
to shallow moat at hole edge to South of Bellair's
Reef - Snorkel out + Start a New Tank (ours)
Collected water Sample Set # 9 + Hutchings
Springs M7, 8, 9, 10.

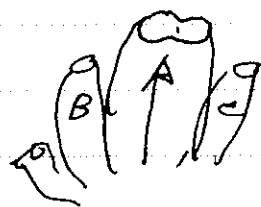
Data:

Z = 28'

Time 8:43 - 8:55 am

Sampling Sequence

- Springs
- | | |
|---|---|
| 2 | Ambient Start 8:43 - 3" |
| 1 | Springs A - Velocity 11.2 cm/sec Height ~ 11" |
| 4 | Springs B - Velocity 13.3 cm/sec Height 8" |
| 5 | Springs C - Velocity 13.0 cm/sec Height 7" |
| 3 | Ambient Stop |



Hutchings Sprays: Depth 28'

M7	Ht 210mm x 70 x 70mm	Kept ring above 70m		70m
M8	Ht 160mm x 55 x 55	" " " 65		65
M9	Ht 175 x 65 x 65	" " " 60		60
M10	Ht 135 x 50 x 55	" " " 60		60

15 July Cont'd

C Sample Set 9

181 [1] Sprge A

Q-1 T ₁	Sample weight	10.5 gm
Q-1 T ₂		10.7
Q-1 D ₁		10.7
Q-1 D ₂		10.9

[2] Ambient Start

Q-2 T ₁	Sample weight	10.7 gm
Q-2 T ₂		10.6
Q-2 D ₁		10.8
Q-2 D ₂		10.8

[3] Ambient End

Q-3 T ₁	Sample weight	10.5 gm
Q-3 T ₂		10.6
Q-3 D ₁		10.9
Q-3 D ₂		10.7

[4] Sprge B

Q-4 T ₁	Sample weight	7.9 gm	← * for some reason I was scared in filling!
Q-4 T ₂		10.6	
Q-4 D ₁		10.9	
Q-4 D ₂		10.6	

[5] Sprge C

Q-5 T ₁	Sample weight	10.4 gm
Q-5 T ₂		10.7
Q-5 D ₁		10.9
Q-5 D ₂		11.1

All went smoothly on pump/seal except I scratched
my arm up on the ampules - may have some skin on some!

81
15 July Contd

In PM after working over Sample Set 9 & Lunch, we later
got ready for the trip to the Bank Reef -

to Charge me: ^{+water} Avon use $\frac{1}{2}$ day - 2 hrs
New Tank full (over Black one w pack Pack) for me
Heathus - ?

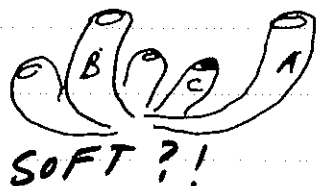
Arrived at Bank Reef about 3:30

Went to bottom ~ Kirks transect - Parks & Beades Corals
flat - Many Yellow Tubes there + Xestospira + Callypsus ^{various}
+ V. listolain + V. longian + sticks + Ircinia brown + Gellies
+ lots of Cliona delictrix + some Callypsus procumbens etc

Collection of Sample Set 10:

Data: Depth 50'

Time: 3:40 - 3:45 fast!



Sequence:

Syringe [2] Ambient Start - - 3"

Syringe [1] Sponge A; ~ 12" long; Velocity 10.7 cm/sec

" [4] sponge B; ~ 11" long Velocity 11.6 cm/sec

→ [5] sponge C; ~ 4" long Velocity 12.0 cm/sec

[3] Ambient stop.

small & quite
a bit of
conduct.

photos. [Then Heath photographed 2 sets of Syringe in Sponge w me
in Color at f 4, 5.6, 8 @ $\frac{1}{60}$ sec w Oceanic 2000.]

Then I went off & West towards drop off - never got
there - & collected a few sponges for Heathings on the
seam - (B-1, B-2, B-3) (See later)

15 July 81

Carbon Sample Set '10' Final!

Springs
[1]

Springs A

10-1 T ₁	Sample weight	10.7 gm
10-1 T ₂	"	10.7 "
10-1 D ₁	"	10.5 "
10-1 D ₂	"	10.5 "

[2]

~~10-2~~ Ambient Start

10-2 T ₁	Sample weight	10.6 gm
10-2 T ₂	"	11.0 "
10-2 D ₁	"	10.7 "
10-2 D ₂	"	11.0 "

[3]

Ambient END

10-3 T ₁	Sample weight	10.7 gm
10-3 T ₂	"	10.6 "
10-3 D ₁	"	10.7 "
10-3 D ₂	"	10.8 "

[4]

~~10-4~~ Springs 'B'

10-4 T ₁	Sample weight	10.7 gm
10-4 T ₂	"	10.6 "
10-4 D ₁	"	10.2 "

*Exploded 10-4 D₂ Disposed [NONE - Blow out during seal

[5]

Springs 'C'

10-5 T ₁	Sample weight	10.6 gm
10-5 T ₂	"	10.7 "
10-5 D ₁	"	10.7 "
10-5 D ₂	"	10.8 "

fairly good purge + Seal run - but one Blowout

15 July Contd
181

Fixed the spurs - Depth 50'

	Length	Major Diam	Farthest Distance From Tip	↓ 
B-1	420 mm	80 x 85 mm	80 mm	
B-2	345 "	75 x 85 "	80 "	
B-3	190 "	60 x 65 "	75 "	

Phot. [Developed old roll of B+W - [Acufine?]
+ my Flash shots on shallow reef.]

Supper: Cold pork Roast + Pineapple in Jam.

Finn Sander left for Miami for a week.

1981

16 July
Thurs

Started Packing up Boxes, Purge & Seal stuff
getting down - Reading O₂ meter for work.

Dive: Haddock Hale at ~1045 w Heather & Tina
Activities: Me & Heather: O₂ meter
new tank
Heather: Tina (First) - Try Plastic Cover in both

Specs: Time down 1045 - 11:30 = 45 min
Depth - 55'

Results: Heather Read; I held.

Amb calc	Species	Velocity cm/sec	Start Amb O ₂	Sp _g Exh O ₂	End Amb O ₂	
(6.925)	<u>Verongia</u> <u>fistularis</u>	9.0 cm/sec	6.9	6.45 wash	6.95	6.9
(6.975)	" "	8.0 cm/sec	6.95	6.43 wash	7.0	7.0
(7.0)	" "	10.2 cm/sec	7.0	6.49 wash	7.0	7.0
(7.025)	<u>Xestospongia</u> <u>muta</u>	8.0 cm/sec	7.0	6.32 ^{Agitation} hole	7.05	7.05
(6.925)	<u>Neofibularia</u> <u>volitans</u>	10.7 cm/sec	6.95	6.52 wash	6.90	6.90

→ Collected V. fist for Hutchins # HD-2 Deep Spec #5
L 180 mm x 50 x 50 ; Plastic disk 70 mm per tip 

I was not satisfied w Calibration of Ambient rates
done by maximum agitation in area around sponges -
the probe is very sensitive to quiet water conditions &
may not be giving me an accurate difference b/w
Ambient & Exhaled ∴ to try to get a more realistic
Ambient by approaching sponge currents - i.e. 10 cm/sec
agitation to try to duplicate by hand kept time.

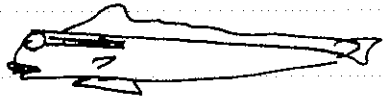
1981

16 July cont'd Took Truck in to Return O₂ Tank & to
thru ~~try~~ try to get paperwork going to
speed up shipment. took truck w to Bridgetown
& picked up papers from Plantation Shipping Co.
& tried to get customs forms from Port Authority -
Not there - directed to Kiosk downtown so back to
find it ... finally did by Sunset House but
closed at 3:30 - then back to Bellairs
to make up the forms we have (typing)

Back to Supper - later Jules Cooked
flying fishes w 2 wines etc

I am busy in Evening boxing up Egypt -
Got it all put away - see the inventors
but left O₂ meter for hard luggage

(HD-2)

had another body 
w yellow lines on head - sponge filled w
eggs on wall of atrium - cut these out
& preserved; in w specimens.

* Truck Mileage charge for 079 - 100 mi = 21 mi

Nite Dive?

1987

17 July

Fri

Finished packing Crates - Everything fitted fairly well - left the 2 Dining tables here for Heather's use.

Got truck at ~ 11 pm after Joan's Collection - Ron wanted it for his buying activities -

Heather + I + Tina took Truck to Budgettown after going to Bank to exchange another Travelers Check - then into Budgettown - picked up Customs forms, Tina tried to get pipes - Heather Filled out forms + we took off to Plantations - Sat up there for ~ 1 hour getting papers made up by gentle persuasion + paid for Transport + fees - 1168.63 Barb w Receipt

Lunch - cheese cutter \$.75 - no receipt
Then off to Customs to clear paperwork at Port Authority - OK after a little filling in of forms - then got Auto pass + instructions from Mr Marshall on Storage References - Then to Shed #4 to drop off the three cases

(Wood Box; Blue wood Box, Metal Can)

Then off to the Foundry for Pliers pipe - No - off to Barbados Foundry on White Lake Road - Yes - bought them there + drove back to Haleson -

Shopping at Super Centre for Eggs + Jam
\$ 3.97 + 6.97 w Receipts

17 July Contd
'81

→ Looked Keys in Car - finally got it open & back to Lab ~ 430 pm

Phone Call from Dr Mackie - Tried to get Brake ^{No Luck}

Party for Mike Spurlins wife & Kids leaving tomorrow - run punch - punchy!

then off for Supper w Julio & Danelle + Tom for Pizza - they paid - I did not
I bought beer for ~ \$10 - no receipts
Back to stop & bed.

Truck milage: $136 - 160 =$ 24 miles

1981

18 July
SAT.

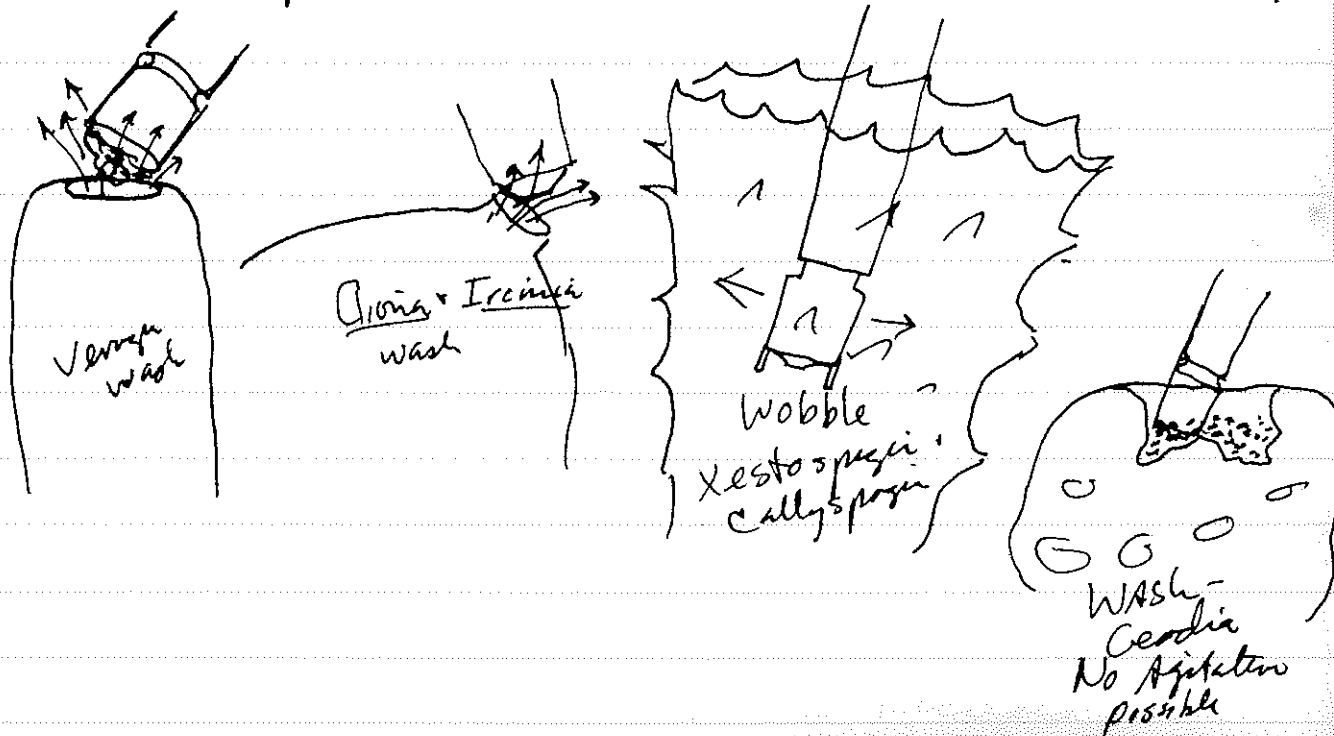
O₂ meter in operation - to try on
a full line Just for it

Dive to Bank - Changes for Boat + 2 tanks
Speeds - Bottom Time: 10:54 - 12:00 = 66 min
Z = 45'

Species

O₂ meter operation - I "wobble" at ~10 cm/sec for
ambient value near calibration situation at 28°C +
20 ppt Chlorinity = 6.5 mg O₂/liter; Sponges
measured by either "wash" if Exhaust Velocity is high or
sponge "appears active" or by Wobble at 10 cm/sec in
large abnms if activity cannot be measured by meter
but can be judged "active" by eye. Heater
Reads at 20 sec exposure.

Data presented over: →



81

		cm/sec Velocity	Amplit.	O ₂ in mg/l	Sp _g Exhaust
1 group	<i>Verorgia fistularis</i>	8.5 cm/sec	6.7 start	6.4 wash	- 4.48
	<i>Verorgia fistularis</i>	8.5 cm/sec	calc(6.7)	6.35 wash	- 5.22
	<i>Verorgia fistularis</i>	8.5 cm/sec	calc(6.7)	6.4 wash	- 4.48
	<i>Verorgia fistularis</i>	8.0 cm/sec	6.7 END	6.35 wash	- 5.22
1 group	<i>Verorgia fistularis</i>	10.7 cm/sec	5.55 start	5.25 wash	- 5.41
	<i>Verorgia fistularis</i>	10.7 cm/sec	calc(5.5375)	5.20 wash	- 6.095
	<i>Verorgia fistularis</i>	10.7	calc(5.525)	5.20 wash	- 5.88
	<i>Verorgia fistularis</i>	9.5	calc(5.5125)	5.20 wash	- 5.67
	<i>Verorgia fistularis</i>	10.2	5.5 end	5.15 wash	- 6.36
1 head	<i>Chirona leletrix</i>	11.6	6.65 start	6.65 wash	- 0
	<i>Chirona leletrix</i>	11.6	calc(6.65)	6.65 wash	- 0
	<i>Chirona leletrix</i>	11.6	calc(6.65)	6.65 wash	- 0
	<i>Chirona leletrix</i>	12.0	6.65	6.65 wash	- 0
Spunk Set dist osc	<i>Callyspongia vaginalis</i>	Not measurable	6.80	6.60 wobble	2.94
	<i>Callyspongia vaginalis</i>		6.80	6.6 wobble	2.94
Same meas diff osc	<i>Xestospongia muta</i>	Not measurable	6.80	6.5 wobble	- 4.41
	<i>Xestospongia muta</i>		6.82	6.5 wobble	- 4.69
Same meas diff osc	<i>Ircinia variabilis</i>	7.5 cm/sec	6.90	6.5 wash	- 5.80
	<i>Ircinia variabilis</i>	7.5 cm/sec	calc(6.9)	6.6 wash	- 4.35
	<i>Ircinia variabilis</i>	7.5 cm/sec	6.9	6.5 wash	- 5.80
	<i>Geodia</i> sp	not measurable	6.9	6.6	- 4.35

Collected a few worms for Joan but still Hermodice -
up in gorgonians feeding on stems of gorgo.

Washed pants + Socks in P.M.

1981

PM Dive

18 July Ctd.

Heather & I lower mooring's Graft site for her
 setting plate introduction and my O₂ meter work -
 New Tanks - used 2nd half of boat time -
 out ~ 3:30

DEPTH: 35 - 50'

Time: 3:40 - 4:30 PM

SITE: Mooring's Graft Site

— Oxygen —

	Species	Velocity cm/sec	Ambient		Exhaust	
			Ambient		Exhaust	
Totally Separate Inos	Xestospongia muta					
	Xestospongia muta ^{3"} young	7.5	6.6		6.2 wash	-6.06
	Xestospongia muta ^{3"} young	7.5	6.6		6.25 wash	-5.30
	Neofibularia nolitans	11.6	6.6		6.3 wash	-6.06
	" "	11.6	calc (6.5875)		6.25 wash	-5.12
	" "	9.5	calc (6.575)		6.25 wash	-4.94
all single specimens	" "	11.6	calc (6.5625)		6.2 wash	-5.52
	" "	10.7	6.55		6.2 wash	-5.34
	Ircinia variabilis	8.5	6.6		6.3 wash	-4.55
	" "	7.5	(6.6)		6.3 wash	-4.55
all spec A largest tubes	" "	7.5	6.6		6.2 wash	-6.06
	Verongia fistularis ^{sp. 4"}	10.2	6.7		6.3 wash	-6.35
	" "	8.5	calc (6.675)		6.3 wash	-5.61
Sep Specimens	" "	6.3	6.65		6.2 wash	-6.77
	Geodia sp 	10.7	6.65		6.15 wash	-7.51
	Cliona deletrix ^{in Porites}	11.6	6.7		6.75 wash	+0.71
	Cliona deletrix ^{in Porites}	"active" horiz	6.7		6.75 wash	+0.71

81
18 July Stud

single spec - 3 tubes

	Vel	Amb	Exh	
Verongia fistularis ^{V tall sat}	10.7	6.7	6.4 wash	-4.48
" "	10.7	6.7	6.15 wash	-8.21
Xestospongia muta	open but v. deep funnel	6.7	6.2 wobble	-7.46
Mycale laevis	Active horiz	6.7	6.55	-2.24
Xestospongia (plate)	open funnel	6.7	6.6 wobble	-1.5
Neofibularia	9.5	6.6	6.3 wash	-4.55
Unknown ^{Polymastia sp} w papillae	10.7	6.55	6.1 wash	-6.87

Rock

Specimen collected for fixation + identification of Symbionts or Sponges.

Neofib

82-4-3.1

Unknown fleshy

82-4-3.2

Polymastia sp

Supper - Jules + Danielle made Spritz -

I worked on Worms of Neofibularia -
Larvae w ~~sp~~ swimming tails developed.
Tried to keep a few "swimmers" overnight
+ to see if I get larvae.
Joan Marsden may be interested.

Note
18 Oct 83

I thought this was the source of the small ciliate swimmers ??

1981

19 July 81

Rained all night but stopped by 8am
- Up for late Bkfst + off to Dive

Set up new membrane + rubber band
on the O₂ probe just for Luck - pretty good
seal!

Dive: Bank Reef off Coral Reef / Colay Club -
ie north of Mantlet - just off Jones Wharf.
Anchored in ~60 feet - New Tank fill, Rubber Band
change -

Z: 60-80 feet during dive

Time: 9:53 - 10:30 (38 min)

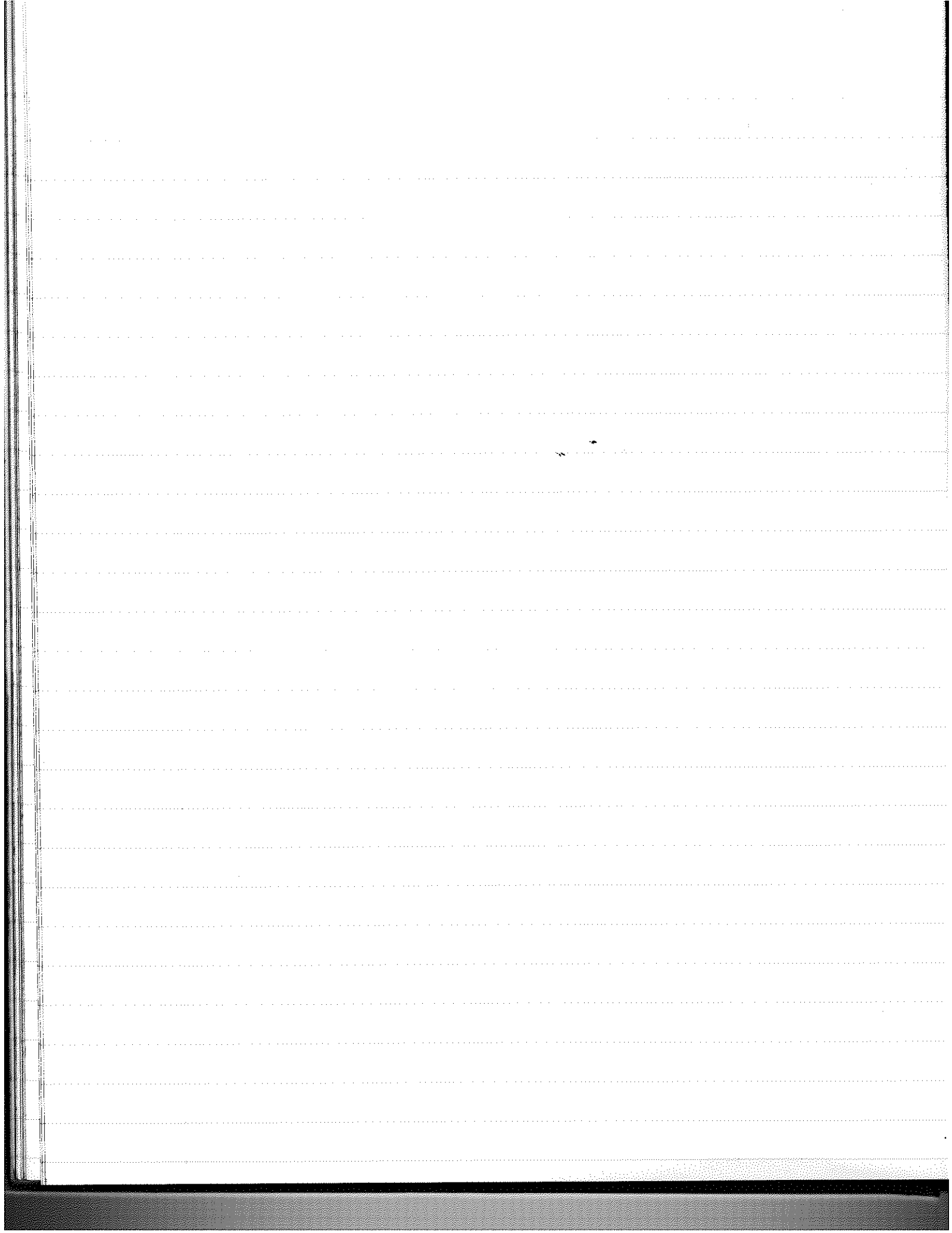
Oxygen meter worked well → over
Same Regime as previous

Calibrate as Saturation at ~6.6 w 10 cm/sec

81

	Species	cm/sec Velocity	Ambient 10 cm/sec	Spge exh
Single group	<u>Verongia fistularis</u> (wide)	7.4	6.6	6.25 wobble -5.30
	<u>Verongia fistularis</u> "	6.5	calc (6.6)	6.20 wobble 6.06
	<u>Verongia fistularis</u> "	6.2	6.6	6.25 wobble 5.30
Single group	<u>Cliona lelebrix</u>	12.5	6.7	6.65 wash -0.75
	" "	11.6	calc (6.7)	6.7 wash -0
	" "	10.7	6.7	6.7 wash -0
All Sponges	<u>Callyspongia vaginalis</u> funnel	N.A. wobble	6.7	6.55 wobble 2.24
	<u>Neofibularia</u>	11.6	6.75	6.4 wash 5.19
	<u>Geodia</u> (med)	8.5	6.7	6.3 wash 5.97
	<u>Geodia</u> (med)	11.6	6.7	6.3 wash 5.97
	<u>Geodia</u> (med)	11.6	6.7	6.25 wash 6.72
	<u>Geodia</u> (Large)	N.A. wobble	6.8	6.35 wobble 6.62

Flw out on 20th
left early, ~ 10 am



'82 U-Michigan Trip for C Analysis

26 May 82 -

Flew Republic Airlines DC 8 to Detroit via Toronto -

Dull flight - Set down ~ 40 mi in Toronto - loaded up
like cattle

MTL 345 Detroit 6:15 & a total of ... hrs.

Analyzers not working well - high "Zero" cannot be
reduced - must work for difference by measuring bkgd. between
each sample pair!

182

Dr. Rolf P. M. Bak ^{Deputy} Acting Director

Dr. Tom van't Hoff PARK's Developer

Marim

Oscar

Aubrey van't eel

Cardoza

[Hendrich Fahn

Henne

Trudy

Walt Faber

Henk

Curacao Trip 1982

Problems in preparation -

Worked out flights by about Mid April for June trip - OK but could not then get confirmation from CARIBBI by telegram or letter - Finally day before flight did get letter of OK. Personnel sent
← Page

Tues

15 June 82 Flight Air Canada → Miami OK - ^{Very Empty} No problems

Baggage cleared at Dorval → thru to Curacao

Met Lino Cotsapas in Miami at ALM Counter ^{North Atlantic Air}

Flight goes Miami → Aruba → Curacao but had to lay over ~1 hr in Aruba for time change - No problems.

No probs in Curacao - Immigration OK - Lino lost passport & ID card - only 2 week landing - need for extension & Pick up later.

Customs inspection lax - No real search. - passed

Get retarded taxi driver - did not know lat - searched around for ~1 hr & finally found it - went to Hilton Hotel.

Moved into Zero Level room & off to La Playa Hotel for supper

~~St~~ + Hilton & its piers for After dinner walk.

Off to Bed ~ 12 midnight

WED

16 June 82. up ~ 8.00 - walked around lat -

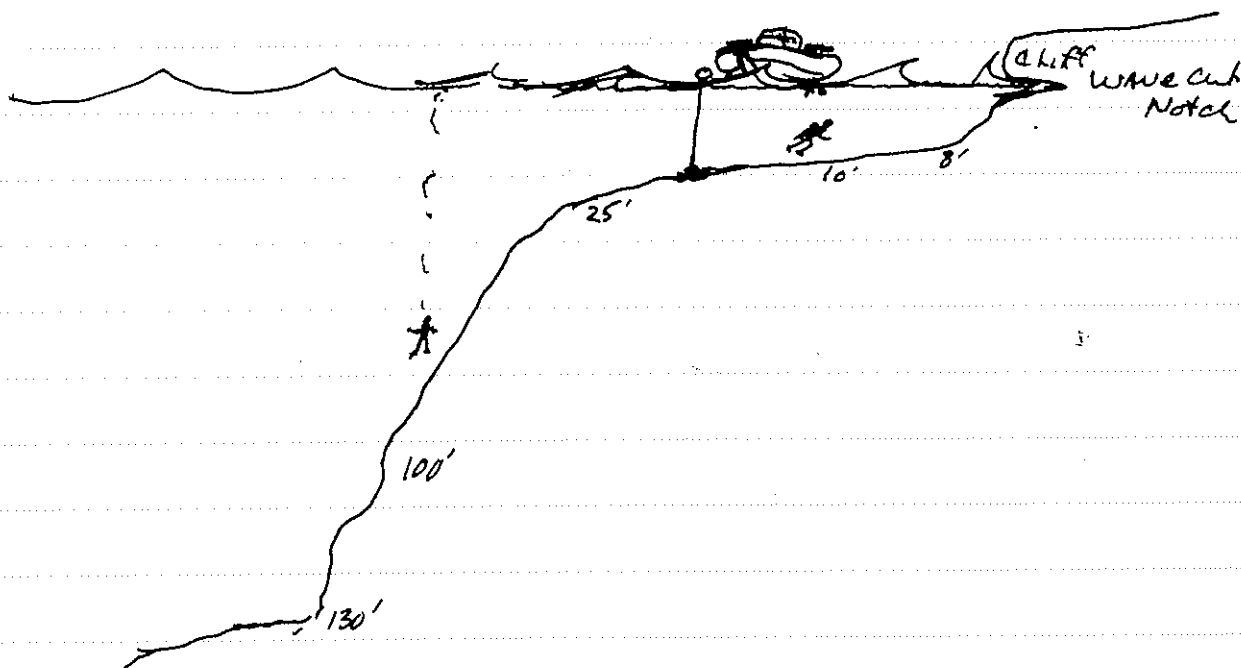
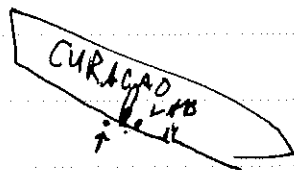
Met Bak at ~ 9.30 had the short tour & got squared away for space and signed up for a dine at 2pm & can use at 10 to go shopping.

Wed
16 June contd.

Stopped for food, batteries, beer,
back to lab for lunch. Unpacked + settled into room
+ lab.

2pm - Dive #1 to Bouy #3 about 1/2 km from
Lab. Bale/Tail + Cotsop/I bubbles.

Worked to 100 feet rapidly to move to south for survey
Platform fairly narrow and steep
Drop to ~ 130'



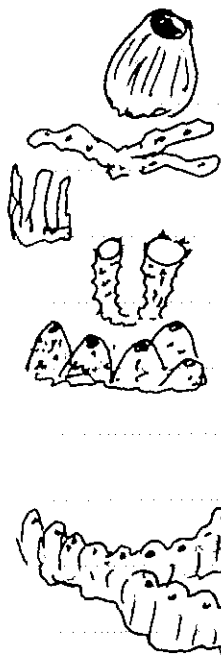
Major observations:

Sponges Not Numerous!



Neofibularia nolitangere Tubular Common - with white worms
Agelae orange massive - Not Red
Spherospongia vesparia - alga fended - No zooids,

'82



Xestospongia muta - one v. large specimen - rather regular form

Agelas brown rope w dark zoanthids

Gelliodes (Niphates) upright Greenish/Bluish SFlida w zoanthids

Callyspongia vaginalis ^{gregarious} tube - to slight flange w zoanthids

Spongia green volcano

Several boring sponges quite obvious - Not C. Seletrix.

Common in shallow water is a

Verongia (Aplysina?) green finger sponge

Lots of Irregularia of various shapes

Return at 3:30 - clean up + off to Immigration to
try Tim's passport + to get to Bank - No Luck - to do
tomorrow. Evening - Sponges by Tim + writing up Notes.
off to Bed afterwards.

Made up sponge guide like Van Soest
for HW on Red paper.

Thursdy. Trouble sleeping - dogs, chickens, etc...

17 June

Up at 7:00 am - BKfst Toast + Coffee; Ready to Dive by 8:30
Took Velocity motor + Ruler out to Brg 1 (near Brg 2) w
limit of 70' for 45 min. Good dive - ~~first~~ First find Moring
so Oscar could reattach the Brg. Surveyed from ~ 30-60'
mostly - occasionally to 70'. Noted at least 17 of Van Soest 31 sp
+ list appended on following pages - seems a good place to
work. less steep - if we use Neofibularia molitangensis as
the focus. The following notes were taken of an event:

Thurs
17 June 82

List Buoy #1 17 June

- Seen ✓ 1) *Xestosprina munda* - rare ~~and~~ spec fallen down
- Seen ✓ 2) *Aplysina fistularia* - 1 group w proper form (small size), each could had lumpy wall surface - ~~Not from~~ mud firm texture
- 3) *Calysps. vaiginis* - grey-t grey green - Lots! w MANY Ophi's at 1/ osculum
- 4) *Calysps. glycyx* 1 spec - poor fluorescence
- 5) *Niphates exspecta* Common - blue green
- 6) *Agelas conifer* brown lumpy rope - mod common
- 7) *Aplysina fulva* (stick verongia) - sticks in one clump.
- 8) *Ircinia campana* - thin wall funnel - many - common
- 9) *Ircinia strobilina* Ball pointer - some mod common
- 10) *Verongula rigida* (ridged purple verongia) one clump good sized
- 11) *Desmopisma anchorata* mod common
- 12) *Calyspsina fallax* - (my procutas) blue tubes one group seen
- 13) *Ulosa ruzickeni* (orange spiky) fairly common encrusta
- 14) *Thalysias* yellow inflated slimer - Very common
- 15) *Ectyophrasia* (*Hemactya*) *ferri* - Not common, but present
- 16) *Neophidiana molitarsis* - by far most abundant sponge
- 17) *Haliclona* n.sp (pouch like w star (avals) only one spec noted.

Not seen - conspicuously were *Aplysina archeri*, *Aplysina lacunosa* (ground),
Agelas - all orange forms (*A. septum*, *A. clathrata*, *A. dispar*),
Sphaerospongia vesparia, *Aplysina canaliculata*, *Pseudoceratina* (*Antipathella*),

Several minors not seen & several others were common:

Red inflated canal slimer - ? Possibly a *Spirastrellid*?

Olive green encrusta - is this common sheet sponge *Chimbrilla munda*?

No Red DOTS!

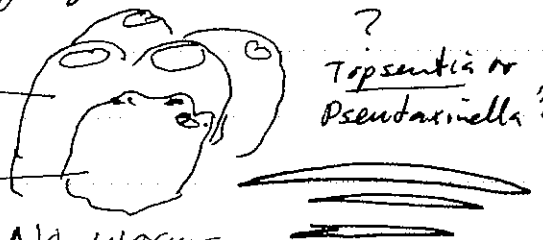
Thurs.
17 June 82

Event #73

GAMETE RELEASE EVENT

9:35 AM - Lirios pointed out a Spermij sponge.
at 38' depth.

Sponge attached to side of ~~near~~ Neofibularia
massive Neofibularia - spermar



about same apparent color - brownish but NO worms.
but very small oscula - sperm pouring out of 3 small vents
+ wafting out into surroundings. Put Bag over one & let it
pump sperm slowly into bag - smoke! Broke off a
piece - brown cortex + creme inside like Neofibularia

- ∴ 2 bags collected - a) Sperm - #82-6-17.1 sperm
b) piece/sfg - 82-6-17.1 sfg

handling see below.

Velocity meter readings - worked well -

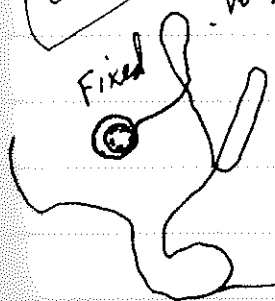
Neofibularia ~ 9-15 cm/sec

Callispongia v. ~ 5-8 cm/sec

Upon Ret'n to Lab, head rather, then washed up
- then to sponge sperm -

- a) Fixed a batch in ~ 50% ^{FW} Borin's ^{with} ~~isotonic~~
put into Jar to settle

82-6-17.1



very long tails looked at w phase contrast scope - 40x
heads seemed pointed, active & healthy
but decided not to make up EM fix's yet - some
So threw out ~ 1/2 of sperm.

- b) Borin - preserved a piece of parent sponge. into ^{vial} ~~bottle~~

Thursday
17 June 82

Got lunch + Car + headed out to town - 1:30

- 1- got Lino's passport
- 2- cashed travellers cheques
- 3- Shopped for Hardware - Knives, rope, etc...
- 4- Food shopped

Back to lab at 5 pm OK.

Unloaded, had beer, cooled off.

Evening: tried ID of prout - No Bleach - Not possible
Preserved a large clump of remaining prout in formalin

82-6-17.1 spg. Form

~ 8 hrs
in BAG
before
Fixation
to ROH at
McLind
14 July 82

↓ Dried rest in prep of bleach some time tomorrow if possible.

Getting notes out of way for Supper Now. Carried Chicken.

After supper - up to lab - found bleach - + Epic prep of spermy spore
Only ovals but wide range in size or probably several classes -
More likely - No guess on the ID - probably a Chloristid.

82-6-17.1

Also cleaned up microscope for future use -
Worked a little on Van Soest list -
Loaded camera for BW photos tomorrow.

Fri
18 June 82

Up at ~ 7:50 - fast Bkfst + Ready to Dive Bury Oct 8:30
took camera Plus x film + light meter.

Dive fine - less large sponges here - fewer Neofibularia
but still quite a lot. Dive 45 min at < 70'

82-6-18.1

Specimen
See in
Negative
of B/W Roll 1
on subject of
Neofibularia
Spec.

At ~ 60' collected Net surface "Halisarca" - the "tent-rope"
sponge as 2nd spec ever taken. Under coral + patch
estimated at 10x10 cm - Broke off net 2 to get into
small bags + Ret'n to lab. P

Photos

Also collected small piece of Olive green sponge -
(later in Lab proved to be Chondrilla mucula ~~Asteromicros~~)

B/W Roll 1 + Photography:

at 70' read vertical light level for ^{ASA} 125 as f5.6 @ 60th
horizontal " " " " f2.8 @ 1/15th

took both Avail + flash (Oceanic 2000) at these
values at 70' + 60' - overcast day - to see
how flash fill affected photo quality.

~~Return to~~

List of observed - but Not consciously surveyed -
sponges over:

18 Fri June '82
Cont'd

Sponges - Site: Buoy 'O'.

Xestospongia nana - rare but there

Callyspongia vagabunda Common w/ zoanthids

Niphates erecta Common w/ zoanthids

Agelaea crispata Brown lumpy rope - present.

Neofibularia nolitangere Common

Agelaea lispa - orange mass present

Ircinia strabillina med common

Desmapsamma anchorata Common

Thalysia sp. yellow slime - common.

Chondrilla nucula olive green encr. Common

Haliclona sp (blue star) common

+ other species not on list but not keyed -

eg Black encruster; ... the Net-rope Halisarcid, etc

82-6-18.1

On return to lab - washed up, etc - 10 o'clock coffee -

up to lab to handle the red rope Halisarcid -

a) largest piece contracted - put into water table to heat & expand

b) Smaller pieces fixed in Form for Museum spec: to ROM at McGill 14 July 82

Worked over ID of Chondrilla nucula - spiracles OK.

BW Roll 1 → Developed Plus X film Microdol X 1:3 ~ 10 min. - Best w/o Flash - use meter reading OK!

P.M. Smashed out to "Hilton Hotel - Cormack Pier -

list of observed sponges all over - Great Spongioid populations -
Some large sponges - very interesting area to survey!

82

18 Fri
June
(cont'd)

Hilton Pier + Shallow area -

Neopibulani volitans common. + on pilings

Desmaysium anclurata common + on pilings

Spherozopsis verpaia common - shallow

Irencia strobilina present

Xestospiza munda rare but present

Callispyris vaginatus common

Niphato erecta present.

Callispyris falkx - blue tube - on net - very common

Talysia n.sp. Yellow slime encrusts common

? Tellania ignis ? fire sp.  red - present.

+ several other species -

1. ^{thin} black slimy encrusts

2. pink ^{slimy} encrusts

3. orange encrusts - w/ 'spikes' -

+ 4. TETHYA CRYPTA ! + Prob Geodia

To identify he summarized for intent + platy - lots of different
fish species etc.

Return to lab - try to get tanks for weekend -

Cardoza not there - off for weekend - No luck

Took 4 empty from Teit & get filled w/ Am at June
Stop.

Linos off to store for Milk + Gas - - -

Supper - P. Chops + mashed Potatoes.

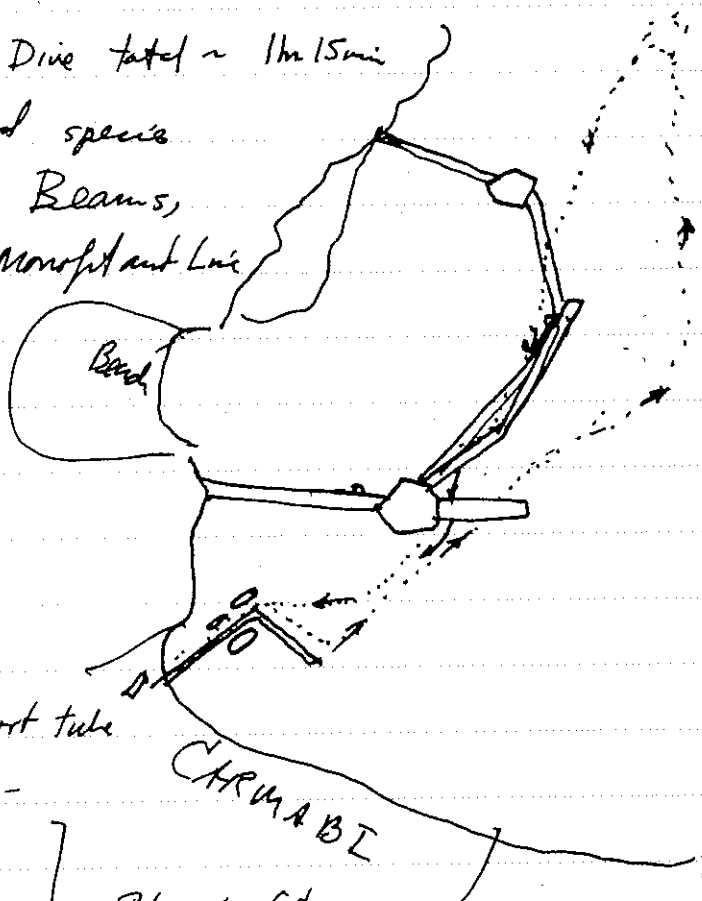
SAT
19 June '82

Up ~ 7:30 - Bkfst Toast, off to fill ⁴ tanks at Dive shop
changed to CARMABI - for weekend dives - Back by 9 AM.
Ready to Dive off Hilton - Carmabi shore is part of
the pier - boardwalk.

Max 60' Start ~ 9:30 - Dive total ~ 1 hr 15 min

Photographed at end & Listed species
JUNKYARD w/ Wooden Beams,
fences, Miles of wire & monofilament line
straw everywhere, Bottles,
Bulbs, tiles, etc. etc.

Sponge in high Diversity as
list opposite indicates



BW Roll 2

Photographed in close up w/ short tube

~ 0.5x w/ Oceanic 2000 strobe -

Start w/ Diffuser on @ f/30 + f22

then w/ Diffuser off @ " "

then " " off @ f11

then " " off @ f16

Plus X film

Developed as std ASA 125 w/

microl X dev. 1:3

Developed film in Afternoon - OK -

Results indicate for close ups

Plus X ASA 125

f16 w/o Diffuser

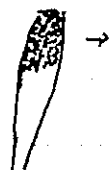
Kodachrome 64

f11 w/o Diffuser

SAT
19 June
Ctd.

182

Hikori Carmali Sponge List
List after Van Soest 1981



182

Xestospongia muta rare - shallow - 20'

Aplysia archeri - rare 1 group of 3 at ~ 60' - hirsute form

Callispongia vaginalis common - all over

Niphates erecta common

Agelas confusa - typical lumps + raised osc

Agelas scepterum? - similar to above but smooth w/o lumps +
'sessile' oscula.

Ircinia campana common in places.

x Neofidulania nobilitans common!

Ircinia strobilina common

Ircinia felix? like Strobilina in several lateral grouped
oscula

Ircinia? sp - like 'vaucheria' but oscula not dark

Spherospongia vaporaria - very common + LARGE.

Pseudoceratium crassa = [Fantusella] - one group at 60' - yellow

Agelas tropica w/ Kyles - common.

Desmapoma melonata v. common.

Mosa ruetzleri - present

Thalysia sp yellow olive - fairly common

Chondrilla nucula fairly common

Halysira sp (blue stars) - present.

plus: Scyton Calcearia Leucetta floridana - one large one at ~ 50'

Large yellow mass - rubbery? spongy? Intrella?

Black encrusting - encrusting

Pink slimy encrusting encrusting

Cliona leleboris! w/ zoanthids - definite! only one ~ 50'

Ball caryophylla? - brown

Mycale laevis? definite on one fallen metal fence ~ 50'

Other
Niphates,
Dysidea
Janina
etc

+ others
UNLISTED

Sat 1 82
19 June
Cudd

82-6-18.1

In late afternoon took out the net-tent spg to mature -
Water in net lab pretty sluggish - put under pier upside
down below rocks at -15ft. No problem. To see if it will
regenerate + inflate itself + get active.

Eve - Supper - large meat loaf + fried potatoes.

MT to write Notes. Band played till ~ 3 at Las Palmas Beach.

Sunday
20 June 1982

Update - 11³⁰ AM - BKfst -

Got gear ready for Dive - Car reserved for 100

Loaded up + Drove down to Jan Thiel Bagg - Van Soest #29

Beautiful bay w short breakwaters - easy entrance - Take Pass
to clear gate free.

BW
roll 3

Took Camera + Plus X film ASA 125 w + w/o flash
Most 1/60 sec at f 5.6

Saw many sponges - a good rich reef - falls off
from ~ 25' w nice upper platform w Acropora palmata
+ lots of Millepora platy-type + Gorgonians.

Down to 75' max today but visibility great + deeper
looks just as interesting. Clearly Dominant sponge clump
is Agelas!

List over -

82

Jan Thiel Bay.

Majors:

Ircinia campana - common funnels + some Jani forms

Agelas conifera - Brown lumpy ropes

Agelas clathrodes ^{into orange} - ^{irreg} masses w ridged surfaces.

Agelas draperi - into coarse regular round forms w osc + keyholes

Ircinia strabus

Neofitulanella voluta - the largest species but not as ^{thin} as ^{others}

Less common:

Callispongia vaguila

Callispongia plicifera

Niphates erecta

? *Agelas scepterum*? - smooth orange-brown ropes. Not sure if id'd

Aplysina fulva - some variegated forms.

Erylus trisphaera - in bowl shapes - black 

Santella - *Pseudoceratina crassa* - as yellowish tubes.

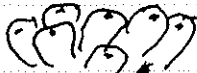
Callispongia fallax - as my predecessors very very common

Ulosa roosei

Thalysia sp - Yellow sponges

Chondrilla nucula - olive-green sponges

Haliclona sp - blue sponges - common!

Unknown red fingers  1-2cm diam

+ brown *Clonias* + others

Collected 2 species - pieces:

82-6-20.1

Erylus trisphaera - Piece in Bonin + red in Form piece edge

82-6-20.2

Red ^{Grape Cluster} sponge - Piece in Bonin + red in Form.

Both were photographed in this roll of film as well.

to ROB @ McNeill 14 July '82



192
Sun
20 June
Control

Return - wash up - work over specs + pream

Supper late - Omelette + broccoli - OK.

Developed film later + up to mind new film rolls + write notes.

21 June
Monday

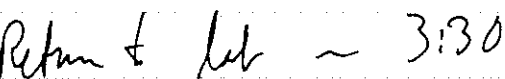
Up about 8 am - late - supposed to use the small Renault for shopping - hurried to dress ... but car gone. Tiel + Lal work - overside of my sign up apparently. But OK - made arrangements to go into shop in Oscar + the Mazda on his trip to get tanks. Just as we were leaving the Renault drove up - I watched + went off alone - Store Hendersons - No eggs, No runs, No lots of things. But we loaded up with \$500 of stuff + headed back - picking up a new bottle via ~ 45 min of SLOW driving + fl 100.

Dive - unloaded, got permission to use the 100m marked transit time in storage, got ready for out at 1:30 pm Dive -

Dive ~ 2 pm w Small Whaler + Oscar diving.

1st work Dive - Put in the transit time 50' + were able to get 3 products mapped + spec. labelled - to spec # 6. map over.

21 June
Cato '82



sit around making more ties & Labels

~ 500. Started swim out to check on the net space under pier

Broke Room + Chinese Supper at Lins. #

Supper Chinese Pork Loin & Rice

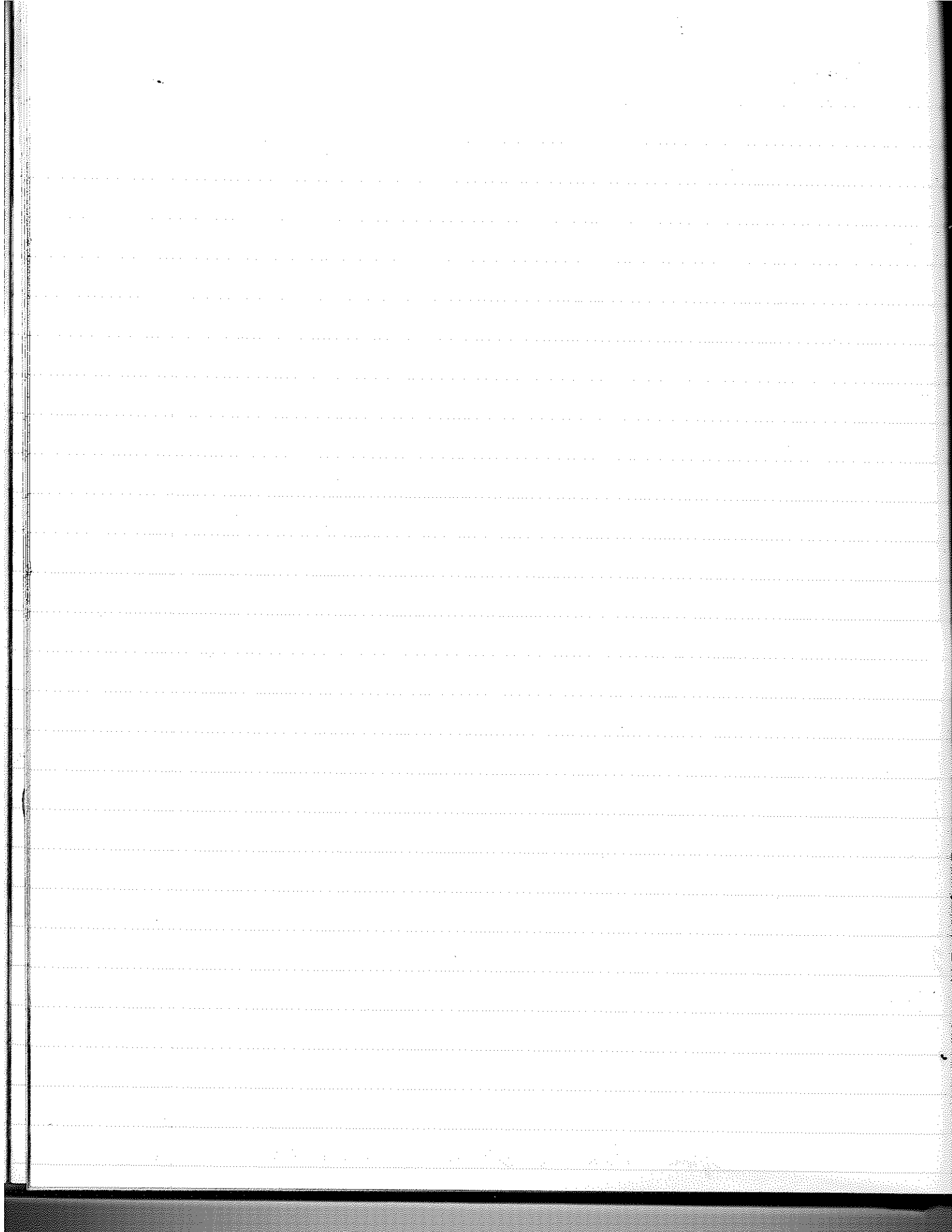
Other Juggers work on Slide Rock

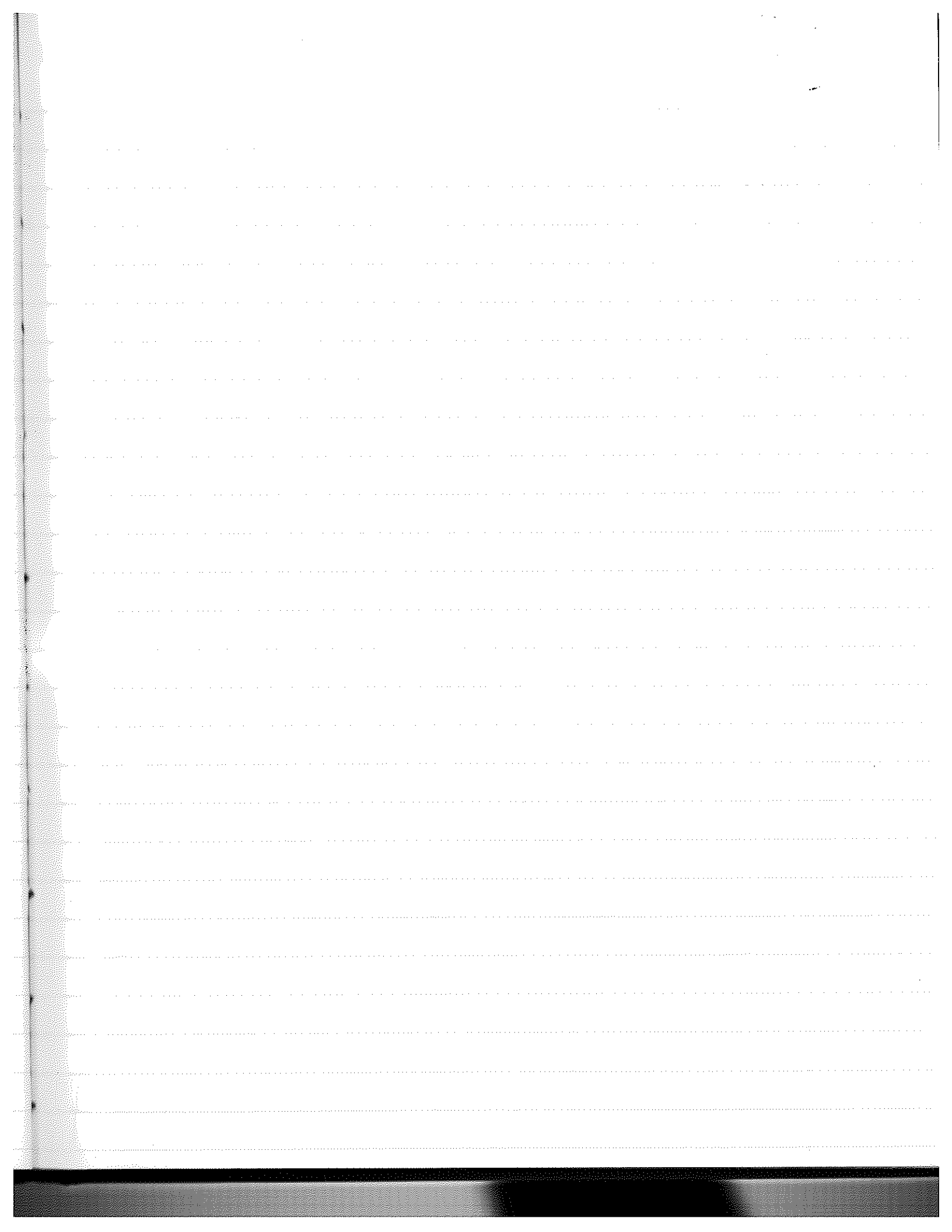
Collected a red
sawtooth sp. - common sp.
Trid. arm - Bled but
No irritation
∴ Not Tetania ignis
What is it?

22 June up ~ 8:30

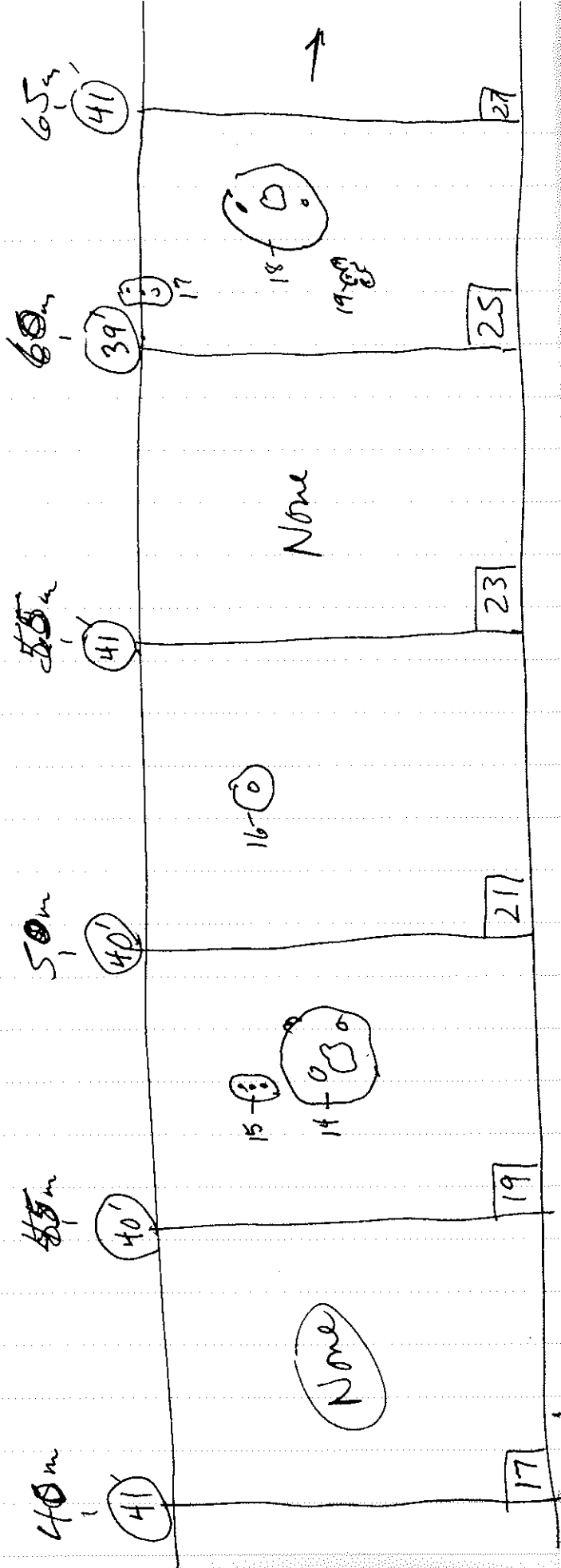
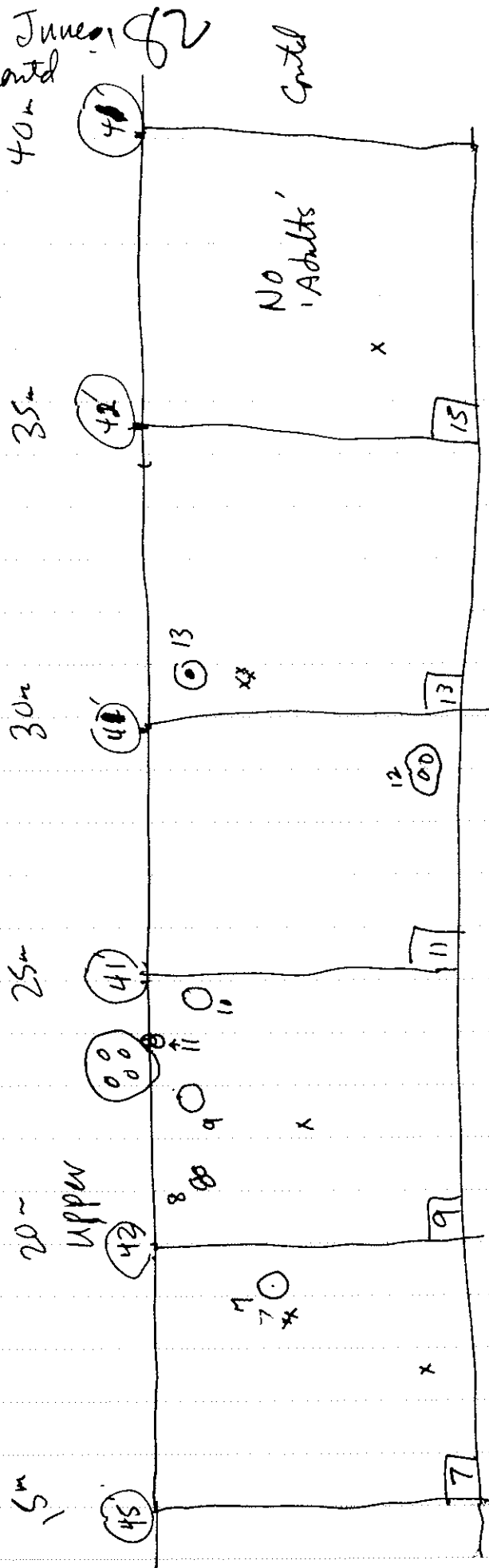
Tues. Get ready for 10 hr Drive

Dive to Buoy 1 to continue transect map of upper side
- Did upper square 7, 9, 11, 13, 15, 17, 19, 21, 23, 25
from 15m to 65m (10 Blocks). over.





22 June 82
Cont'd



22 June '82
Contd.

Wrote up Notes at 2:30 & wrote letter off to home
to work on Slide racks

Supper - Melange of (in order): Cheese, Hamburger, Plantain, Eggplant & Zucchini.

More work on Racks is due -

23 June
Wedn.

Up at 7:30 for 800 dive -

Out to Buoy 1 - dropped trial racks for slides & aff to
65m mark on the 50m Deep transect line.

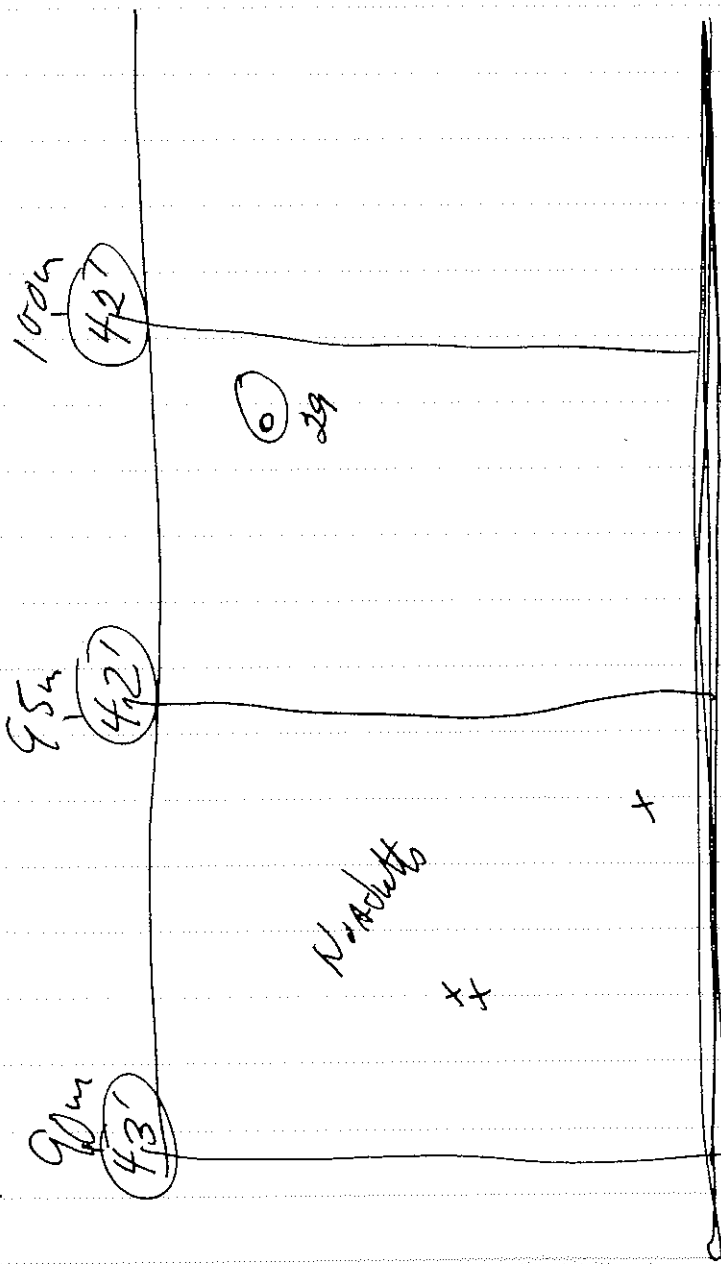
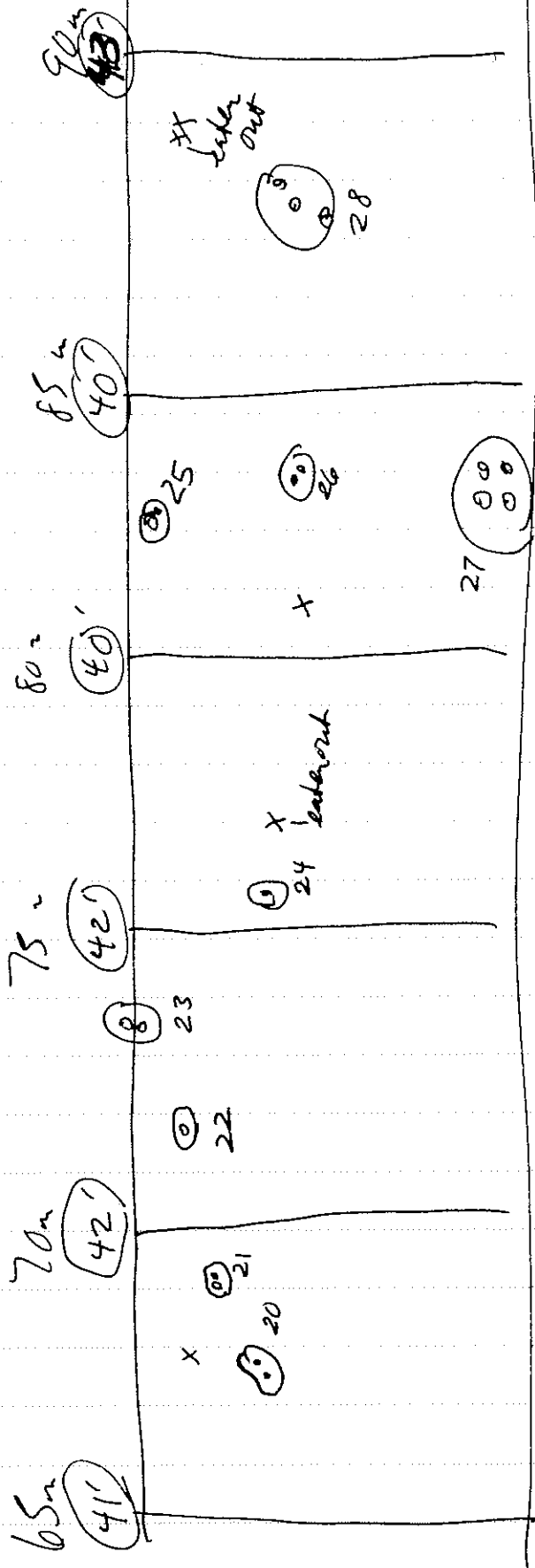
Continued survey & tagging specimens - - - finished the
100m at ~ 30 min of dive - total 29 'adult'
(OVER →) sponges & several young. A couple heavily eaten out
by some predator - Saw a fleet of 4 leopard rays
fly by at ~ 100' & back again later -

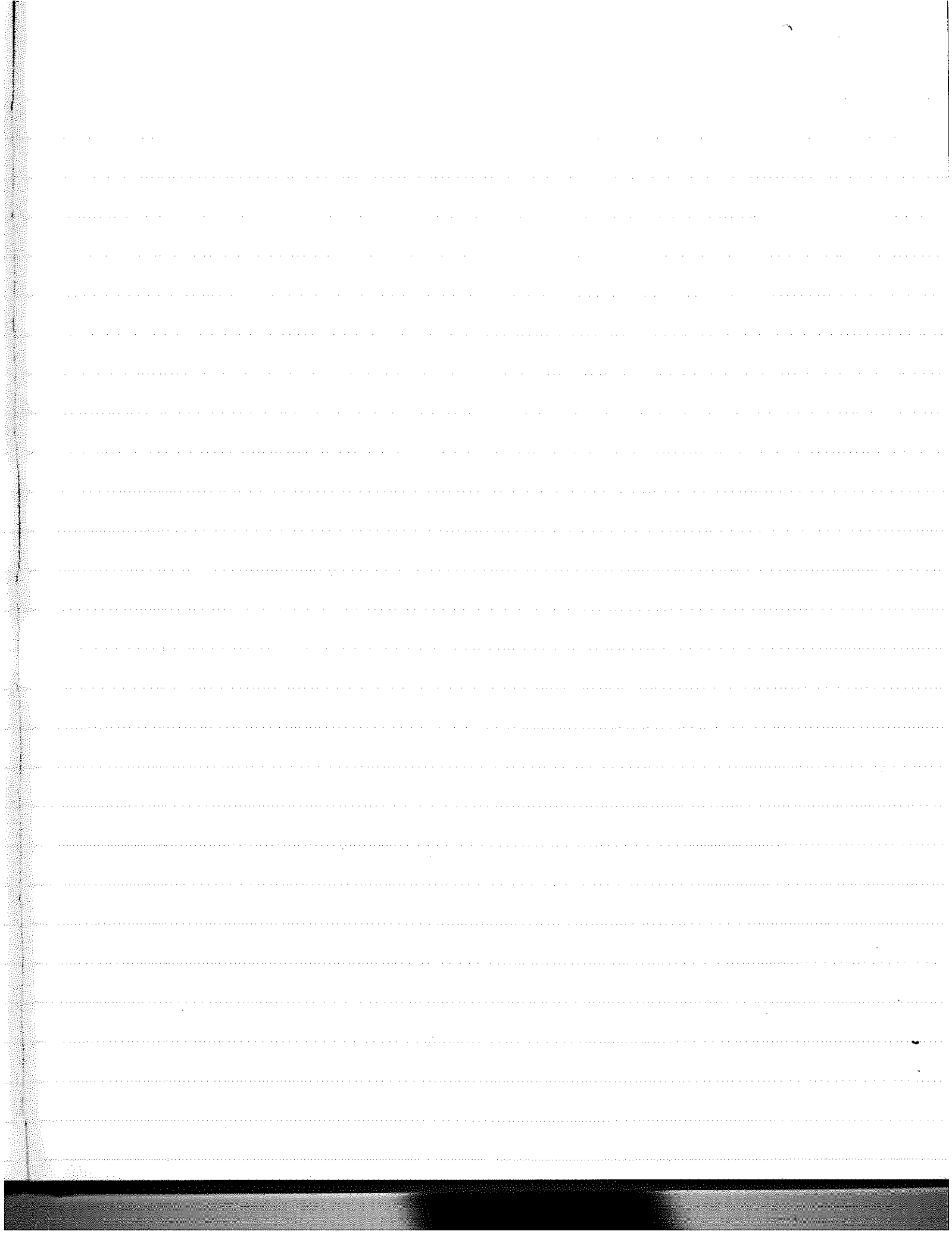
At end of dive came up & No boat again -
waited a few mins & came in - OK.

Aft - drove off w/ Chev's pick up to monitor
the stores - found a good one up North - great -
Bought Film, beer, rum, postcards, p. chop etc...

Back to lab to get ready for Am. drink,
& writing up notes.

23
June cont'd '82





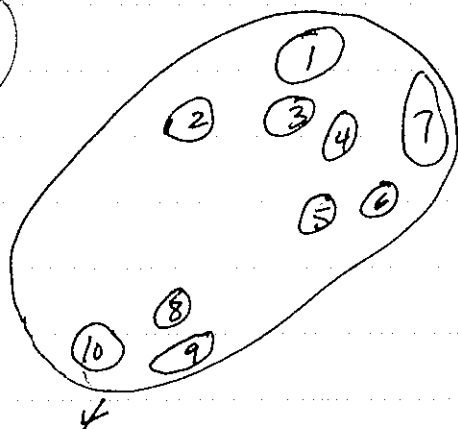
24 June 82
Thurs.

Dive w Small boat ~ 8:45 at Buoy #1

Linos measuring - I photographing plus x @ $\frac{1}{60}$ @ f4 (BW Roll 4)

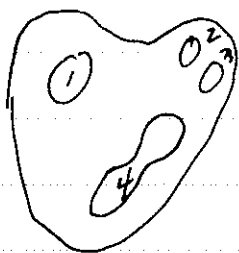
Top transect:

Linos #1



	depth	Widest dian
OSC 1.	8cm	5.5cm
2.	5.5	3.5
3.	8	5
4.	8	4
5.	5.5	(?) get from p
6.	8	3
7.	26.3	16.5
8.	30	14.8
9.	26	12
10.	44.5	16.5

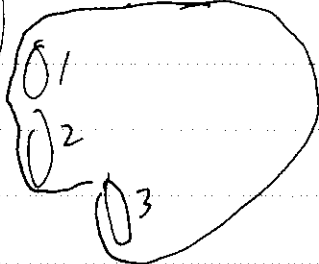
#2



1.	20	4
2.	8.5	5
3.	11	9
4.	42	29

#3

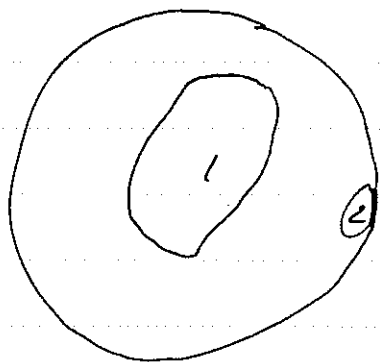
Fallen over



1.	18	9.5
2.	22	11.5
3.	34	9.5

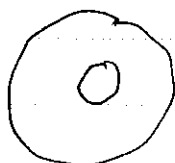
24 June 82
contd

(4)



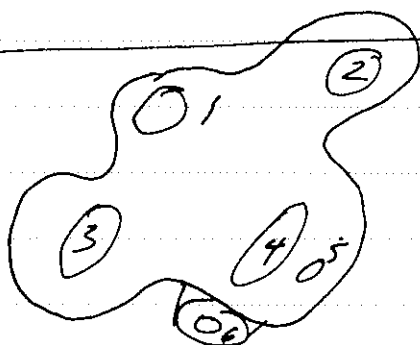
	Z	D
1	66	36.5
2	23	8

(5)



	Z	D
1	24.5	6.5

(6)



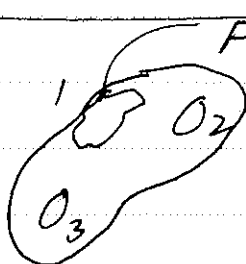
	Z	D
1	35	14.5
2	36.5	17.5
3	35.5 flatish	19.5
4	34.5	16
5	34.5	11.5
6	17.5	7

(7)



1	15	7.5
---	----	-----

(8)



Fallen out - Eaten?

1	7	7
2	9	6
3	10.5	3.5

24 June 82
Thurs
Contd

(9)

(0)

	Z	D
1.	38.5	13

(10)

(0)

12	11.5	5
----	------	---

(11)

(01
02)

1	21	8
2	17	4.5

(12)

(1) (2) (3)

1	27.5	8
2	36	10 Flat!
3	37.5	14.5

End of Morning Measts,

Miles Reads #4 at 1/60 for horizontal photos. Into dark Nerfit surfaces.

Photog Notes: * Probable Velocity Measts.

BW4

1. ✓ Photo Big
2. ✓ med
3. ✓ Fallen over Med-small.
4. ✓ * vel Big-Med
5. ✓ * vel small
6. ✓ (Big)

Roll 4. BW



24 June '82
Contd

BW 4
↑

- 7 ✓ *
- 8. ✓ 3000
- 9 ✓ * med small.
- 10 ✓ * small
- 11. ✓ double slits
- 12. ✓ med Big
- 13. ✓ *

BW 5
↓

- 14 ✓ Big Charge Film in Middle
- 15 ✓
- 16 ✓ * 1. good.
- 17 ✓ 4000 * part separates - could look *
- 18. ✓ BIG!

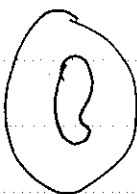
Start BW Roll 5
← Charge Film in Boat.

Developed Films --

Dive at 3:45 pm ~ 50 S. Photos

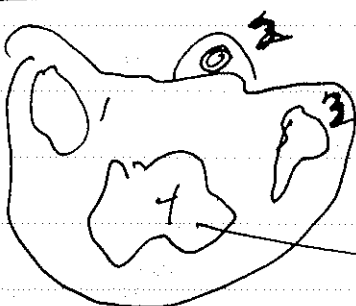
Linos continued measuring:

13



1. $\frac{Z}{25cm}$ $\frac{D}{14.5cm}$

14



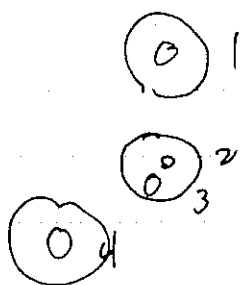
Bottom
even out

	Z	D
1	39.5	19
2	18	3.5
3	47	20
4	~38	44

Where the bottom should have been

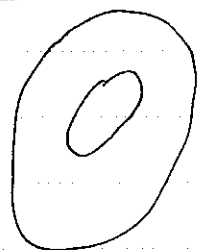
24 June 1982
cont'd

(15)



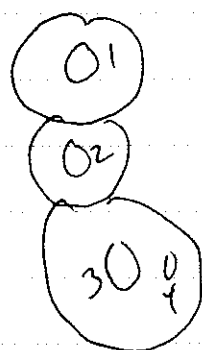
1.	2	D
2.	11	5
3.	8	3.5
4.	6	2
	8.5	4

(16)



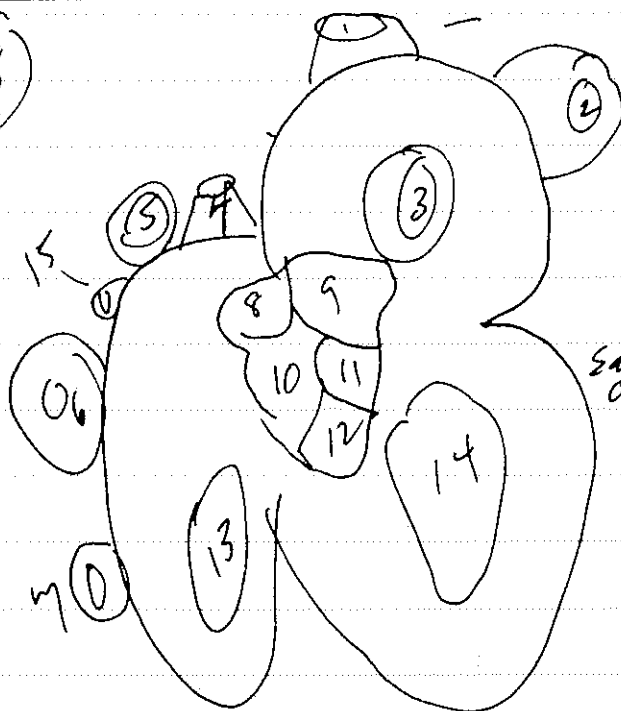
1.	31	-15
----	----	-----

(17)



1	35	10.5
2	22.	9
3	50.5	15
4	6	2.5

(18)



1	38	-13
2	29	-15.5
3	42	15.5
4	33	-13
5	11.5	5.5
6	43.5	14
7	11.5	8
8	63/71	25
9	34/43	10
10	49/63	17.5
11	18/33	10
12	41.5	15
13	60	21.5
14	63	35.5
15	8	2.5

side off

24 '82
June
Cattle

(19)

20

(60)

1

1

25

4.5

2

15.5

7.5

3

12.

5.5

30

(20)

(00, 02)

1. 14.5 - 3

2 15.5 5.5

Photography HMR: BW Roll 6

BW
Roll
6.

19 ✓ small triple loose

20 ✓ 2 osc tight small *

21 ✓ 2 small - loose

22 ✓ 1 mid-small irregular

23 ✓ 2 double med *

24 ✓ 3 irreg small

25 ✓ 1 small dirty-hairy

26 ✓ 2 med tag gone

27 ✓ 4 osc med - By peep

28 ✓ 2 osc + 2 med size

29 ✓ 1 osc on side

29* for Vibrato only - outside transect!

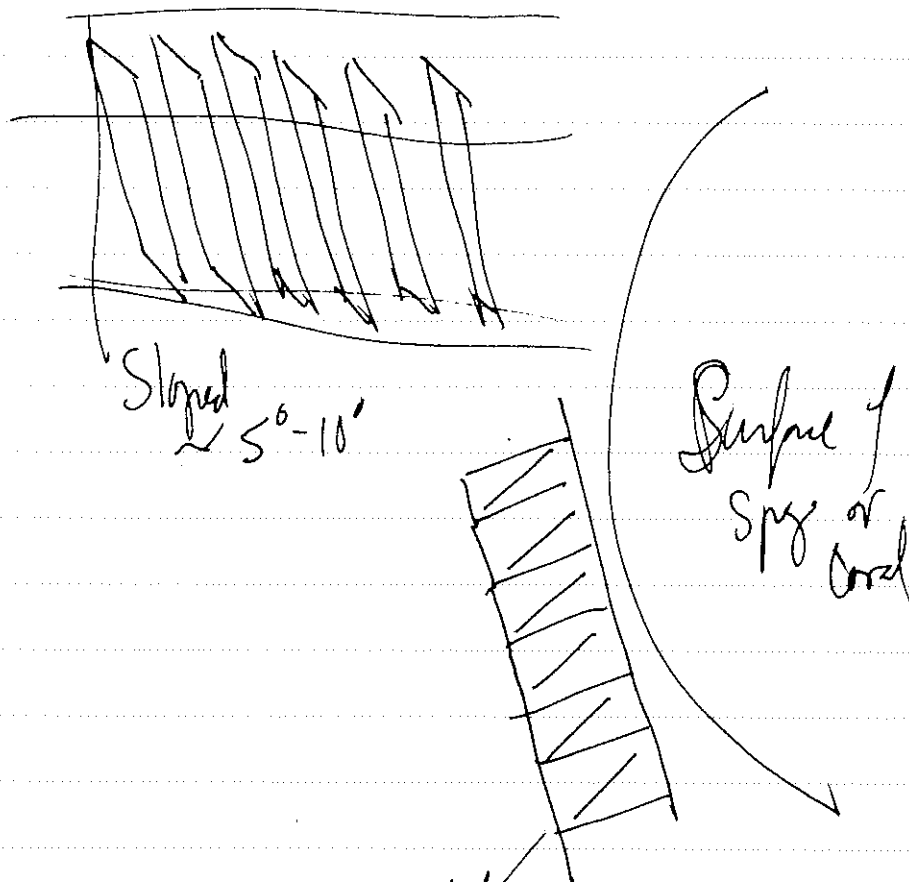
24 June!
Contd. 82

Loaded Slides -

Washed AS } $\sim 0.5\% \text{HCl}$ in 50% ROH
AC }
AN } Cleaned for $\sim 15 \text{ min}$ & then
rinsed in tap water & wiped.

All others Wiped w tissue paper +
labelled in loading Racks.

Racks



Mount 20° Angle + surface

25 June 1982
Fri.

up at 8:30

Dive Broy #1 - Tasks - Finish Measuring upper transect

Put in slide racks.

Lines: Measts: catel

Photos taken in Dark before time of racks

(21)

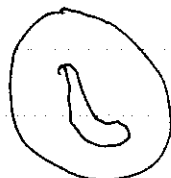


	Z cm	D cm
1.	9	4
2.	13.5	4

Minolta camera
color
Slide

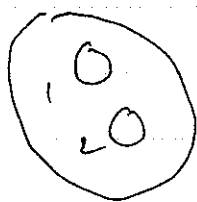
3111	3112	3113
------	------	------

(22)



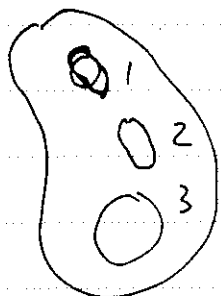
	Z cm	D cm
1.	25	12.5

(23)



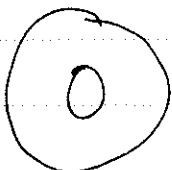
	Z cm	D cm
1	16	6
2	17.5	5.5

(24)



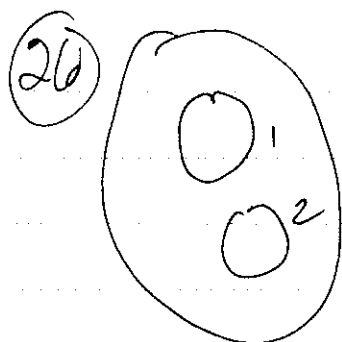
	Z cm	D cm
1.	5	3.5
2.	6	3.5
3.	17.5	7

(25)

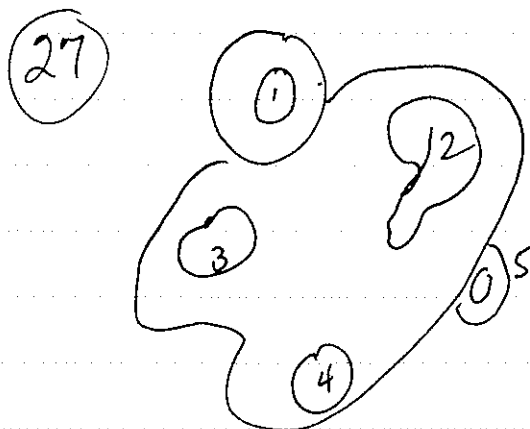


	Z cm	D cm
1.	15.5	6

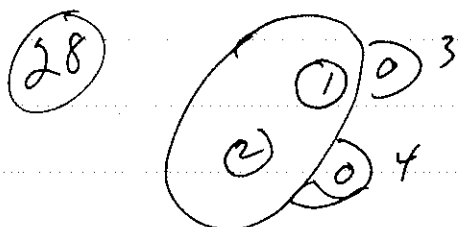
25 June '82
Contd.



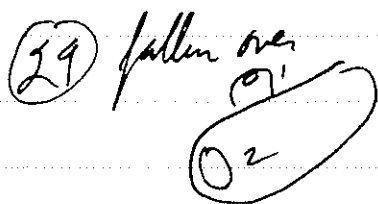
	Z	D
1	26.5	12
2	19	11.5



1	39.5	10.5
2	58	26.5
3	45	12.5
4	43	10.5
5	13.5	4.5



1.	37.5	14.5
2.	34.5	12.5
3.	11.5	4.5
4.	16	5.5



1	54	2
2	19	6

29 Xtra



1.	34	12
----	----	----

25 June '82

πr^2
 πr^2

Water Currents tried at Start + End - Spine result

@ the end of transect line 'O' in

Release Bag 2-5' above bottom at ~ 50'

Wobble slowly around the base, but no significant

Lateral translation over 2 min - Max ~ 1 meter/2 min

Direction Not consistent.

Clearly present an oscillation - wave induced at

40' w a period of about 5 sec + a

reach of about 8" - 12"

Putting in slide racks -

→ have pairs A B C D E for CDS
+ one lone AN

Does C = coral

Depths

40'

AC, DC

43'

AS, CS

45'

BC, DS

50'

CC, ES

52'

AN, BS

56'

EC

PC

BS

AN is in open
E adjacent coral
S adjacent space

Map

PC

EC

ES

AN

CS

AC

AS

PC

000

□

└─┘

25 June
cont'd

Rest of day getting ready for tomorrow +

82-6-18.1

82

snorkeling out in front -

Visited the net sponge captive - had fallen out - onto sed surface.

Resupplied in the niche of 2 rocks.

26 June
1982

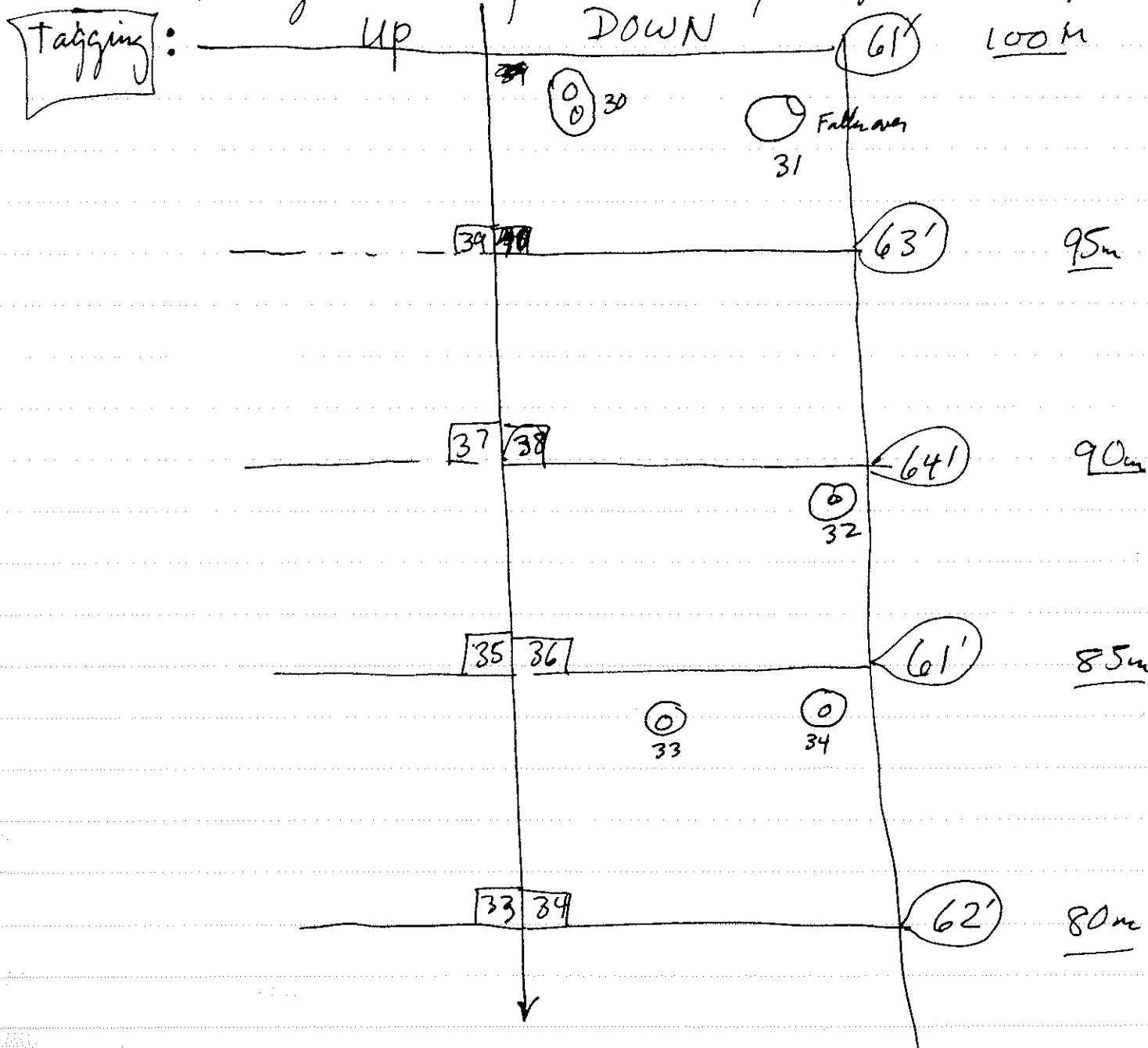
Up ~ 830 - - - - bKfst

Ready to Dive - into water at Buoy 1 at 9:30 ^{Small Boat.}

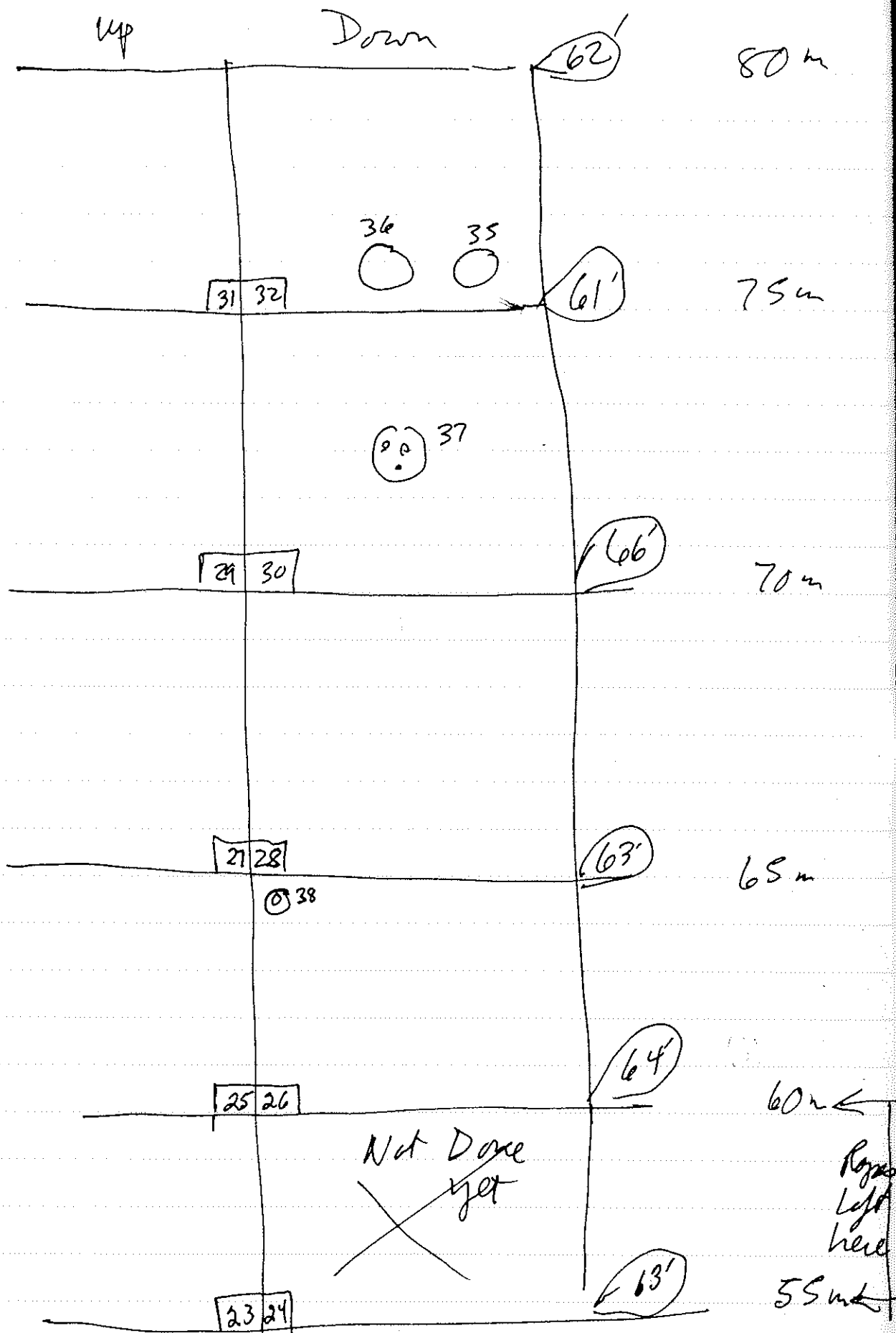
1. retrieve Ruler

2. Lines over to 100m End of T&C to begin tagging "lower" set of Quadrats -

3. I began record of velocities of upper selected species.



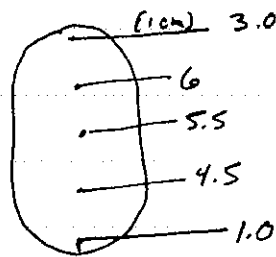
26 June
cont'd
82



26 June '82
Catal

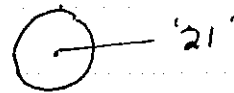
Velocities : in Raw Reading of Meter

4



25 x 38
cm

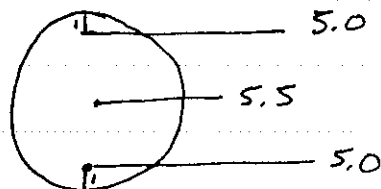
①



8.3 x 10.0 cm

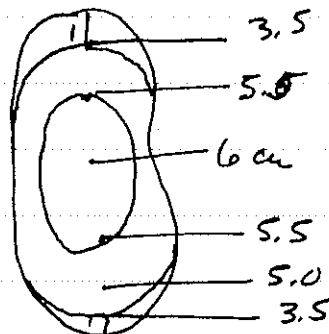
②

5



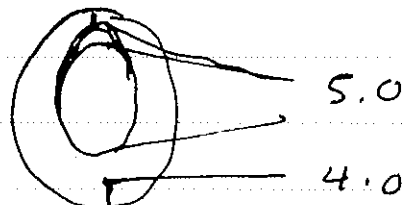
6.7 x 6.7 cm

7



3.2 x 7.2 cm

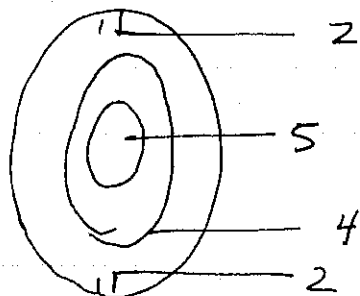
10



4.5 x 5.3 cm

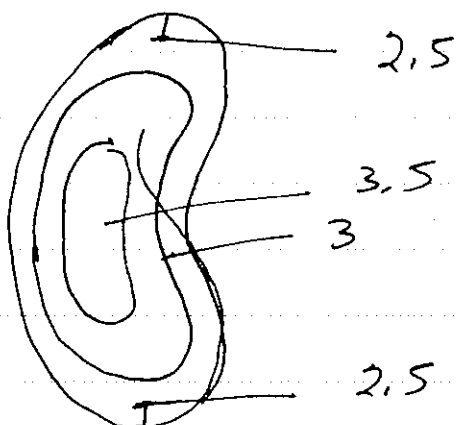
26 June 1982
Cont'd

9



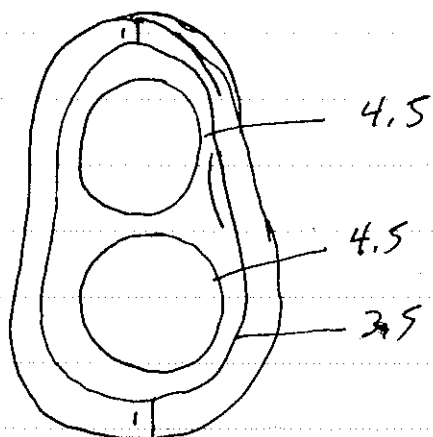
9.5 x 12.5 cm

13



7.8 x 14.8 cm

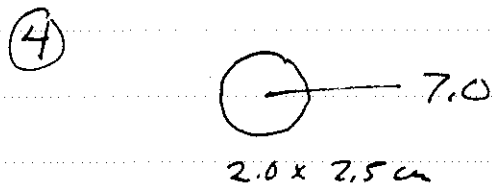
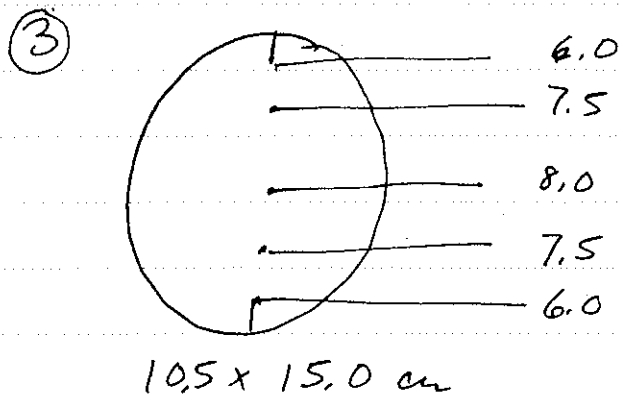
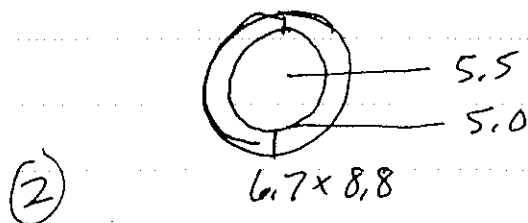
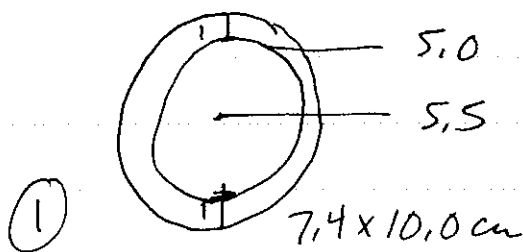
16



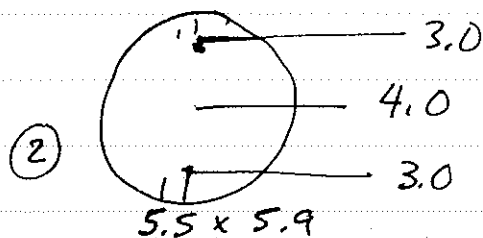
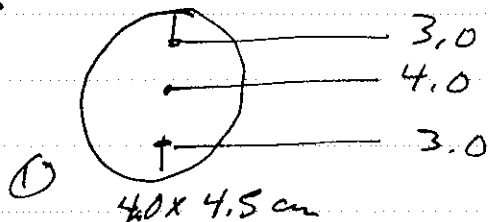
8.3 x 12.0

26 June '82

#17



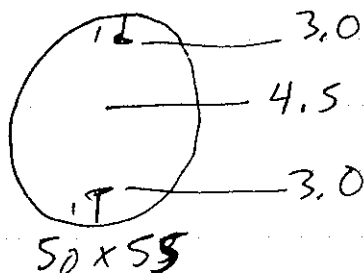
#20



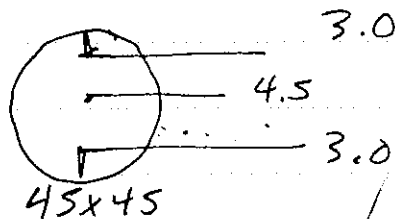
26 June
Contd 182

#23

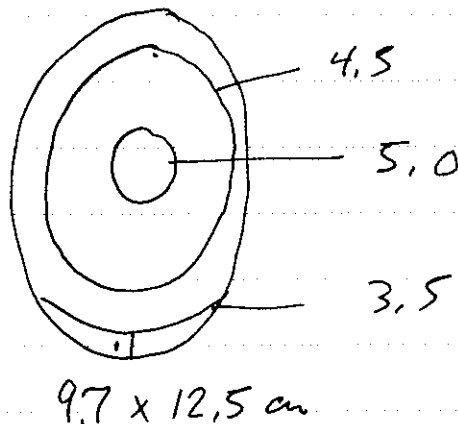
① Big



②



#29X

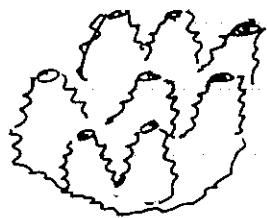


Collected Scales from #27 - fish evidence in large ~~damaged~~ ^{damaged} to wall - large scales embedded in it.

Damaged #4 by Knife - one side cut out about 1.5 cm d patch ~ 0.5 cm deep - gouge. Opposite a 2.5 cm d. patch ~ 0.5 cm deep. - To monitor for regeneration & healing processes.

26 June '82
Contd

Collected a piece of the red branching sponge
+ preserved in Borius in SW at Lake ~
2 hrs after collection - not likely good
for histology - # 82-6-26.1
to RHH at McGill 14 July '82



Supper - Creme Spagetti
Cake ala Walt

27 June 82
Sunday.

Up ~ 7 AM - BKfst
Dine small boat Bony #1 w Lino @ 9:30 AM

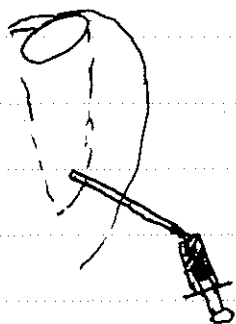
1. Finish marking/mapping lower transect
2. Try Fluorescein dye into sponge via syringe.

1. Total ^{Neofish Adult} Sponges in upper Transect	29
total " " Lower Transect	13
	<u>42</u>

Young: upper	15
Lower	3
	<u>18</u>

60 total spec

2. Made Fluorescein in SW. 1 tablet in 1 liter bottle of water for Lab - filled Syringe in Lab - corked + took down w tube. After the mapping went to sponge #2 + ~~shoved tube~~ ~~shove~~ metal tube w Syringe + shoved into wall - penetrate ~ 1" into lower Vertebrae Took breath + pushed Syringe fully in - depressed it + moved back rapidly to ~ 10'



10 sec

Meand w 2 gauge at +2 m
Center at 28'
sponge surface at 38'
10'



Top reaches ~ 4m above sponge
+2m ldr. Center @ 3m above spg + 1/2 NW
1 min ~ 2.3m up + 1m down

30 sec ~ 1/2 m up + 1/2 meter + North m

27 June 1982

Sum
Antid

50

25 26

64'

60m

23 24

63'

55m

Up

21 22

61'

50

19 20

61'

45m

17 18

65'

40m

40SC
39

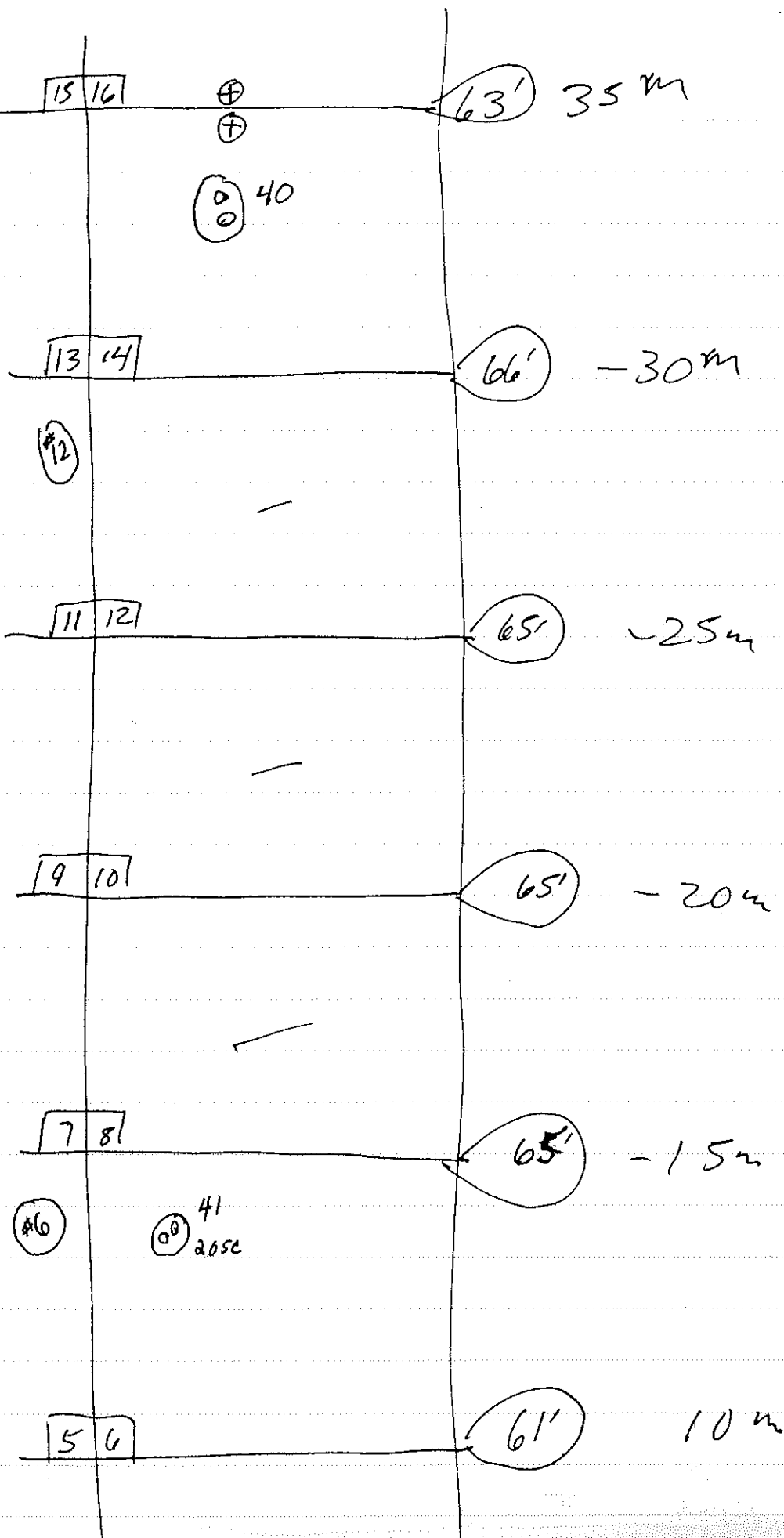
15 16

Lili

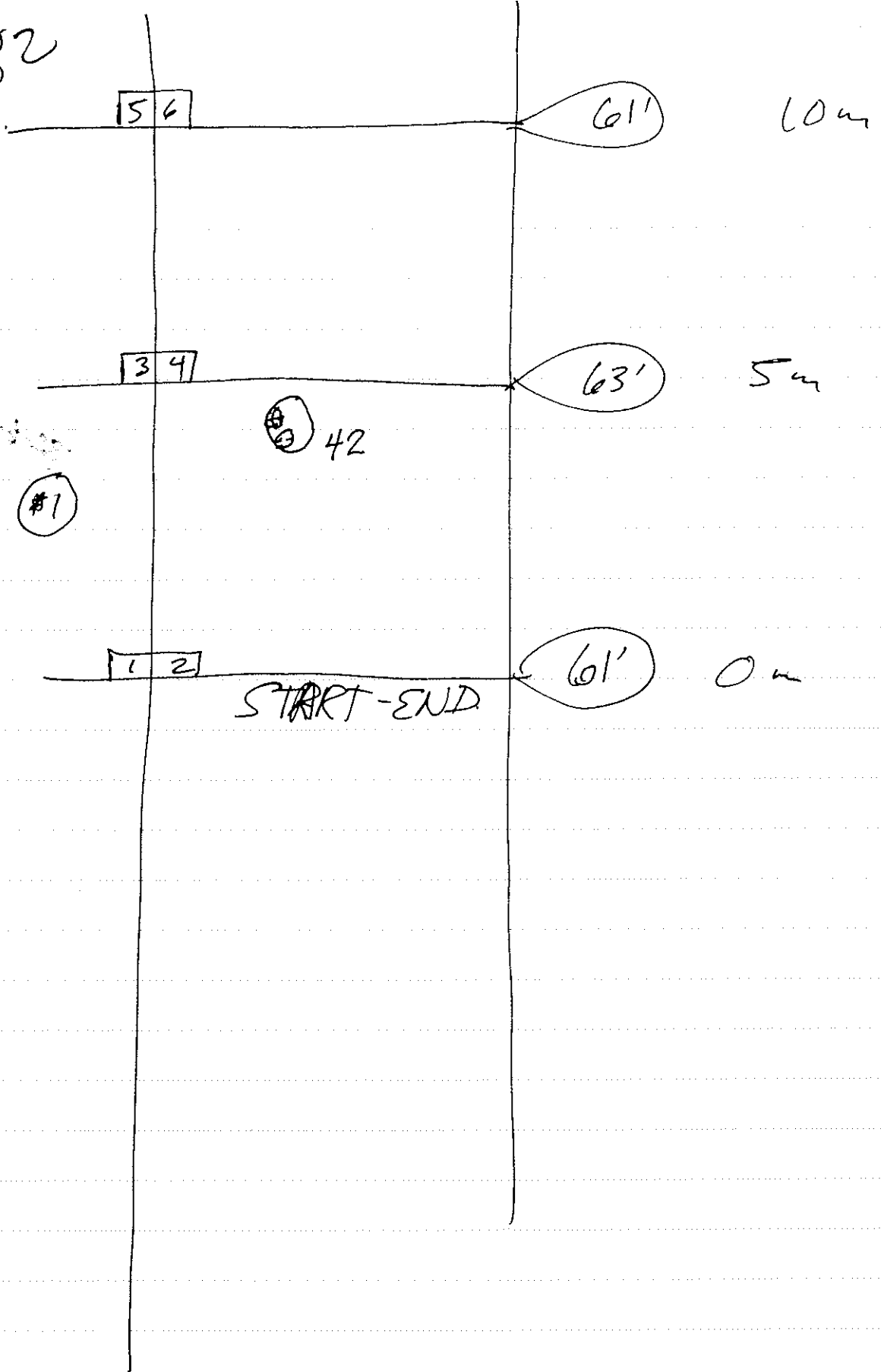
63'

35m

27 June
Cont'd
82



22 June 182
Contd



27 June
Contd. 1982

@ ~ 2:30 pm used rest of Air to take
photos under Hilton pier -

Coln I

Nikons w 35mm lens + Short Close up tube - D set on 2.75'
Oceanic 2000 flash w/o diffuser
Fujii 100 film 36 exposures
1/60 @ f11

map 40'

82-6-18.1

Slide
3631-3657

Took worms Serpulids ~ 10; Net sponge contracted,
Neoplauria - lots of encrusts + contact interfaces
Corals, Zoanthids on Calyptopora vaginulis, etc etc.

Collected

- 82-6-27.1 - 1. Yellowish encrusts - good scrape w knife
82-6-27.2 - 2. Thin pink encrusts - just a partial scrape - Very thin & diaphanous
3. Tubastrea coral from the net - w crabs & other stuff on it.

Fix later in 100% Form

Over to Hilton beach for Sunshine in later P.M.

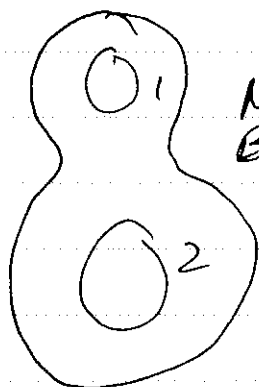
28 June 82
Mon

Shopping Downtown & at Store for Groceries

Dive ~ 3:20 — at Bay #1

Lina's — Measuring spgs in lower transect
Me — Collecting Slide set + 3d. + Photog.

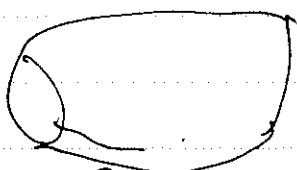
(30)



No
Bottom
eaten
out

	Z	D.
1	20.5	8.5
2	30	13

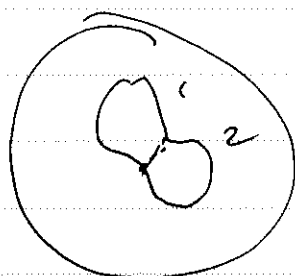
(31)



fallen over
N. end. bottom

1.	19	7.5
----	----	-----

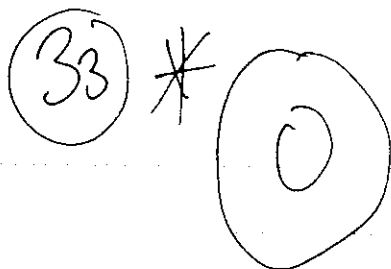
(32)



1	32	10
2	31.5	10

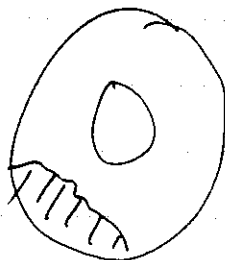
28 June '82
Contd.

Z



1. 43.5 - 10.5

(34)

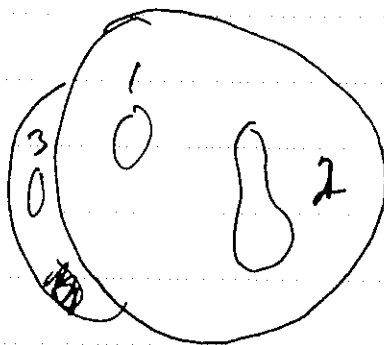


1.

36 13.5

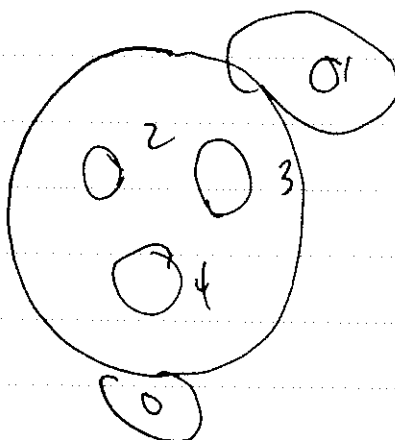
No bottom
eaten off
inside

(35)



1	30.5	7.5
2	29.5	13.5
3	19.5	5.5

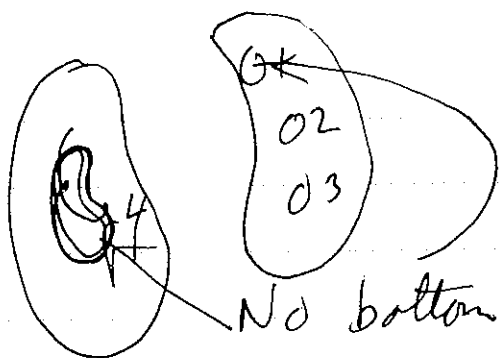
(36)



1	22	7
2	36.5	10
3	35	6.5
4	29	10.5
5	6	2.5

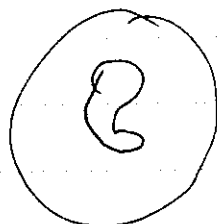
28 June 82
contd

(37)



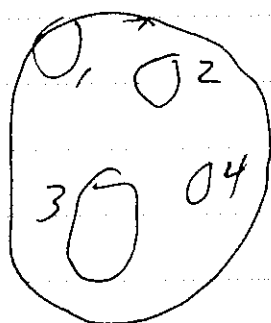
1	29	7.5
2	34.	8
3	30.5	7.5
4	57	14

(38)



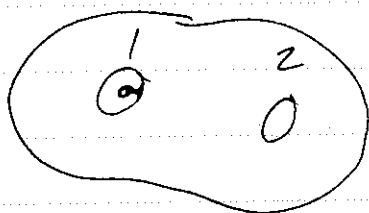
1, 20 9.5

(39)



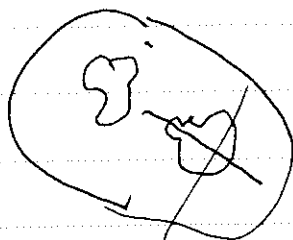
1	14.8	8
2	17.5	11
3	41	18
4	38	11.5

(40)



1	27	11.5
2	27	9

(41)



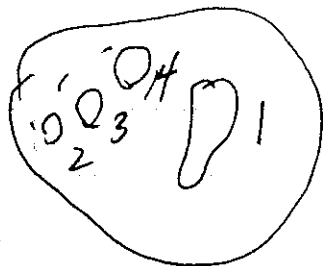
1	11	6
2	23.5	[11.5, 12.5]

right angles

28 June '82

Contd

(42)



1.	15	17
2.	15 4	15 2
3.	6	8
4.	7	5.5

Photo f 4 @ 1/30 sec

BW
Roll #7

42
41
40
39
38

Collected Slides - put into Slide boxes

AS - fell out of Box + Tumbled.

Travis Cooked 3 Cakes in tent - Yum!

Tired

Party for Trudy, leaving for Arabs.

29 June / 82
Tues

Up at ~ 7:30 - bKfat -

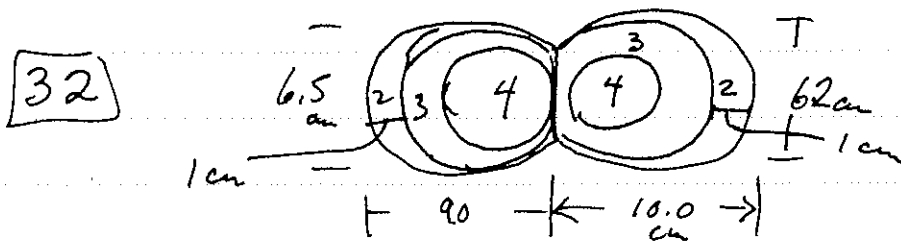
Dive Buoy #1 at 8:30 in Small Boat.

- Tasks:
1. Photograph remaining specimens
 2. Take a few more velocities
 3. Pick up line + tags
 4. Check wounds on Spec #4

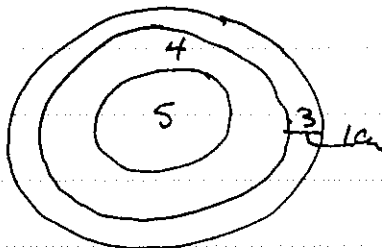
BW
Roll
8

HUR - Photog Specimens 37, 36, 35, 34, 33, 32, 31, 30

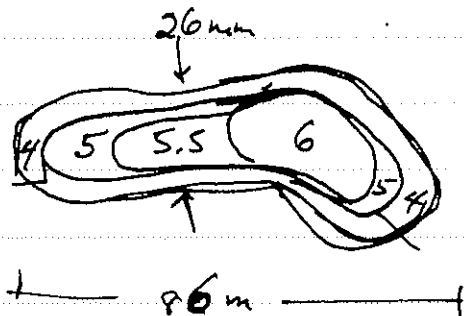
Measure Velocities of a few -



33



38



29 June '82
Contd

Noted near #37 the zoanthid Epizoanthus swiftii yellow & typical
branched colony on the common yellow encrusting
Thalysias sp. & No hint of ~~Sant~~ Iotrochota bristledata
around - conclusively either 1) J. b. has been there & lost from site
or 2) the fauna settled there per se.

Checked out wounds on Nerfish #4 -
Still no pigment movement in but wound covered!
both look OK.

~~Picked up~~

Picked up all traps & Line (Lines). → up to Boat at 45 min

Lab - filled bag for fluorescein dye; filled, checked coral bleeding
etc. Put away line, - recoded notes.

Supper - Spaghetti in cream sauce w/ mushrooms, minis, peppers, ...

7 Lines Robert Fahn
Dived today?

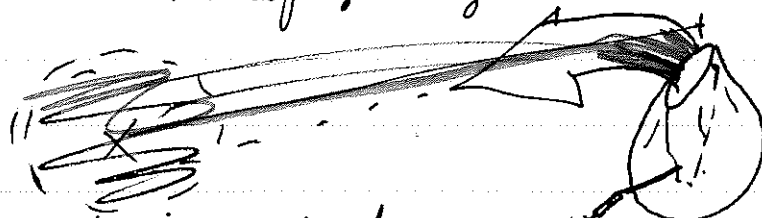
30 June 82
Wed

up ~ 7:30 Bkfst, toast - Juice.

Dive Buoy #3 - site of first dive here @ ~ 8:45

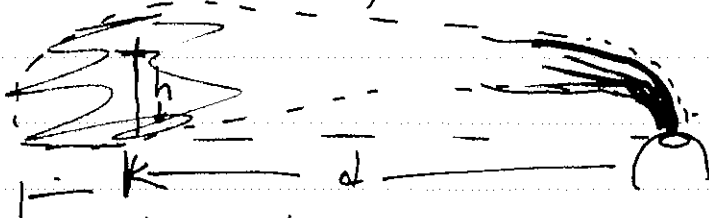
TASK - Use Fluorescein Soln + tablet to record
effluent streams of Sponges on BW film -
Me manning dye + Lino on the Camera - BWRoll #9

- 1) first encounter Xestospongia large at ~ 60' - injected



dye Movement up coast from SE to NW + drift slightly downsls
by +2 min distance was about 4 m + diffusing rapidly
in turbulent mixed water.

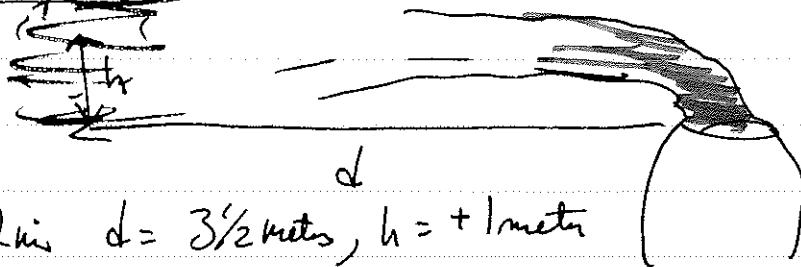
- 2) Neofibularia - vol est 2 1/2 liters
Small spec at ~ 50', osc ~ 6.5 cm diam



by +1 min $d = 2\frac{1}{2}$ m down current

by 2 min $d = 3\frac{1}{2}$ m down current but height about 1 1/2 m.
above sponge level

- 3) larger Neofibularia - vol est ~ 15 liters



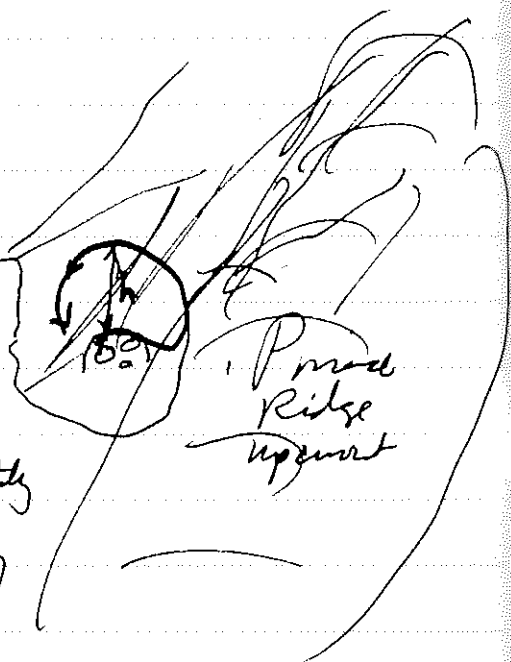
by 2 min $d = 3\frac{1}{2}$ meters, $h = +1$ meter

30 June 1972
with

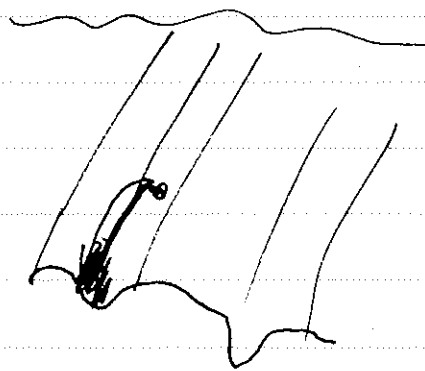
- 4) Tried $\frac{1}{4}$ dye tablet in Xestopomus large spec -
Could not get tablet to bottom - flow too strong +
Tablet just flew out - 2nd try got it $\frac{1}{2}$ way
in - Not well mixed in stream - local
flow as Biddis designed long ago - flow good
for $\sim \frac{1}{2}$ min but petered out. Good
method for photos though! - May try a few
more Friday

- 5) Neofibularia in leeward gully - clute
injected - 49' about 30 liter group.

Flow trapped + mixed in gully - @ 2 min:
 $d = \text{zero}$ $h = 2m$ because
the effluent did not translocate horizontally
but circulated within the gully - only
minor downslope transport moment

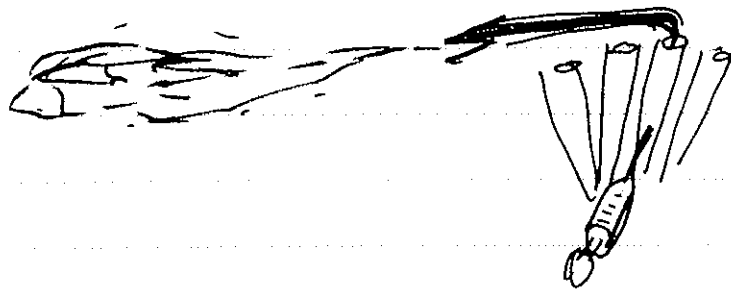


- 6) Small Neofibularia in gully - clute at open
reef surface at $\sim 45'$
Rapid flow down slope in the gully -
by $\frac{1}{2}$ min $d = 3 \text{ meters down}$



30 June 1982
Cont

- 40' ~ 12" long
- 7) injected a tube of thin Vermetus (Aplysina) prochori
+ it was rapidly blown down to well



- 8) Tried Pelleting into Neapibularia but the could
not get 1 pellet to bottom - No changes!!
- pattered it all around me & reef & gave it up.

BW
Roll
9

Lines Recorded some info on this - during those
attempts - can't expect much. Waves high &
water movement unusually rough - Bake later commented
on the water turbulence this year.

Developed film

Preparing charts for tomorrow.

Late Evening Arrivals ~ 11:30

Alan Bé
May Bé
+ Roger Anderson } Arrived.

1 July '82

Thurs. Up ~ 6:30 Am - No BKpt - Still feeling stuffed
Boat Inspection day - No diving on boats

Dive: Took Tank + worked under pier off the Hatter Pier
Alone Collecting fixation specimens + photog w Phox w Short Close up tube
at 1/30 F11 & 16 - Problems w Advance of film - Reversed Kersh not
In + Seated - Causes gear backlash + film sprocket slipping
O. Photoed Net sponge part night

Collected the following groups + brought under pier to flagged location

1. LARGE Neofabularia notidagere ~ 20' - clean specimen w/o tubes

2. ~~Sphaera~~ Haliacra blue star ~ 30'

3. Agelas Red mass - holey ~ 35'

4. Sarcinia funnel - Campana ~ 35'

5. Moved three up + went over under boat pier

Grabbed a

5. Sphaeropsis vesparis ~ 20'

6. Chondrilla nucula - ~ 30'

All brought over + Returned to lab early June

Later ~ 11:30 took fixative over + Began fixing - Lines
retrieved + I "fixed" sequentially.

EM fix

2 vials 25% Glut Smiles → 10 ml

2 vials 4% OsO₄ Smiles → 10 ml

20 ml sea water filtered

0.6 gm NaCl →

Final conc

6.25%

1%

0.15% added to sea

Approx 40 ml total

1 July '82
Contd

Fixate segues

1) Net "Halisand"

82-6-18.1 cont'd
~~82-6-18.1~~

up in bucket - broke w knife & popped 2 ygs into Etn fix Vial 1.
Fixed remains in Bonis w acetate in Bag "B" to ROH on Return to McGill 13 July

2) Blue^{star} Halisand 82-7-1.2 fixed w Etn fix Vial 2
fixed chunk in Bag in Bonis w acet
disposed of rest to ROH on 14 July 82 at McGill

3) Azela regl-- cut up + fixed small piece in Etn Vial 3
82-7-1.3 Bonis in Bag + Vial 4
to ROH at McGill 14 July 82

4) Chondrilla nucula 82-7-1.4 - cut chunk to fix Etn Vial 5
Bonis fixed 2 pieces Vial 6 + 7
to ROH at McGill 14 July 82

5) Neophylacium chumbe fedge Fixed Etn Vial 8
82-7-1.5 Bag in Bonis + Fixed Bonis Vial 9
to ROH at McGill 14 July 82

6) Ircinia campana Fixed Etn Vial 10
82-7-1.6 Bonis Bag + Bonis Vial 11
to ROH on 14 July 82 at McGill

7) Sphaerospira - No Etn Fix
82-7-1.7 only Bag fix in Bonis to ROH at McGill 13 July
has some Entopneustes in inhalant vestibula

Finished Fix ~ 12:00 Noon -

Cleaned up lab & off to town for Shopping -
Bank, T-shirts; Films, ... etc.

16km

1 July '62

Evening - ~ 6 pm Started ^{SW.} Rinse but Not very successful
- Be's coming & I wanted to avoid possible
contamination - held off Rinse until
Later ~ 7:00 into SW several Rinses

to Hilton Hotel for festivities. : Lino's & Marion won Liqueur...

Afterwards to JAZZ - Ragtime hangout near highbridge - home late

2 July '82

Sw spec into FW at ~ 12:30 Afternoon

Put spec settlements into 2 vials 82-6-17.1

Developed film but only partial frame - Disposed.

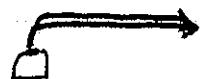
Dive at ~ 2:30 pm at Buoy 1.

1. Picked up 2nd Slide Set + 7 days - transfer to Slide Boxes + Corerul - put into plastic bags + sealed. Did not bring 2nd Control set - forgot. have to do with the first set. Recorded angles of rack, ~~over~~

2. Went around doing more sponge injection: Fluorescein
"Fluorescent Dye Tablets, water Soluble, Red.
Horizon ecology Co. Chicago Cat# 295-05.
Photographing in color as done.

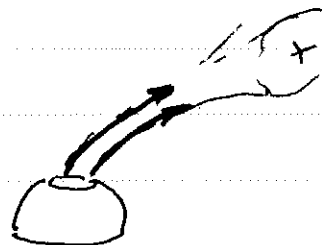
55 slides color
3072, 23, 74, 25, 76
OK →

- a) Neofit small at 40'
at 1 min: $d = 2m$ SE
 $h = +0.5m$



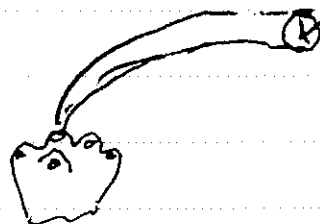
1 slide color
3077
not under good

- b) 1/4 Pellet with Neofit 4 ~ 36'
@ 2 min: $d = 3m$ SE
 $h = 2^+m$ (Lines says +2 feet)



3 slides
3078-79-80
OK

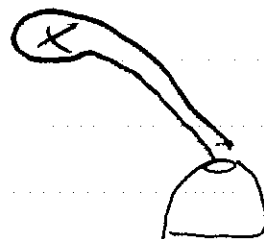
- c) Neofit Large #6 - 50'
@ 2 min: $d = 3m$ SE
 $h = 1\frac{1}{2}m$.



2 July 1982
Cortez

4 Slits
3081, 3281, 34
good

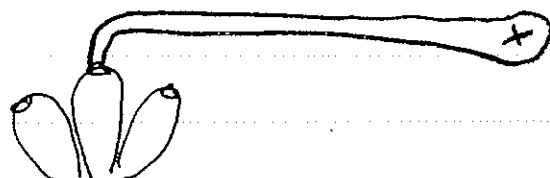
4) med sized Neoph at 35' - on rise
@ 2m d = 4m NW!
h = +9.5m



~~1000~~

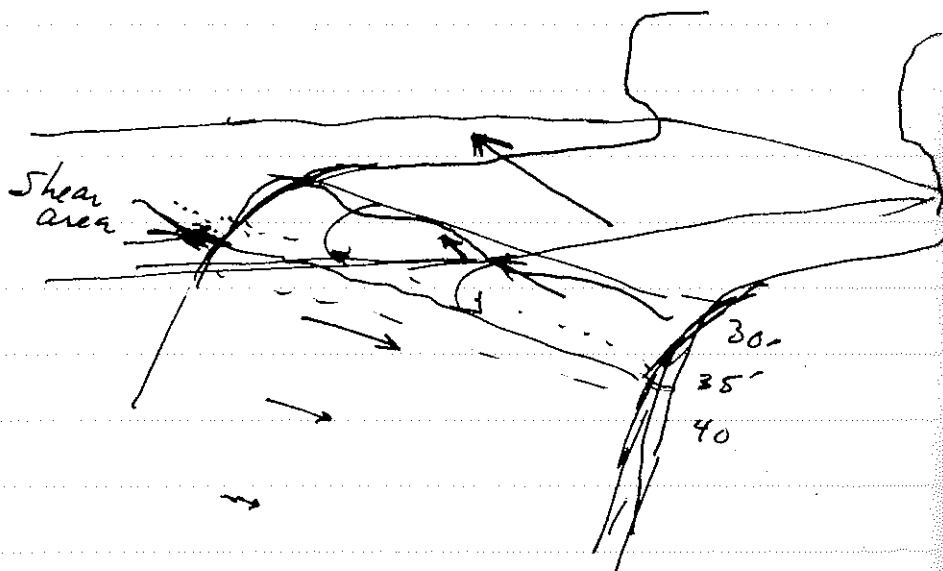
5) Verongia Aphysini lacunosa coral. tubes @ '45'
@ 2m d = 4m SE
h = 0.2m. (20cm)

35 Slits
3085, 31, 37
OK



Note shallow water flow clearly set in part with wave & wind direction. ∴ shear area probably between 35 & 40' somewhere

1 Slit
Linos + Dye
3086

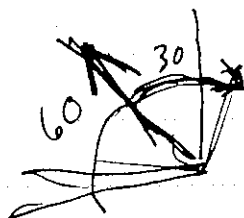
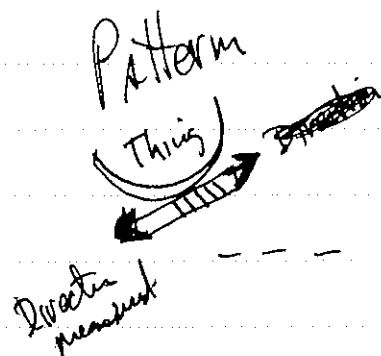


2 July '82
Cand



Rack Angles.

Shorline



- Break

Neoph 35'

Neofishline

DC (C)

AS (N)

CS (N)

DS (N)

Coral reef

ES (N)

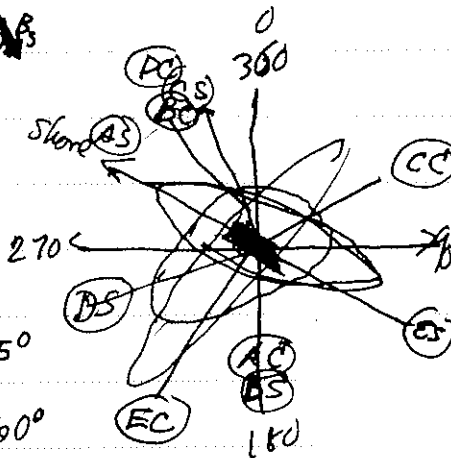
ES (N)

Coral

AN

EC (N)

DS



AS 43' 300°
BS 52' 180°
CS 43' 160° = 340°
DS 45' 250°
ES 50' 290° = 110°

AC 40' 180°
BC 45' 155° = 335°
CC 50' 240° = 60°
DC 40' 155° = 335°
EC 56' 30° 210°

AN 52' 120° ↔ 300°

2 July
Contd '82

at ~ 10:30 pm Transferred EM Fix Spec to ^{from tap water} 50% Ethanol from Lab Stacks
No Rinses. Labelled & Put away

3 July
1982

Sat.

Update - ~ 8:30 - BKFst.

Worked a little in lab - cleaning up, labelling, etc.

Took the "304" Renault - for a drive/dive to N coast -
First Flat tire so changed + aff - after unblocking gate...

Drove up main Hwy past CHRISTOFFEL PARK + on towards ~~NB~~

"West PUNT" - Stopped at "Boca Tabla" for a look at
WILD! East coast - eroded sand platform + down to the
"Cavern" - Then continued drive up + around ... down the

west side -- nice calm water -- to Boca Santa Cruz
where we decided to try our luck diving ..

Swam up + into water at S side of bay - less turbid close
in - but as we followed current out on S. side
it was clear that we were in flow from the Bay.

After landing + short rest decided to try the other
side so swam over + water cleared perceptively
w each few strokes - Swam out on long

shallow platform to reef edge + down onto
reef - Max 90' for 30'min

I took Color film #2 Kodachrome II in flash -
most at F5.6 @ 1/60. Sponge list over -

generally a very beautiful reef - flat foliose
Agaricoids - very nice. Collected plates of old

Coral - w Macaroni? Oscarella? + plate w lots
of branching + what I thought was a sclerospore
- but wasn't. Mucosages rising later proved to
contain lots of stuff - a whole sponge community

3 July 82
united

loaded w blue green algae - some one as widespread blue
sponge. Also the little white papilla poring sponges - Need a
safety scope to see - Also should note the many
Common presence of Siphonostoma pores - Yellow tubes. {
On reef - Not in my plates. Also Merlet-like
encrusting sponge w claudiscs  but No hint of
Calcification! - + lots more - sand-tube papillae -
some as sponges + some as ascidians,

82-7-3.1 fixed in Form later in ^{early} evening ~ 5 PM ~ 3 hrs after
Collection in Bag. to ROH at McGill 14 July,

blue encrusting

Merlet-like orange encrusting

3 July
Boca
Sta Cruz
82

Color slides
inspected by
Nelson

Siphonodictyon Yellow tubes
Cliona leleborix + other borers.

Yes - common - 3090, 91, 92, 94, 3097, 99, 3100

Halysarca blue star

Yes - common - hard to see in slide

Chondrilla rupestris

Yes

Xestospongia muta -

small + rare

Verongia fistularia -

? - yes? - which in slide 3104?

Verongia lacunosa

Yes

Verongia (Aplysai) archeri

Yes - common - 3089

Callyspongia vaginulii

Is com - 3101

Niphato electa

Yes common 3090, 3096

Agelas conifera brown - lumpy

Yes common 3090, 3098

Aplysina fulva

Yes? Maybe

Ircinia campana

Yes com 3104

Neofidula notata

Yes common 3089

Ircinia stratolita - black.

Yes.

Pseudoceratium crassum = Janthella

Yes

Ircinia felix = naniculata

Yes

Agelas lispia

orange Keyhole

Yes

3096

Desmopisma annua arabata

Yes common

3093

Ulosa laetzelii

Yes

Phyllosia yellow encrusting

Yes

Ectyopora fascia hemactis

Yes

Tedania [sic] ignis

Yes -

Callyspongia fallax

Verongula ridibunda

Sphaerospira vesparia

Not seen:

Isotrochata biratulata

Callyspongia placifera

Aplysina Verongia cauliformis = longissima

Erylus trisphaera

Agelas clathrodes -

3 July '82
Castel

3106
3107
3108

On way back saw lots of Tabastrea near shore.
Saw Aerogina pinnata - blue-leaf gorgonians w polyps
on only lateral edges & lots more -
a very enjoyable dive w more & more to see.

On return ~ 3:30 washed up &
started looking over coral plates till supper
Another steak dinner by Lino's - delectable!

Prepared dive tables for tomorrow's deep dive 190'

Curacao Photos

SPONGE Currents - 2 July 82

3072	1	2W	Single @ Neopht	Before dye inject. 40' ^{80' 1}	Part Frame 2 Jul
3073	2	2W	Single @ Neopht	dye flow start - 5 sec (1)	Part Frame
3074	3	2W	Single @ Neopht	dye flow 20 sec (2)	
3075	4	2W	Single @ Neopht	dye flow 40 sec (3)	
3076	5	2W	Single @ Neopht	dye flow 60 sec (4)	
3077	6	2W	Single Neopht	dye flow #4 @ 36' 120 sec	2 July
3078	7	2W	Neopht group	dye injecting 50' (0)	
3079	8	2W	Neopht group	dye flow start 5 sec (1)	
3080	9	2W	Neopht group	dye flow 60 sec (2)	
3081	10	2W	Neophtula group	dye ready to inject Prelim. 0	2 July
3082	11	2W	Neophtula group	dye flow start t=0	
3083	12	2W	Neophtula group	dye flow t=25 sec	
3084	13	2W	Neophtula group	- dye flow t=30 sec	
3085	14	2W	Veron Yellow tubes	dye flow start 45' t=0	2 July
3086	15	(2W)	Veron Yellow tubes	- dye flow # t=25 sec	
3087	16	(2W)	Veron Yellow tubes	- dye flow t=30 sec	
3088	17	2W)	Liros releasing Dye Bag	to monitor Mass mounts	2 July
3089	18	(2W)	Purple tube <i>Heterosia</i> , <i>Neophtula</i> BKd, & others	80' Boca Santa Cruz	3 Jul
3090	19	(2W)	<i>Siphonodictyon</i> , <i>Niphata</i> (cellular rope), <i>Agelas</i> + others	80'	3 Jul
3091	20	(2W)	<i>Siphonodictyon</i> + other much-coral spgs.	80' Boca Santa Cruz	3 Jul
3092	21	(2W)	Black <i>Cliona</i> + <i>Siphonodictyon</i> in Coral/fairy ring	70'	
3093	22	(2W)	<i>Desmopisma</i> in <i>Gorgonia</i>	70'	
3094	23	(2W)	Janthella purple + other spgs + corals	70'	
3095	24	(2W)	Reef patch, corals + sponges	70'	
3096	25	(2W)	Orange <i>Agelas</i> , <i>Cellular rope</i> , <i>Siphonodictyon</i> , etc	70'	
3097	26	(2W)	<i>Siphonodictyon</i> in coral	70'	
3098	27	(2W)	Sponges + Corals (<i>Agelas</i> 2 sp, <i>Heterosia</i> , <i>Neophtula</i> , etc)	70'	
3099	28	(2W)	<i>Cliona detrita</i> + <i>Siphonodictyon</i>	70'	
3100	29	(2W)	Yellow <i>Siphonodictyon</i> in Corals	60'	
3101	30	(2W)	<i>Callyspongia vaginella</i> etc	50'	
3102	31	(2W)	Mass <i>Ascidia</i> Killam <i>Ascidia</i>	50'	
3103	32	(2W)	Purple Veron tubes, boxfish + <i>Neophtula</i> below shallow platform	50'	
3104	33	(2W)	Yellow Veron tubes in shallow platform at	20'	
3105	34	(2W)	<i>Platyspongia</i> + <i>Gorgonia</i> bushes on shallow platform	20'	
3106	35	(2W)	Corals, mollusks + Calc. algae on shallow wall	20'	

Boca Santa Cruz Trip

3107	36	(NW) Tubastrea ^{red} on intertidal overhang - from below	0.1'
3108	37	(NW) Tubastrea ^{red} on corner Rocks Pillars at water level	0.1'
3109	38	Carmahi '204' at.. Boca Santa Cruz	3 July 82
3110	39	Beach at .. " " "	3 July 82

Slide racks	3111	14	Slide racks - 3 + bucket of them, on Carmahi Dock	25 June 82
	3112	15	2 slide racks - close up	" " " 25 June 82
	3113	16	1 slide rack close w slides	" " " 25 June 82
Scenery	3114	17	Blurred photo of Willhelmsburg from hi Bridge	28 June 82
	3115	18	Floaty Bride + City	28 June 82
	3116	19	Customs office - across harbor entrance	28 June 82
	3117	20	Float Bridge open + high bridge behind	28 June 82
	3118	21	Linos on Platform - East Coast above Canal - Boca Table	3 July
	3119	22	Surf on East Coast Rocky Platform.	Boca Table "
	3120	23	Surf on East Coast Rocky Platform	Boca Table "
	3121	24	Surf on East Coast Rocky Platform	" " "
	3122	25	Canal from inside looking out	" " "
	3123	26	Canal from inside looking out - Surf entry	" " "

Other Color Slides from 27 June 82 back at Montreal - Not
 Avail when these numbered & listed

4 July '82
Sunday

Up ~ 7 AM ~ 5 hrs sleep w Big Noise in ∇
Chevros Yard behind - Auto Repairs & Carburetor
Adjusting. Had Bfst & Read some - then about
10 AM a nap for ~ 3/4 hour - felt great
after a shower

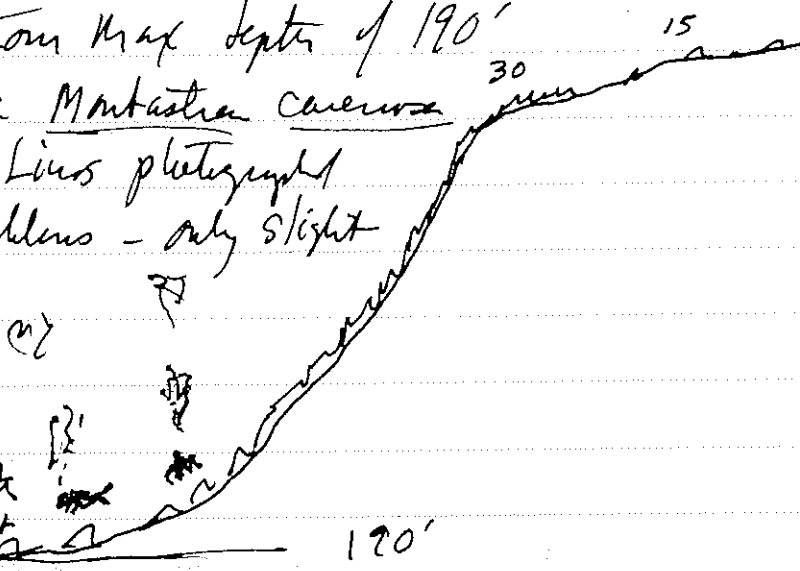
@ 12:30 we got ready to make our return trip
to Jan Thiel Bay - hunted up & borrowed a
back pack from H+H & got the 304 Renault gassed
up & filled the leaking spare & off to the park
Arrived ~ 1 pm - Great sunny day - pretty good
crowd on hand.

Dove ~ 1:30 - SWAM out, Lino w camera &
his own roll of Color film - beautiful water - warm
& clear!

Started from over outer reef - fell away to
~160 & started to merge into a ^{slightly} shelf at ~180

We Stopped at our Max depth of 190'
& I scouted for a Montastraea cavernosa
for H+H while Lino photographed
No Narcosis problems - only slight
hint.

Saw clear sharp break
off to the right had our depth
but could not go down to inspect
Keep to dive plan.



4 July 82
Contd

Noted: ^{clear} ~~sample~~ sponge found change from ~100' + down
sampled by Agelas w some Nasopulana - but Not used

to clear sample of Xestospongia made from ~120' + down -
Very common nice symmetric species all over the
base of reef + upper slope of platform

Also first observation of typical Hymenoclea sp - soft but
firmer here - + lighter color - looks reddish w zooids clearly!

Also other sponges seen Not recorded from shallower
water here - a strange BLUE encrusting sponge - tried to
bring a piece back but failed, A Favosites-like subleaving
Yellow mass, Something looking like the Spongia Volcanus but
Tough - probably Ircinia varicosa = felix? but maybe not
at all? A small reddish tube sponge - like the
cigar sponge +

Many others of less common  report in the shallow
reef. Very interesting + deserving of more study!

Meanwhile Lins cornered a ^{5lb} Lobster at ~170' +
I went up to help out - after a 5 min struggle
We got her out + dispatched by nerve cord
separation - quieted out.

By then our 15 min time up so off we went
to decompress - 4 @ 20', 7 @ 10 + 5 extra for peak
of mind. I was very buoyant by now w the

4 July
Contd 82

Aluminium tank & no other weight so I picked up
& carried a large coral head. took a few photos of
each other for Lino's slides & eventually surfaced at
+ 35 min w ~ 700 psi in tank for the 2900 start - an
easy, ~~but~~ enjoyable, but too short dive.

Need to return w bags + writing slates to study.

Charged at Cbr, had a beer at very nice local
Cafe-Windward - Great Place for families! - Hot day!

& Redford & Loh - ^{parade of youngsters in town} washed up; Broke up + Refig Lohite
for Supper: ~~Sandwich~~

Done by 4 pm - Sandwich, nap & up by 6 pm
for evening coffee.

Late Supper of Lobster w butter garlic & peppers on Rice
A Mountain of a Meal!

Off to hilt on after clean up - No festivities -
Miss Teen Curacao festival but warty for July 4th per se.

Walked fish a while at Joles & came back to Loh to
clean up & write up notes. - End of Dives

5 July '82
1982
Monday

Up late ~ began cleaning up stuff around lab & packing.
After lunch we went into town to cash another travel Chk.
off to do a bit more shopping. We returned to lab
~ 3pm for a short nap & shower.

Off in Evening to sit downtown at Chung King's - No
Cooking.

6 July
82

Up at ~ 6:30 - dressed & took Lino to Airport.
I returned, paid my bill, finished packing,
unloaded stuff onto Hendrich & Heine Fahn & sat
around to wait. Hendrich volunteered to drive me to
Airport & I accepted.

ALM off after payment of Airtax - to Kingston - OK -
Had to pay extra for overweight baggage... \$75.00 Giller
Land in Kingston OK. No rental Cars - got to Bank &
Cash some travel checks. Taxi over to Airport #2
for Air taxi to Mo Bay. - Taxi J\$30.00

SA around & wait to get Air taxi for 2 1/2 hrs
fully put ~ 6pm → Mo Bay 46 + 75 J\$71.00

Land at Mo Bay from Airport - No Rental Cars! ~~Wait~~

So get taxi TO DB - 40.00 - J\$80.00

So trip took me an awful lot. Total: J\$181.00 Jan

Argh

6 July '82

J. Jackson Charlie Waddle
A. Kimmitt Brian Callaghan
J. Wordly Phil + Gwen Madnor + Rick
L. Sides etc Pritchard from Lehigh, Murray Isch...

Out in ~ ~~6:30~~ - 7:00 at Ureal June -

Had some Supper, a little Sleep +
then off to our hosting Lango + Erin for the Eve.

(Sml + 25%)

7 July - Up ~ 7:30 Bkfst ...

Wed Off to Lab... prepare fixatives -

Dine:

2 vial Blot + 10ml SW + 300mg NACL

2 vial Osm + 10ml SW + 300mg NACL
(Sml + 4%)

Keep Separate & Mix only
before Use

w Phil Madnor + Rick to EFRed ~~2:15~~ 11:15 AM

Large flat at 45' w clean Image + destruction -

Many pieces of old Lead A. Cervicornis + lots of heads broken loose
Gorgo's seem to be better ft - may ok.

Lots of algal-puzz patches all over everything

Blot LOTS of young sponges of many species
(1" to 4") and several swimming adults
are obvious.

Searched for Red Dot + Green Sponges for EM Fixation

Found - Red Dot Hymedesmia very very common here
at 45-50' - in typical habitat - looks almost black

Some small specimens found even on cervicornis rubble so
pop is high. Collected 2 specimens for return to Lab in bucket

Also the Green sponge is prolific - perhaps 1 indiv/m² +
all size ranges from ~ 1" diam to long multicaular groups
of 10 inds + 1 1/2 ft long - Collected one very nice symmetric

July '82

Contd

individual from cerise coral rubble - into bucket. More habitat note
Common species: Neofab nodit, Verigin longissima, Spongia green, Xestospira large,
Dreolina black, Agelas brown plate, Verongula gigantea cups, Anthosigmella,
Cliona brown speckles, Chama brown encrusting very common, Chama skeleton,
Niphates fringed funnel, Sotrochota bird, Callyspongia armiger sticks,
Halioloma rubens very comm, Hemectya ferox, Verigin distans tubes,
Ussa montgleri, Hymedon red dot, orange Alveoloid, Black Erylus,
Agelas brown tubes, Agelas orange open-skinning,

Retired to lab + fixed Specimen - spent ~ 1 pm

mix Glut + Osmin halves of fixative -

Red Dot - cut off the one small ind - tried to break it off
w/ the hammer + knife - Not too good - fixed it anyway

2nd specimen popped in half + then into large piece by vertical
cuts - better but both were small contracted

82-7-7.1

82-7-7.2

The Green Spongia cut w/ Swiss Knife + plucked into fix
Fixed 2 vials worth but

82-7-7.3A

one lost later so note given Number. Rest of Specimen was
briefly rinsed in FW + dried in oven @ ~ 100°C

12 July '82
Cleaned at McGill NaOH → SKel → Dried in bag

82-7-7.3B

~~Afternoon spent for~~
~~Rinsed Spec~~

Went for walk into D.B. to get lunch - Retired
at ~ 3:30 P. Transferred Spec to SW. - for Storage
Fixative thus about 3 hours. Even ate Supper
w/ Phil McLevor after Sam Retired w/ his crate
from Customs. Ended day w/ watching Note Divers Return

8 July '82
Thurs.

Up at 7:30 - Bkfst in Labs

Out to dine in Sam - took 'Bags' at ~ 8:30

Out to EFR Reef - far East at ~ 55'

Search for measure Conchs - saw about 10 in

2 large sand patches - some in pairs etc -

Took the last in a deeper part of channel at
75' was in process of laying - collected the egg
mass in bag. for Return to Lab -

Also collected small snail - Cratichydra-like
laying eggs in a cockle shell valve - brought back also.

Spent rest of day looking for a way to get to
Kingston - finally ~~located~~ all cars out of

luck - No rentals, no advice of Sam etc...

so we settled on just Taxi to Airport + overnight

St - most expensive but sure to be there at

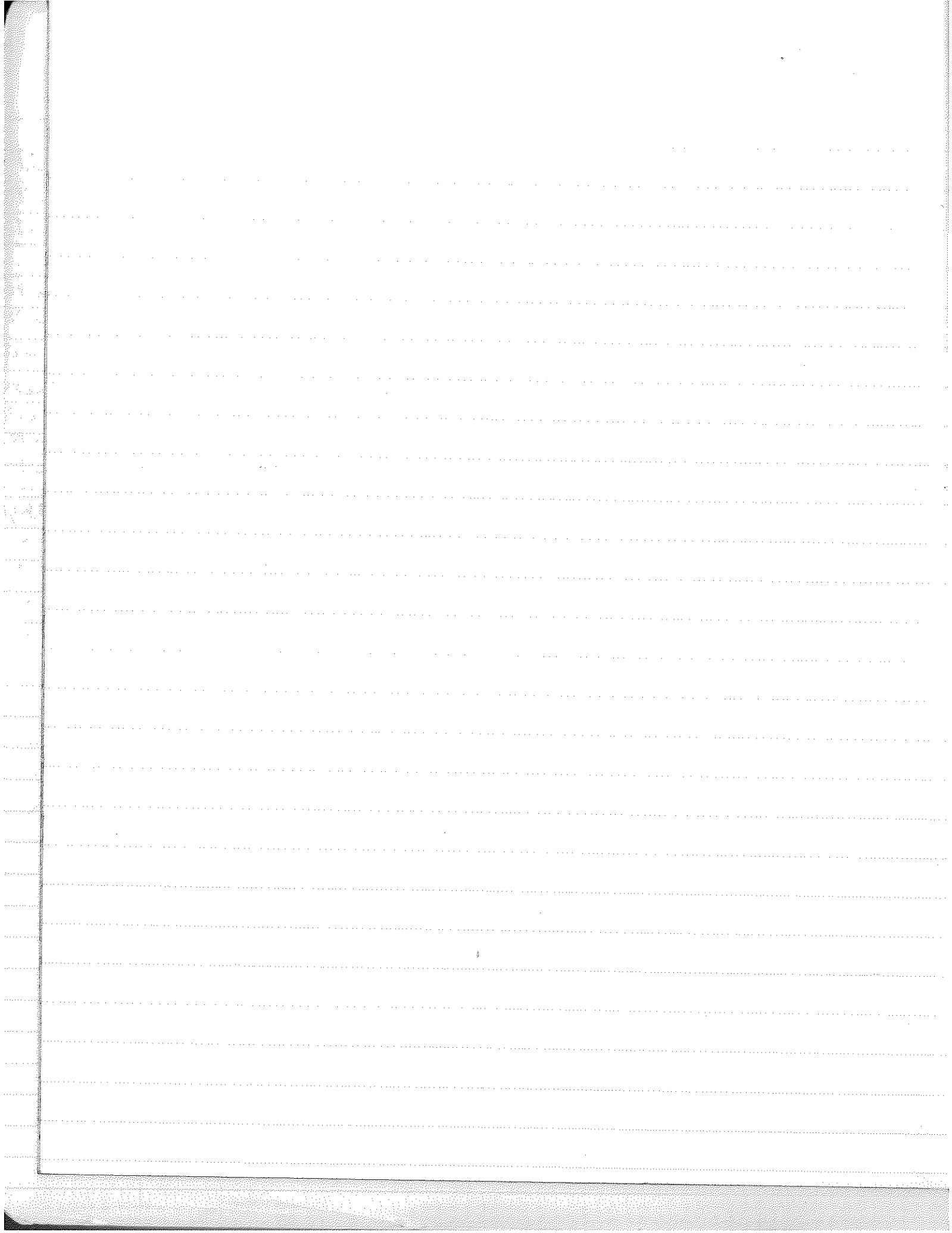
check in time. Ride OK - hectic & wild as

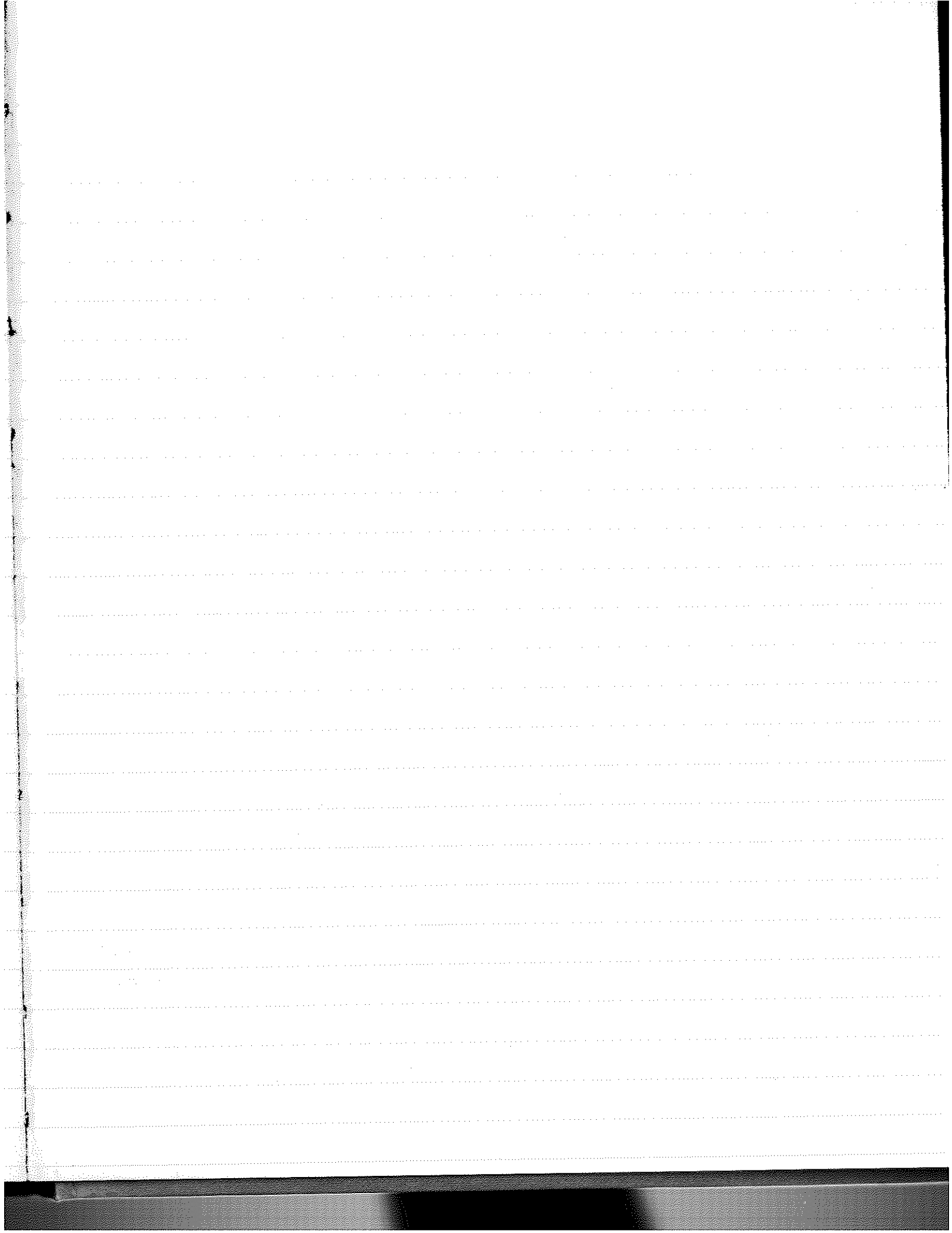
always - highway not much better!

Ate at Cafeteria after dumping bags in Air Terminal.

Flew out 9th on schedule → Miami/Montreal

END of TRIP





	Rm	Tanks	Ant Kib
to Fiv for Elm	15	16-2	20
0	16	17-2	30
1. Net ^{Holodril} sponge If can Find again	17	18-2	20
2. <u>Chondrilla</u> <u>mucida</u>	18	19-2	30
3. <u>Spongia</u> <u>sponge</u>	19	20-2	40
4. <u>Neoplantaria</u>	20	21-2	50
5. An <u>Agelas</u> sp	21	22-2	
6. Blue Star Halimena.	22	23-4	0
7. <u>Isornia</u> <u>piece</u>	23	24-2	
8. <u>Sphaerosyllis</u> <u>varianii</u>	24	25-2	

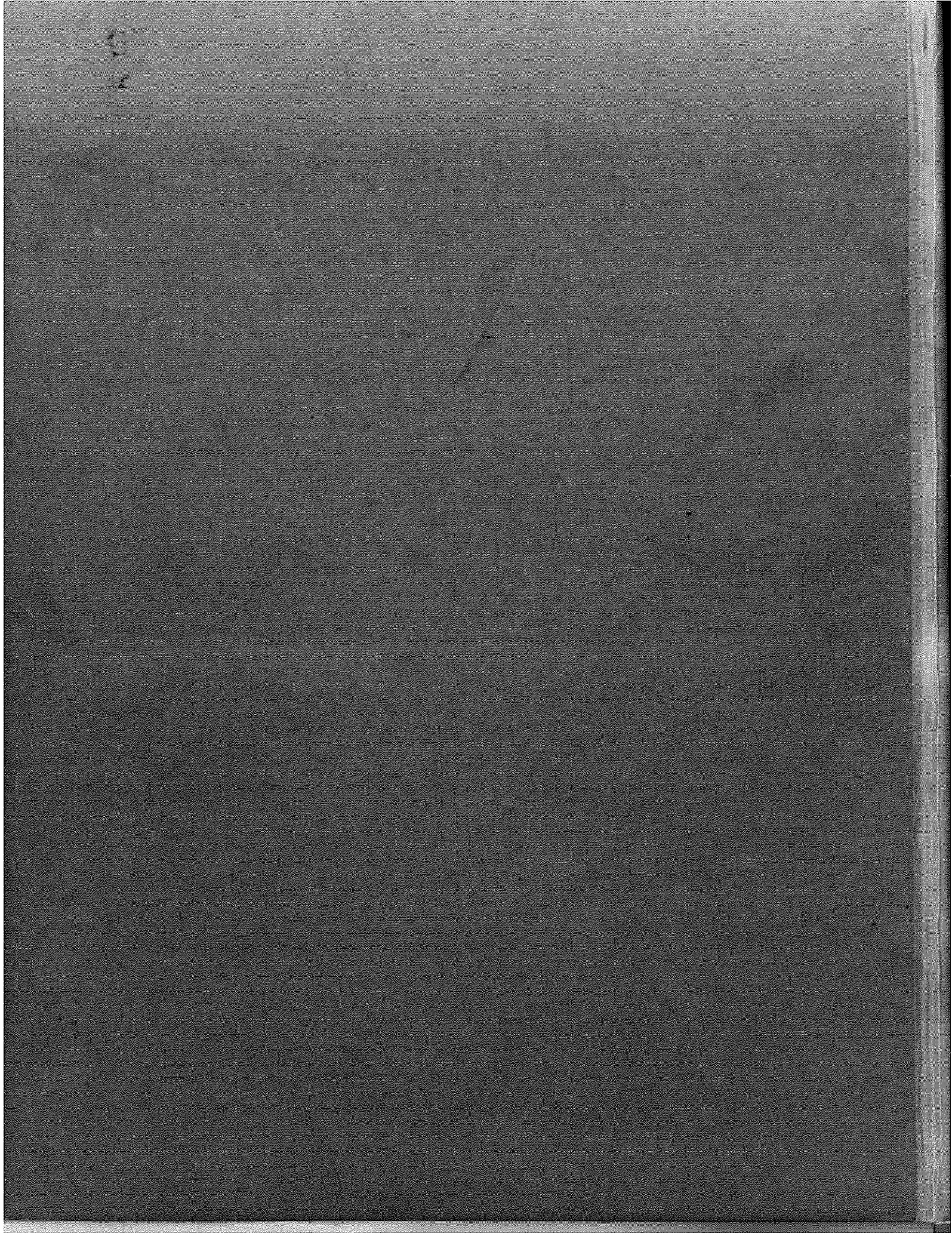
25 26-2
26 27-2
27 28-2
28 29-2 (+2?)

TANKS 12
41 x 3 ~ 123
21 x 15 ~ 315
Old CAR 40
New CAR 60
Fish 6
XLR 6

~ 550
MAIL ~ 3
~ 553
- 30
- 15

29 30-2
30 1 - 1 only
1 2-2 ✓
2 3-2 ✓
3 4-2 ✓
4 ~~5-2~~
5 39 Tanks
21 days ~~44~~ est ~ 200 @ 20
42 150 @ 40
71

21
45
135
28
345



4 H. M. REISWIG

- FIELD NOTES - 1 July 81 +

100