

REISWIG

5

Mc Gill

1982

Pisces Dive #1

19 August : Pisces IV Dive at Pat Bay on Amber II
in Saanich Inlet.

Specs: Dive # 1134

HMR PISCES 1

**HMR
PISCES I**

Pilot: Al Witcomb

Scientists Observers: G.O. Mackie & H. M. Reibund

Depth: 211 m

Location: Saanich Inlet, Squally Reach, 51600 Pt.

I Arrived at Pat Bay at 8:20 am - walk out to ship
Met Mackie on the way. I went aboard & snooped
around. Mackie ret'd. work on dive to get sponge

Specimen Samples + Oz Water Samples. He Discussed dive plan
w the Chief Pilot - Frank ...? and his plans

to dry for next week's work. Verena came aboard &
outlined her ~~grant~~ plans for Sub - ~~needed~~ the
need for CTD & Camera (3D) additions. She outlined
if from recent here granted in applic for these & NSERC visit would
Boot food supply. Monday. We set up Oz Winkler unit & killed time
until Dive in PM. - Steamed out of dock at ~11
& arrived ~ 12 noon while lunch underway in Galley.

Dove at 12:46 pm.

~~Pressure 21.3 bar @ 211m at 213.26; T 12.0c~~

Euphausiid zone at 118-120 m

Turbidity layer begins at 120 & goes to 180m - Bacterial Culture

Below 180 begins to clear -

Mud with Leaves +
Bottom at 211 m, 12.0°C at 13:16 hrs - Lots of Euphausiid Corpes
On way up we took water samples through hull each 10m
up to 20m

Return to Bottom & go towards cliff & try to get sponges

Cliff encountered by sonar. move to it - arrive at 203m.

Again Cliff as mud bottom stream w euphausiid Corpes
& Leaves - a dead fish & larger shrimp - No
evidence of active feeding on these

@ 190^m rock totally barren of macrobenthos - sediment caps
as expected

@ 170m water begins getting milky -

@ 140m milky water ~ 10' visib limit

@ 130m Muddy & Rock surfaces covered by flocculent 'cobwebs'

@ 122m Swarm of large copepods - several species

@ 121m Munids appear on bottom & a couple of dead
sponge bases

@ 118m White anemones & lots of Munidas - small.

@ 106m Anemones getting thicker

@ 90m Ascidians appear - translucent 1-2" long solitary

@ 70m Serpulids becoming abundant; a few large
ceriantulars, brachiopods & still lots of Munidas

@ 69m Attempt sampling sponges & rock samples. NB.

@ 60m - Rhabdocalyptra & ? Aphrocalappa

@ 52m Boat Sponges & dead Aphrocal. Sample again

@ 15:00 hrs start up from 46m 12.5°C

@ 20m 13.8°C

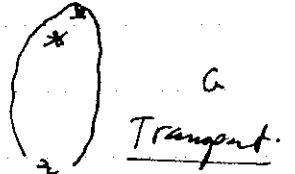
@ 10m 15.3°C

@ 0 17.1°C - ? Prote sounds stage

recapture at 3:13 ^{12.46} AM (15:13 hrs) E.T. 2:27
_{12.48}

No photography possible - must use Left bank for it -
 Got some specimen Lists from George .. from Verena.

Ascidian : Ascidia callosa? or ceratodes³



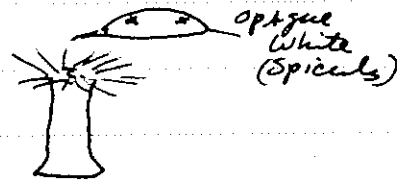
Transparent.

Small flat top Ascidian Chelyosoma




Small white Ascid Bathypora sp

White Anemone Synhalcurias



Brachiopods - Laqueus californicus
Terebratalia trananensis

At lab I worked over water samples for Oxygen (Winkler)
 and did little else - Later we rounded up
 Verena + went to Georges for supper +
 drinks - wife Gillian + friends ...

 GOVERNMENT OF CANADA
 FISHERIES AND OCEANS
 PISCES IV

H. LEISWIG
 WAS ON BOARD PISCES IV

DURING DIVE No. 1134

TO A DEPTH OF 211 METRES

ON 19 AUG. 1982

AT SHAWNEE INLET, ELBOW Pt.

Meunier
 CHIEF PILOT

PILOT [Signature]

17.3

17.3

17.3

17.3

Pisces Dive #2

1982

9 Sept Drone to Port Bay - Arrive ~ 8:15 -

Dive scheduled: with Verena on her work at Elbow pt.
Left Dock on Pandora II at ~ 9:00 - ~ 1/2 hr to steam
up to Elbow pt. Organize Preps & Enter Sub ~ 10:00

Pilot: Bob Point, Chief Scientist: Verena Tuomilaffe

10:00 Enter Water - Begin slow descent to Bottom

@ 10 m - Ctenophores - Pleurobrachia-type

11 m Oikopleura - temp 13.5°C

33 m a few white Amphipods

41 m Amphipods increasing - Cloud

47 m Amphipods continuing as dense cloud

50 m Amphipods stop abruptly.

56 m Return of Amphipods

63 m Murchie larvae start

74 m ~~Murchie larvae increase~~ - large Copepods

↓ abrupt decrease of Murchie larvae

85 m Still a few Murchie larvae & Amphipods

90 m a few Euphausiids & flocs

97 m Copepods small & flocs

100 m dense cloud of Murchie larvae

110 m - into White Cloud suddenly - all zoopl gone

135 m Still cloud - thinning out - visib slowly increasing

150 m Sudden increase in cloud density again

160 m Abrupt layer change - visib increasing

182 m zoopl again present in low densities

Murchie larvae, Copepods

190 m more Murchie larvae & Copepods

DIVE
NO
1148

HMR
PISCES 2

9 Sept 82

pg 2

192m Euphausiids few, Mucoid larvae, copepods, fish larvae and floccs

206m Amphipods, murex & floccs

210m. BOTTOM - mud. visib poor ~ 5m or less
still Copepods, Amphipods & Euphausiids + Floccs
Zoopl density ~ 2/m²

Cruising toward South wall - White Lady + Elbow pit
Large Clenophores - a few fish larvae

Slow uphill gradient -

190m bottom - Hit + Dug in deeply - Mud Cloud -

Bottom w- transparent jelly layer as a network
like frosting - wafts off easily w- sub wash as
Mucoid floccs.

↑
uphill

183m - Still jelly bottom w- whitish powder lightly
lying on it -

↓
178m encounter first rocks outcropping -
totally Barran - golden surface just ~~sed~~
Sediments on rocks here laden w- Euphausiid corpses

175m Seds on rocks much darker hue than
on basin bottom - dark grey/green w- thin
white film

170m - Sponge Base? on wall - tried to capture
but fell away - need a basket under claw.
Several bases in the area

9 Sept Pg 3

- 155 m water clouding up again - Seal w/ lots of Euphausiid corpses
+ several Seal herring-like fish ~ 3-4" long
Sediment surface becoming reticulate
- 135 m Sediment cover on rocks becoming ^{very} thicker + reticulate
in extreme - "pits of hair" Grey green w/ white fuzz

Interval to Replace fuse in Starboard Flood water
Circuit - 11:20 - one hour + ten minutes into dive

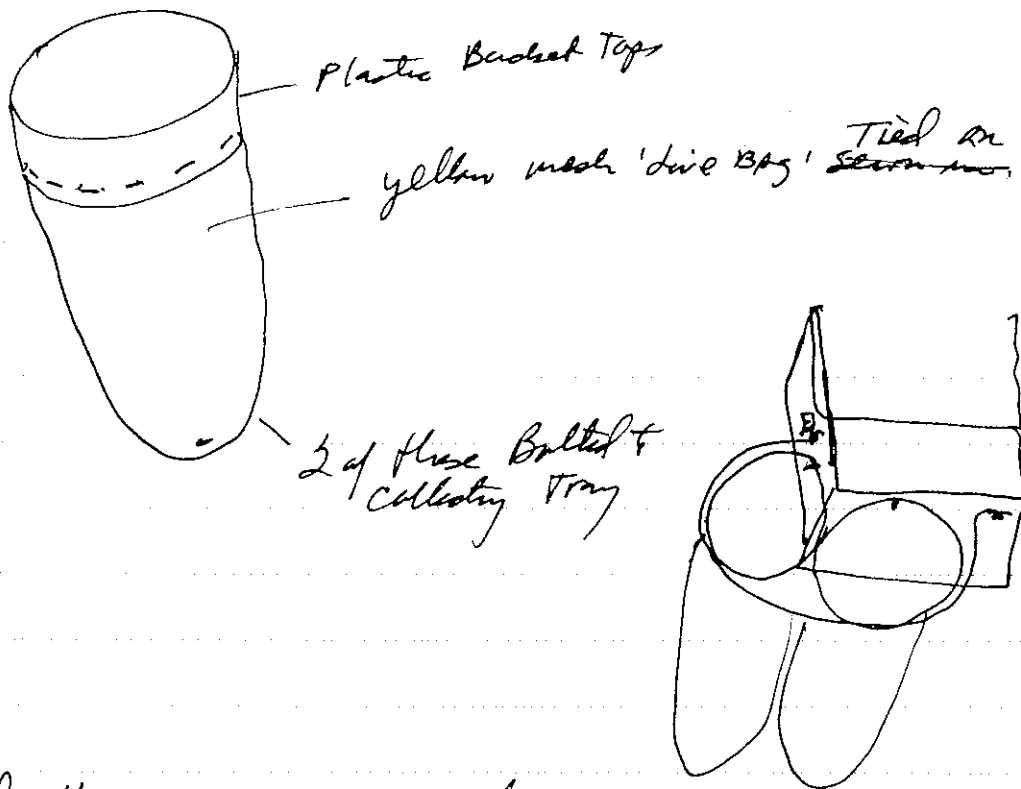
Return to cliff -

- 127 m - Plenty of sponge bases here
water milky
- 117 m - white gum-ball sponges on wall begin - Prosobranchs
- 115 m Pink Anemones begin
- 109 m Dense worm tubes in Seal - Vermetus strong Varia to Secora
- 105 m - Corella ascids frequent.
- 97 m 1st Brachiopods
- 90 m Taking samples of Brachiopod rocks
Weed sponges: Syringella?
- 85-90 m - Sampling - Large pink Scale worms Actina
- 75 m Lots of Muricea -
Worm tubes Serpulid on rocks
Ascids of all kinds common + Brachiopods.
- 70-80 m Collected 'Shallow' Brachiopod sample
- Left cliff at 50m - Luscious red snappers etc common
14:09 hrs Ratfish + lots of Aphrocalatho
Rhabdoderm (Rhabdocalyptra)
- Surface 14:10 hrs - Pick up + Return --
10:10 hrs END DIVE ET
4:00

9 Sept 82

p84

Collectors used mesh



Talked Verena out of a few specimens of sponges & a rock or two.

Still need to know potentials of Sub to allow collection of water samples.

- ✓ 82-9-9.1 - Piece of Rhabdocalyptus lawsoni ID'd HMR - dried after brief Rinse
- ✓ 82-9-9.2 " " " " " " " " one spiny spiculate - maybe
- ✓ 82-9-9.3 " " " " " " " " " " " "
- ✓ 82-9-9.4 " " " " " " " " " " " "
- ✓ 82-9-9.5 Dead SKel of Aphrocallistes vestus - ^{initial} Spicules still some present.
- ✓ 82-9-9.6 Large dead base of " " " " W some microsclera still pres
- * 82-9-9.7 ^{worm} Tubes w spicules of hermit

9 October
1982

Dive - SACKS Point, Esquimault, B.C.

Buddy - Maria Byrne + 2 other Pairs -
Jim Cosgrove + Don ; Bill + Froya

Collecting + Photos

Into water + Down 11:05 - out 12:15: 70 min

Zmax 30'

Photos set up: NIKONS I w Metz flash full Power

+ Hydro lens (2) w #3 wand - too close - WRONG WAND -
ASA 125
out of focus; Film Plus X develop D76 1:1 - 7 min

* First Group f22

Good

2nd Group f16

Slightly Dark - but OK

f16 + diffuser

too light - better f11 or f8

f22 + diffuser

Much too light! -

∴ Use f22 w/o diffuser for lens #3

use f11 w diffuser for lens #3

Expect f16 for lens #2 at correct Distance

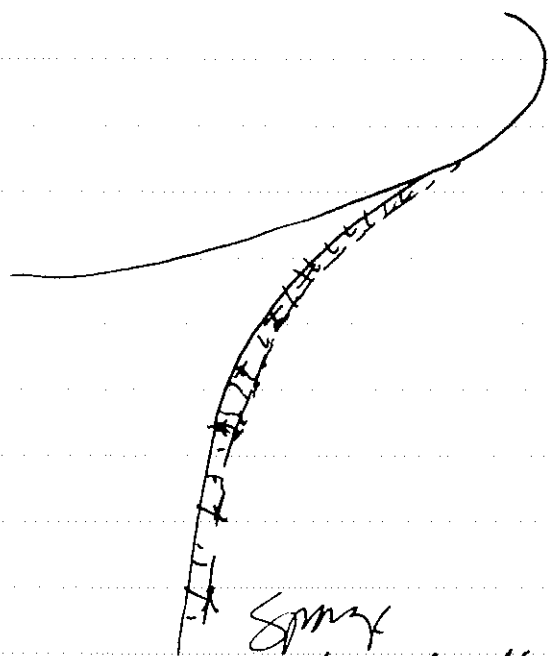
Expect f11 for lens #1 at correct Distance

No Specs Collected! For me. Maria - hairy triton ~ 100; Kelp.

Checked Buoyancy - shallow water ~ 25 Lbs

for Full Suit
w small gloves

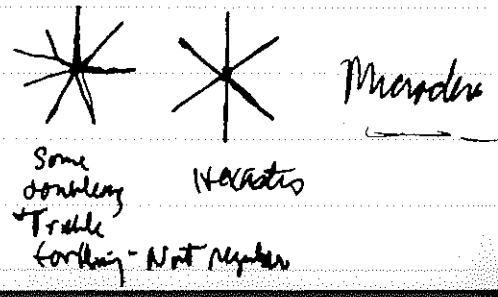
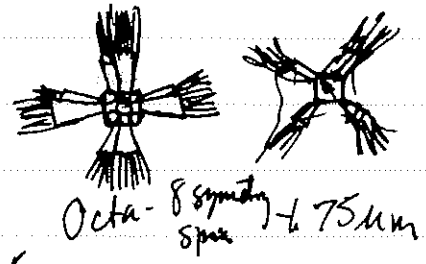
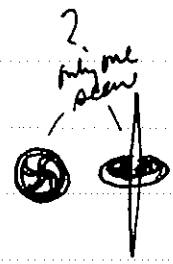
for deeper water take 22 Lbs.



Alyssacine (loose spines)
 Spines are very short from
 Pentacts which are grossly smooth
 No turning in of oscula -
 instead turns outward.

New Range Extension - Previously
 for Santa Cruz

Spines
 Surface appears almost
 smooth; spines plus
 Not very Apparent!



1982

October

18
MON

- Pisces IV Northern Trip. - PANDORA II

Loaded matt's from UVic on Fri 15 Oct

Arrived Monday AM at Boat at Pat Bay - loaded my little bit on - Bell Austin Arrived - Ann took off for Home Met ~~Mike~~ Foster - photographer for - ? Env't Canada - to get Brochure photos. ~~She~~ ~~worked~~ Worked all AM ^{Local} ~~stew~~ to move equip down to Lcd + Tie down Matt's Left ~ 12 Noon for Pat Bay - Spent the rest of day tying down, etc + looking at a few Sponges + Slides from Sea Mount work by Verena.

Staurocalyptus fasciculatus Schudye 1899 (Amer. H. Herent)

Spec (A)

Dive D1151 Pisces IV ? 1157

Cobb Sea Mt - ~~Sept~~ Sept 1982 Z=468m

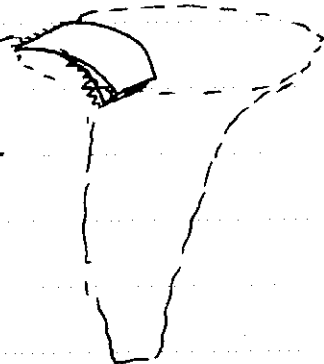
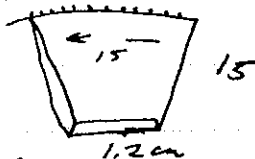
fragment collected from large indiv

Slide Photo in Situ 490m

Col - V. Tammiche

I.D. W.C. Austin

ROH FIX



Probably the spec from which I took photo
83-4-20.1

I gave Number: 2
IOS: 2
ID

My spec frag

83-6-20.1

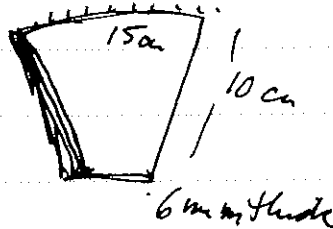
Spec (B)

D 1127 - 8 Aug 82 Cobb Sea Mt East.

Z. 460 m - Part of a fragment sponge.

Col. V. Tammiche

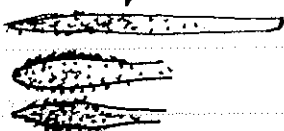
I.D. W.C. Austin



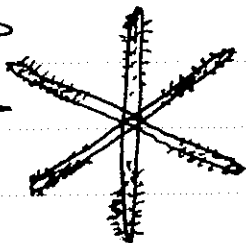
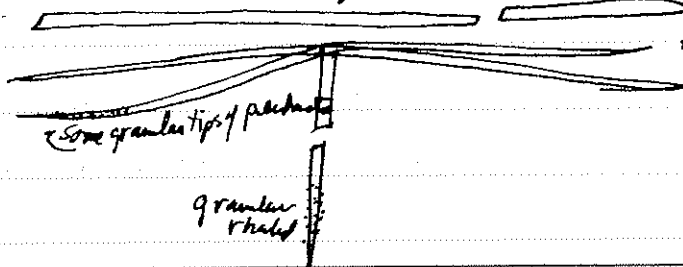
Boles A & B

Very similar!

Megascleres



V. Long



Hexacts

Supper - baked Chicken + Dumplings ... Apple pie w/ ice cream.

Sea Mount Show - Slide by V. T.

Start: Cobb S. M. East side 35m.

35m - Algae + Kelp - rockfish young + lots of Hinnits scallops, etc
- 50m - lots of Strongylo. fransisco, Corynactis Carapets all!

Fleaky sponge \rightarrow Myxilla lacunosa

88m - Still Corynactis - green crusts on rocks

100m - White sand - mussel shells - No live mussels here now

150m - Fluometra (Crinoids on rocks - Lots!)
~~without a new~~ Perastichopus photo

Crinoids also on sand - these Sedentifed.

Pycnospodia common - where it occurs ^{Crinoids do NOT.}

Very few Serpulids throughout this region - ^{still poss.}

Brachyrod shells common - bored; but ^{almost living} No Brachs.!?

180m - Lithothamnion still present -

Small white pillows accertino? - Tritidemannia?
ophuroids common

West side - about 500m

500m Ophiuroids! maene - foram spots on rocks ...

White holothurians; Cladiobrissidae - filtering Asteroids

Glass funnel sponge on pillows -

Crinoids. Big Gorgona, still; Gastropods

450m - Dasyphylla ^{Very common} - cup coral - No Ophiuroids -

Purple anemone, hydroids, Allopsora street

Clavularia coloms on sed corals this vine

Sponges - possibly Auletta

450m Solenosimilia coral field - brachi - coral field - brachy.
makes large bioherms w Dendrophyllum,

Primna group; Carpets of Epizooids on sediments,
Laqueous brachiopods; No ophiuroids

Brown Sea Sea Mont Sept 1987

680m. Sediment veneer on a near rock bottom

Cerata, sparse corals v. common now!
Young nemids common.

Large Psolus

whip antipatharia; Crab,

Stauracalyptus & Anemones, Ophiuroid, Bryozoa

? Potted ~~thru~~ Sponge ^{is} ~~is~~ ^{is} regularly folded.
- Is this a Favos?

Planar form of sparse coral Antipatharia.

700m
8mths
side

- Ophiopholis cryptic in rocks w arms up.

Soft coral, no sponges -

Carbonate Sediments - probably of ophiuroid skeleton

- Ophiuroid Very Common

Triton about 1/2 by early the bamboo

Coral - slumping; it slip

Anthomastus Archaeocera.

Pseudosquilla starfish.

Next find
little to East

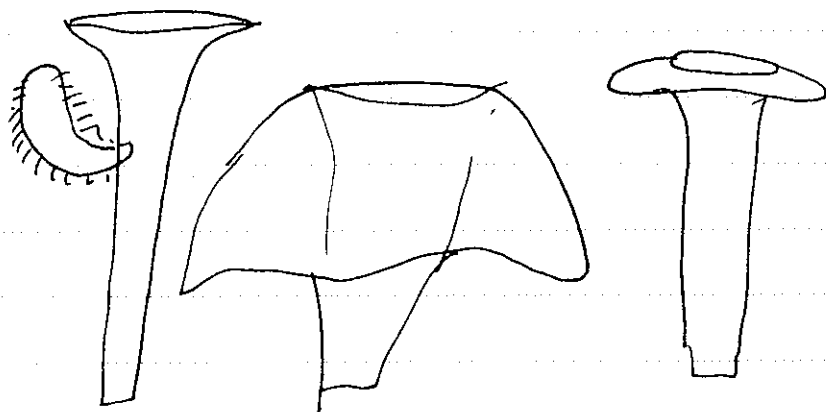
700m small white sponge balls - purple
Archaeocera - sulfur-iron crusts - collapsed

13 Oct contd -

Slide Show Contd - Brown Bear Sea Mt.

700m contd Gorgonian Young stems Common.

Stauracalypus - Big - one w Rhabdocalypus on it



~680m

Farrea - very nice lacy ball colony

+ another compound tube spg w terminal tubes

White!

+ Rhabdocalypus - UK

+ White Tube spg

Just like photos at

Explorers Sea Mount

- Crossing Now Leptozella?

620m - Pteraster

Flounder -

and

19 Oct
82

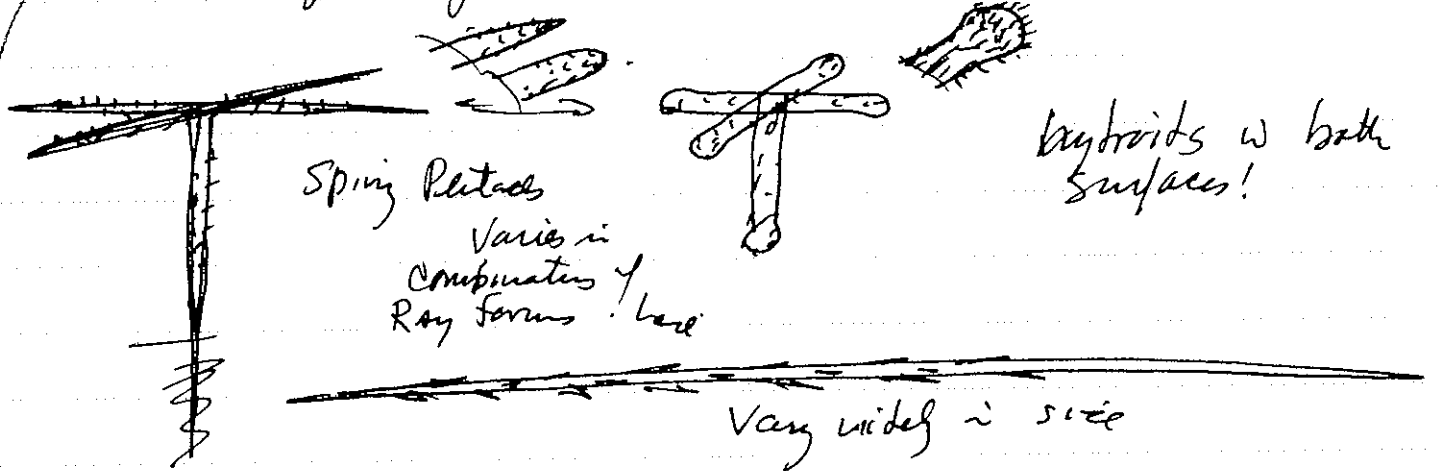
from Jjimi 1927
p. 137

Spec from Dive # 1156 -

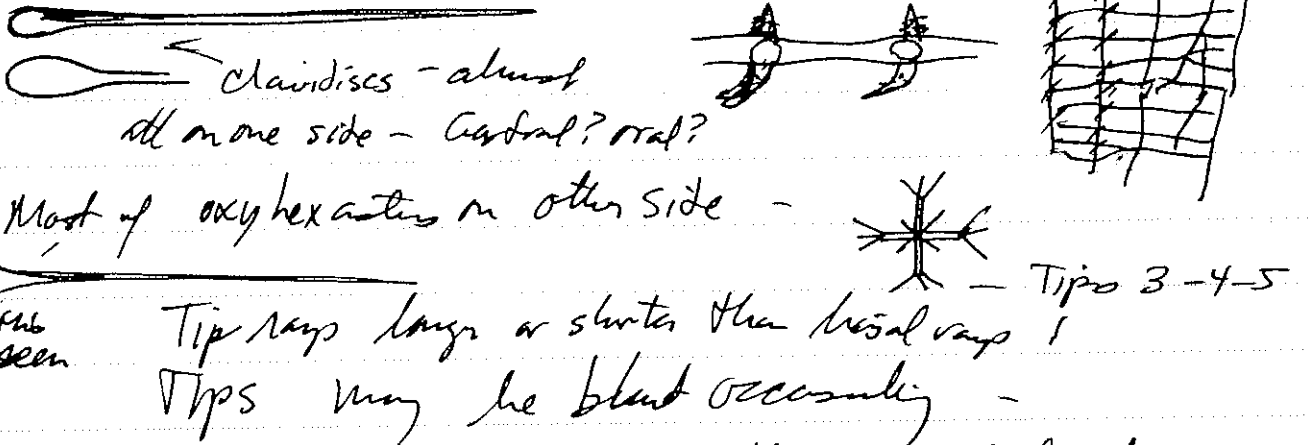
Fanea? - of Fanea pcca subsp clavigera
(Schulze)

Z-702m; Sept 21, 1982 V. Truncheffe Sea Mount!
Flags in Jan & Main Street in Dusk

later took
Spec Flag
83-5-15.1



Unilayered Framework - Dictyome Net



only one of Pub
found seen

Taxonomic problems - No Fanea w these unispinal clavicles
except for some parts of F. o. clavigera - this may fit
but it is poor. We have found no gaxonal
clavicles - but perhaps not looked for enough yet.

19 Oct 82

Up at ~ 7:30 AM - Bkfst Egg/Toast -
Nice Day - Just ~~out~~ came out of narrow channel into
the Queen Charlotte Strait - ran there until about
2 pm when broke into sound - clear weather &
some low cloud in the hills.

Worked on specimen ID - Reading over Gjima Sidera
Stuff - very slow going -

Spent part of day beginning to work over the Curacao
Measurements on Neofibularia!

Even mixed up S-Cellidine buffer sol'n:

5 ml S-Cellidine (? "Interscience Supply Co"?)
about 200 ml H₂O dist
precisely 3.00 gm NaCl - (minus some sticking to cap inside)
and 18 ml of my 1N HCl mixed by ~~Crack~~ Danyung.

Buffer! - sticks but is apparently stable at this pH.
Took - supper hand chops, shower. ...

20 Oct 82

Up at ~ 7:15 dressed + up a lake before sun-up

Nice day - calm - pretty clear. Bkfst -
Ready for Dive w Verma - ? Notes Taken from
Notebook + Recorder.

20 Oct
Cont'd.

Dive Pisces[#] II 1169

Frank.

Verona Tuimmette - chief observer Seat Lft.
Henry Rensig - observer seat - Rt

NMR
Pisces 3

Long. 51° 24.0' N

Lat 129° 42.0' W Goose Is Bank
Queen Charlotte St.

Z: 200 m

Entry: 8:55 pm; 9:00 roll out; 9:05 Launch into water

9:07 5m Phialidium common

15m

25m Pretty empty

50m Lots of floes - small 1-5mm long + Copepods

9:19 60m Getting pretty clear

125m More Euphausiids - $\approx 1/2$

155m Rooker common - school?

180 Fish abruptly disappeared as reached bottom

189m Euphausiids ~~very thick~~

~~189m~~
200m Sand-mud bottom between scattered V. Large Stones ~ 1m dia
to 30m diameter. Lots of Cigar sponges - Auletha sp
of Bill Austin & B. Ott. Very very thick
& spec up to ~ 1cm $1/2$ in diam
15 cm long - 1000's of specimens.

Lots of Euphausiids covered out when stopped

for any time - Sediment cloud raised near thick -

No comments to speak of.

3 Big Farrea specimens right next one another -
about 1 foot or more across - appear to be
partly dead. Another Big Farrea a few mins later.

Crinoids on boulder tops, hydroid growth on top -
Cyan sponges (*Aequorea*) on sides, Crinoids collected by net
Noted ~ 4-5 patches of white encrusting sponges around
rock sides - cannot tell much of their identity.

Vernon reports large long Corals out here side = 600 ft!

Small hairy tube sponges appear to be Rhabdocalymus -
Not sure.

191m - Cheilognath swam replaced Euphrasid swam - study?

Lots of large corals - pink.

Another *Forams*

Sampled white Sea Urchin - Strongylocentrotus Pulchellus 191m

(82-10-20.1)

Collected Sponges Bottom Tubing/Beach System / "Forams" like
but much thicker - probably *Chelonicera*? w/ Crinoids

Mit - Used small *Chelonicera* Brain - Brake stoppage.

10:41 STARTED up
10:44 Alt 182 meters

10:52 Surfaced.

Z max 200m
E.T. 1:57 hrs

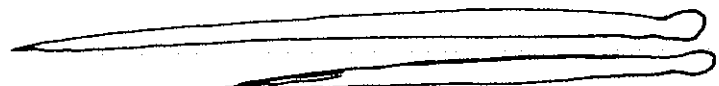
9
8:55
1:57
10:52
8:55
2:3

- Lab

Fixed in Bouin 2 pieces of what appears to be Chonelasma calyx.
Number - 82-10-20.1 - turned out that the skeleton of hexact
was overgrown by a Jemnospore - to check out anyway -
later piece Rinsed & Put into Plastic Bag to Dry. 82-10-20.1

From
Dive
1169

Spicule smear: Inhabitant:



Great Size Range



probably
Chonelasma calyx

Deceased!



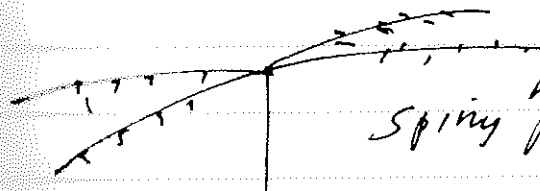
82-10-20.2 - Stelletid - Stelletta Clavella

Piece fixed in 8% Formalin in Jar.

Spicule prep: Dive #1170

82-10-20.3 Rhabdocalyptra Jarvisi - 1pc Bouin Fix

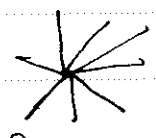
Rest Dried Mus S,
Whole



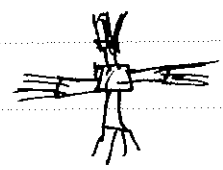
Spring hyperdermal
pentaacts

From Dive #1170

Spring
Hexacts

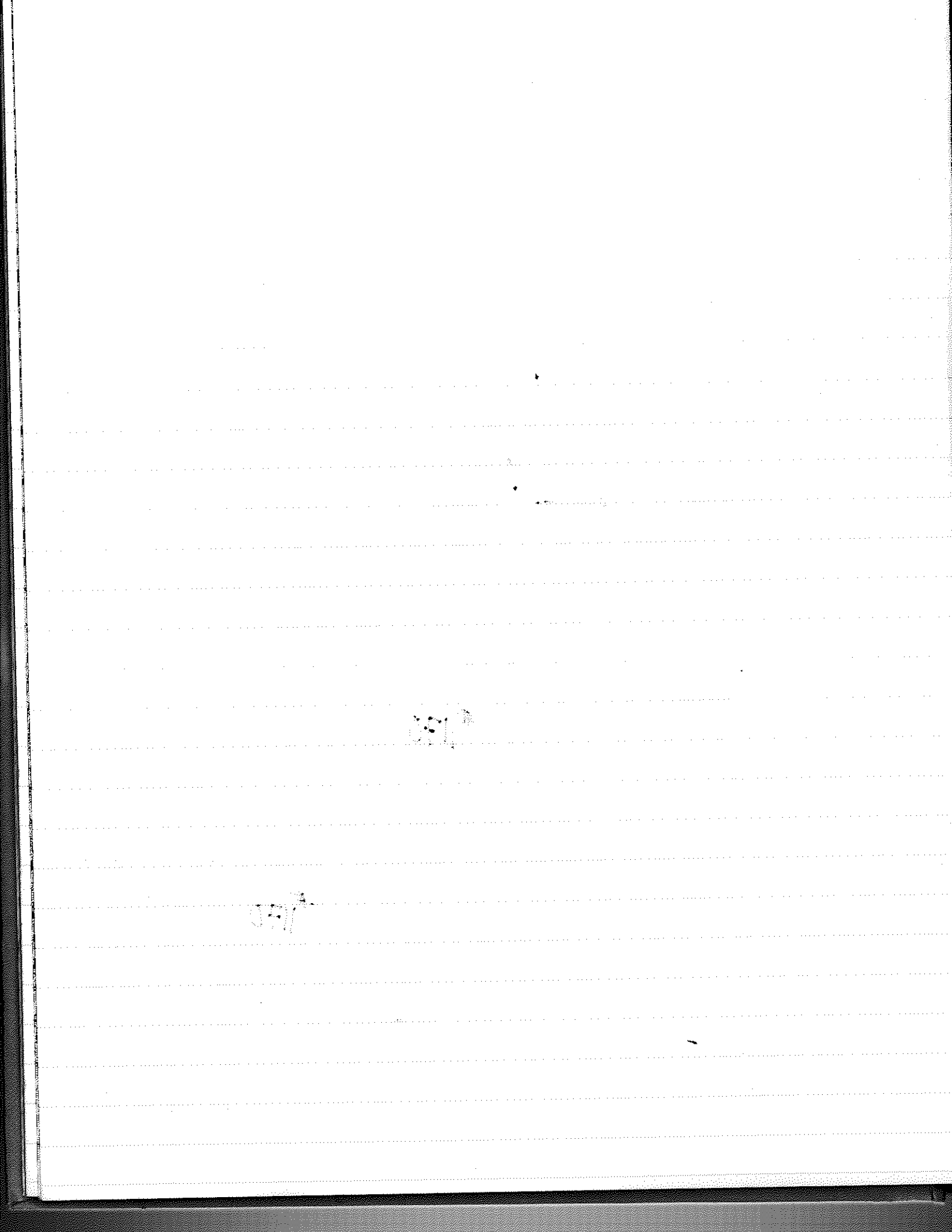


8pt star



Brush-hexacters [?]

50-70µ



20 Oct Cont'd

Dive Pisces IV # 1170

Bill Austin Left Observer Seat - Comova
Frank Pilot
Henry Resing - Rt Observer Seat.

HMR
Pisces 4

Begin Dive - P.M. Into Sub ~ 1:10 pm
Depth 100m Longit. 51° 30.0' Goose Is Bank
Latit. 129° 30.0'

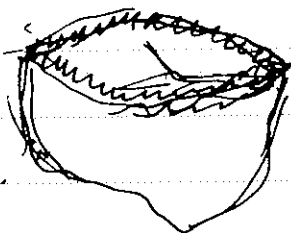
Into water - Launch - 1:15 - Clamshell Collector Arm!
to 25m - *Phialidium medusae* common ~ 1/m²
96m. Depth - 1:25

Gravel ~ 1cm - 1 inch pieces - w Large Boulder 1-4m
Parastichopus common
Sea Star - long arms, Red cushion, White Bats etc
Solaster's

Run east - No currents now -

lots of many small lucernate sponges /
Sampled large white sponge - a Stellated it found
out - corticated white w tan inside
all white outside but very heavy
Spicule brush - took ~ 1/2 of it.

82-10-20.2



Currents began to pick up -

Sampled cigar sponge, starfish, + *Rhabdocyathus* at
1m - chased it across bottom. - 82-10-20.3

Lots of fishes - Red Rock fish good sized ones.
End Dive ~ 3:40 - surface

Wanda

3:40
1:10
2:20

21 Oct 82

Night - Wind + Waves Rose - Pretty hectic -
Management decided to move "to inside" since weather Report
worsening - Moved to Fitz Hugh Sound via HAKAI Passage

Piscos #
1171

- in AM RAINING + Foggy but Pretty CALM

Verena, Bill Austin at Unime Pt } Looky
Pilot A Witcomb Hartate Is. } Looky

51° 43.5'
127° 58.8'

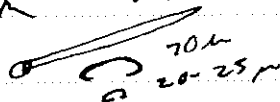
Dove from ~ 1130 to 345
brought back



7cm long
Depth?

1. Myedle kellebellensis - reticulate - Netted flap
2. Stoletta again - maybe the same but different form
- ← 3. Calcareum spg - Leucantra gigantea? (something like that)
cf: Desmassella?
ragabensis?
500µ
4. Aphrocallistes vastus skeleton

w that **!XX in it
w superficial brushes, etc...



Fixed a piece in Boum

82-10-21.1

5. Chrysanthemum anemone

6. Golden Anemone

7. Mame Antipatharia -

Reports: - No Farrea ~ 250m

3 aphrocallistes

● boot sponges - Rhabdocaliptus

I worked on my Curacao stuff most of the Day. Slow + Lang.

Moved to Nanne for Night anchorage +

to make out Bug on Sub - Electric leak somewhere

22 Oct 82

Spent Entire Day at Nama Anchorage - inside Kiwash Is.
128° 52.7' W x 51° 51.8' N

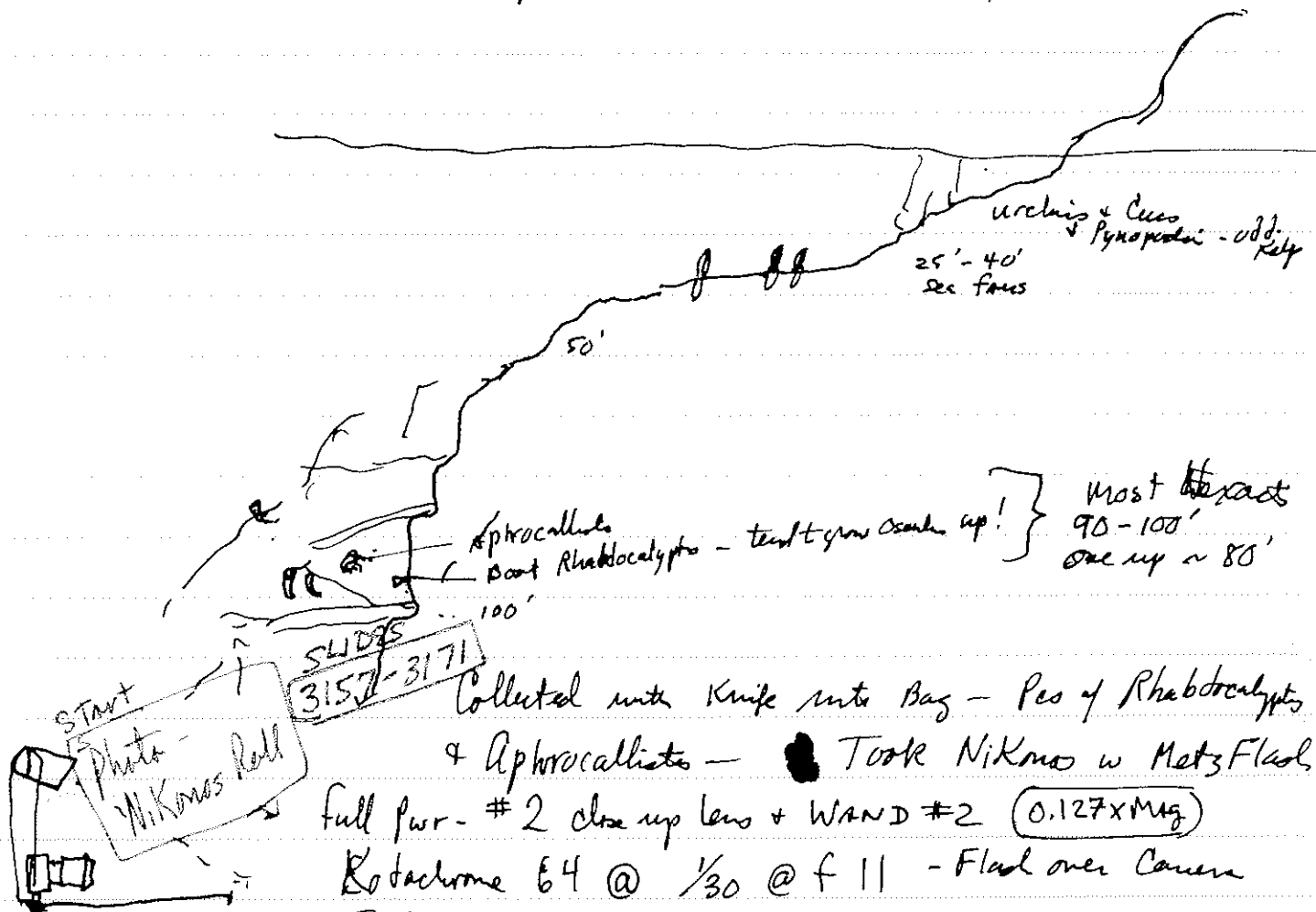
Pine
1172

Pisces Crew Test done sub Am.

Bill Austin I went for Scuba Dive off Front of Kiwash Is.
128° 53.6' W x 51° 51.8' N in Zodiac -

Into water about 10 am - out 10:30 am

Max depth 100' for 25 min bottom time; 5 min ascent time



Most Hexact
90-100'
one up ~ 80'



Collected with Knife into Bag - Pcs of Rhabdocalypts
& Aphrocalites - Took Nikomas w Metz Flash
full par - #2 close up lens + WAND #2 (0.127xMag)
Kodachrome 64 @ 1/30 @ f 11 - Flash over Camera
Took ~ 10 photos

Return to Salore - picked up fixture bucket - Windy & Raining -
Wanted to Fix on board Pandora. Got back ~ 11 + unloaded
Fixed in Glut/osm/s. Collision at 11:15 am -



Specs

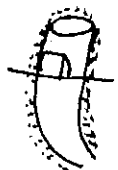
82-10-22.1

Aphrocallytus vastus *

EM Fix one Piece

Bovins Fix Strip in Vial Immed adjpt

Later ~ 12 to 1 pm Fixed a large Piece in Bovin Jar +
Eventually ~ 3 pm - Placed remnants into Jar for Drying.



82-10-22.2

Rhabdocalytus dawsoni

Tubular - boat

None Fixed EM; Piece Fixed Bovins Vial + Later Piece
Fixed Bovins Jar. Eventually Cut up into large jar for drying.

82-10-22.3

Rhabdocalytus dawsoni

Convolutal form -

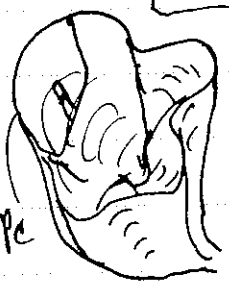
fragment Plate-like

EM Fix 1pc

Bovins-vial Fix Adacal piece

Later larger piece Bovin fix in Jar

Eventually - all to Jar (Cut up) - for drying.



EM - fixed Sinfers formula - 0.2M
S-Callitane buffer 5ml in 200 ul H₂O w 18 cc 1N HCl
+ 3 gms NaCl for Osm

5 parts buffer, 1 part 50% Glut; 2 parts 4% Osm → Mix Just before use!

Fixed 1st set 1 hr; Rinse Sea Water 3x (muddy water) +

Fix 2nd time 1 hr; Rinse SW 4-5 times ...

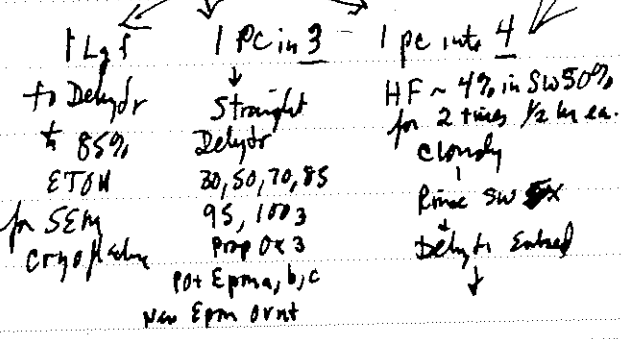
Dissected + Divided

Try to deal back to 15 min ea.

Probably

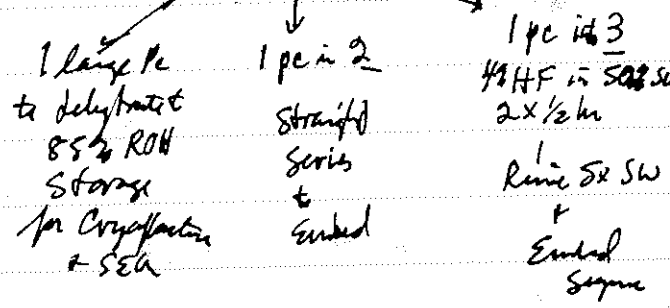
Aphroc 82-10-22.1

EM Fix 1pc



Rhabdocal - Truncated off specimens 82-10-22.3

EM Fix 1pc



1 part Epon A } in Vial ~ 6.5 ml
 1 part Epon B }
 accel PPM 30 3-4 drops

.08 ml
 14
 08 | 6.5
 6.5
 30
 32
 OK!!
 ~ 1/2 of the
 should be
 150-170?

Dehydr.

Embedding sequence 15-30 min intervals

30 ETON → 50 → 70 → 85 → 95 → 100₁ → 100₂ → 100₃ →

[Mix Epoxy] Prop Ox₁ → Prop Ox₂ → Prop Ox₃ → Prop Ox₄ ← add Epon 1 pt. swirl — 30w
 1 ← add Epon 1 pt, swirl — 30w
 ← add Epon 1 pt, swirl — 30w
 ← into Full Epon New.


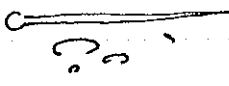
P

Let Stand overnight in vials
 Put into Molds in Morning + into 40°C for 8hr Start ~ 9AM (23rd)

to Continue
 5

1% Osm
 6.25% Glut
 0.13M S. Colloidine
 1% NaCl.

Bill also collected dead Aphrocal Skeleton - found

Plus a young one - double incipient tube ^{orange} ^{white}  foreign 'darken' - Light Tan
 w mostly Aphrocalista vastus plus one side being taken over ~~over~~
 by another sponge - appears again to be 

Bill suggest Desmurella vagabunda - but I'm not sure of this

Interface is clean - just a color change abrupt - No dead zone
 + no noticeable necrosis under dissect scope; Would have
 been nice to do histology of the contact zone - but ~~not~~
 it was in bucket + pretty mucky for several hours by
 the time it was noticed ∴ Not attempted - Bill Photographed it.
 May have saved it.

.005

22 Oct 82

PM - Sub still worked on

I - worked in lab on dehydrator etc of 1st Ew batch

Others took off into Namu for a jaunt.

Bed + we are still here at Namu - heavy wind.
took a few time photos + Sat program out - Nikons - 3172 - 3173 slides

23rd
Oct
1982
SAT

Up at 7:15 - Boat under way up Burke Inlet -
Wind strong 80 Km in Night - Drugged anchor
Work going on the Pisces; After Breakfast
I begin processing samples again for Ek - + Writing Log.
- Now up to date

Tried Trawl again - at station just upsill of the
Burke Inlet ~ $3/4$ Cable broke when being up on
Rock - Snapped - Lost Trawl! Loc ~ $129^{\circ} 41' W \times$
 $51^{\circ} 58' N$. - then still working on sub - stand
- up in Rain + Fog into Kwatna Inlet down to
~ 70 fath area to test dive pieces - never really
got loose - Cable leakage apparent right away at
the first immersion. Hauled her out again +
back up channel.

No Dive
Nimble

Continued with
Nikonos Roll

Slides
3174 - 3183

When we got up to ~ last bend of head
of Kwatna Inlet we stopped ~ $1/2$ hrs to
SCUBA Dive. VERTICAL WALLS!
 $129^{\circ} 31' W \times 52^{\circ} 06' N$.

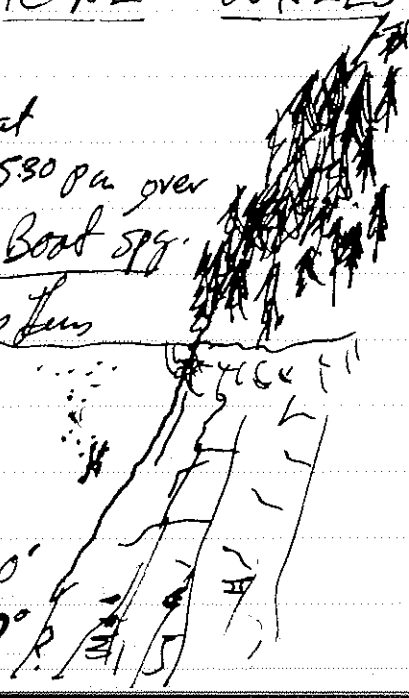
Done w Bill Austin in water at
5 pm - Max Z ~ 95' - out 5:30 pm over

82-10-23.1

Bottom Time 25 min, I collected 1 large Boat spg.


+ photographed w Nikonos w #2 accessories
+ wand - continue Still 1st Roll -
~ 10 photos taken at $1/30 @ f11$.

Saw about 35 - Rhabdocalyptus Dawsoni
all sizes + shapes - Many oscula up
+ oscula form.



23 Oct
Contd

82-10-23.2

Bill collected lots of stuff - a small Aphrocallistes vastus
ca 1" diameter - under ledge at ~95'. I saw
no live adults in scan of open very steep cliff 
but possibly one broken up skeleton. - very pretty form -
Not typical or probably not it.

Seemed like a mixing layer at ~30' - Temperature? Salinity?


Large Nudibranchs at ~30' - ~~very~~
Large solitary Ascidians - 2 types between 30' + 60' 376
Rhabdocalyptus started at 60' + on down - Large right at
start! Good Dive but Cold! 377

Supper late - Still Steamy and Dulet -
Word is tomorrow take five pieces again at
Dulet head.

Put oven to 60°C at 9 pm.

Collections from Dive

82-10-23.1 BIG Best sps Rhabdocalyptus dawsoni → dried whole
↳ Piece Bouins JAR

82-10-23.2 Young Aphrocallistes vastus  with puff top
appears in the process of inflation & get
ready to sicifex wallsides - Maybe this is the way it
can open & close oscula & membranes here & there!?
Bouins fixed in Evening - unlikely any good histology.

24 Oct
Sunday

Up at 7 + clean my lab a little - Rainy Morning!

Dive
1173

Pisces again ready for test dive this AM -

+ Dive w Mike Foster for Inside Photographs - ~ 100 Fath.

Slight rise out Big Rhabdo - [82-10-23.1] + hung up to
day - Take a few more photos of fjord system here (Nikon)

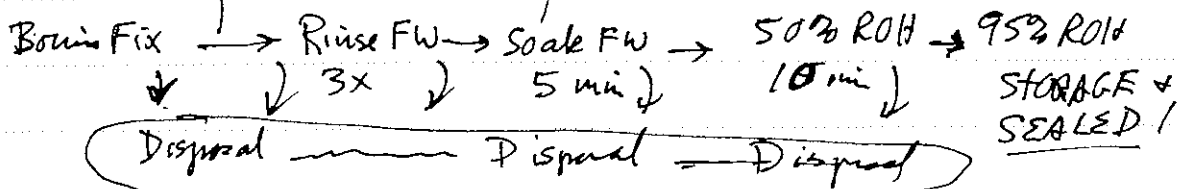
in the lower reaches of Kwatna Inlet again

Checked Blocks - Still a little soft + Flexible - let

~~to~~ cure a bit more - till noon anyway.

Slides
3184-89

Started Rinsing out Bowins of earlier Fixes.



All Poly vials now rinsed to 95% ETOH. +
all 4 by JARS As Well!

Pisces Dive # 1174 24 Oct 82

Burke Channel Cathedral Pt Depth set 600m.

52° 12' N
127° 27.8' W

Personnel: Al Witcomb Pilot - Verena Funnell chief.

Henry Reising observer.

In Water 12.55 pm

Blowing Air Trunks 12.56 pm -

Verena busy taking water samples every 50m on descent for
Oxygen profile.

Enter water ~ 1:00 pm (1300 hrs) Water turbid - high Flocculant
Density.

HMR
Pisces 5

24 Oct cont

HMR, Tape Extracts

Z T

50m 105pm - Small ^{1mm} Flocc - little Live BLKTN - some copepods

55m large Polychaete ~ 10cm swim by

60m Small 1mm Flocc - little plankton.

70m " " " " " "

80 " " " Mugeid 5cm Siphonophore - Rapid swimmer

90m " " Euphausiid, Mugeid - 2,
10-15mm Translucent Tomopterid sp 10
~1cm Amphipod - peach color (whiteish)

100m flocc reducing in density - fewer in Numbers -
Tomopteris polydonta, Aegina medusae begin
Mugeid siphonophore, Copepods - large size begin - up to 5mm - 1cm

118m Tom cod, Aegina ^{1/5 m³}, Shrimp?, Appendicularian house
Large 1cm Copepods

132m Large Copepods, Small Aegina, Flocc, Tomopteris

144m Flocc, Aegina all size, ^{1/2 m³}, Large Copepods, Mugeid siphonophore
Large Nanomid siphonophore - 15cm long when contracted.

158m Flocc, Large Copepods ^{2-3/m³}; ~~Aegina~~
Large Clausenid - Boliniopsis
(No Tomopterid or Aeginids)

179m Large Nanomiid siphonophore, Amphipods, Copepods

186m Large Copepods, Amphipod ^{3-4/m³}, Small Mugeids, Chaetognaths

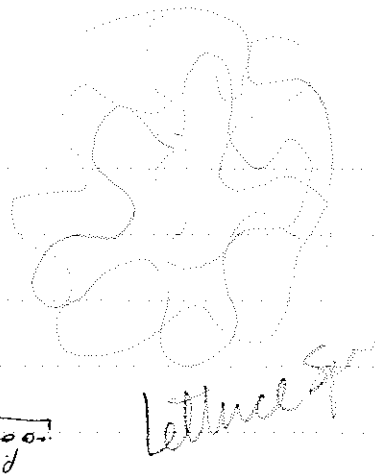
200m Amphipods, Copepods, Flocc, Chaetognaths, Boliniopsis

212 Large white Amphipods - patchy - Large red Copepods

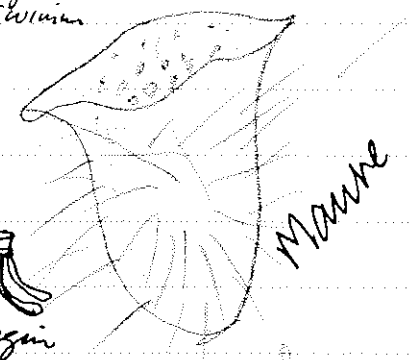
230 Copepods Amphipods Aggregate Flocc, Juv. Fish, Medusa disc.

244 Copepods, Amphipods ^{1/5 m³}, Medusa disc, Juv. Fish

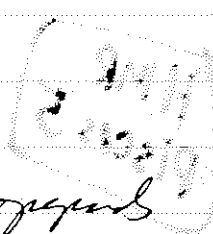
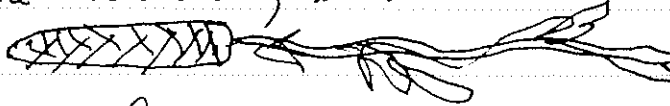
270 Flocc, Aggregates, Juv. Fish, Flocc threads, Mugeid siphonophore → over page



Lettuce Sp.



MANNE



Re Dive
1174

82-10-24.1

82-10-24.2

slide in box
3204

Processing France

Acanthosorus
& Cactus
MANVE:
24 to 25

Collected early in dive ~ 1:45 pm

Fixed finally at 5:15 Glut/osm/ Coll fix

(Fixed pieces of both in Bouins)

2 France + 1 vid Acath

3 SW pieces

2nd Fix Glut/osm/ Coll at 6:00 - Fix 2x 1/2 hr

Wash SW ~ SX at 6:30

Pieces into Dehydr

Pieces into HF & FW (dist)

- 30
- 50
- 75
- 85
- 95

2 x 1/2 hr at 4%

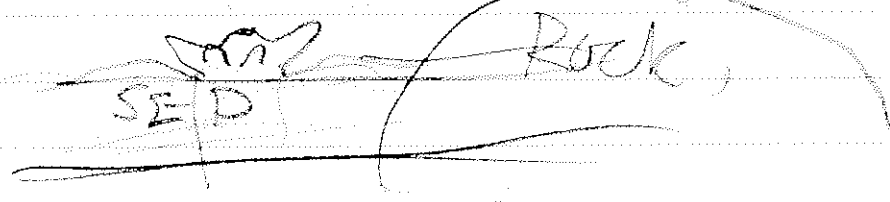
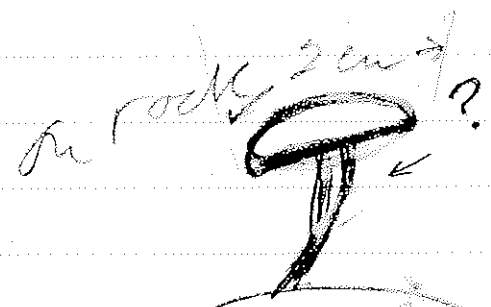
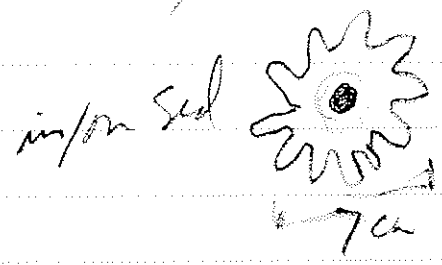
Rinse Dist water 3x

Disssect to pieces for Embeddy

100, 1, 2, 3 Prop Ox 1, 2, 3, 4

PO - Epm 1:1, 1:2, 1:3; - Epm only -

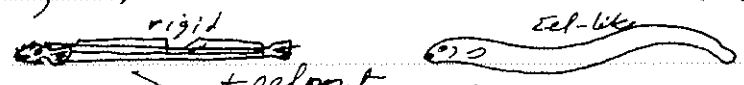
Sellm - May be on tape



24 Oct cont'd
Dive 1174 cont'd

- Depth m
- 280 m Amphipods, Flocc, Juv Fish, Copepods
 - 296 m Mugeid siphonoph, Copepods, Flocc, Aggreg to 10cm (Flatfishes), Juv Fish, Discoid medusa (em flapper).
 - 315 m Juv Fish, Amphip, Copepods red, Flocc, White Copepods, Mugeids,
 - 350 m Juv Fish, Amphipods, Flocc, Bolinopsid Ctenophore, White Copepods, Flat threads, Copepod carapae?, Berooid Ctenophore
 - 380 Tomopteris - One rare one, Juv. Fish, Aggreg. Copepods
 - 390 Squid resting on Spec Tray.
 - 420 Amphipods, Flocc less abundant, Flat thread, Aggregates, Large Copepods, Fish Juv.
 - 450 Fish Juv, Amphipods, Aggreg, Naupliids
 - 500 Flocc, Flat threads, Aggregs, Copepods, Amphipods occas. Mugeid Siphonoph, Chaetognaths rare, Disc medusa Juv Fish.
 - 540 Flocc, thread, Aggreg, Juv Fish, Large Copepods occas Amphipods, large Copepods.
 - 567 m Juv Fish, Flocc, Thread, Aggreg, Amphip, Copepods, Squid, Bolinopsid Ctenophore.

587m Bottom - visib 5m, soft mud-silt - Run to South wall
No Current.



Fauna - many sablefish, ^{teelpouts} Poachers, Red shrimp
White shrimp, Swimming shrimp, Many Bolinopsid Ctenophores
- 1-2 m off bottom, white starfish 1/10m, white Amphipods
pounce off bottom; Flounder + Flounder trails?

to wall soon



Page over.

11/10/11

Re Dive
1175
~~1175~~ Oct

82-10-25.1

yellow/orange
sieve plate



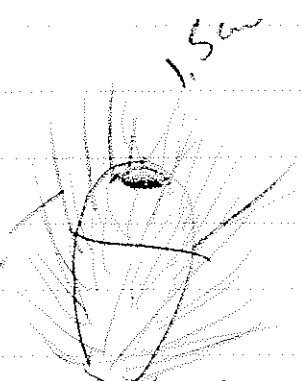
Aphrocaltheta vastus

from 178m

Dive 1175
Way Back

82-10-25.2

Spine
probably



3.8 cm

7 cm

Staurocalyptus - solidus ← probably - probably same
from 220m - S. Stautingeri

Dive 1175
Way Back

24 Oct cont'd

Dive 1174 cont'd

EKT
Kobach II :-

NO Flash here!

Thylosis

WALL - Encountered at 570 m - Photography Avail Sub Rummy Lute

Slide #

Rentay EKT 160 at 1/30 - f4 w meter

Minolta Kobach 164 at ~1/30 - f4 w meter

570 m - Large Aphrocall. v. skel at base - fallen off.

Live Rhabdocalyptus (?) on wall

Common Brachipods Laqueas

Aphrocallatus - common in sieve plate on osc



3276

570 m - Faena lettuce sponge



Rhabdoc? w/o dirt - Clean! - Staurocalyptus? did not note osc.

Photog spys

3277

532 m

Faena sponge - Al collected in POK man - Part 82-10-24.1

3278

505 m

Photog Sponges

3279

502 m

Collect Boot sps w flared edge → ID Acanthascus of Cactus later

3280

480 m

White Boot sps



82-10-24.2

Slide 3204

in lab

Slide 3280

in situ

3281

Faena sps

MANVE

462 m - Large Lead Aphrocallatus skeleton

3282

Laqueas

3283

456 m

White boot sps clean



3284

Faena - Very large

3285

450

Gorgonians

3286

Aphrocallatus - Photo

3287

Faena - Photo

3288

445

Large Gorgonian? series ~ 15 of these in vertical set

3289

440

Aphrocallatus? small - Photo

3290

423

Dark boot - Rhabdocalyptus!

3291

Anemones - Photo

3292

410 m

Aphrocallatus - Dead Skeleton

Video on

Spiny Cucc, Large Nematoid siphonophores

24 Oct contd

410 m contd

Gorgonian + Fans

Fanea (Photo)

3296

3297

Octopus under Sea Fan - in Video

Video: V

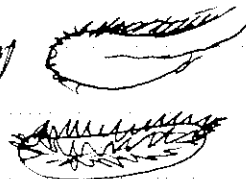
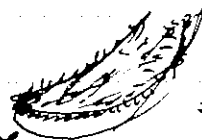
400 m

Boat Sponge w long dark spines -- ID? -

Fanea small.

396 m

Flat plate spp → white underneath, dark above w some spicule flesh.



ID? Rhabdocalyptus ??

386 m

~~3298~~

Aphrocalyptus Large -

Fanea

Gorgonian

370 m

Sediment Slope - aherm corals projecting.

365 m

Sub Thruster Wash - ^{Violent} Wobble Fanea but does NOT BREAK

(Photo)

360 m

3298

Aphrocalyptus ← (Photo)

356 m

3299

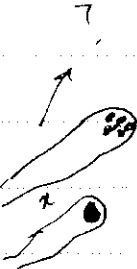
Underhang - Brachopod cover walls ← (Photo)

350 m

Spiny cuc. Serpulids w large crown.

Aphrocalyptus w large sieve - Peach/Carrot colour

Young Stage less pigment & No Sieve?



3300

340 m

Spiny Cuc

Round Ball spp - 1cm diam

mud sill -

skate on T.V. Vider

(V)

3301

318 m

Rhabdocalyptus - typical dark hairy form ← (Photo)

3302

316 m

Spiny Cuc

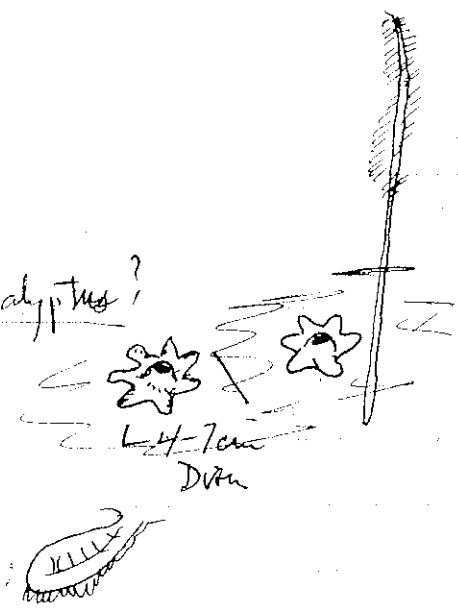
Brain spp, yellow-green encrusting spp

ophuroids, shrimp, Brachopods, serpulids

+

Dive 1174 contd 24 Oct
24 Oct contd
3303

- 284m - Aphrocallistes
blue nematy sponges
- 275m - Large boat sponges - form ? - white - ? Stauracalyptus?
- 270m Stellate colorless Spgs? project for Seds.
- 265 Giant Sea Pen - Red Polyps (meter long)
- 260m Anemone on branch - i.e. not a coral
- 250m Flat boat sponge - white side up!
Aphrocallistes? Chnelasma?



- 246m Spiny Cues 3 spes
- 3305 - 235m - Aphrocallistes - Large one Nearly all dead
White Sea Pens

3306 232m - Aphrocallistes **GRAVEYARD STARTS** - Cliff above
HEAVY TALKUS SLOPE!

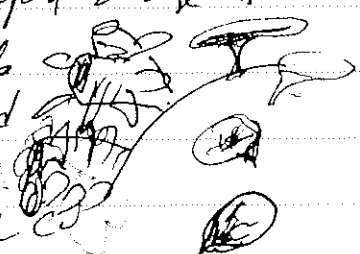
- 3307 225m Graveyard Continues
- 3308 221m Wall heavily
Long red Nemert. on wall
Brain Spgs - Common
Brachiopods not common here - Not steep enough
Tachygasteris sessile red medusae?

198m - Aherm Corals or Scleractinia coat vertical wall
3309 190m Still Aphrocallistes skeletons on Slope - interrupted Graveyard
~~185m~~ continues to

- 166m Vertical wall begins again
Common green - yellow encrusting spgs - Speddy.
- 156m - Boat spgs - good Rhabdocalyptus type
Underhang of Cliff covered w Brachiopods again
- 150m Giant Boat Spgs - numerous -
Many white w/o dirty spicate plumes

24 Oct
Cont'd

Roll
Min II

- B310 140m - Boat spg set back in groove of cliff
Brachiopod-serpulid wall - Photo # 35 on EKT roll
- B311 137m Zoanthid wall - or are these corals - video record
Some seemed joined basally
- B312 Pearly Caliostoma gastropod prey in crevice
- 120m Boat spg + Anemone - Photo Kodachrome in Muntak w Sub Lite! ³¹⁹⁰
- 115m Boat spg - MANY! ← 3191, 3192, 3193.
- 113m More Zoanthids?
- 97 Serpulid + Brachiopods Still dominate cliff faces
- 106m Many more Boat sponges - A whole wall - 3194
all Types + Size - White, Dark, Porcupine ³¹⁹⁵ not
Aphrocalistes / Chondaria? also incredibly ³¹⁹⁶ fine ³¹⁹⁷
dense - all shapes + sizes growing over
one another - all fairly dim peach color ³¹⁹⁸
+ some dead bases. ³¹⁹⁹ ³²⁰⁰ ³²⁰¹
- 100m Very dense Boat spg + Cloud spg!
- 102m Red Octopus (?)
- 94m - Large horizontal spready lenticular blue spg
Aphrocalistes mass population continues.
- 87m cliff shoulder - rapid change to
Phakellia funnels 
in Very Narrow Band

K-77
Photo
like
mad.

77 moving up sed slope to Boulder Pile
71m Large Nannoid siphonous mat by window.
Now into Boulder zone 1-3m dia boulders

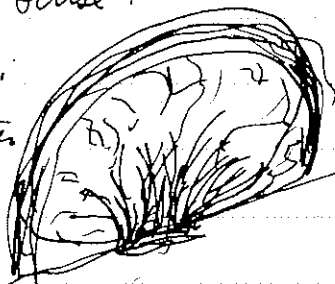
Dive 1174 24 Oct

71m contd.

Blue Encrusting sponges domito - all sides + undersides of Boulders - 1m diameter + larger individuals Cover ~ 30% of bottom.

Rockfish populations Very dense.

Large Fan Sponges - 2. ~ 1 meter diameter



55m

Boat Spz - still here

Blue encruster keeps going in Boulder zone

Pink anemones

50m

Cramia coats rocks - pavement!

red algae on rocks -

40m

2 large Boat spz - prob Rhabdocalyptis

39m

Rhabdocalyptis ~~porracea~~

36m

small Rhabdocalyptis

35m

Boat spz - Cramia brachyura contains

28 meters (= 81ft)

Very Dense ^{Rhabdocalyptis} Boat spz on vertical face here just before we leave the Bottom ← Photo 3203

END TAPE LOG.

ET ~ 3 hrs

24 Oct

Zm

0

25

50

75

100

150

200

250

300

350

400

450

500

550

600

Small Floor

Threads

Aggregat.

Small Sip Hong

Large Siphonid

Aggregat.

Small Fish

Amphipods

Copepods

Disc. Nudibr.

Alve. by the

50 mm

Polychaeta

Onychophora

Aphroce Dea

Aphroce Aling

Rhabdo.

Boot sp

Famula

Brain sp

Large Gaster

Amphipods

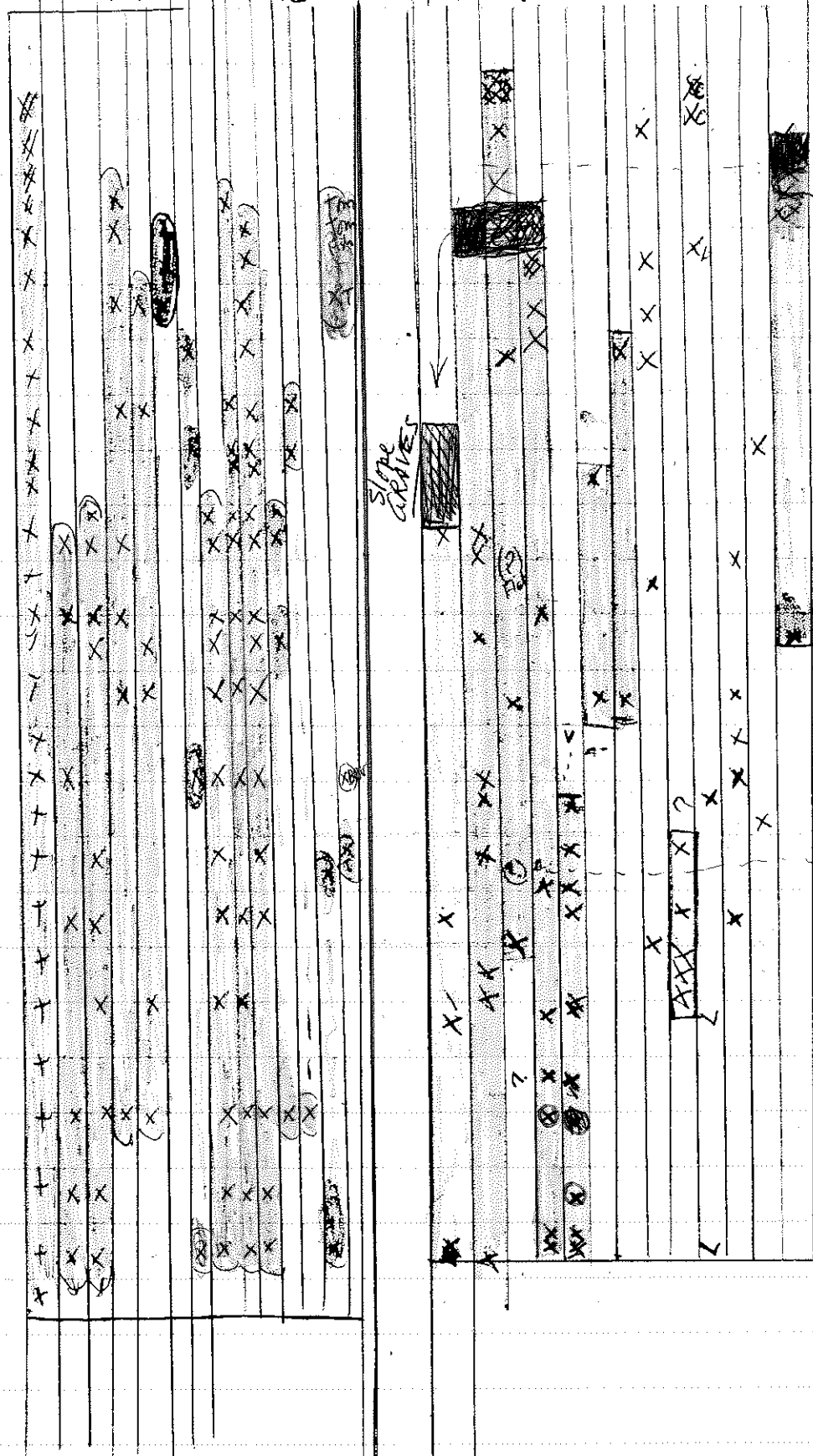
Georgina

Brachyopod

Spring Cues

Ahorn Cone

Blue Enc Sp.



Boulder
Sed
Cliff
Face

← Mycale? Fans

← Phacellin lim

← Octopus

← Zoantid

← Zoantid

← Tochnyastria

← Sea pens

← Flat plates sp

← Sea pens

← Star-mud sp

← Round Ball sp

← Flat Plate sp

← Octopus

25/10

24 Oct

ftm
Video

25

50

75

100

150

200

250

300

350

400

450

500

550

600

460

425

350
300

225
200

150

110

0

Loph
Sp. Guaneyd

Loph 25% cover, Brachs,

Primnoa 20% cover (Fanea) brachs

PuKa Lopho
Caryophyllia, (Fanea) S. pallidus Serps, Rhabd.
brachs

Ascidias

(Fanea) Primnoa, Octopus

Brachs 10% cover

V. Tunnichliffe
VT

Dive Profile # 1174

V.T.S.
85

~~135~~

~~80~~

~~75~~

~~100~~

~~100~~

150

175

~~200~~

~~200~~

~~250~~

~~250~~

~~300~~

~~300~~

~~350~~

~~350~~

~~400~~

~~400~~

~~450~~

~~450~~

~~500~~

~~500~~

~~550~~

~~550~~

~~600~~

~~600~~

~~650~~

~~650~~

Boulders
Crania
barnacles
Climitocarpa, Orth
mycalid. 30% cones
Blue spp

Aphro, Crania, Serps boat sps.

Crania

50-60% cones, Epizoanth brachy, Serps Aphro, Primna, Terdot

CaCO₃ slope - Odopus

Serps. encrust 20%

1st Blue spgs

blue spgs, Serps

1st blue

300
1000
1000

25 Oct
Mon

Steamed up to Dem Channel ~~and~~ interest
in Early Morning + Dive Site # 11 - near hot spring "Eucott Springs"
off Edward Point. 52° 26.8' N
127° 18.0' W

Planned Dive # 11

Pisces Dive # 1175

VT Dive # 86

Slides
3205-3217
Pisces Launch
& Dive

V.T. + W.C.A. Dive - Pilot Robert T.
Est Z 345m.

Partly Extract from VT Dive Profile

Hexacts - Ferrea 280m -

Stauracalyptus ^{of solidus} cuttata from 220m - See 5 pages ago -
82-10-25.2

Aphrocalistes collected from 178m

"
82-10-25.1

to get more data on Dive

I read + made notes - washed clothes - took a ride to hot spring
for visit - photograph + return while Dive in progress.

Dem Jet

In PM - Steamed to North Benbowk Arm for ^{Sched} Dive # 10

off Batchelor Point, ~~off~~

52° 21.6' N

127° 15.0' W Est 384m

Pisces Dive # 1176

AMP
Pisces 6

Slides
3218-3224

HMR; Bill Austin, BOB. Taylor

Tape Log Extracts -

Onto left at 2:13 pm - Moving to North side of Inlet see
Dirty surface water - Glacial till - clear rapidly at ~ 3m
w Turbulent mixing of salinity discontinuity

25 Oct

Est Launch 2:15

Z

Minalta Camera - End of Roll # 2?

Use Sub Strake 1/60 @ f8

~~Est~~ ~~Est~~ Kodachrome 644

End of Roll
Flash would not go!

10m Fine Flocc - little zoopl.

70m 2:23 PM - Lite Flocc - Maybe small copepods

Euphausiid, Nannonia 15cm

95m Euphausiid 1/2 m³, ~~Balanus~~

~~110m~~ ~~Agar~~

106m Balanopsis cluniphne

117m Argonia modera

Nannonia common

130m Amphipods - white, begin

Floods + threads

Large Copepods.

145m - Nothing - Balanopsis, Amphipods.

160m - Flocc getting finer, Balanopsis, Amphipods patchy,
Juv. fish

190m Threads + fine flocc; Amphipods.

201m Balanopsis

230m Thread, Amphipods, Balanopsis, Juv fish,

270m Threads, Balanopsis, Fish Juv.

308m Bottom - 2:41 pm

313m Muddy - steep slope - Drive toward Cliff

Large Tomopteris undulata - Tomopteris Renata?

Pink worms, Red shrimp

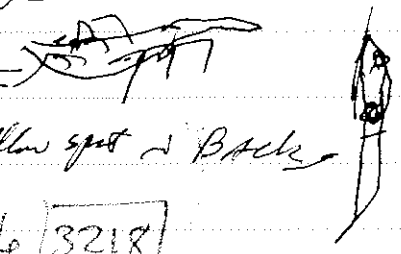
"Tommer crab", Swain shrimp w yellow spot on Back,

Red ceriantid

Sable fish rare -

Eel pouts

Slide 3218



25 feet
Min
KII - No flash work

147 m - ~~Change Film Roll~~
Roscid octopods / cuttle? - Photo
Big Flower? Photo
Change Film Roll

KII
Some flash

128 m Roscid - bony ground
90 m - mud slope

Crabs
Cercanthid - red deep sea - Trying to pick up
SAPelled tube w claw

67 m
63 m Cercanthid slide 3222

30 m - Rolling to log w submarine - snails on - slide 3223-24
18 m leamy bottom - shrimp under.

No Rock - BAD Dive! End of Tape ~~Est~~ Time

Return to Lab to finish processing tissues of
samples from Mornig Dive - #1175 -
Staurocalyptus + Aphrocalistes

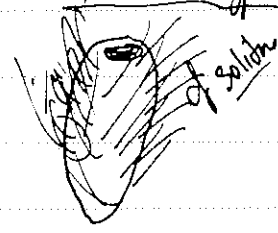
1 -
Spec EM Fix 2x 20 min - SW rinses in keton.
Rinse 5x SW

1
Butter 1 part to HF but Staurocalyptus lost it

∴ have

Staurocalyptus

82-10-25.2



- Bonus Piece
- Epon Block Glut/Am/Gol Fix ... w spec None Desiccated
- Extra Piece for SEM EM Fix - in vial
- Rest of spec to Bill Austin.

25 Oct

Aphrocallistes

82-10-25.1

→ Bonus Fix Jar + Bonus Vial Fix,
 → EM Fix - glut/osin/col → Epon w spic
 ↓
 35% HF in dist water 2x 1/2 hr - Epon w/o spic
 Vial → excess in Vial (NO spic)
 VIAL → Excess in Vial w spic for SEM

26 Oct - up at 7:30 - Just toast & coffee

- Back to check oven & Embedding of '24' specs
 & see if ready to put '25' specs into molds.

I worked around lab all day -

Veronica & Bill Done #Piscis 1177 VT #86

In Dean Channel? → Fisher Channel off "Satisfactory Cove"

52° 08.7' N } Dive ~ 11 am finally after hang up
 127° 52.0' W } - Dive took ~ 5^{1/2} hrs - up ~ 4:30

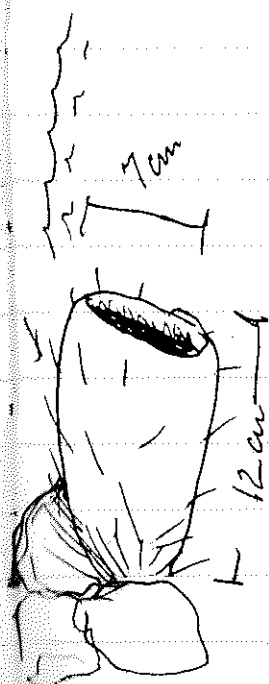
& onto boat ~ 4:10. Lots of stuff -

Herbert for moi.

82-10-26.1 - Acanthascus cf. platei (?) Z-517 m.

Whitish - few large spicules anterol., oscular margin tapered.
 & NH infolded - No obvious pentact plush! - slightly convoluted
 (chitinous skin) surface; atrial walls smooth - NO exhalant
 apertures visible.

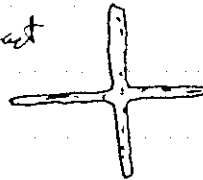
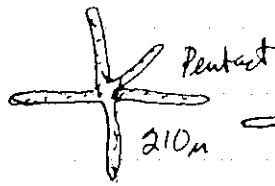
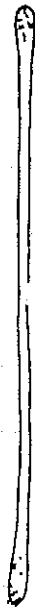
grh



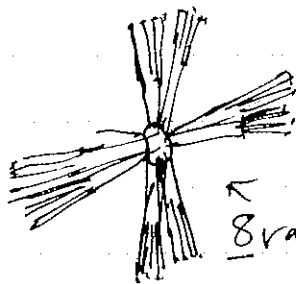
26 Oct
1982

82-10-26.1

Specimens



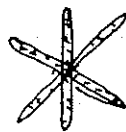
Granular
Tetracts 350µ



←
8 rays. Pri.

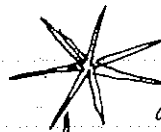
190µ 195µ

150µ 180µ 180µ



Granular
hexact -

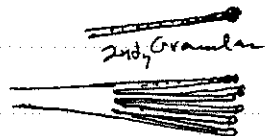
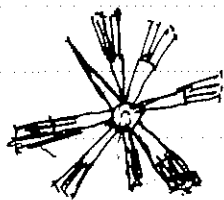
120µ



Fine granular
oxyact - ? Hexact some



100-150µ-160



2nd, Granular

Old one w 1 spine tip oxact

8 brachis + 1 oxact.

Tip broadly in brachis of 6 pts Secorinus

Specs. ① EM Fix glut/0.5M/Coll - 1X only - 20 min - NO change
Right to SW-3 rinses, FW tap - 3 rinses → 30% → ... → 85% KO
Stored all together! - can use for SEM, TEM, ... etc

② Brini Fixed Pieces - Jar

③ Alcohol fixed 2 small pieces for Spicule preps

82-10-26.2

He is working on it!

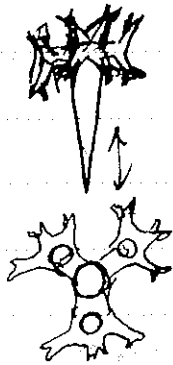
Bills UNDESCRIBED SPECIES - Homosclerophrich - near Plakia

Fixed EM Fix 1 shot - SW Rinse 3x

FW Rinse 3x

30% ... 85% ROIT dehydrate

Vial - up to 95% ROIT



EM
EM
EM

27 Oct
Wed


Up 7:15 - Breakfast - walk and deck - Still in Namm
 Dive is Sub scheduled for 9 AM at the Burke Sill -
 About 8 AM ~~Sub~~ Pandora weighed Anchor & made to North
 before turning up Burke Channel. at 8:15 power failed
 Generator loss - about 15 min lost furling and in dark
 tried aux generator but only partial load -
 After furling around w power on/off intermittent - we
 finally got up to Sill ~ 10:30 -
 Ready to Dive about 11:00 AM - But ... always this
 that - but not Sup at 10:10

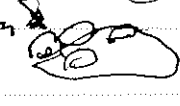
Pisces Dive #1178 - U.T. Dive #87


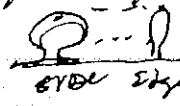
Est 70 meters Depth - Blew Tanks at 11:17 AM
 Fell onto large boulder field ~ 1-3m diameter at ~~32m~~ ^{33m}
 fish + ~~biomaterial~~ + gravel, invertebrates generally, & Fish
 abundant. Current ~~moderately~~ ^{moderately} strong -

Branching frigs tube sponge - I thought it was *Stylissa*
stiptata - but no - it was probably *Neosperopsis*
 Bottom at 11:24 AM at ~~32m~~ 35 meters

took (1st) at ambient light at 1 sec. Rodolph
 branching tubular sponge - (*Stylissa?*) NO V.
 f2 at 1/15 sec ... more common at 1/30 s

Tan pillowy sponge on rocks 

Small pillowette sponges 1-2cm diam 

Pholis - Lots of small scallops w 
 Creme (*Myxilla*) + rose (*Mycale*) sponges probable
 Lots of little pendant spongs 

51° 57.3' N
127° 45' W

HMR
Pisces Dive 7

BW Film
125 ASA

3 photos
33m

27 Oct
Wed

Lots of Ling Cod & Rockfish & Greenling.

(Photo) - Starfish eating a Neoegeocrinus 33m - normally these are
Creme (color as Aphrocalites) but many dark brown ones
also ant-eater-off-skeletons? possibly?


(2 photos) - Dense field of 32m Tan Tube sponges -
Gorgonocypedes on large boulders .32m

(2 photos) Scallop bottom - 41 meters

(Photo) Ratfish

(Photo) Tube sponge - Solitary - 42m

Collected rock in "green sponge" at 42m

(Photo) - Yellow sponge 



(Photo) - Tennis ball sponge - 

Photo #19 - (Photo) - Barnacles on rocks - 44m - Balanus nubilis

65m - small funnel sponges 

Basket stars on boulders + fish

(Photo) 65m barnacles

(2-Photos) 70m Anemones &

Collected sample of rocks in red hydroids - prob tubular
+ Tube worms 73m

(Photo) Dense Barnacle shell bottom at 73m

(Photo) Cucumber + ketchup 85m

(Photo) Sea Pens - 72m Philocarid - Yellow one

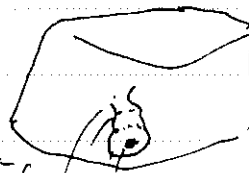
~~Wefact~~ → Saw Aphrocalites at ~ 55m on side of large Boulder

End Dive about 60m in collection of Gerssema

Up ~ 3:45pm - ET ~ 4hrs 30min

max ~~D~~ 102 meters

gray-gold color
Translucent and rough
gray edge + gray to osc.



No Hexacts fixed on Drive

∴ when returned, No Read work to do —
Clean up a little - but Not too much

3:18
2:16

28 Oct 82

Thurs

Dive

Pisces No # **1179**

49° 46.5' N 124° 12.7' W

Jervis Inlet - at ENTRANCE

Start on boat **3225**

Tom (Mike) Foster and I + Frank

Start Dive at 2:16 PM in Water 55 fath - 120m
+ Photos Kodach 64 @ f/5.6 - f/8 - Call it Roll **3 min**

Chaetognets, Euphausiids, Aegina, Small Ctenophors.

Bottom 115m - soft ~~sediment~~ some buried but may still alive

Evidence of slurrage LOTS of YOUNG or

Small Aphrocallists -

Regenerates! **3226**

~~hairy~~ mop or thread white sponges

3227

Dirty boat sponges

3228

? Maybe Acanthascus down about 100+ meters

3229

3230

3231

Ceratacid cummings, shrimp, galatheid crabs

3232

Ratfish -

82-10-28.1 vial Siphon

3233

Collect 82m - Collected Brandy white spg

3234

Collect 82m - ~~4~~ boat sponges → ~~small ones~~ ~~Ratfish~~ Staurocalyptra

~ 10m EM Fix **82-10-28.2, -28.3, 28.4**

82-10-28.5

Appears both color forms of Aphrocallists ~~spg~~ identical.

3235

Collect 72m - white trumpet spg collected Aphrocallists

Collect 71m - Large boat hairy spg + white trumpet spg. Another stage

82-10-28.6

82-10-28.7

68m Acanthascus (probable) noted, see hole w side

Panama + Ceratacid cummings + Abalone now

Few young Aphrocallists here.

48m Boulder field - still boat sponges + Aphrocallists

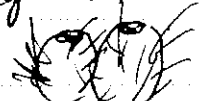
3236

3237

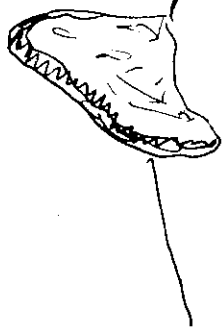
Collect 42m - Open funnel spg collected - Chonelasma!

HMR Pisces Dive 8

3225-3238
5100



Another stage



Choreasma - gold + white ore neph zone

Also large fan spgs with dirty edges
possibly the Mycale beltchelus

36m - Rock Masses - lots of brood spgs + Slide 3238
Aphrocaliots - out of film -
White film on rocks - Hydractinia like

32 meters on cliff edge - Rhabdocalyptus
Aphrocaliots
Allopora = -

26 meters - up above bottom -
left bottom at 3:16 PM. - surface 3:18

30
3/1
90

Fixed spgs at ~ 3:50

1 hr Fix 1 shot

Raise out - Dehydrate to 85% ETOH
STARTED
to B HFed & Schedded

Cleaned my lab.

done later on
Fri Nite started
29th at Home

uploaded
Fri Am
29th

PANDORA Pisces TRIP SUMMARY

3157-3189 Slides

Films:

1. Kodachrome II 64 - NIKONOS - Scenery + UW Dives 3157-3189
2. Kodachrome II 64 MINOLTA I Scenery + Pisces Topside 3239-3275
3. Kodachrome II 64 MINOLTA II Scenery + Pisces 1174 ~~END~~ ENDED in Pisces 1176 MUD 3190-3220
4. Kodachrome II 64 MINOLTA III - Jarvis Mostly Pisces 1179 3221-3238
5. EKTACHROME 160 PENTAX - Burke - Cathedral Pt. Pisces 1174 3276-3312
6. Ilford (B.W) FP4 Minolta - Burke Sill Pisces 1178 BW Film Neg

Pisces Dives:

Pisces #	HMR #	Date	Location	Coordinates	Depth	Notes
1169	3	20 Oct 82	Goose's Bank	51° 24' N 129° 42' W	202m	Boulder Blocks
1170	4	20 Oct 82	Goose's Bank	51° 30' N 129° 30' W	96m	Boulder-Gravel
1174	5	24 Oct 82	Burke Ch Cathedral Pt	52° 12' N 127° 27.8' W	587m	Rock Cliff wall
1176	6	25 Oct 82	N Bentneck Arm, Bachelor Pt	52° 21.6' N 127° 15.0' W	313m max	Mud Slope
1178	7	27 Oct 82	Burke Ch - Sill	51° 57.3' N 127° 45' W	102m max	Sill Platforms
1179	8	28 Oct 82	Jarvis Inlet	49° 46.5' N 124° 12.7' W	115m	- Mud spg slope

Summary Contd:

SCUBA Dives

1. NAMU - outer side of Kiwacha Is in Fitz Hugh Sound

22 Oct 82

Platform Broken stepped Cliff

51° 51.8' N
128° 52.71' W

Z = 100'

2. Kwatna Inlet - North Side

23 Oct 82

51° 06'
127° 31'
Vertical! Cliff

Z = 95'

Video Cassette Record

1. ONE Cassette - Extracts from

Dive 1174 NMR-VT Cathedral Pt - Burke

*? Dive 1175 VT-WA Edward Pt Beach

*? Dive 1177 VT-WA Salisbury Pt - Beach

HEXACT List Summary

	No Live Spec Coll	No Fixed EM	No Foreign Skel Occupied
<u>Aphrocallista vastus</u>	4	2	1
<u>Rhabdocalyptus dawsoni</u>	5	1	—
<u>Chonelasma calyx</u>	1	1	1
<u>Acanthascus cf cactus</u>	1	1	—
<u>Acanthascus cf platei</u>	1	1	—
<u>Staurocalyptus cf solidus</u>	(5)	(2)	—
some could be <u>dowlingi</u> ?			
<u>Favrea sp</u>	1	1	—
<u>Totals</u>	18	9	2

SPECIMEN SUMMARY OCT PANDORA/PISCES TRIP

Red = Hexact

Electron Microscopy

Spec No	T.D.	Electron Microscopy				Other Fix	Dried Piece
		Fix	EPON w. spic	H.F.	Excess w. spic H.F.		
82-10-20.1	Living: Desmucella variegata Skel: Chonelasma calyx	-	-	-	-	Bouins - 2 vial	Pieces
82-10-20.2	Stelletta Alabrella	-	-	-	-	Form - Jar	-
82-10-20.3	Rhabdocalyptus dawsoni	-	-	-	-	Bouin - vial	Piece + skel - vial
82-10-21.1	Living: Desmucella variegata Skel: Aphrocallista vastus	-	-	-	-	Bouin vial Form Jar	+ 3 Kelic vial
82-10-22.1	Aphrocallista vastus	✓	✓	✓	LOST	Bouin vial Bouin Jar	Piece
82-10-22.2	Rhabdocalyptus dawsoni	-	-	-	-	Bouin vial Bouin Jar	Piece
82-10-22.3	Rhabdocalyptus dawsoni	✓	✓	✓	✓	Bouin vial Bouin Jar	Pieces
82-10-23.1	Rhabdocalyptus dawsoni	-	-	-	-	Bouin Jar	Whole
82-10-23.2	Aphrocallista vastus	-	-	-	-	Bouin Jar	
82-10-24.1	Fanea sp?	✓	✓	✓	✓	Bouin Jar	
82-10-24.2	Acanthascus cf. cactus	✓	✓	✓	✓	Bouin Jar	
82-10-25.1	Aphrocallista vastus	✓	✓	✓	✓	Bouin Jar Bouin vial	
82-10-25.2	Staurocalyptus cf. solomon	✓	✓	⊙	⊙	Bouin vial	
82-10-26.1	Acanthascus cf. platei	✓	✓	✓	✓	Bouin Jar ROH - vial (spic)	
82-10-26.2	? <i>Andresca</i> <i>Hemosclerophriid</i>	✓	✓	✓	⊙	-	
82-10-28.1	Tophan chelifer	-	-	-	-	Form vial	
82-10-28.2	Staurocalyptus	✓	✓	✓	⊙	ROH Jar Bouin Jar	
82-10-28.3	Staurocalyptus	-	-	-	-	ROH Jar	
82-10-28.4	Staurocalyptus	-	-	-	-	Form Jar	
82-10-28.5	Aphrocallista vastus	-	-	-	-	Form Jar	
82-10-28.6	Rhabdocalyptus dawsoni	-	-	-	-	Form Jar	
82-10-28.7	Staurocalyptus	-	-	-	-	ROH Jar	
82-10-28.8	Chonelasma calyx	✓	✓	✓	⊙	Form Jar Bouin Jar	

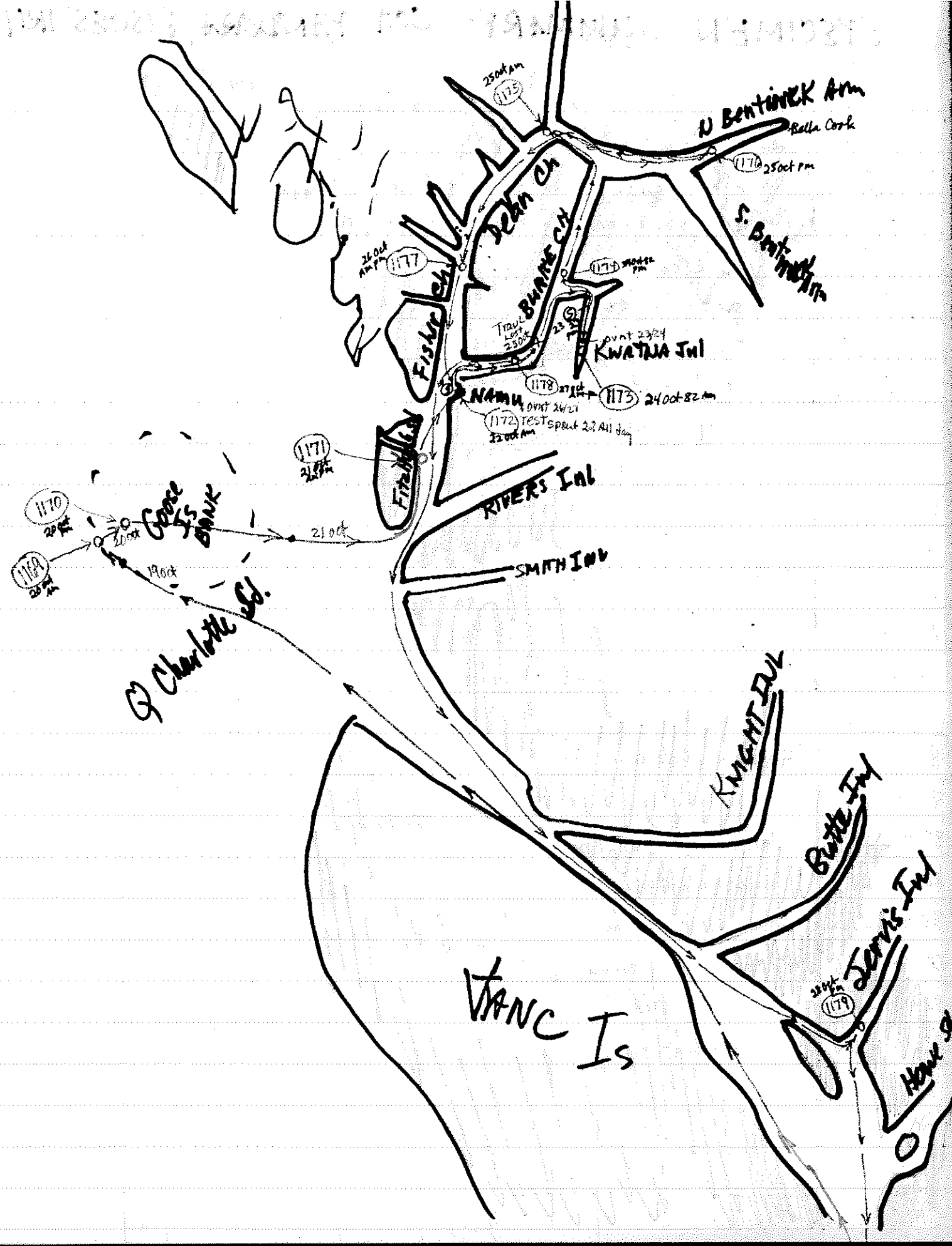
CORALS

SERRATE - SPIN

TERRINS

PANDORA

1941 200000 1:50000 1941 200000 1:50000



3 Nov

Chamris Scaglia showed me his paraffin sections of Phabodoclyptus
Collected 'last month' - Last week of Sept -
Looks like egg production going on



Archaeocyte
near
egg develop?

6 Nov
Sat

Diving at Saanich Inlet ~~to~~ off Senanish Island
w Elizabeth (Betsy) Day - took Univ small truck -
Rented Boat at Brentwood Bay Boat Rental -
Put/Puttled out to Island - Drag anchored to hit
reef - Surted up - int water - started Dive @ 11:55 Am
123° 29.3'W; 48° 35.6'N

Dove down anchor line to 60-

Set anchor + down gentle slope -

Met first Boat sponges at 75'

Large ones - Photos plus X film at 1/4 (3' below

setting) w full Metz flash 1/60 sec @ f8

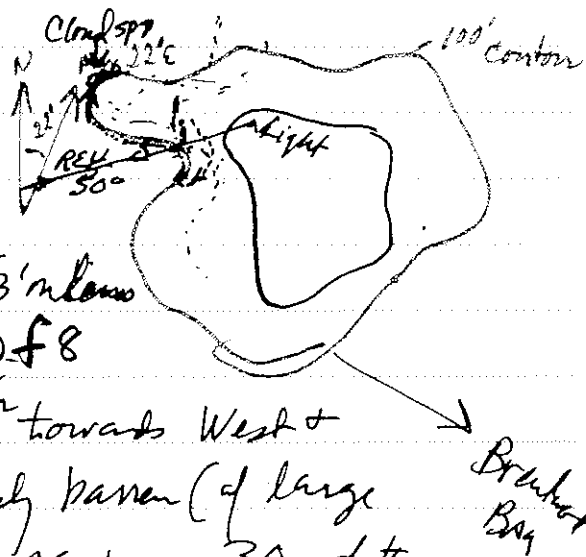
Met many other Boats on 100' contour survey towards West +

North - on red slopes + fairly barren (of large
macrofauna) rocks - Probably saw ~ 30 of these -

-photography all the while - Eventually came upon
Cloud sponges at 100-120' around the far top

of reef to West. Betsy said 50° shot Back from light
but this seems an unlikely reading - make so - Means 230° from light

on "out trip - There I put down the Bucket top
on line as a marker ^{285'} + took off down to



6 Nov 82

to cloud sponges - cut off sample ^{sp. 100'} + showed it
into bag - Betty had collected a large boat sponge
larvae - so we were set + about out of time -
Start up at ~ 12:20 pm - 25 min Dive

Note - both boats + clouds are very fragile in
attachment here - + unlikely to be the best place
to work - may be OK for settling plates however

Dip in Boat Fixed specs.

82-11-6.1 *Aphrocalathes waata* spec ~ 35 cm high -
piece - 1) Fixed ^{2 pcs} glut/osan/coll fresh at 11 pm
2) Fixed several pieces in Bouin minimal
3) Rest of collect piece into cold water bucket
- eventually fixed at home in 90% ROH ~ 8 pm

82-11-6.2 *Rhabdocalathes dawsoni* ~ 30 cm spec
1) Fix 2 pcs glut/osan/coll Fresh ~ 1 pm
2) Fix several pcs in Bouin
3) rest into Bag - Transport + lab + sink
Agarum at U. Vic. for Single.

Kept ~~the~~ 2m Fixed pcs in cold water
at home at night - put into 2nd fix about 5 pm - Rinse in SW
+ began ROH dehydrater ~ 7 pm. ... overnight

Preliminary Observations

Brief Notes on Hexact Anatomy Observations:

1. Aphrocallestes 82-10-22.1

dermal surface w Grid over Canals
 gastral Canals wide Open
 Canals apparently alternate



2. Chonelasma

3. Rhabdocalyptus - 22.2, -22.3, 23.1

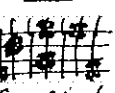
Outer surface - irreg uneven (conulose) + mottled. Veiled

Gastral - Grided - regular - smooth! Not Open

Porous Membr
 GRID? NO

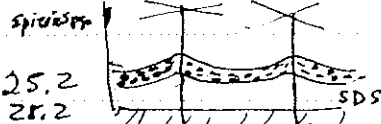


GRID!



Covered Canals

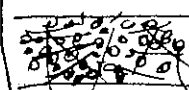
4. Staurocalyptus cf solidus



Outer surface - Porous membrane - Not Real Grid

Gastral Shallow pits + irreg mesh cover

Porous Membr
 Not Grid



Irreg Mesh



Pits Shallow

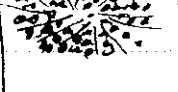
5. Acanthascus ceteris 24.2

Outer surface conulose pored membrane

Gastral - wide open LARGE CANALS



Porous Membr



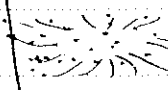
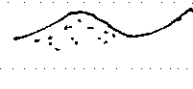
OPEN



6. Acanthascus plateri? 26.1

Outer - conulose w pores apparently closed

Gastral - membrane over shallow pits - like Stauro



Irreg
 GRID

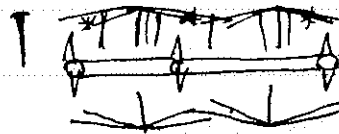


Shallow
 Pits

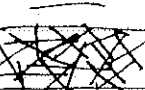
7. Favea cf Occa - 24.1

Outer surface? - ocyphacets + clavals

Gastral? Surface - apparently lacks these



Membrane



Membr



Lab work ~ 19 Nov 82

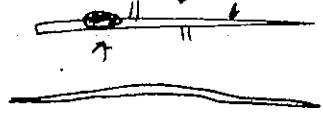


Photos: Plus X Psm + Olympus Microcam
Develop \$76 1:1 8min

Epizoic Spicule-Sponges on Piece (Paraffin Embedded) 1 82-10-25.2

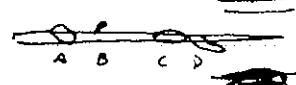
Stauracalyptus

Spic 1 - 31.2 mm long. also forams, hydroid, fungi, heliozoa? Neg Naha



spj @ 3.7mm: Photo ① 1/30 sec 10x obj x 7.5x oc
irreg axes ← Spics ② 1/30 sec 20x 7.5
in cloax

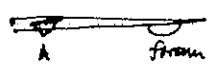
Spic 2 - 20.9 mm long. spj (A) @ 5.2mm ③ 1/30 10x 7.5



spj (B) @ 12.1mm ④ " " "
spj (C) @ 13.7mm ⑤ " " "
spj (D) @ 14.6mm ⑥ " " "

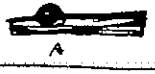
Spics A ⑦ 1/30 20x 7.5 irreg axes
Spics B ⑧ " " " "
Spics C ⑨ " " " "
Spics D ⑩ " " longer.

Spic 3 15.4 mm long. spj A @ 4.4mm ⑪ 1/30 10x 7.5



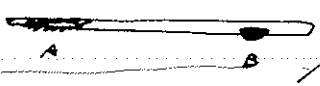
Spicules ⑫ 1/30 20x 7.5 irreg axes

Spic 4 5.6 mm long. spj @ 1mm ⑬ 1/30 10x 7.5



Spicules ⑭ 1/30 20x 7.5 irreg axes

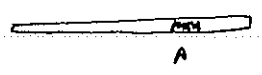
Spic 5 15.1 mm long. spj A parallel? ⑮ 1/30 10x 7.5



spj B @ 1.4mm ⑯ 1/30 10x 7.5 ← chose files

Spics of parallel type? Spics B ⑰ 1/30 20x 7.5 irreg axes

Spic 6 10.0 mm long. spj A @ 2.9mm ⑱ 1/30 10x 7.5x



Spicules A ⑲ 1/30 20x 7.5 long irreg axes.

END

No Spics or spics kept - all digested + disposed.

Neg Fig 9 pg 2

Lab notes - Histol

11 Nov 82 -

Desilicified 82-10-24.1 (3) Bonins Fixed Favrea }
 4% HF 2hrs 82-10-6.2 (3) Bonins Fixed Rhabdoc } φ

Rinsed + dehydrated

12 Nov 82 - Embedded these paraffin via vacuum oven in 2nd wash - only 2 paraff

15 Nov 82. Cut sects of above 24.1 + 6.2 @ 10μ w Merzoni blade - MTD Reg

16 Nov 82 Stained these in Eriochrome cyanin (Chapman) Fontaine Lab

Hydrate → 0.5N HCl 10sec → Eriochrome Cyanin 1 min →
 mount & dehydrate ← Tap water wash 15sec ← 0.5N HCl 10sec

17 Nov.

Dehydrate previously desilicified 82-10-24.1 → Xylene → Embed. 2 par wash
 EM: Fixed 82-10-24.2 No vac.

Desilicified: Bonins fixed pieces of
 ~4% HF 2x1hr

82-10-20.1 Clonelaoma Demospg }
 82-10-20.3 Rhabdo } to Xylene I
 82-10-21.1 Aphroc Demospg }
 82-10-22.1 Aphroc }

18 Nov MTD in Blades 82-10-24.1 EM-HF Favrea
 82-10-24.2 " " Acanth.

Embedded: Bonins HF blades

82-10-20.1 w stud }
 " 22.1 on side } 3 washes Paraffin
 " 20.3 on side } Vac 15mi in Wash #2
 " 21.1 }

19 Nov

A - Cut 24.1 EM-HF 15μ-10μ → MTD sects
 24.2 EM-HF 15μ-10μ → " "

B - Desilicified Bonins Fixed: 82-10-22.3, -25.1, -22.2, -24.2A.

C - Cut + MTD Sects 15μ-10μ of 82-10-20.1, -22.1, -20.3, -21.1.

22 Nov Lab:

- A) Blocks of 82-10-22.2, 22.3, 23.1, 24.2 next at 100% -
took these to embedding No Vac, Some Bubbles - Too Bad
3 washes ~ 1 hr ea
- B) Stained Slides of all soft mtd in Eriochrome cyanin.
mounted in Histoclad (Adams) w Xylene dibutyl.

24 Nov.

- A) Mtd + Cut Paraffin blocks of
BoniHF 82-10-22.2, -22.3, -23.1, 24.2A
- B) Desilicified BoniHF:
82-10-24.2B, -24.2C, -25.1, -25.2 to 95%

25 Nov

- a) Paraffin Embed 82-10-24.2B, -24.2C; -25.1, -25.2
- B) Desilicify 82-10-26.1, -28.2, -28.8, 6.1 HF 1 hr only one wash - No 2nd's

26 Nov

- A) Embed in paraffin 82-10-26.1, -28.2; -28.8; -6.1
- B) Section 24.2B, -24.2C, -25.1, -25.2 25 μ i/15 μ i/10 μ

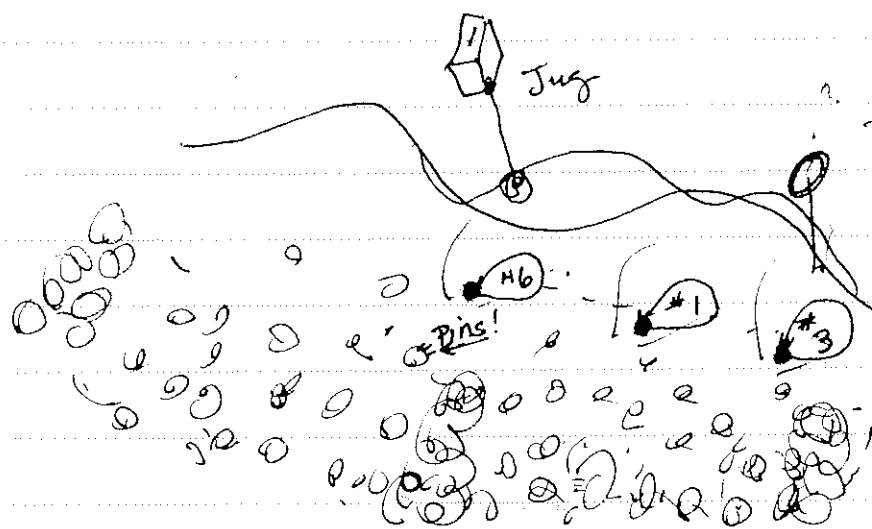
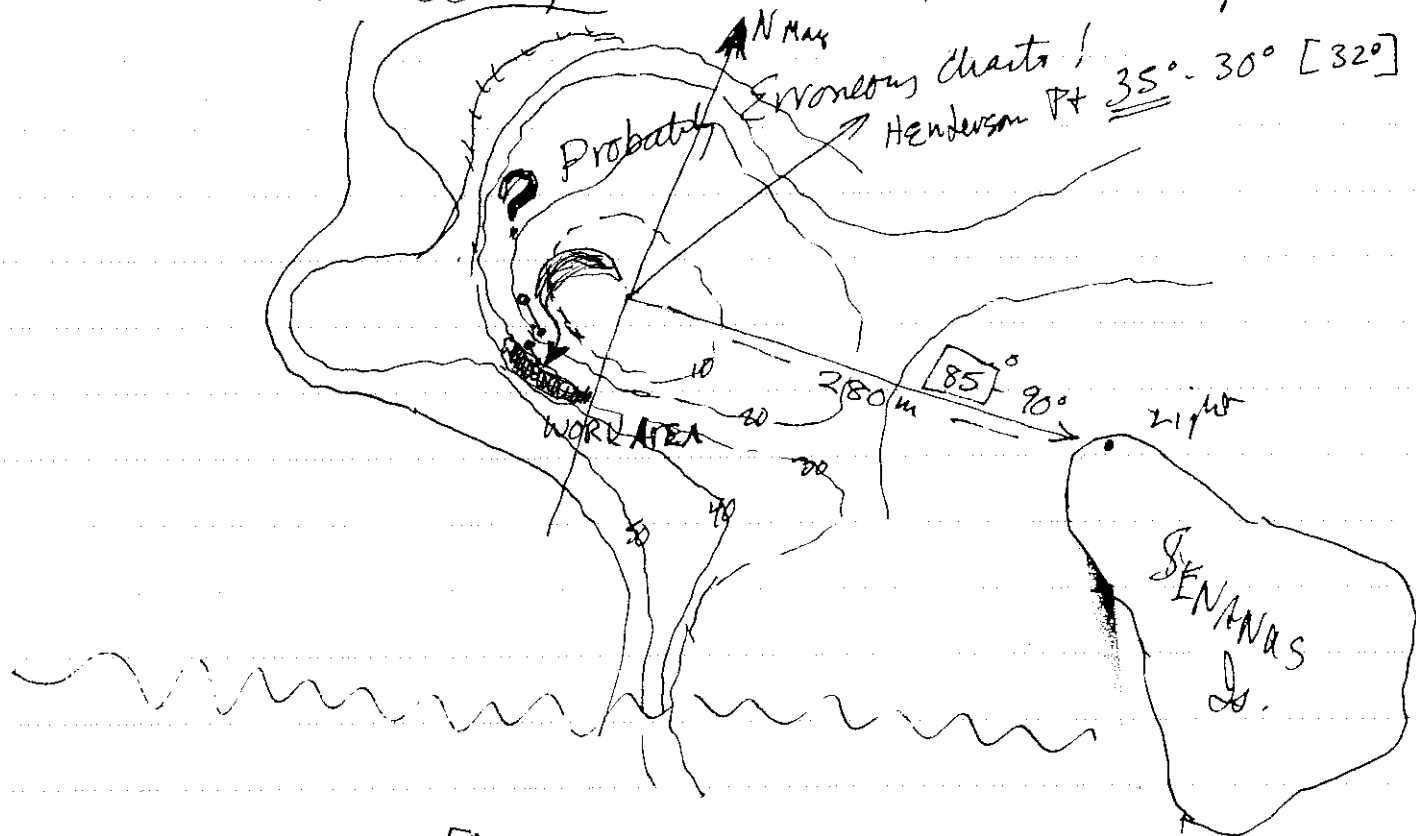
1982

27 Nov.

SCUBA Dive Senanus Is #2
with Betsy Day + Rody ~~Kashiro~~ -
Use Brentwood Boat Rental Boat -

123° 29.3' W
48° 35.6' N

loaded up at ~ 9 am - Dive ~ 10:15 - 10:45 AM.
Max Z 100' for 25 min + 5 min decomp.



Put Rodes on slight Prominences

Put ~ 6 pins (blue into sponge

below #6 - *Aphrocallistes* var

Collected head piece of skel from
this spec + a large rock
from area above it near
mooring of #1 Jug

27 Nov 82

Dive Contd -

Pins went in Fine - May Need to Clip off ends -
Not sure if this will add to damage.

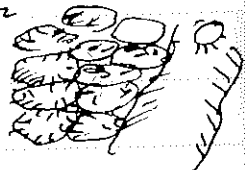
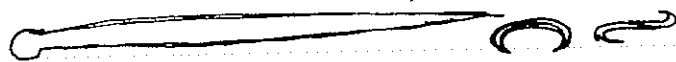
Rock + Skeletons surveyed in evening after keeping in water table

I "Dead" skeleton of Aphrocallista 82-11-27.1

General Descript ~ 8x10 cm piece - Meshes all dead-looking
- dark brown to black in place - small aphrocallista on
it but broken up in Transit (in Bag).

1st look at under scope in lab - Heavy Colonization by
Sponges + some few bryozoa. - looked at these

a) Obvious white patches - w/ spicule plumes over
meshes + Transp. surface canals to oscula



Covers about 20% of surface; Saw also a few small $\frac{1}{2} \times 1$ cm
patches of this spp.

b) Glistening transparent sponge - sunken into meshes
No color - perhaps a dull brown but very transparent -
No obvious spicules - maybe a slime sponge?

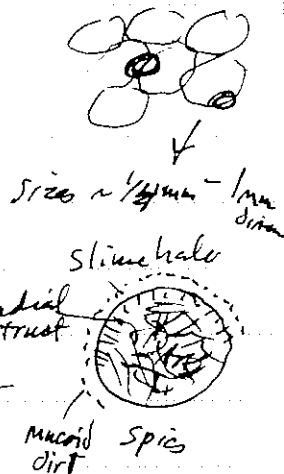
Clear channels in squamulae - spherical -

could have small tabular areas but these could be
foreign - not many

Occupies about 70% of skeleton! - probably in one side
& out the other! - No currents seen.

27th
Cont'd

c) Many small, white balls on surface of mesh -
firmly attached - do not look like fruiting
spores - may be recent larval settlement or
resting post-larval stages - clear slime layer
on outer surface. One $\sim 1/\text{cm}^2$
so guess about 50 on this sponge skeleton -
Not settled on white spg no (a) but
can settle on projecting skel could by (b)



Spiracles

Most of these w irreg ovals $\sim 90\%$

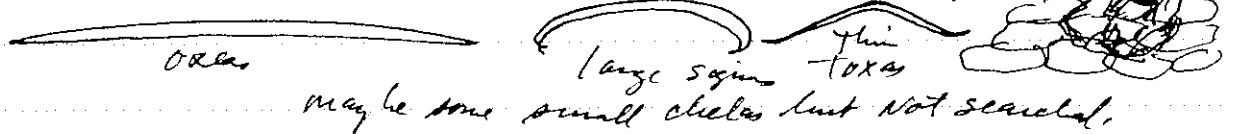
Some few others w reg spiracles but not all opening

Present about a dozen in Bonis w/o acetic.

~ 200 spiracles / ball.

82-11-27.2

d) Pinkish spore projects from surface - Not spreading



e) Many Calcareo - ranging from $\sim 1/2$ mm to 7 mm diam

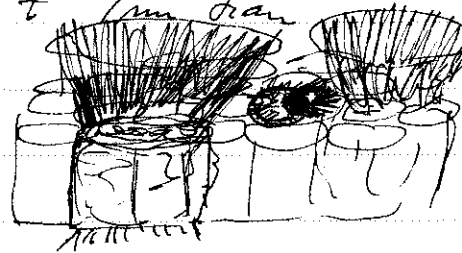
Many just settled on surface but

Several invading mesh of skel!

Occupy several meshes. White

chromosome marked in mesh - ?

one side inhalant - one exhalant - ? - No currents seen.





f) Small firm lump spg $\sim 1/2$ cm diam - 2 hard! oxea xestospy like

g) 2 small projecting pieces - on surface! - oxea - haloboid-like.
May have larvae in base

27 Nov
Cont'd.

Preserved the skel piece in ROH ~ 70% after cutting to fit Jar. Several overgrowth interactions but very subtle!

II Rock - ~ 15 x 18 x 30 cm - too large to survey well w. microscope -

Myriads of small patches sponges - Tan to cream white - ~ 2-3mm diam - some larger flat patches to 15mm diam
a few ascidians - ~~3/4~~ spring sessile Rhabdoclypeus tubes ~ 5mm long - a couple of stalked red forms 
+ a sessile "didemnid" or white spheric sponges - but only one individual - 

Some tube worms + a small cucumber - a couple of Calceus here + there on worm tubes.

Surface of rock "appears" mostly uncolonized BUT -

a) Slime layer pretty widespread ~ 0.5mm thick - 30% of rock
Could be a sponge - did not inspect closely - headache

b) Rest of rock red-looking - scraping appears as a 0.3mm or so thick layer of reddish algal mat in regular cellular array

presumably overlain by a thick

Scyton slime of millions of cells - several cells thick!



So the surface is NOT BARE + not directly available to colonization without some considerable biologic interactions & competition - Rock tried w/o Rinse. → Disposed

30 Nov
1982

wrote letters

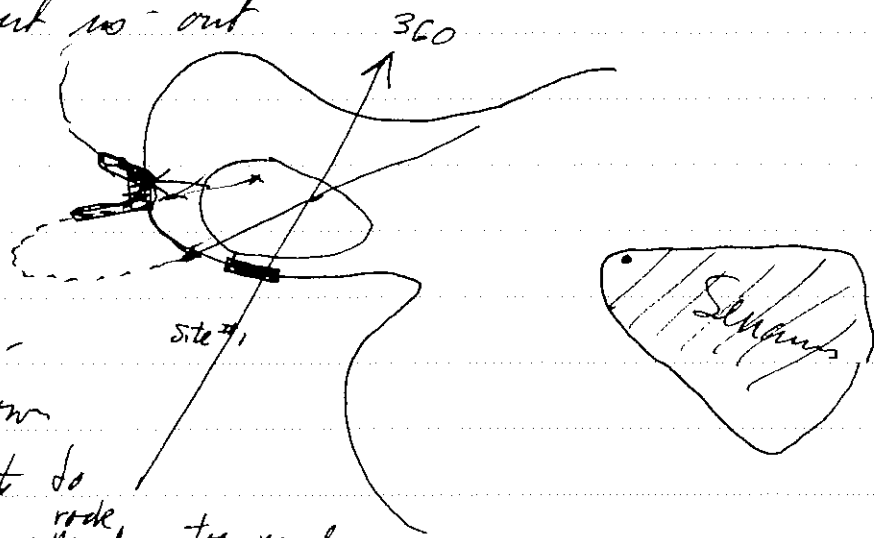
Worked in U Vic Lab getting ready for dive in Pkr.
Picked up Maria Byrne + Chaman Singla to go to
P.O.S. - drove out in the Pontiac Lemmon - got there
~ 12:45 - boat request was for 1 pm - talked to
"Frank" over at Ship Hangar - Laid on the "Nucleus"
for us under pilotage of Steve. Loaded up -
Randy Kashino showed up. Headed out ~ 1:20 -
Down to Senamus Is at ~ 1:50 - not water
+ down (No Anchor) about 2:00 - I think we
were outside seaward of my work site - NO
Buoys seen. When we dove we swam at ~
300° to put us out
on the end.

I still need to
Map out the
entire area
better. Someday -

Anyway took down
too much stuff to do

- Core, pin, photo + ^{rode} make - too much
weight for one. Maria collecting Rhynchocalyptra for Chaman
& I took all my stuff - but wrong place so
I hid one - photoed plus X low Flash close up
short tube at f16/30 - to test exposure.

Also collected a piece of Cyphocallistes for Oamites.
? Some specimens - No Rocks + No Skeb collected.
Saw rope growing through - looks like they grow



Map BW: 9-4

30 Nov

at about 2"/yr as crude estimate
Water very Clean - Lots & lots of Cloud
Sprys here - up to 75' in some places -
good to work but No Burys down!
Lots more sediment here as well -
Some v. large specimens w. single central
osculum - rather lowish porous.

Reasonable (moderate) Numbers
of dead skeletons about.

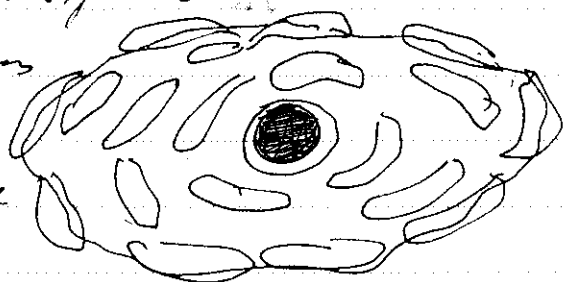
Maria said orange color phase
here also. Single fixed in

90'

brat. I fixed Bonis the 2 pieces -

82-11-30.1 core piece

82-11-30.2 larger jar piece



BW Photo
Nyg Brock 9: P.4

1 Dec - worked in Lab.

- Finished staining the Pisces North specimens!

Filted halson - Ø.22 wheaton - Veg mouth -

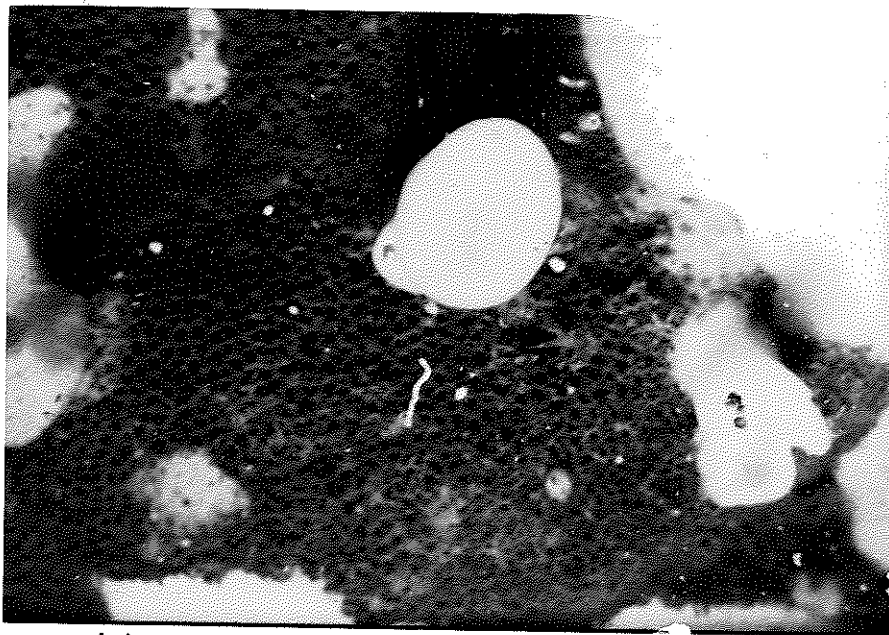
still little globules in it. Must be a fluid-

water?. To see about. - Night @ Garcia Restaurant.

30 Nov

Neg 9:4:515

at
Wa
Spr
g
L
S
K



Cloud
lacs -
town.
-
center

BW photo
Neg Book 9: P.4

Man

Young Aphroc. on Senanus @ 95' 30 Nov 1982
Part Dead Adult. - Field Photo Sannik Inlet.

here also. Single fixed w

prot. I fixed bones the 2 pieces -

82-11-30.1 core piece

82-11-30.2 larger jar piece

1 Dec - worked in Lab

- Finished staining the Procces North specimens!

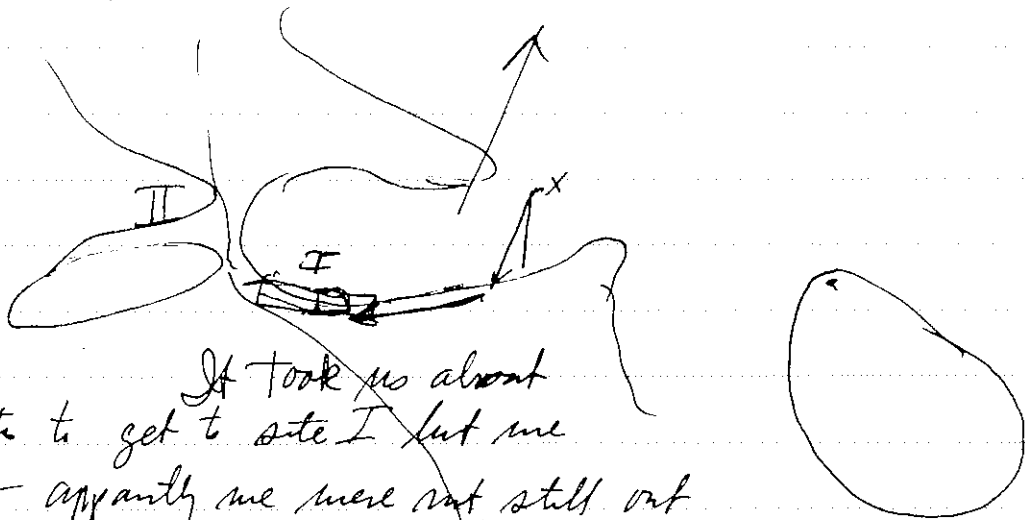
Filled balsam - Ø, 22 wheaton - Neg vault -

still little globules in it. Must be a fluid-

water?. To see about. - Night @ Garcia's Restaurant.

4 Dec

Dive Brentwood Bay w Betsy Day + Randy Koshino
Rent Boat - Motor out around Large Lumber Ship - broken sky -
sunny + fairly calm. Anchored in about right place - but -
Dove - swan south came down on edge of cliff
~~where~~ to east of Site I



It took us about
8 minutes to get to site I but we
got there - apparently we were not still out
far enough - Must get a better fix on the site!
So anyway - started coring + "viating" like mad - pinning w blue tips
Betsy kept slate + record + marked the
specimens - so should be "findable" -

- #1 about 95' - rock
- #2 + 3 next to one another - ~100'
- #4 + 5 - same spec - 105' - large flake broke off - with #4 core

so stuffed it into pouch -

Moved on to others - to get sequence + rocks + depth for
Betsy - In short came up with 8 cores -

4 + 5 same + large piece of (4-5) specimen - put into bag
on the way up - Photographed these in sequence

Ilford FP-4 - 1/30 @ f16 w flash on 1/2 power - Short extra tube
ASA 125

All name to summarize when I get Betsy's Report - Ric'd

Core # Aphroc. vastus

- | | | | | | | |
|-----------|------|---|---|--------------------------------------|--------|--|
| 82-12-4.1 | 1 | - | Rock # 9 | HMR-95'
BD-99' | > 97' | - small - 3 oscula |
| 82-12-4.2 | 2 | - | Rock # 2 | (Below 9-
HMR 100'
BD-108') | > 104' | Large w dead area on left - 2 boat spp above. |
| 82-12-4.3 | 3 | / | | | | |
| 82-12-4.4 | 4 | - | Rock # 11 | Just below #2
HMR 105'
BD 115' | > 110' | Medium size |
| 82-12-4.5 | 5 | / | | | | |
| | | | Flap -- 2 vital Bonis | | | |
| | | | Dried nest | | | |
| 82-12-4.6 | 6 | | Rock # 4 at | HMR 110'
BD-120' | > 115' | Located below Oz Bay # 1 + left of long clump. |
| 82-12-4.7 | 7 | | Rock # 8 at | HMR 105'
BD 118' | > 112' | along rock 4 - a small solitary sponge |
| 82-12-4.8 | 8 | | (not marked - unpinned?) - collected one only above Rock # 8 ~ 105' | | | |
| 82-12-4.9 | (9) | | } Pieces of flap f(4-5) → 10 | | | |
| | (10) | | | | | |

On return to boat - fixed all in Bonis + 2 sets of pieces of the flap in 9 + 10. - Remnants dried in bag at home

5 Dec Washed these out Sunday in H₂O for ~ 1 hr + then up to RCHs 50-95.

Cut all cores in half + pcs of '9 + 10' for histology.

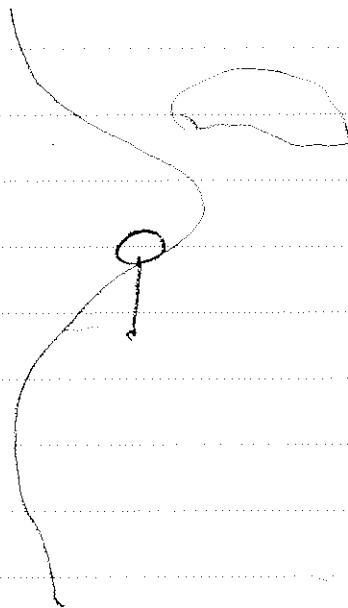
Nego 9:5 top

~~82-12-44 (Case I)~~

← Photos Results - FP-4 was not advanced evenly + ~~not~~
shutter apparently did not open evenly! - To check camera!
The Exposure was about like Plus X - a bit dark - f22
would have been better!

From the supposed 1234567 photos - I got 6 impressions
+ the light leak on My error of opening before rewind
Killed 4 of those or 5? - So only 1 or 2 are usable +
not sure which is which!

Hiatus - Xmas Break - Oakland/SF area -



6 Jan 83 Prep for Cruise Jan

a) Sample tubing - tygon $\frac{1}{8}$ " - Washed & tested
Residual volume - $\sim 30 \text{ ml} / 12 \text{ ft} \sim \frac{30}{12} = \underline{\underline{2\frac{1}{2} \text{ ml/ft.}}}$

b) Diafine Developer

Exposure: Plus X ~~400~~ ASA

Tri X 1600 ASA

Jiford FP4 320 ASA

Develop: @ 70-85°F - Recomb $\frac{4}{5}$ min each (3 min)

ie Developer A - 4 min - Gentle Agitation
Drain

Strat & Developer B - 4 min " "

Rinse H₂O 3x

Fix - Wash - Dry.

12 Jan 83
Wed

Checkpoint Dive in AM by Sub crew - in Dark Cave - !
She still has some problems - but Presumably OK for Diving

Dive: 12 Jan 83 Pisces # 1229
#1 Pilot: John Oszost Observer: HM Reiswig (Alone)

Loc - Site # 2: Foley Head - 49°48.3'N 123°59.0'W Z=600
to Bottom

Dive Log: Enter water 1402 hrs

F.W. layer to ~ 16 m away on way down (entrained)
@ 30m T° = 6.2°C ± 0.5° [5m on way up!]

Visibil ~ 5m Not Bottom!

Drop to 450m + time + Cliff

Nikon w 24mm wide angle lens - 1/4000 FP-4 film - rate 320 or
ASA
to use on Flash
Diapir.

Bottom ~ 450m on Cliff face

440 m lots of skeletons of Hexarts - rock wall -

elongate Rhabdocalypis
Boat sponges - first 5 or 6, flash no go at f8...

Staurocalypus

425m Aphrocalypus - ~ 6-7 small Staurocalypus

Small white specs on rocks - some as young Aphrocalypus?

a few Galatheid crabs - Brachyurids - Laqueus common, small gorgonias - pale, white,

Shrimp, Spongy Corals, (Still not working Flash.)

More dead skeletons - Aphrocalypus & Chelosoma - think perhaps a million years?

Very long boat sps (R. dawsoni). Flash went. Small Aphrocalypus & ~ 2' long
Some ~ 1cm long

400m - Talus pile of Seals or fallen basalt Rocks ~ 1-2 ft + lots of Spongy skeletons below.

Black starfish, Rhabdocalypus overhang. Flash missed;

Flash worked again

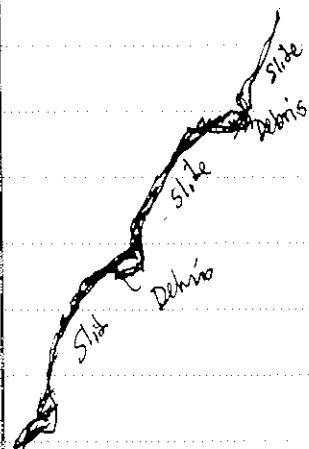
380m Giant Anemone - Dead sponge peels still - Flash worked again - Frame #8

~~380~~

Change to f11 - large mass of skelet - pop-bottle type

Some still in wall in place - wheat seed pods on slope - what??

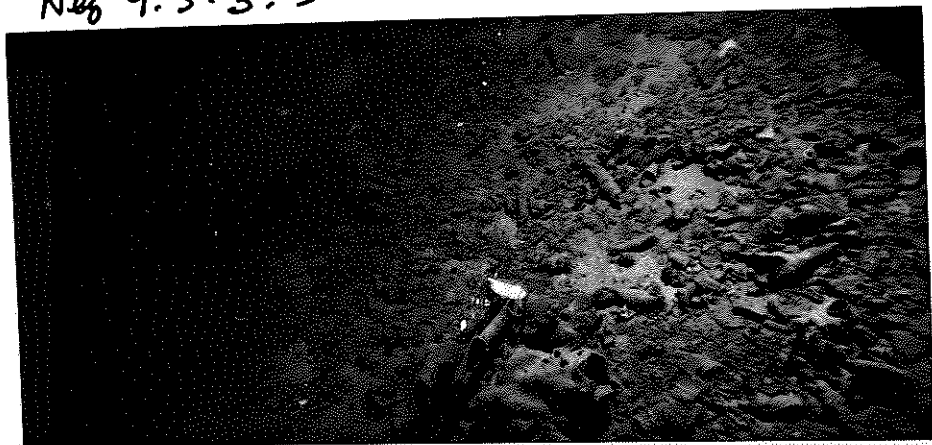
Boat sponges - clean + dirty - Rhabdocalypus. Flatfish Aphrocalypus



12 Jan 83 dtd
Tried

370m Still at f11 - still skeleton piles wherever they can accumulate
Stauract...

Neg 9:5:3:3



in frame # 11
stars, small mostly white eggs

still at f11

Indo calypso common 370m

Stauractylis & Rhadoc m wall 330m ^{F11}

Neg 9:5:3:5 (6)



Now switch to f16.

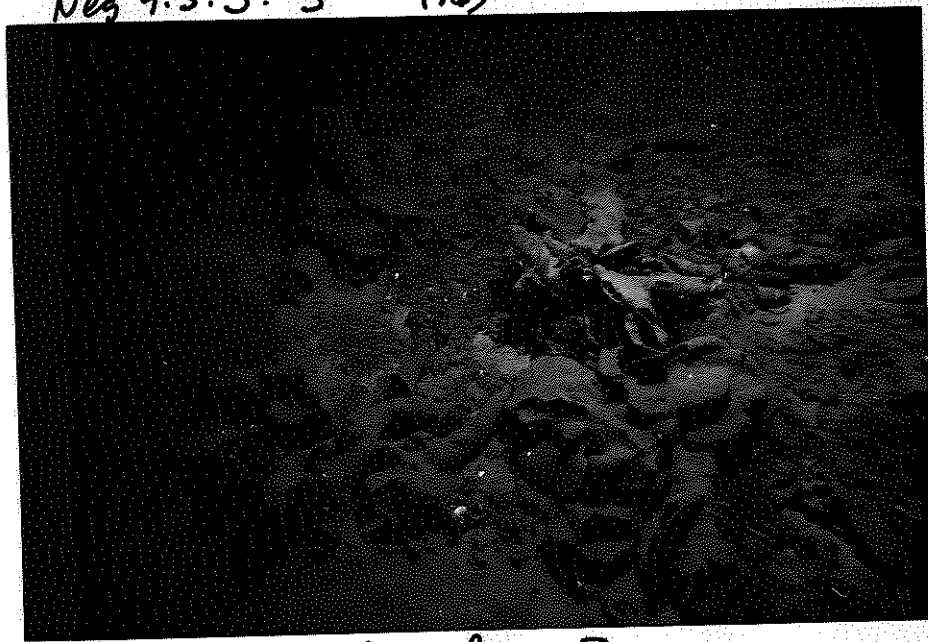
Chondasma, Acanthascen ^{smooth!} - maybe
No spics Platei

f16.

+ f16 one!

+ Staurac, Acanthascen - smooth wall
A. Platei

Neg 9:5:5:5 (16)



only light purple!

eggs still f14

one line in amongst heads -

- still mostly lead eggs -
of sponge skeletons

T. N. Kan Rad

with EKT160 target 1/30 f4 Avian
not seen to be Chondasma?

Jervis Islet Pisces Dive 1229

12 Jan 1983

170 m

400 m
scummosus corals - supray purple

170 m

photo rubble - EKT 160

12 Jan 83 old
Wed

370m Still at #11 - still skeleton piles wherever they can accumulate

Staurocalyptis

Staurocalyptis on skeleton - photo frame # 11

Brachiopods, gattalids, small corals, small Lucy's white sponges

Solitary corals - pretty sparse - $\sim 1/m^2$

356m - another photo of skeleton rubble - still at #11

line Aphrocalyx falls off; Rhabdocalyptis common 340m

340 Photo Rubble at 340m #11 } ~~Photo~~ Staurocalyptis & Rhabdo on wall 330m ^{F11}

310 Photo 310m Dead Aphrocalyx

288 - Photo - Dead Sponges Affall #11 ; Now Switch to #16.

260 - Richer sponge fauna - Stauro, Chondasma, Acanthascus - smooth! ^{maybe}
Photo - Start ^NBlack frame _{No spics Platei}

Then several in flash failed - smooth off.

Photo Brachiopod wall - probably 1st #16 one!

250 Still rubble - lots of small Aphroc. & Stauroc., Acanthascus - smooth! _{A. Platei}

236m - Small Acanthascus ^{cactus} ~~platei~~ clearly light purple!

Photo frame # 30 - mixture of sponges still #14

225 Photo frame # 31 -

211m Photo - rubble hanging on cliff at same line in amongst leads -

Aphroc., Staurocalyptis

200m - lots of sponges, Anemones, etc - still mostly dead sponges -

Small brachiopods on individuals of sponge skeletons

200m Photo #16 Brachiopods & Sponges

200m Corqin for photo - End of Nikon Roll

185m Still not into live sponges Start Muntz Ekt 160 Target 1/30 f4 Avian

- Most still dead - a few alive - most seem to be Chondasma?

178m Acanthascus cactus - slightly purple

170m Photo rubble - Ekt 160

color

12 JAN 83

Cahn Slide
3333-3343

83-1-12.1
Bount preserved
-Roll

Week

155 m
150 m

Collected a pink sponge
Leave 15:56 Bottom

wall - left in claw.

Took ~ 12 slides on Minolta EKT
avail.

Surface @ 16:06
1902

END Log.

2:02

No water samples - No ledges!

13 JAN 83

~~THURS~~
THURS.

Up at ~ 8 am - Steaming up to Saumarez Bluff
for Int Dive [site # 4] + took 2 photos of
Scaevola on Minolta in early AM - Tungsten film
but that's all that's in right now
to Finish EKT 160 roll Minolta (#1) on Dive this
AM.

↓ Dive here to Log

After Dive ~ 1 pm took scenery ^{3 photos} on EKT 160 Tungsten
on Nikon (Roll 2) to Dive 5 morning dive from
from Alt Dive @ Vancouver Bay

In slides
looks marine to me

3 Slides in lab EKT

Nrs: 3344
3345
3346

83-1-12.1

No Photo in Situ

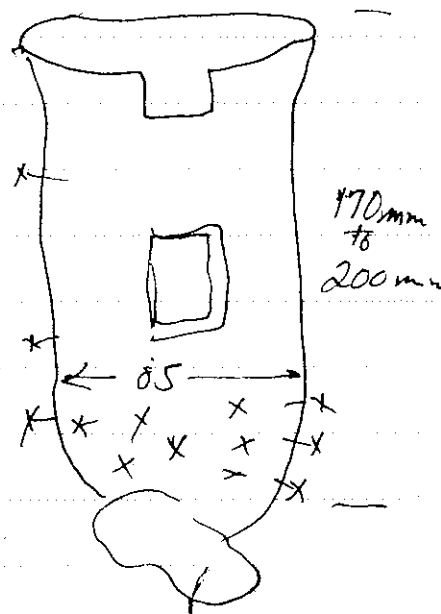
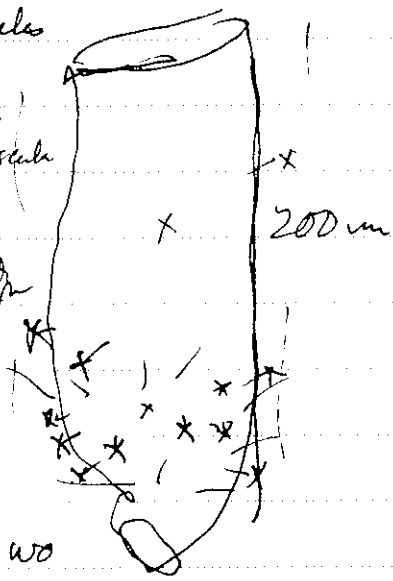
Collected in Claw at m just before leaving bottom - I did not get to see it before collection - "pinkish" from John's description. Remained in Claw (Pre man) till in hanger - dropped out into the water of tray - but too late - bubbled up.

In Lab cut 2 pieces off for Bouin's Fix anyway.

3 photos taken in Lab w. Electr Flash on EKT 160 [Trugster] film - ?? will it come out ?? ~ 1 foot but flash at ~ 4' use f22 (Full Power)

IN LAB

No real hint of Corals
Atrial wall smooth,
slightly Pitted - but no wide open orals
a few Punctata as
rare punctata + 170µ
three mostly Basal



Wall ~ 6-8 µm thick

Very difficult to cut w/o CRUSHING! - Even new Razor just pushes.

Discoactines ~ 200µ

Dermals - punctactines, a few Stenactes

∴ Probably = Acanthascus platei ?

Specs: 2 pieces Bouin's Fixed! - small Jar
Remainder ROH Fixed in Jar Lg - cut up 4 pcs → 2 Jars in 2nd ROH on 26th Jar



13 Jan 83

Thurs
Dive #2

Dive: Pisces Dive #1231 - Jarvis Inlet

Pilot Bob Taylor - Observer H. Reising

Site: Saumarez Bluff · 49°52.7'N 123°53.9'W Int water 0901 Mm

09:58 - 658 m - Soft Mud but firm-looking bottom

Shrimp comm - ~ 1 1/2" size pink; no current;

Move to cliff up mud rise - Sponge skeletons on mud slope pretty common - certainly contribute to mid bottom sediments -

less on the slope as it becomes steeper. Probably shrimps move at intervals - carries out off slope

622 Rock face at ~ 622 m: Brachiopods, small corals, gorgonian, algaloid crabs - pretty sparse. Few sponges!

593 - small octopus 593 m - video try - stirred up

575 m Photo EKT - roll ^{crit} 160 minutes - hexact sponge sponges skeletons on platforms

560 m Tubular sponge skeleton hanging in place on wall Acartusson platei on wall - lots of wall hangings - dead. Couple of more photos

* **545m** Photos of EKT 160 minutes continuous... 1000w on/off. 1/30 f4 - f2 8.8°C Collected 1st skeleton

535 m 2 photos of lead spz masses

525 m - "brain encrusting sponges", Brachia, rare gattrellid. White spots = small sponges. Some solitary corals, live

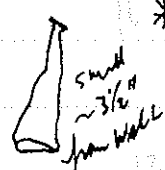
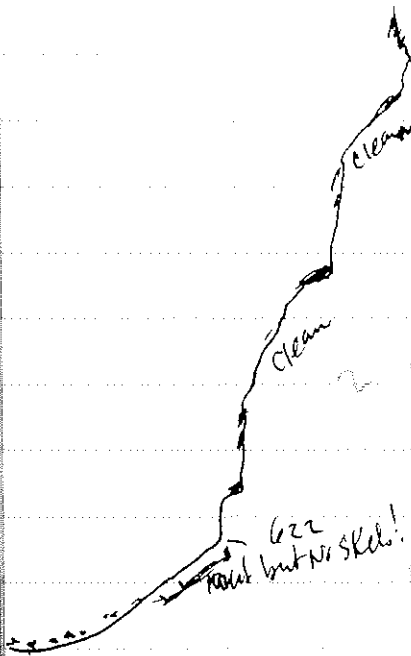
490 m - Jumbo skeletons on Platform

445 m - Clean sloping place

438 m - Photo White pendent spz (w hole)

* **428 m** - Grabbed a lead trumpet sponge of P. ... - Sweep mud

419. Rhynchonellid - 1st m - 1 1/3 ft long



3355-56

3340

3341-42

small white sponge #1231-1-31

13 Jan 83
Thurs

Still lots of rubble + dead spgs

398m Staurocalyptra getting more common. - Acaethesia platei, R. davisii -v8

390m A. cactus, R. davisii, Several large

380m - Another octopus, anura, R. d. Staurocalyptra

369m Aphrocalyptra - more live stuff

350m - photos of live stuff - Georgina coming on - line of them.

340m Lots of dead sponges + blue white basket spgs - Acaethesia species
+ Staurocalyptra + R. d.; Photos taken

320m Overhangs common - lots of stuff hanging off
Very pendant spgs! Video short on - huge white bands

Several photographs still going - incredible Nrs of pendant spgs

320 - Rocks pretty broken - Sloping away - Still steep

Large Georgina + Nidobryx under it (Tritonia?)

Several large bases of Georgina.

300m Hit overhang again - but not a lot of stuff

280m - Small fuzzy patches on rocks - creeping alcyonaria -
Chlorodriada? -

275m - Still hauser rock - not much sponge here

260m - Sponges getting abundant again - white pendant ones

250m - Leave cliff wall - also Aphrocalyptra present but still
Small ones

200m Thin crusty filmy blue sponges - left patches
Primrose sponges - + more & more white pendant sponges.

Video stops at ~ 062 ft.

On Surface at 11:25 - Retreind at 11:35 pm

1135
901
234

Finished Muella EKT Roll 1; Start Roll 2 EKT 160 in Nikon.



3376



13 Jan 83
Thurs

Spent Lunch washing samples & preparing pieces

Aborted Dive #3

PM - Pisces Dive Vanguard Bay ~ 240 m Jew's Inlet ^{near}
Pisces Dive # 1232.


Leave Surface 1401 Pilot Bob Taylor.

Aborted due to Thruster failure - No Samples
No Photos

Got to ~ 35 m & back up. - & off to Howe Isd.

Spent Rest of Aft washing up samples - Start trip for Howe Isd.

Specs:

83-1-13.1 - Small ? Hexact? on a Dead Base collected at
428 m -  - Fixed on piece of base w/ Boris
after wash up a bit in S.W. Z = 429 m

83-1-13.2 - 2 more small spp on base piece - Boris Fixed
I'd not even looked at! Vial # Z = 429 m

83-1-13.3 Yellow sulfur sponge on base - Fixed Boris Vial
Z = 429 m

83-1-13.4 Several 3 misc small spp on dead Base - Boris Fixed Vial
Z = 429 m

83-1-13.5 Several pieces of Yellow spp in Formalin - turned purple by
supper time ~ 2 hrs - Jar.

Misc Affal - Dive 1231 - Galatheid-cue, worm, etc - Form Fix Jar.

→ One

1401
1232

83-1-13.6

Disc 1231 Spicule Matt - Washed Garbage of Scoop at 428m
mostly Spicules - Form Fix Jtr.

83-1-13.7 2 Jars Pickled remnants of scoop Graveyard after medium Wash ^{Form Fix}

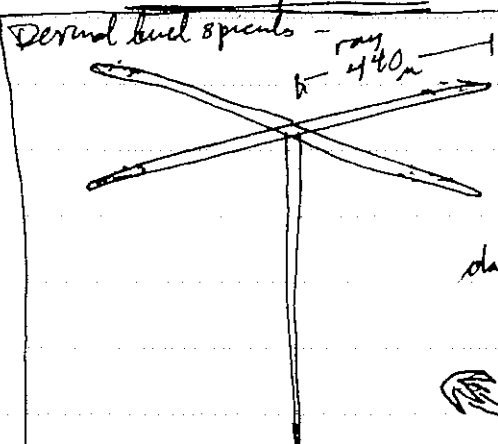
Plus an Assortment of Pcs to Be Dried -
Only Semi Washed + Pickled + Put into Plastic Bags! :

83-1-13.8

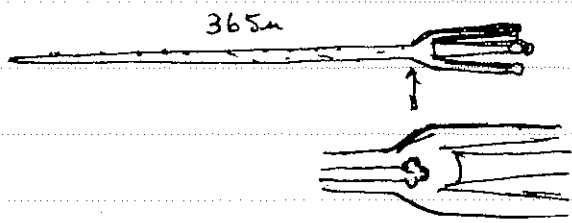
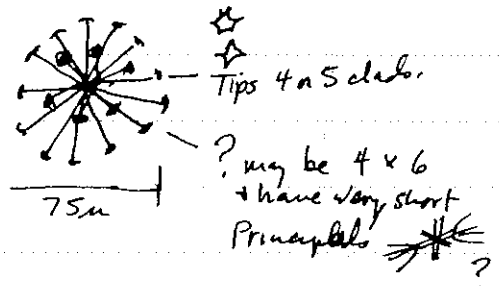
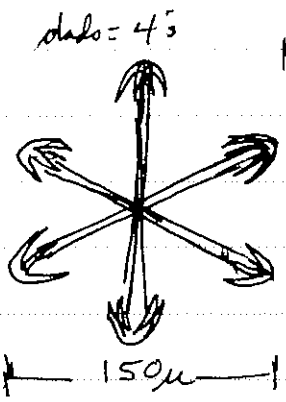
about 20 bags plastic of variously labelled + dried
affal of Graveyard heap - bases + etc.

Leucopsacas scoliodocus Ijima 1903

from a pinch
of dermal
layer



Pentastria



ID?
Maybe Eurete? Not the one
in Kottun

Maybe a Canthophasia -
not those is Schuchz 1899
Althaus

to see the type of inner
skeleton if present after
good photos of specimen

14 Jan 83
Dive #
Fri

Ran to

Down out of Snug Harbour in late Nite (early am ~ 200 hrs)
+ ran around to S of Hamilton Is.

In morning ran back to Horseshoe bay to pick up Bill Austin.

Bill taken on ~ 8:45 - leave for Dive at Boyers Is.

Dive Pisces #1233 - Boyer Is. 49°25.5' N 123°15.3' W.

Pilot: Keith Shepard; Obs: H. M. Reisinger & Bill Austin

Enter water 9:33 AM - Run 315° True to Shore as course

Bottom 9:50 AM 9.1°C Z=206m

Visib 7-8 m - little current - Chaetognaths over mud bottom -

Shrimps, Ceratactis, Galatheids, couple of large crabs scurrying around.

200m - Shrimp Ceratactis

188m - nemertea collected maybe

Dive Interruption - Starbuck's throttle controller defective - Leave boat at 10:00 AM 186m

Surface - switch controller while wait in the ugly boat. ~ 15 mins or less.

Return to dive - Return to bottom:

Aegina - medusa - swims BKwd

Lensia - Large Orange-dot siphonophore

Z 150m at 10:58 - Shrimp - Ceratactis + occas Aureum + Red Nemertea

130 - 1st Hexact Skeleton + Brach Shells - Come to small rock wall

w Brachs mostly + several dead + falling off sppg skeletons Not large!

125m - White fluffy Fophon - more Ceratactis on mud slope again.

100m - Rock w small spp on it - pebble size - Not collected.

Iopha + Antros metrisis - Giant Rhabdocyptus on bottom - polychaete.

Aphrocalathus small (~3") shrimp!

87 m Tried - Collecting small Aphrocalathus - (Apparently Not
recovered)

14 Jan 83
Fri Cont'd

77m Photo Aphrocalappa on rocks at ... Nikon 244

Photo ~ 4 or 5 photos total

74m - up onto shoulder of rise - Cercarial dermatitis -
& more small fish - Photographed a few Cerata
pore Sophon here

65m Sample collected Boulder fauna (Bill Austin took to Khoyoten preserved)
Rosseid seen during collection

83-1-14-1

56m Sampled Glass Bottles fauna Time = 11:25 am (Mapped Bottle
Later in lab)

48m Aphrocalappa common on boulder field - still

47m Rhabdocalappa - good slopes

Lots of dead Aphrocalappa & quite a few young ones on
Boulders + Rise area - ridge + gullies

Very large Rhabdocalappa seen

17m -

11:37 beane Bottom

Completed Dive

11:37
9:33
2:04

Lunch:

P.M. Dive - Pisces # 1234 ←

Dive
5

Loc: S. End of Gambier Is. Halcat Bay - Halcat Pt

Pilot: K. Shepherd, Obs: Bill Austin & H. Reising

Enter water 13:02 - Course 020° to coast -

Descent begins 13:03 ~ 2:203 m arrival at 13:21

Soft mud no lots of Bark & other vegetation debris -

14 Jan 83
Cont.
Fri

Typical Bottom - Shrimp, Ceratohids, Ponds, Crabs, crabs, worms

- * 188m Sampled another nematode worm. @ 13:29
- 175 a Sablefish - Lots of parastichops on them - why?
- 167m - quite a few pink nematodes - galatheids - large skate
- 132m - photo of a sunken log w teredos all over it
- 108m - Still some bottom - Several Metridian anemones
a few corals - rather large galatheids -
- 95m - log w huge Metridian anemones
- 82m Photo anemone
- 62m first Rhabdocalyx & small ^{3"} Aphrocalyx on rock
- * 59m - Rock sampled Collected - terelibratulus. No cells
- 57m - white patches on rocks - white encrusting sponges or bryozoans
Parastichops
rocks like rag-like Rhabdocalyx on rocks -
- 47.5m Photographed - has top partial & mussels living in it
Not a great place for sponges was from #20 on Nikon
ERT 160 film roll 2
Laguncula, it appears, on rock here w Terelibratulus

Left Bottom (low voltage) at 228m

Recovery at 2:42 pm - on board Peter.

Steamed up to Port Greenes to spend the Night

Spent Note going over bottle fauna & spp collected.

1242
1302
140

15 JAN 83

Sat.

UP for BKpt - Steamed across Howe sd to East shore for final Dive - ~ 9:30 expected.

Pisces Dive # 1235 East Wall Howe Sound 49°29.2'N 123°15.2'W

Pilot Al Whitcomb: Observers H. M. Reisiwig & Bill Austin.

Water Enters 9:08; T = 5.2°C

Bottom 9:28 am run at 090° - due East. 250 m depth.

Virtually No or little current. Soft Bottom w very few holes ~ 26cm-3cm

Visib ~ 3 meters - few shrimp, pink nemertean, Occas ^{Knobel Orange} large Anemone

few ceriantbirds, Crab occas. Conce & Tanner, a few ^{various types} fish and

snails & snail tracks. Plankton: copepods, chaetognaths, Tropocyclops.

Dead? hexact ^{Rhabdocalyptus} outside mud - away from anything - strange

encountered 2 logs on bottom 234m - Galatheid in it

228m - start up steep mud slope

deep Gully before getting to Rock Boulder Pile

232m Aphrocallista on ^{Metridium} Anemone-covered rocks Boulder.

brachiopod (common!) - ~~many~~

226m 1/2 photo taken on Boulder pile - [EXT-2 roll]

V. small Rhabdocalyptus + 1/2 small Aphrocallista whole

Resembly healthy but not the best shape

83-1-15.1 * 226m Sample collected - Aphrocallista - 3 photos of

stripling procedure - claw + etc

Galatheid - small solitary crabs - ^{Metridium} Anemone

Brachiopod on rock edges Terichatulinia. O

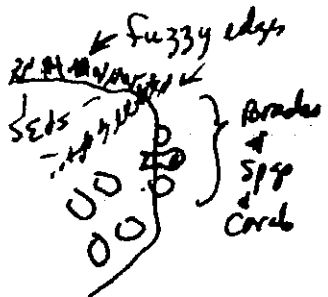
Start TriX - 1/30 - f8 on boulder pile (Minimal)

w/ sunny lito - visibility improving - 4-5m

1st one of Galatheid



15 Jan 83



216 m - ^{frame 2} TriX photo small aphrocallites
 212 m 3rd ^{TriX no 7} - long Aphrocallites hanging ft a Boulder face
 Some amt of dead skels - about as many as alive.
 Pink anemones - small; Rocks have fuzzy edges
 Long dead Aphroc. skel ~ 1 1/2' long - rocks here for a reasonable time - No drill holes seen -

210m Rhubrocalyptus

Starfish collected here - probably feeding on Metridium
 ? Leptasterias?

207m Acanthascus or Stauracalyptus -  Long spines!

Probably Acanthascus + large "open" canals - !
 Best guess A. cactus - slightly purple tinge
 No photo of it.

Bill Austin
got it

201m Photo dead skel Aphroc. - several around here.
 Small anemones now 2 types - white + pink!

194m - many small aphrocallites on rocks - heavy sedimentation here - lots of brachiopods - Laguncula mostly - Rocks becoming gravel size

185m - sheer wall w/ brachiopods, aphrocallites small

177m + photo ^{Rafinesquina} sublepta - med Aphrocallites -
 dead skels on wall. Photo in EKT 2 roll #2
 frame #34.

175m Photo Wall w/ line + dead Aphrocallites on it
 Back to B+W Camera - TriX - some small stout
 Galatheids, P. + W. anemone, dead Aphroc skels
 Brachiopods, serpulids (large brown tubes), Starfish

15 Jan 83

171m Photo Tri X Small solitary corals, Laqueus,
dead Aphrocalites w small 'buds' on site - small ones? - New?

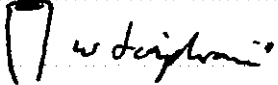
83-1-15.2 * 167m Small Rock collected w 3 small sponges on it - turned out to be
a piece of dead Aphro skel - but caught OK!

Photo tri X - small Aphros dead + small Leis one next to it. ^{little} _{sails}


83-1-15.3 * 157m Sampled white boat spg sitting upright -
v. little veil - smooth surface + mostly clean of
mud.

156m Trix film - Claw collecting Aphrocalites - could not get!

155m Several small scattered small line Aphros + equal nos
of dead skels - Sediments pretty low.

Aphros w typical oscula edges 

single oscula - several discs w

Aphros young in clear 'cloud' form seen 
when young - ovoid oscula

Rocks still all seem to have been flashed down
from road bed excavation.

B Another small 'clean' boat sponge - Sphaerocalyx?
Still lots of Brachyids

148m Acanthaster plateri? at Bill took photo - pendant.

143m Acanthaster cactus - rosy color - Bill says Not cactus

133m - Aphrocalites small common + equal No of skel

Sea urchin, galatheid, Laqueus, Scopulis

122m - photo Ekt roll Aphrocalites next to pink Amure.
w 1000 well built on. 1/30 f 2.8 Frame 35 of Roll 2

15 JAN '83

120m - 2 photos on trix Minolta.

115am - Rhabdocalyptus medium size

112m ^{Collected} White sponge lying on substrate ^{Collected!}

(turned purple on air Exposure)

Long spicules out oscular edge - distinct from previous collected spec



83-1-15.4

98m -

Fish school beginning to get thick! - Run into cliff - stir up bottom. Video of Anemone eating fish

Dogfish eats fish here - Video of fishes.

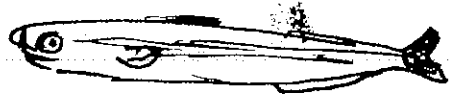
Small silver fingerling - 3-4" long

Lights out & on etc

Trying to avoid them impossible

blocking out lights when near cliff.

Fishing Rope - seen out port side - inoperable but fish school prevented us from seeing it & avoiding it - got hung up in it.



Flotation
around
off on
cliff face

83m

12:28 pm - on way up in Crab trap on deck -

Diver request to clear the ~~water~~ forward line

12:47 retrieval into Powder. - End Dive

12:47
9:08
3:39
6.5

Rushed and getting set to blend at Horseshoe Bay

Brian Pickled pos of all 3 main sponges

a) Aphrocell.

b) White tube - Staurocalyptus?

c) Purplish flaring tube - featherman? - Purple blotches on exposure surface - Air? - F.W.?

d) Brown fringed small sponge on shell.

15 Jan '83

Rest of Specs:

- a) Aphroc - thrown out
- b) Stauro white - into Bag - to return to Victoria for drying
- c) Aphrothase Purple " " " " " " " " for dry w

Rushed our put-away process - + offloaded at ~ 2 pm
 at Hesse Bay - ferry to Nannings w Bill Austin
 Done Jan to Victoria. Home ~ 6:30

Dive Summary - 1235

SPECS.

83-1-15.1

^{226m} Aphroc. vastus → ^{Small Jar.} Bouis Fix - rest disposed

83-1-15.2

^{167m} 3 white spp on Aphroc ~~skel~~ Fix

83-1-15.3

^{157m} Barge Veiled Boat - ? Staurocalyptus - Bouis Fix small Jr Pieces
Remains - FW rinse + Dry.

83-1-15.4

^{112m} Large white (turn purple) sponge - Bouis fix (small jar) Pieces
Remains FW Rinse → Dry..

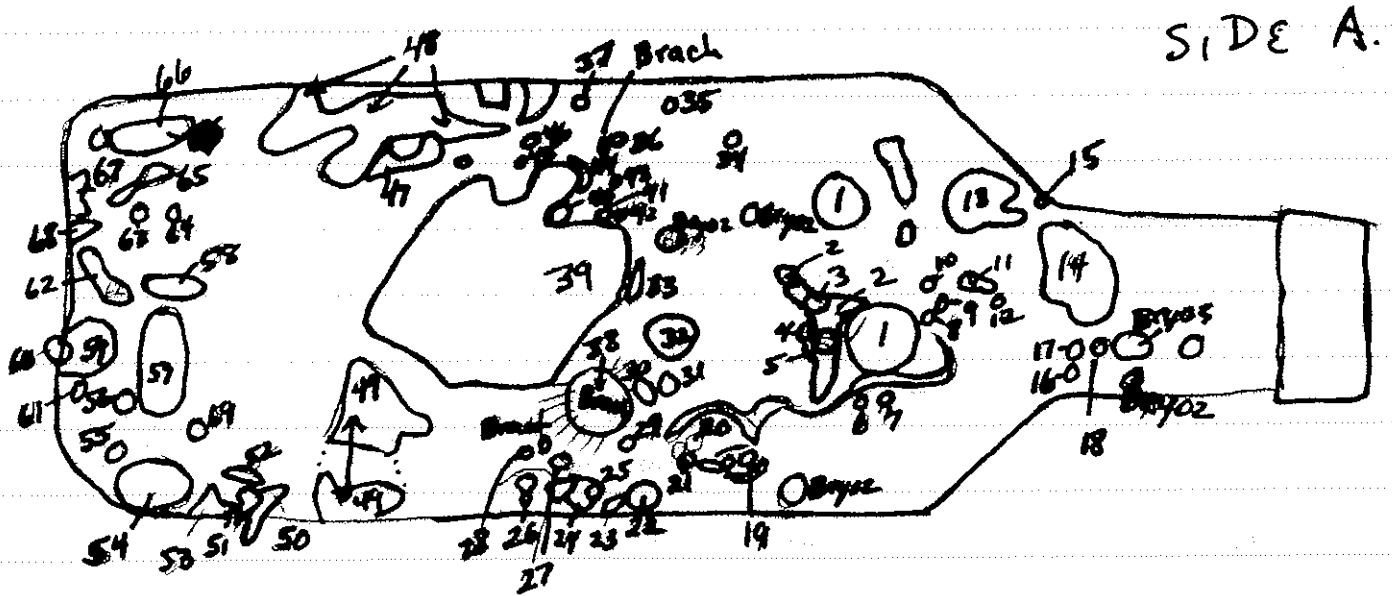
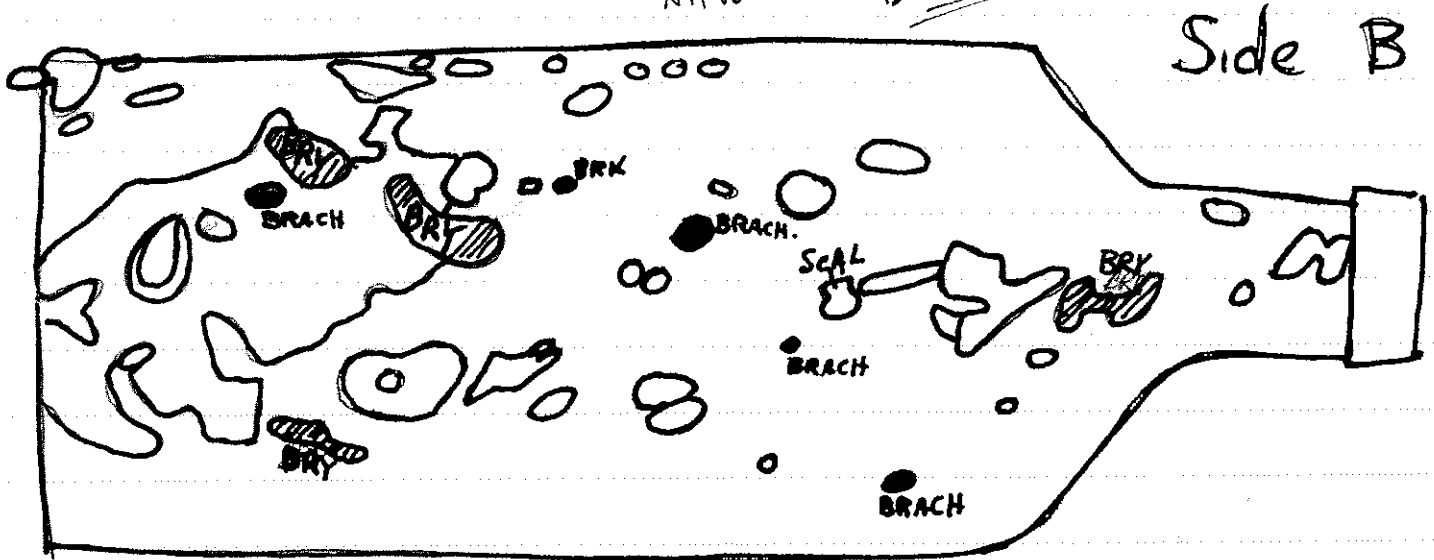
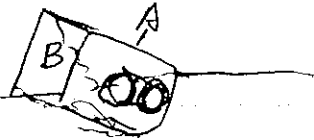
Bill Austin took Starfish + Fish School samples.

BW Tri X film - Book 9 page 8


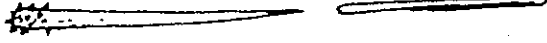






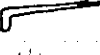

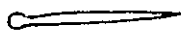
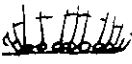





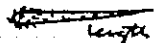
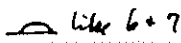
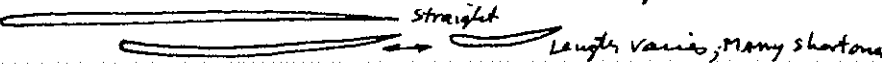
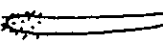
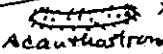
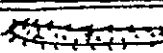
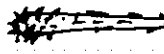
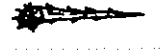
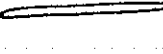
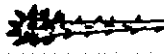


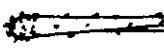
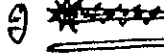

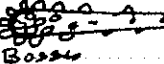
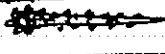

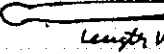

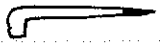

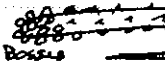
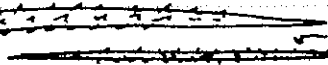

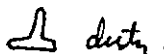
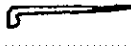
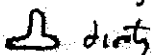
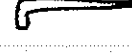
Color Slides: 3395 - 3407

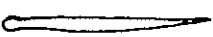



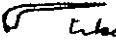
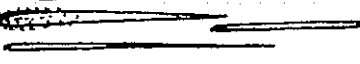
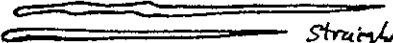
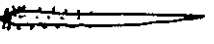
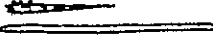

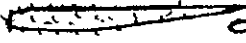
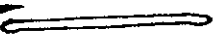

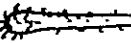
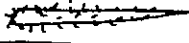
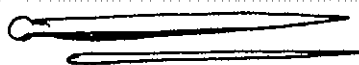


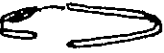




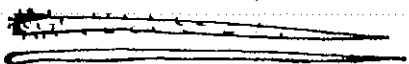
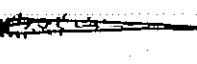

Bottle - Spec # 83-1-14.1 collected on Dive # 1233

Bottle - ~ 9" long. No tissue saved
All used or: Bottle to Bill Austin.



Side A.

- 1) Suberites mont.  mound-shaped - ostial pore fields as discs
- 2) Thin drab encrust:  - dirt covered - crinkly
- 3)  small w chimney ('GIANT')  replite  Biemna
- 4)  " " " " as 3 " " " " " "  Biemna
- 5)  upright tube as 3 " " " "  Biemna
- 6)  v small disc  length variable heads down  on substrate
- 7)  v. small disc " as 6.
- 8) as 3 - Biemna
- 9) as 3 - Biemna
- 10) Mycaloid (clear surface)   2 chelas aniso
- 11) Orange cushion  flat top disc  hump  length varies
- 12) Small disc  like 6+?  straight Length varies; many shortens
- 13) drab thin encrust - with lemon color embryos spics like 11 grossly but details differ
- 14) drab transparent - hispid   Acanthostrangyles  Placania?
- 15) v small patch   
- 16) v. small patch   
- 17) small patch   
- 18) Small patch.  Bossae  
- 19) Small patch w dense radiate center  length varies  irreg replite
- 20) Small patch as 3 -  Biemna
- 21) " " as 3.  Biemna
- 22) Similar to 15 - but w replites very very abundant!
- 23) - as 12 " " " " " " " "
- 24) Small drab patch  Bossae  spined microxenas * very abundant  onychoctis?
- 25) darkish small patch - as '16'
- 26)  dirty small patch w chimney - as '3' Biemna 
- 27)  dirty small patch w chimney as '3' Biemna 

- 28) ○ small clean patch - like '16'
- 29) ⊗ small disc  Tyloskya like 19, 6+7
- 30)  dirty patch w 2 clumps -  Biemna as 3
- 31)  dirty w 1 clump -  like 3 - Biemna
- 32) ○ thin encrusting patch w yellow embryos  ○ chela almost closed.
- 33) very thin encrusting strand - like 16
- 34) vv small patch - as 3 Biemna
- 35) vv small patch  Some w swellings
Straight no microvilli
- 36) thin small rosy patch    small
- 37) w small patch    larger than 36
- 38) thin yellow sheet on Brachyopod  
- 39) Extensive sheet - transparent + glistening, thin. 
- 40)  clean w clump    25135 large
Rosette
Bumelia
- 41)  similar - as '40'
- 42) ○ small patch - as '16'
- 43) ○ small barnacle-like patch - as '16'
- 44) thin dirty patch - as '16'
- [45] - lost]
- 46) small patch gold color w dense corals - similar to '40' - but possibly different
- 47) thin drab encrusting spg - dirty - as '16'
- 48) thin drab " " - extensive like 36
- 49) reddish thin encrusting - like 36
- 50)  dirty patch w clump - as '24'
- 51)  dirty " " " as '24'
- 52) thin encrust   
- 53) " " - as '52'

That's as far as I got - Bottle provided by Bill Austin.

12 JAN 1983

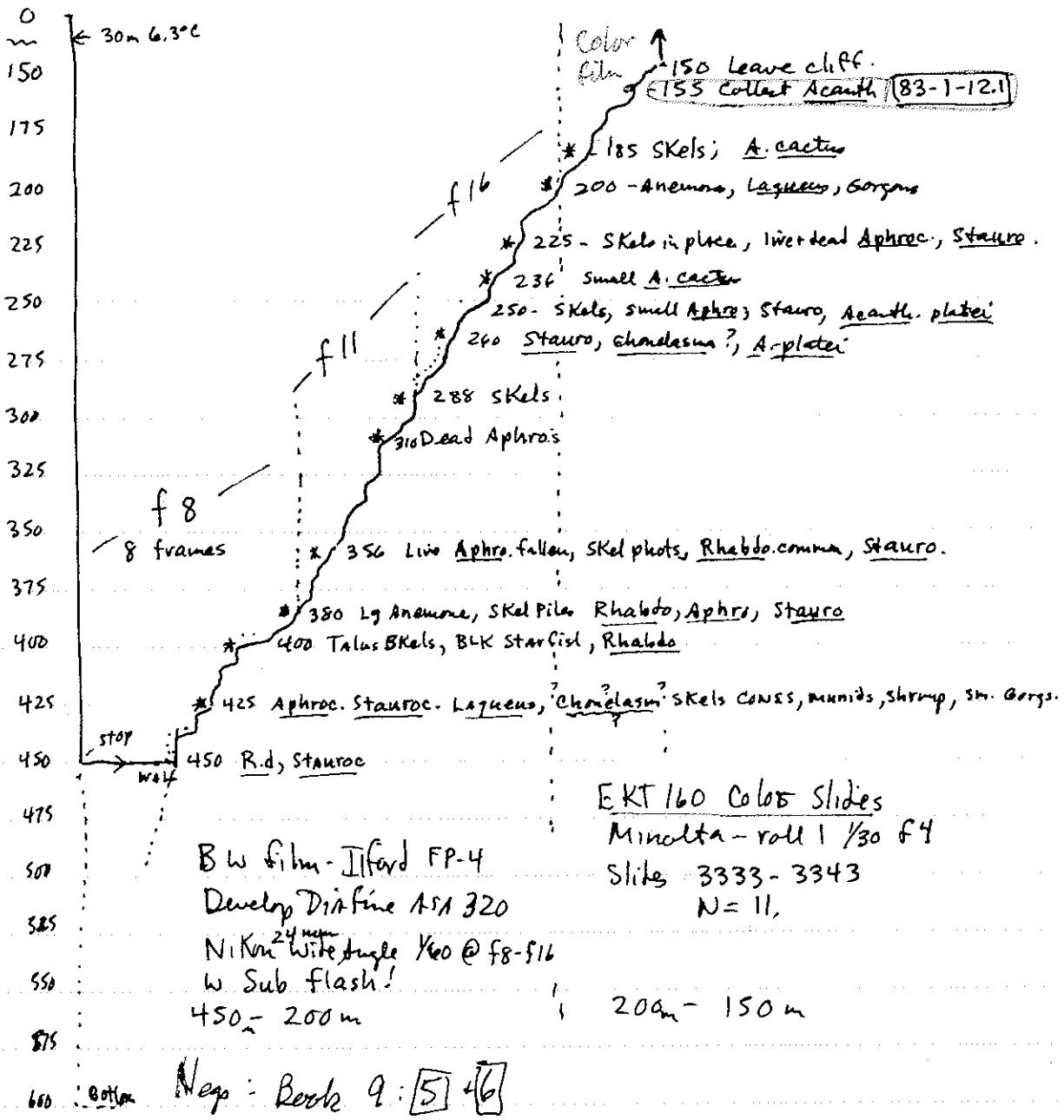
Summary Dive Pisces 1229

Pilot J. Oszost; Obs. H. M. Reisswig

Jervis Inlet - Foley Head.

49° 48.3' N x 123° 59.0' W Z = 450m.

IN 1402 hrs - Surface 16:04 hrs



Specs: only one 'in claw' - 83-1-12.1 - Bouin + ROH Fixed.

13 JAN 1983

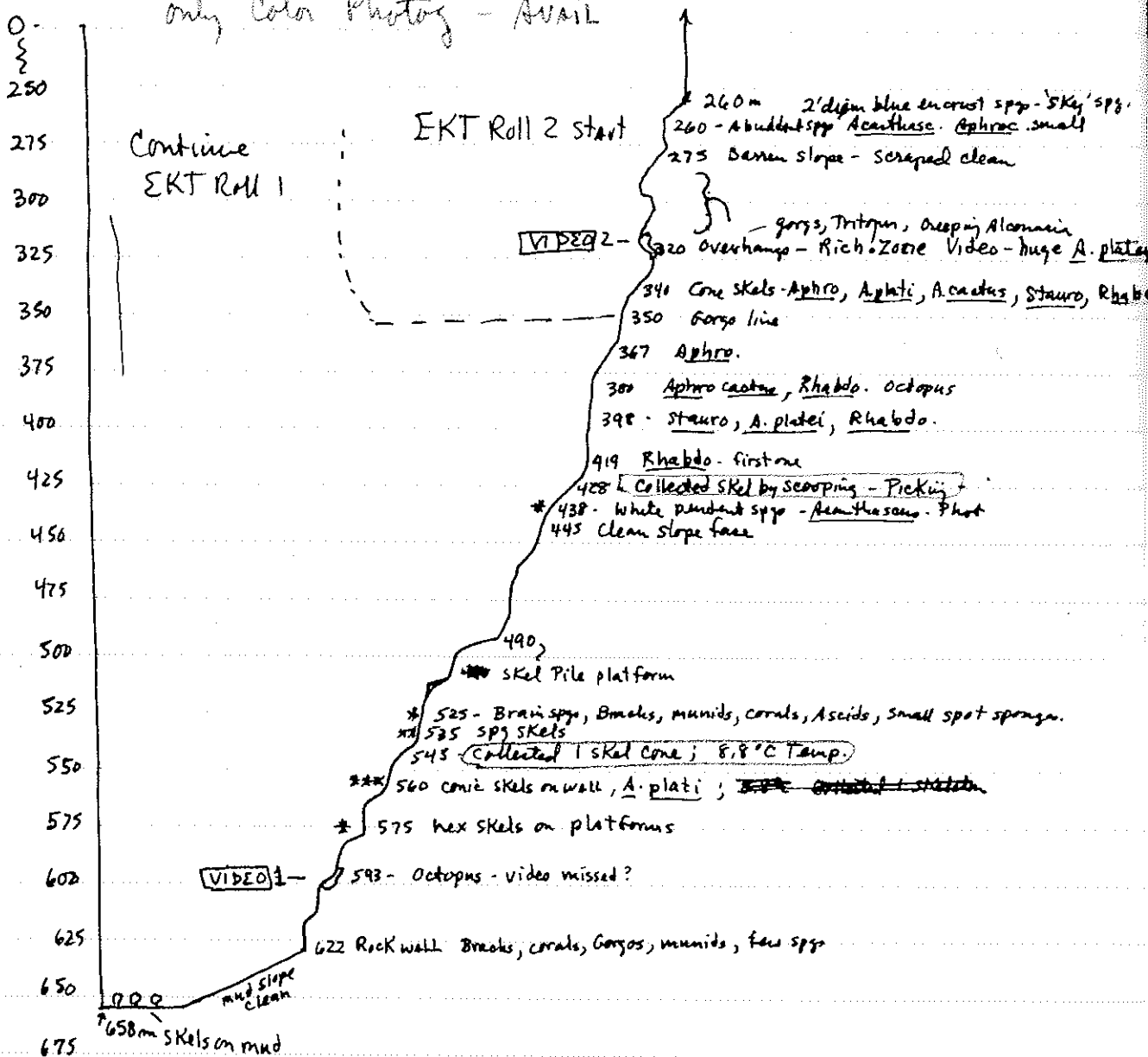
Summary Dive Pisces # 1231

Pilot: R. Taylor; Obs. H. Reisiwig

In 09:01 hrs Surface 11:25 hrs

Jervis Inlet 49° 52.7' N
Saumarez Bluff. 173° 53.9' W
Z = 658 m.

only color photos - Avail



Minalta

EKT 160 - Roll 1 - finish

Slides 3349-3376 - 22 slides

1/30 - f4 Avail

Specs: New sponge: 83-1-13.1 Bonin fix

Rubble Mass of skels:

Nikon 24mm wide angle

EKT 160 Roll 2 start

1/30 f4 - f2

Slides 3371-3376

Video

593 m } 062
320 m }

14 JAN 1983

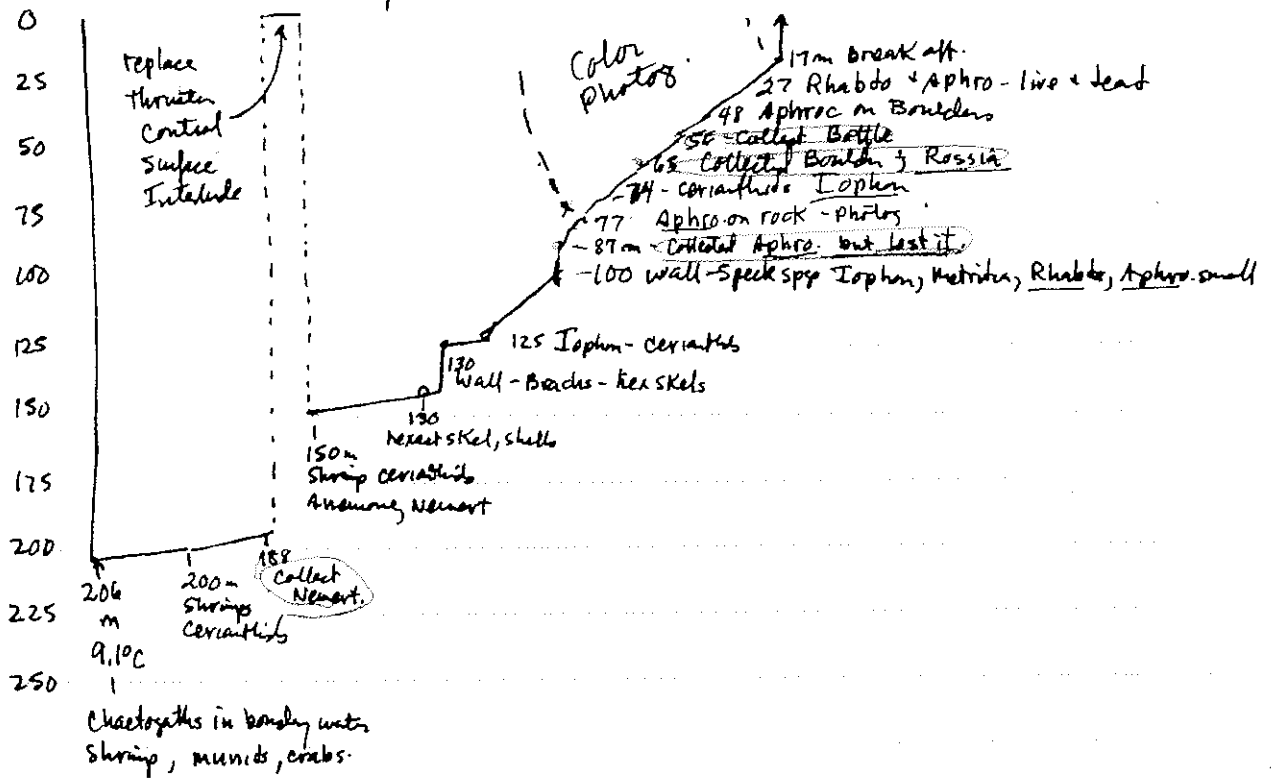
Howe Sound - Boyer Is.

Summary Dive Pisces # 1233
Pilot - Keith Shephard, Obs - B. Austin & H. Reswig

490 25.5' N x 1230 15.3' W.

Z = 206 m

In @ 0933 Surface ~ 11:40 AM



Photos: EKT 160 Nikon 24 mm wide Angle

Continue Roll 2 - 1/30 f4-2.8 Avail

Slides: 3380 - 3388 (9 Slides)

Specs - Bottle w Sponge fauna - I mapped + surveyed - Austin received Specimens

Rock w fauna ----- Austin took ? specimens.

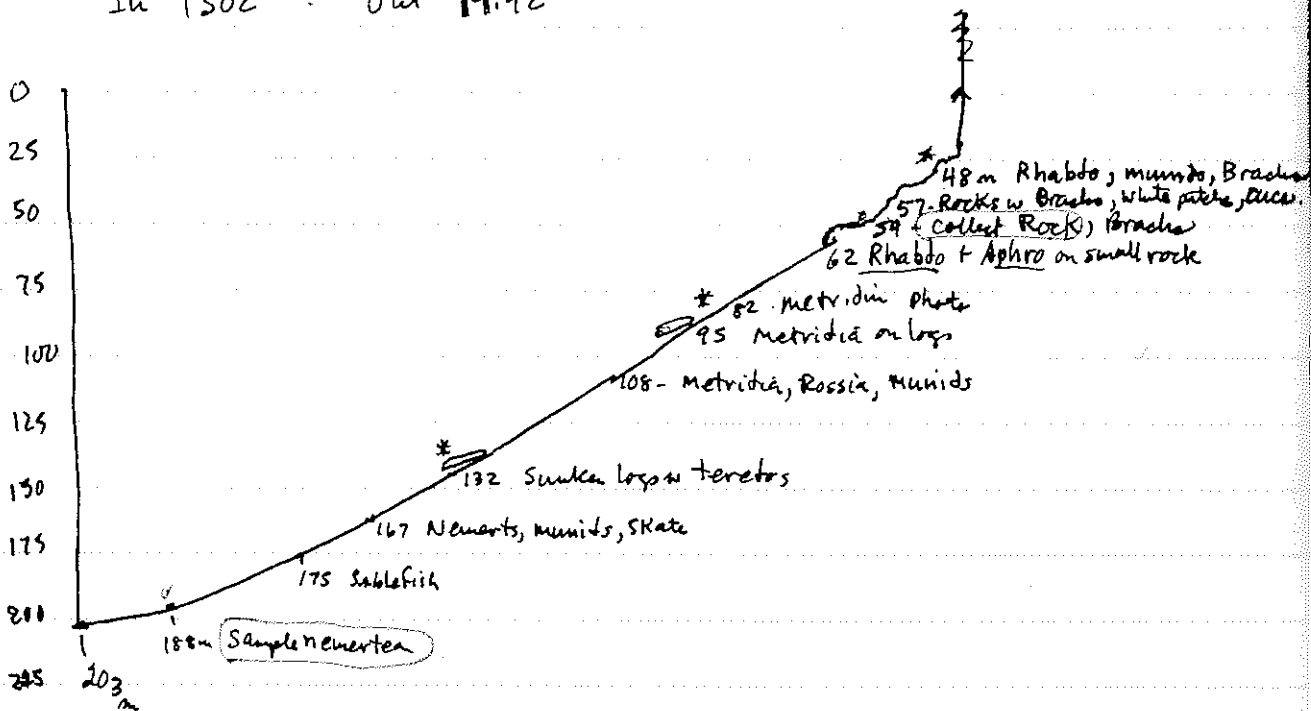
[No Hexacts obtained !]

14 JAN 1983

Howe Sound, Malcat Bay

Summary Dive Pisces # 1234
Pilot Keith Shepherd; Obs: Bill Austin + H. Reiswig
In 1302 : Out 14:42

Z 203m



Photos: SKT color 160 - continue Roll 2

Mikon wide angle 24 mm

Slides 3389 - 3394 - 6 slides - 3 underwater
3 inside Pisces

Specimens:

One or two rocks collected.

No hexacts recovered.

15 JAN 1983

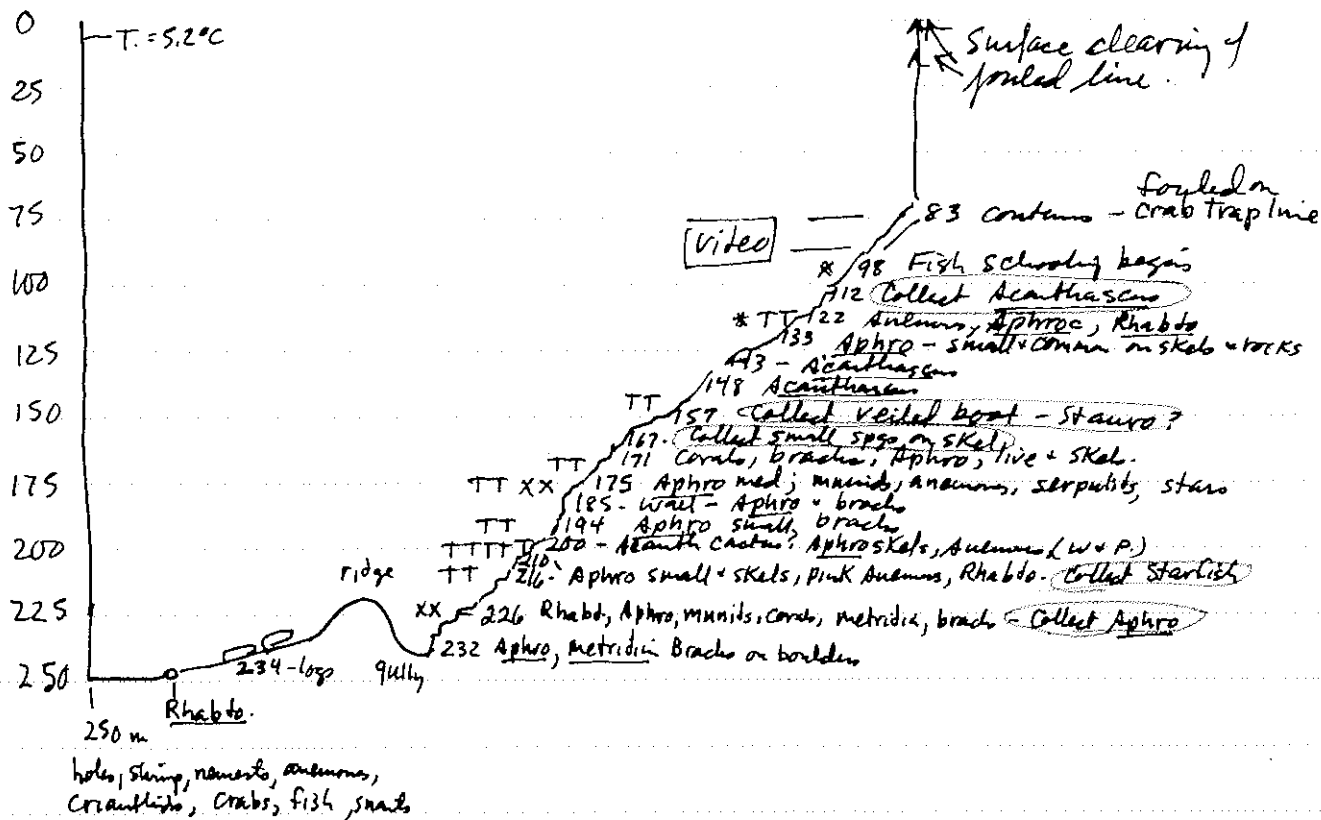
Howe Sound, East Coast

49° 29.2' N

123° 15.2' W

Z = 250m

Summary Pisces Dive 1235
Pilot: Al Whitcomb; Obs B. Austin, H. Reiswig.



Photos: overlapping & interwoven of color & B/W photos - 2 cameras

EKT 160 Nikon - Roll 2 finished Avail 1/30 f4-f2.8

Slide 3395 - 3407 (13 slides)

EKT 160 Nikon - Roll 3 - just started - ~ 3 exposures of surfacing process - crab trap on stick -

BW - Tri X film Minolta Avail 1/60 @ f8 - ^{Naga in 35mm file} 9 - 8

Video - fish school

Specs: 83-1-15.1 Aphrocallates Bonis + Froza

83-1-15.2 3 white spg - Bonis

83-1-15.3 Large veiled white spg? Stauroc.?
Bonis + stry

83-1-15.4

Acanthascus - purple
on Air Exposure
Bonis fix + dried.

January Trip Summary:

Dives:

1229

1231

1232

1233

1234

1235

Photography + Video

JANUARY
SPECIMEN LOG - SUMMARY

JANUARY.

SPECIMEN LOG CONTINUED

21 JAN
1983

Dive Senanus Island-

Betsy Dry Codrion + Chaman Singla coworker in Boat.
Rented Boat from Brentwood Boats ~ 9:30 - loaded + Putted out to site
Had trouble getting a bottom but finally did - Saw Eagle fishing on way out

Aims - to Mark sites, survey Regenerants (Cored) + Collect
Tissue Samples - for Boms + EM. Fixes - No Camera - No Photos

Got into water ~ 10:35 - Current on surface swift going in! -

Betsy's suit not sealed - she got out + Resealed - ready in ~ 15 min

Started Dive ~ 10:50 AM - went straight down - bottom ~ 65'

headed out to the ~~west~~?... after ~ 5 mi found site 1 w Bucket Lid

dropped the 1st Reel Marker - took off well

Betsy tried coming while I checked the

Regenerants w flashlight - almost all
from closed - to photos next time

Rounded up gear + off to site 2

Released Buoy -

Picked up a spec of A.V. +
on R.D. at ~ 95' - Lead AV
Bucket Lid marker

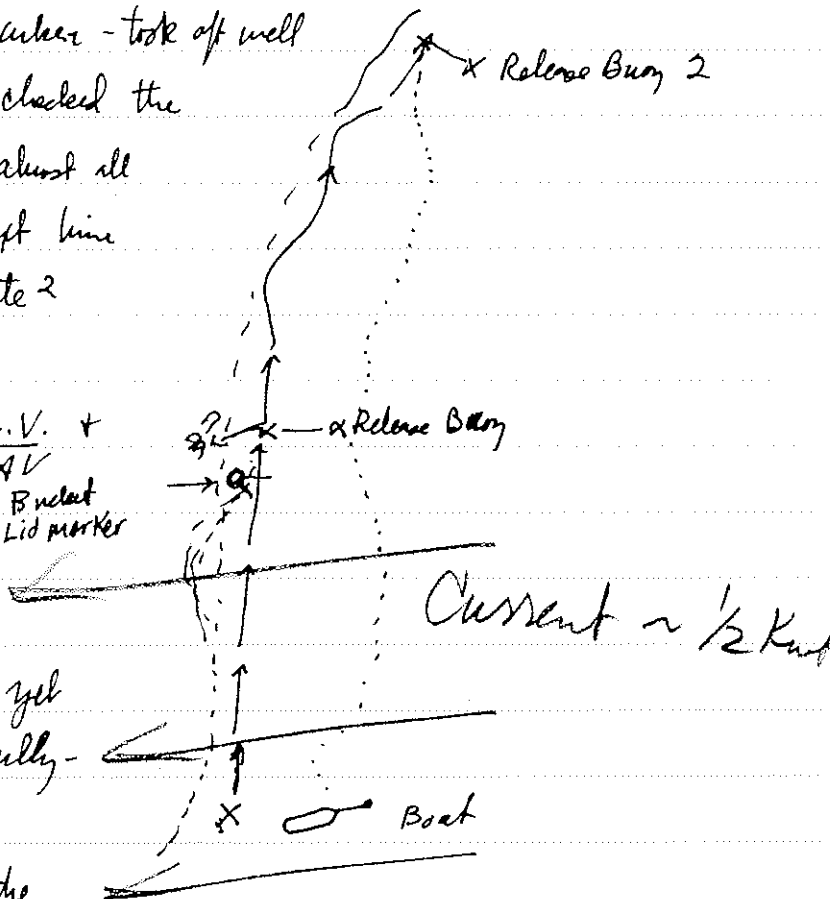
Betsy had collected 3 spec

of R.D. - Time out

Came up at site 2 - Not yet
all the way to the "angle" gully -
but getting there.

Upon Surfacing - took bearing to the
Stack in Brentwood - 90° on my compass = Not possible

Swam back to Boat w great difficulty! Almost did not make it
w spec to drag - on return Singla fixed the spec for EM -
Senanus Is

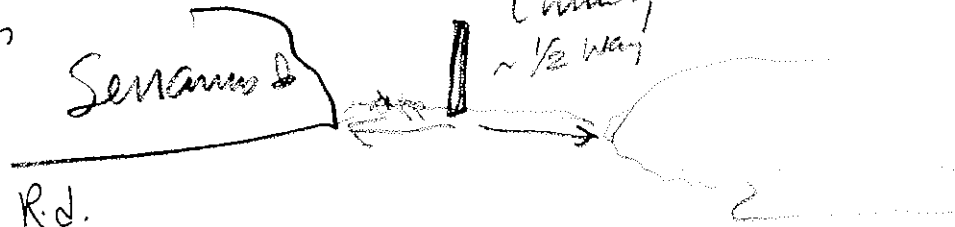


21 Jan 83

Senanus Is.

Senanus Is.

Chimney
~ 1/2 way



Saanich Inlet

- 3 specs of R.D.

I fixed A.V. Spec

83-1-21.1

- Aphrocaltus vastus 95' site 1/2
in Bonin Shell Jar

+ Packed remainder in 2 plastic Jars for Muller
& Froze

83-1-21.2

Rhabdocalypus dawsoni 95' site 1/2

Abolished in Water at home after thorough
Search for young specs settled on specis - none!
- then dried.

After boat handling specs & getting dressed we went ashore to
get off to burp - one at site #1 ~ 2 ft below surface

- Sighting by magnetic Compass - accurate:

site 1 to Senanus light 78° (258°)

" 1 to Brantwood Chimney 120° (300)

" 1 to Most westerly house on Willis Pt 160°? (340)

83-1-21.3

- dead SKel of Aphroc vastus 95' Site 1/2

for search of young hexacts.

Size ~ 14 cm long by 10 cm Diam

At Lab - Cut into Pieces ~

5 x 5 cm - 16 pcs

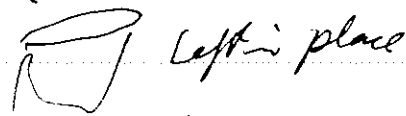
Surveyed these on Dissect & Compound scope

by cutting into 1.5 x 1.5 cm pieces & shining
off the inner sediment-covered surface

to enhance illumination through skeletal matrix

Survey on 24, 25, 26 to Germany. while kept in Dish in water

Table - No circulation in Dish!



Bowlin's
fixative

83-1-21.3 - pickings - May Drosops + Colearea - discarded most

24 Jan (+3 days) - 4 pcs ~ 5x5 cm seaweed

83-1-21.3-A'	young hexact	in	skeletal layer	Bowlin → Roth	Photos Alive
83-1-21.3-B	"	"	IN	"	No Photo
83-1-21.3-C	"	"	IN	"	"
83-1-21.3-D	"	"	IN	"	"
83-1-21.3-E	"	"	IN	"	"
83-1-21.3-F	"	"	IN	"	"
83-1-21.3-G	"	"	IN	"	"

25 Jan (+4 days) - 5 pcs ~ 5x5 cm seaweed

83-1-21.3-H	young hexact	ON	Rd spics on AV skel	Bowlin → Roth	Photo BW Alive
83-1-21.3-I	"	ON	"	"	" "
83-1-21.3-J	"	ON	"	"	" "
○	stone spg	ON	LOST	in Transfer	" "

26 Jan (+5 days) - 8 pcs

83-1-21.3-K	young hexact ~ 3mm	IN	AV skel	Bowlin → Roth	No Photo
83-1-21.3-L	" " ~ 1mm	ON	Rd spics on AV skel	"	" "
83-1-21.3-M	" " ~ 3mm	ON	"	"	" "
83-1-21.3-N	" " ~ 2mm	IN	AV skel	"	" "
83-1-21.3(P)	stone sponges on small live crab		body fixed	Bowlin → Roth	" "

Photos 35mm BW
Book 9 page 7

26 Jan 1983

2 Divers visited office at 21. Vic - brought specimens

for I.D. - 2 - from ~ 20 ft depth somewhere off


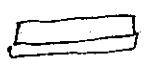
Vanc. Is near Victoria - left me one spec:

83-1-26.1 - Suberites domuncula forma latus according to
Bill Austin - Form Presens + later to 95% ROH.

~~Makes
26 Jan - 8 Feb in Nets~~

11 Feb 83
Fri

Dive Senanus Island w/ Marie^{Byrne} & Cathy Pennacchetti
& Chaman Singh in Boat - First to Airport + drop off
sponges to Germany for Muller - then to Brentwood Bay
Sailed up at Dock - pulled out + Lined up w/ Compass -
Right on - found Marker Buoy under surface - OK -
Anchored ~~up~~ North of it + got ready -
pulled up + into water ~ 11:30 - Drove Down
marker line right onto site -

Set up tiles - # 1 + 2 at site near Bucket Lid -
upright  in groove - # 2  flat on Rock/sed surface -
#1

Off to look for Core spec - found some - did not
recol # 5! - probably - 09 - 2 + 11

Took photos of Cores - "before" - No blue pins in place!

→ After photo - Cored out in Large 52mm ~~core~~ cores +
put into Bags - worked well! -

Got the three + looked around - Couldn't
find others for sure! So photographed some
oscular membranes + swam to West - towards
#2 - got up to the white Big Jug on bottom or
~ 10-15' above it. Took Spec of Dead SKel
from a "clump" of line A.V. + started up to surface
at +20min. The Grants had collected another
Dead Skel of A.V. + ~5 pieces of Rhab jaws. for Saylor

83-2-11.1
83-2-11.2
83-2-11.3

83-2-11.4
skel

83-2-11.5

11 Feb
contd

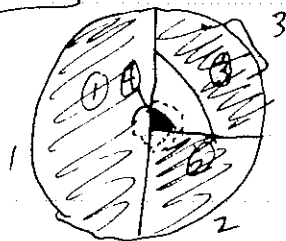
In the boat - Fixed the Cores in Mesty Bonnis +
also piece of each in 1% osm in 6.25% glut in Callidura a
'B' spec - Picked up and on + off to the docks.
Dive went WELL!

Treatment - changed Fix from ^A osm + glut → B glut alone at
~ 3:30 pm (after shower + wash up) - left till
~ 4:30 → Dist water ^{3x} + started up 2x 30% ROH at ~ 5:00
+ 7:30 → 50% ROH ~ 10 pm. - overnight -

Next Day, Set Observed Core specs.

83-2-11.1

(A)
Bonnis



tip of 2 membrane +
4 into separate
vial!

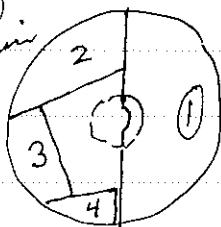
Rest to ROH

(B) osm / glut



83-2-11.2

(A)
Bonnis



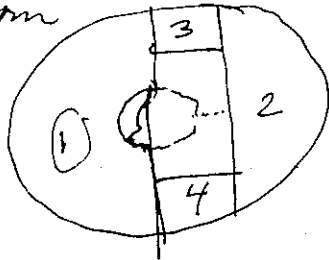
(B) osm / glut



11. Feb 83
Contd

83-2-11.3

A)
Bmi



B osen/ahut



23 Feb 83

DIVE - SENANUS Is.

Cathy P. + I to Greenwood Bay - by Auto
Arrive ~ 9:30 - Suit up + out to Compass Readings
As normal - high tide - +10.9'

Calm, overcast, No Current - No Bury
Visible

V. dirty surface - soupy.

Anchored + into water - Start down

at ~ 10:15am - Right on target - a

bit off to "up" side towards bury #2

Saw several marked spgs - 3, 4, 6, 11 etc

but could find no "cores" - photographed

all over - f8 @ 1/30 mostly @ 3' dist = 4 real

Photo X - Full Metz Power Flash. -

Also some at f5.6 @ 1/30 at 6' = 8 real

Tried a few Times Exposures - f11 for 1 sec at dist setting

of 10' - Camera not steady - but Exposure should be

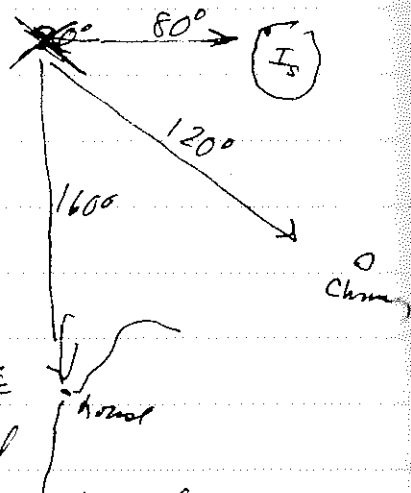
OK - the last set I forgot + left it on timer w

flash - but since ambient light is so low the negs

should be OK.

Time Down - 19+ min - return to surface!

All OK - no problems!



28 Feb 83

Dive Senamo Is - w Maria Byrne
+ C. Single in Boat - Brentwood Boat Rental.
Drove w Auto to Brentwood - Rental Boat - own
anchor - out to Site - Didn't hit it right on -
a bit to East - but on site soon.

Done ~ 11am - 18 min Bottom time -

1. Mold core spec #1 (Rock #9) - was flying
2. Broke off a med sized spec at ~ 110' + took it
up to ~ 90 - tried Epoxy screw base - did not
work - Epoxy too hard to work! - Abandoned.
3. Took photos Avait w Naked Nikons - Plus X
5 sec 15 sec 30 sec @ f8 - 7' distance

Dark - overcast + dirty surface layer.

Did not try pinning new spinal set or tie ups.

4. Did inspect glass syringe - worked OK -
Seal is fine But - Could not Release
the seal - must use Bigger handle on
the stopper end!

Did not tie on flagging tape on sponges -

Did not put Iron Lid marker.

End Dive at 11:20 - to Boat.

Specimen Excess from Single's fraters & R. d. washed
F.W. + dried:

83-2-28.1, 83-2-28.2 ... OVER

28 Feb 83 - Specimens 1 R.D.

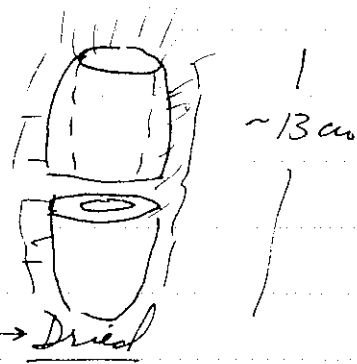
83-2-28.1 - Rhabdocalyptus dawsoni

Small spec ca 13 cm long

+ 4-4.5 cm diam

Single cut out Fix pieces - left as

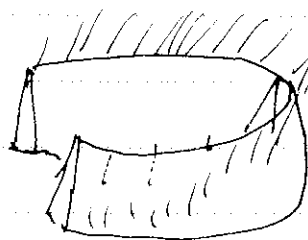
2 pcs - Top + bottom → Rinse → Dried



83-2-28.2

2 pcs of oscular margin

of a large specimen - Rinse → Dry



oscular margin

83-2-28.3

Small-ish piece of large? individual - only ~ 4mm thick
so only medium-size probably - Rinse → Dry

18 Mar 83

Drive Senam Is w Maria Byrne - Am
+ Chaman Singh in Boat.

Light
Foot
part!

21 Mar
'83

- Start Pisces Trip - SAANICH Inlet
- Arrive Port Bay ~ 7:30 - out to Pender to unload gear - then up to Breakfast Lab to put away 2nd Box - over to get O₂ sample bottles - filled Reagent Drogines for O₂ fixation - ...
Could not find Rack - [Prices has it]

Met Chris Cooke at Benthic Ecology Lab - ... all ok - Barge will leave ~ 12 when Tuzi gets up -
Went to table to Tony Fitch - Frank Smith (Jerry) ^{via}
& get ready for Wed ...

All set - down to Pender quickly & await Tuzi - read some of the Siboga ... Tuzi arrived ~ 12 Noon - Ready to leave at 12:30 - Cast off & out to Dyer Rocks - 48° 37.3' N; 123° 29.45' W

- Prep: - 1. Oxygen set up
2. Cameras - Minolta w K-II 64 film
3. Nikons w EKT 160 Tungsten
4. Tape recorder & stuff -

Log of Tape: Pisces Dive # 1242 - Dyer Rocks

Enter water 1:01 pm Pilot Al Whitcomb, Obs: HM R & Chris Cooke

overcast & Calm: Course ~ 085° up slope.

depth 0m	T = 8.8°C	Time 1:06	- Sun to Bottom ~ 210m
90m	T = 8.8°C	Time 1:14	- Plktn - mostly amphipod Eurytemora, mussels, plankton disappears suddenly - No Cloud
125m			
135m	T = 9.3°C		Cod still present
206m	T = 9.3°C	T = 1:24	- Enter turbid layer ~ 3m above bottom

21 Mar 83

200m bottom T=9.3°C - Visib ~ 3-5m - little or no current
soft mud w reticulate ribbed surface

T 1:33 - start run at 085° Mag.

Many shallow depressions "footprints" made apparently by fish
Cool - No slugs, crabs

200m - Took O₂ sample - Bottle #103 [see later Titr ~ 1.0 ml.]

178m T=9.3°C " " Bottle 105 [" " " ~ 0.55 ml.]

#1
HTR
SLK
3408
OK

177m First photo mud - w fuzzy white boat? slime.

159m O₂ sample - Bottle #22 [see later Titr ~ 0.70 ml.]

155m Encounter first rock outcrop - barren! - Golden brown
w grey-brown silt covers w white dust

#2
SLK
3409
OK

152m - Photo # 2 (KII) barren rock wall slope - $\frac{1}{60}$ f 5.6

w slimy deposits on surface -

No animal life yet except small sponges

#3
N.F.
SLK
3410
OK

145m - small dead intact sponge base in crevice -

145m Photo # 3 - overhung barren rock

140m Photo # 4 - barren rock

135m O₂ Water sample - Bottle # 1127 [Titr ~ 0.17 ml.]

white spot sponges first appear here -

132m more of these spot sponges - some in crevices

130m Photos of white spot spgs

#5
SLK
3411
OK

123m - Dense area w white powder - Photo

120m - Bottle No # 83 [Titr 0.55 ml.]

+7
SLK
3413
OK

Rock free w lots of white patches - Not really
recognizable except as merely 1130 - Photo

115m - Still no zooplankton yet normal, & NO mounds
yet & NO bioturbators.

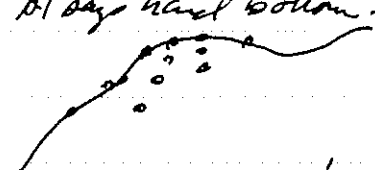
21 Mar 83

- #8 slide 3414 108m - mounds & lots of small sponge spots ... get large
- 106m - Photo mounds - Many! - sponges seem to stick out of
- 104m - 2 photos of rock wall w mounds & sponges
- #9 3415 102m - 2 more photos - mounds on wall - sponges
- #10 discarded. NO FISH? 100m - mounds & small sponges
- #11 discarded 98m - O₂ water sample # 79 [Titr ~ 0.85 ml]

83-3-21.1A →

Collected Grab sample of Rocks inside a bungee or burlap Bag! - w white spongy spots on it.

T = 9.4°C - Question are these sediment lines or hard bottom veneered by seds - small spot sponges sticking "out" or "on" - Blowing hard bottom. Edports,



- 90m - Murky layer entered again & No Zooplankton again!
- 89m - Box crab, rock fish, Shrimps begin to become abundant -
- #13 + 14 discarded too DARK! 88m - Euphausiids back now & lots & lots of bottom Shrimps - ascidians, tube worms - Photograph here -

- #15 slide 3417 86m - Starfish photographed - white anemones start in 'Mediaster'
- Small box crab - lots of starfishes - red 'bits'
- Lots & lots of shrimps. - another photo of starfish - lots of Tube worms
- #16 discarded too DARK! + From Flash Failure to lady change! 82m - Still mounds. step-like cliffs

21 Mar 83

Cobble terraces wide here - good sampling areas.

81m

Maybe a Rhabdocalyptra - first - but not certain -
Just shape - no clear oscula -

79m

last water sample - bottle ~~11~~ [titr ~ 2.90 ml]

Cucumbers - white crown - Pentactids ~~etc~~

83-3-21.1
B

78m

Grab sample of another few rocks - white spot spp

Still No Certain Glass Spps - lots of Euphausiids!

70m

- big ships, another nudibranch, Henricia ...

69m

Large ceriantlids begin + Larger Pinnate-like stars

Nudibranchs - Ceriantlids getting fairly numerous.

Flounder - Red Psolus

Photo

Another flounder; - brown cushion sponges

Dark Brown Ceriantlid? - Photo

Ceriantlid photo;

Tan Pillow sponges, Large Cancer crab.

Nudibranch, Psolids, rodentic, ^{SPIRO}Chaetopterus tubes

Still lots of ceriantlids. T = 8.8°C

going across cobble bottom + Boulders + outcrops.

Photo - subtidal yellow spp.; chitons, fishes

* 1st Certain Rhabdocalyptra !! Certain

Photo - fish

Large Parastichopus

Another Rhabdocalyptra - only 2nd!

4 more Red. - dusty ~ 1/20 m².

Fucitriton

huge R's ^{about 4} - Photos ~ 35 cm long - open + white

#17 discarded
Sample - No Flash?
#18 Slide 3418
#19 Slide 3419
#20 Slide 3420

61m

56m

#21 Slide 3421
#22 Slide 3422
#23 Slide 3423

54m

51m

48m

Slide 24 Discarded
25 No Flash?
26
27

44m

38m

#28 3424 dark
#29 3425 dark
#30 3426

32m

30m

Halocynthia igaboja OK 1906

Big light color Tunicata in groups here - in
crevices + on ridges + almost always in R's

21 Mar 83
see after this date for specs included.

83-3-21.2

involved in a group.
30m - Collected part of a group -

#31 3427

(Hi-1)

w some of both Rd. + the ascid group of ascid
Oral in new Pecten - hard to tear off!



Sponges in the clumps look extremely hairy (long spines) + much less sediment accum - almost a tan surface in contrast to the extreme load of loose living-specimens below.

#32 3428 dank!

#33 3429 dank!

25m

Photos - Time 2:58 - Maybe we have an association here.

#34
Slide 3430
dank!

25m

More Rd's - Large ones + small ones - fairly good mix of size - population spread in age pretty nice.

Going across platform at 25m - Spotty occurrence of Rd's -

Several solitary white midvent? solitary ascids - I guess these are the wanted ones



#35 3431 dank!

19m

Photo of Rd

#36 3432 still dank!

Photo of China R.K. fish - end Roll of film KII

No cloud sponges seen at all over considerable transverse distance - Oil Leaks from Hydraulics.

19m 3:07 leaving Bottoms 8.7°C

3:08 arrive surface

3:19 m hoak + upp. - End Dive

319
106
2:13

21 Mar contd

Preserved Samples in 2 Jars - 10% Form in SW.

- 83-3-21.1 - a) Spot spores ^{78m} + deeper spores ^{98m} - scraps from Rocks + Bag.
- 83-3-21.2 - b) - Acid / Rd complex in 3 small Yoldis - to be separated

Annie Probside ~ 4 pm -

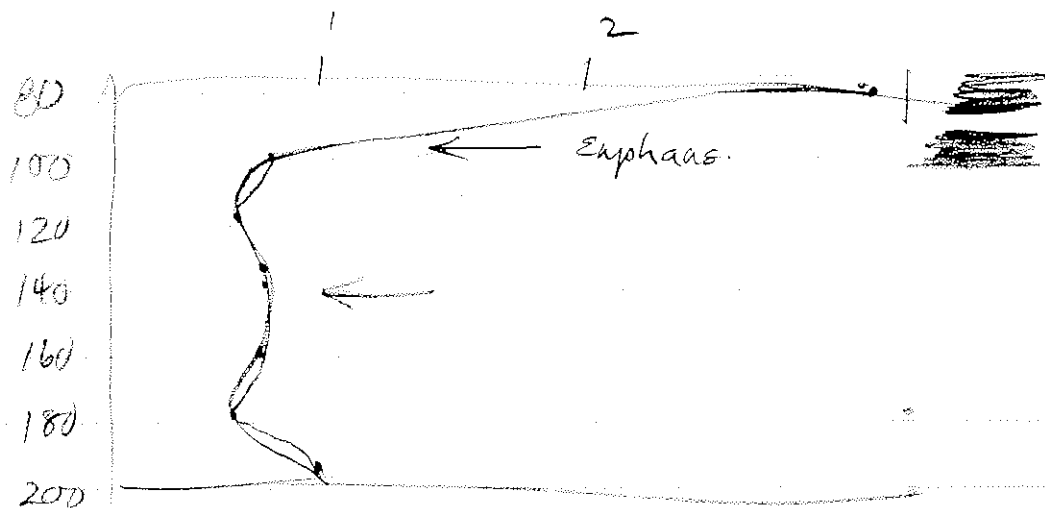
Up to do the O₂ analysis immediately - need to take an extra card -

Sequence: ^{50ml sample}
0.1N
ml

Sample	Bottle No	Thiosulfate	\bar{X}	mg-at O ₂ /l	ml O ₂ /l	mg O ₂ /l
135m	# 127 - 1.	0.70 ml	> 0.70	.085	0.95	1.36
	2.	0.70 ml				
178m	# 105 1.	0.55 ml	> .575	.070	0.78	1.12
	2.	0.60 ml				
200m	# 103 1.	1.00 ml	> .975	.118	1.32	1.89
	2.	0.95 ml				
159m	# 22 1.	0.75 ml	> .725	.088	0.885	1.41
	2.	0.70 ml				
120	# 83 1.	0.55 ml	.55	.067	0.747	1.07
	2.	0.55 ml				
98m	# 79 1.	0.80 ml	.825	.100	1.12	1.60
	2.	0.85 ml				
79m	# 11 1.	2.90 ml	2.875	.349	3.81	5.58
	2.	2.85 ml				

Tired - So off to home! -
to get conversions for Process from Ed Anderson.

21 Mar cont'd



Slits 3408 - 3433

83-3-21.2 - Hi-11

- (A) - Ascid ~ 8 cm dia
- (B) R.D. 75 mm x 40 mm x 15 mm 23.6 cc
- (C) Rd. 40 mm x 28 mm x 23 mm 13.5 cc
- (D) Calc
- (E) Rd. 8 x 15 x 1 mm (flap) 0.063 cc
- A₁₋₁) Rd 28 x 12 x 14 mm 2.46 cc
- A₁₋₂) Rd: 5 x 3 x 2 mm 0.016 cc
- A₁₋₃) Rd - base
- A₂₋₁₂) Rd 4.25 x 2.5 x 2.5 mm 0.014 cc

Preserved Embryo - ~ 300 μ diam ~ 0.000015 cc
 = .015 mm² μ gal

22 Mar 83

Drove out to Pat Bay - Brought O₂ bottles - picked up small bottles at D.E. Lab - cruised in hot water - to Pensler at ~ 7:45

Randy Baker showed up at ~ 8 am - 48° 36.1' N; 123° 29.5' W

Cast off + steam out toward Brentwood Bay ~ 8:15 am.

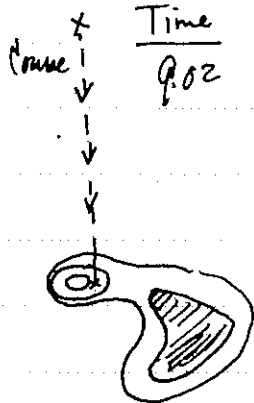
New Bat into Pensler - Minolta w KII - Roll II 1/60 @ 5.6 F/8

Piscar Dive # 1243 Senama So North - to run to reef on 170° true

Time 8:59 on Hook

Randy Baker + HURK; Al Whitcomb Pilot

Time	Depth (m)	Observations
9:02	0m	enter water - depth meter by Sonar ~ 220m; T = 6.9°C [?]
	40m	5.9°C [?] - Generally small detrital flakes abundant - Pellets little zooplankton - few amphipods
	93m	Euphausiids + Amphipods + a few Ctenophores
	103m	Large Flocs begin - <u>Euphausiids dense!</u> mural larvae - a few -
	109m	No Zooplankton Now! - Just Flocs
	115m	" " "
9:14	150m	-
	193m	^{cap} See white cloud defocus again - actually starts Turbid Cloud
	199m	- see bottom
	202m	bottom - same reticulate surface as at Dyer Pks Current - very slight - fish skeleton or goopy Jelly.
#1 slide 3433	195m	Slope off to right of path course - 170° course Running off to reef - Junes ~ 8"-20" w reticulate filmy ridges - <u>Photo #1</u> Junes
#2 slide 3434	190m	- some tops whitening - <u>Photo #2</u> - Very Very Soft fish (Cod) swam right into bottom - shook like Jello but stayed more or less intact.



22 Mar 83
Catal

Time Depth

178 m

Water Sample - Bottle No. 11

170 m - drop into hollow -

157 m - Water Sample Bottle 83

#3
Slide 3435

150 m Photo 3 of white goey bottom

135 m

Water sample Bottle 22

125 m

Same grey soft bottom - smoothing out here - still white

118 m

Water sample Bottle 103 - white smooth layer

#4
Slide 3436 dark

107 m

Mounds start - 2 Photos - surface getting brown

#5 disposed - No flash

More + More mounds

107 m

Water Sample Bottle No 79 near mounds

#6 3437 dark

102 m

Photo Mounds

104 m

- cutting milky layer as we approach Rock Outcrop

#7
Slide 3438 V dark Flash, no direction

103 m

Photo rock outcrop - white spots on -

#8
Slide 3439

Mounds + white spot sponges - flowers

#9
Slide 3440

100 m

Aphrocallites skel - got a mummy on it - Fishy skin

Another Aphrocallites skeleton

Red Rockfish sitting around on Bottom

92 m

Water Sample Bottle #105 - small Brachyid eggs,

Fan cylindric ascid bunches, white spot sponges,

Some tube worms - very thick Chaetognaths.

Slides
10 } discarded
11 } too
12 } dark
13 } see!

90 m

Ascidians heavy on free faces - 2 photos on bottom

Crabs, Chaetognaths, Serpulid worms, small

88 m

Chelysoma ascidius

Aphrocallites skel on rock - may have fallen down

Shrimps, brachiopods, seds on upper rock surface

84 m

Photo rock outcrop edge -

Large shrimp ~ 3" long -

22 Mar 83
Control

Time Depth

82 m - Large Rockfish - still mainly acid garden -
Psolid? Cuemba - white plume of Herbaceous
No hexacts yet - undulating bottom

#14
Slide 3441

76 m - Last water sample - Bottle 127

75 m - worm tubes - spirochaetoxylus bundles, white Psolus
Gravel - ~~Cobble~~ field - platform - ^{Star} Night gazer fish
Common - medusa

#15
#16
Discard
Slide
to Jack

71 m Mediatus - red stars - 2 photos - starfish
- pillow spg

70 m - * 1st small Rhabdocalyx ~ 3" long - fairly 'clean' spec
w/ long spines - nice - looks healthy! in a
worm tube clump.

10 meters further - No more R.d. - No A.V.s

Large metritin on salinity rock - No plants

63 m Another R.d. finally after about 50m of travel

Ceriantiid - bottom still undulating -

Large serpulids, Red Psolus, large sea anemone

60 m - Grand Cobble field platform - No R.d.s No A.V. for last 40m

Dead R.d. steel - collapsed! Photo taken of submerged

#15
Slide 3442

58 m Rock wall - Live R.d. at ~~first~~ first see No A.V. yet

#16
discard

Range of sight ~ 3 meters laterally - No hexacts in view

Nudibranch - on R.d. seen out right side

Rock face pretty empty here - clean. - B.

#17
Slide 3443

52 m Back onto Flat platform - A.V. graveyard! - lots of small

#18
Slide 3444

pieces ~ 3-4 cm ... some ~ 10cm - Photo taken -

50 m Big A.V. spec Live! - Large clumps of graveyard also

#19
Slide 3445

3 photos here - lots of stuff lying on sponges

#20
Slide 3446

Many white A.V.s are obviously not AV but new tenants.

22 Mar 83
cont'd

Time, Depth

83-3-22.1 | 45m

#21 Slide 3447 | 43m

#22 discarded - too dark

#23 3448 dark 33m

83-3-22.2

#24 Slide 3449 dark

#25 ~~3450~~ 23m
discarded too dark!

Sample Collecting here at ~ 45m AV. SKELS

- Still lots of skeletons - lots of new tenants -
much much whiter - + some yellows -

Photo 33m - spiky balls stuck flat on walls -

[found out to be gerdids] SAMPLED

here some AVs still live - density ~ 1/10m between.

Photo of spgs on walls -

Large R.d. - Photos? -

Topography very complex - No cloud spgs but
some R.d.s - anemone, anemone - probably
~ 1 per 5 meter distance here but NO AVs -

Bottom up + down - deep canyons! see AVs
way down below at ~ 28-30 m

25m onto anemone wall - sp'ds in groups - 1/5m (5+)
+ patches ~ 10m apart - here.

20m - white acids spiky like Dyer R.K.s but not so
many - warty white solitary acids, Fand stuff
in starfish, Pycnospidia, Pisaster^{like};

12m - ON TOP of Reef.

11:18 0m - Surface

11:24 on hook - out of water

#26 Slide 3450 - samples in Jar

3 Lg Jrs Form

< 25m Jrs Brnis

83-3-22.1

83-3-22.2

1 Lg Jar Form

15m Jr Brnis

Dried Remainder.

11:24
9:02
2:22

Fix Specimens in 10% Form + Brnis one

Lunch - Headache Bad!

More or less Finish KII Roll II

25 Mar 83

Visited by Mc Carneys Dive Boat in mid Dty. -

Finished cont'd
Roll KIT topside

Slice
3451, 3452, 3453, 3454, 3455

1/2 way between Seranno Is + Cole Bay

48° 36.5' N 123° 29.4' W

Start Discos Dive

1244

Randy Baker, HM R,

Pilot Al. Whitecombe

Time	Depth (m)	Observations
1:09	0 (m) hand surface	Temp 8.8°C
	10m	7.8°C
	77m	2 Amphipods 1/m ³
	82m	" 1/m ³ some
	85m	Thirteen Amphipods 10/m ³ - some
	88m	" 10/m ³ + some 1/2 cm gelatin balls
	90m	Amphipods 20/m ³ + Euphausiids 2-3/m ³
	95m	amphipods almost gone Euphausiids 10-20/m ³ Cladocera
	98m	amphipods ~ 1/10 m ³ Euphausiids 10-20/m ³ a Beroë
	100m	Floes - still Euphausiids 15/m ³
	102	few Amphipods Euphausiids 10/m ³
	103	Amphipods ~ 0.5/m ³ <u>quiescent</u> Euphausiid ~ 8/m ³
	105m	" " " "
	110m	Zooplankton clearing - - - trapped out
	112m	Euphausiids cease - a few amphipods continue 1/10 m ³
	130m	still rare floc aggregates, amphipods continue 1/10 m ³ also
	130m	
	160m	Problem in water inlet valve - wrong sequence
	R	- Must be stuck - <u>Aborted Dive</u> -
1:44	0m	- on hook leaving water.

Sub requires Maintenance -

Retard to Port Bay - dock ~ 3:00 PM

No Spec collected on Dive 1244

1244

22 Mar 83
Coral

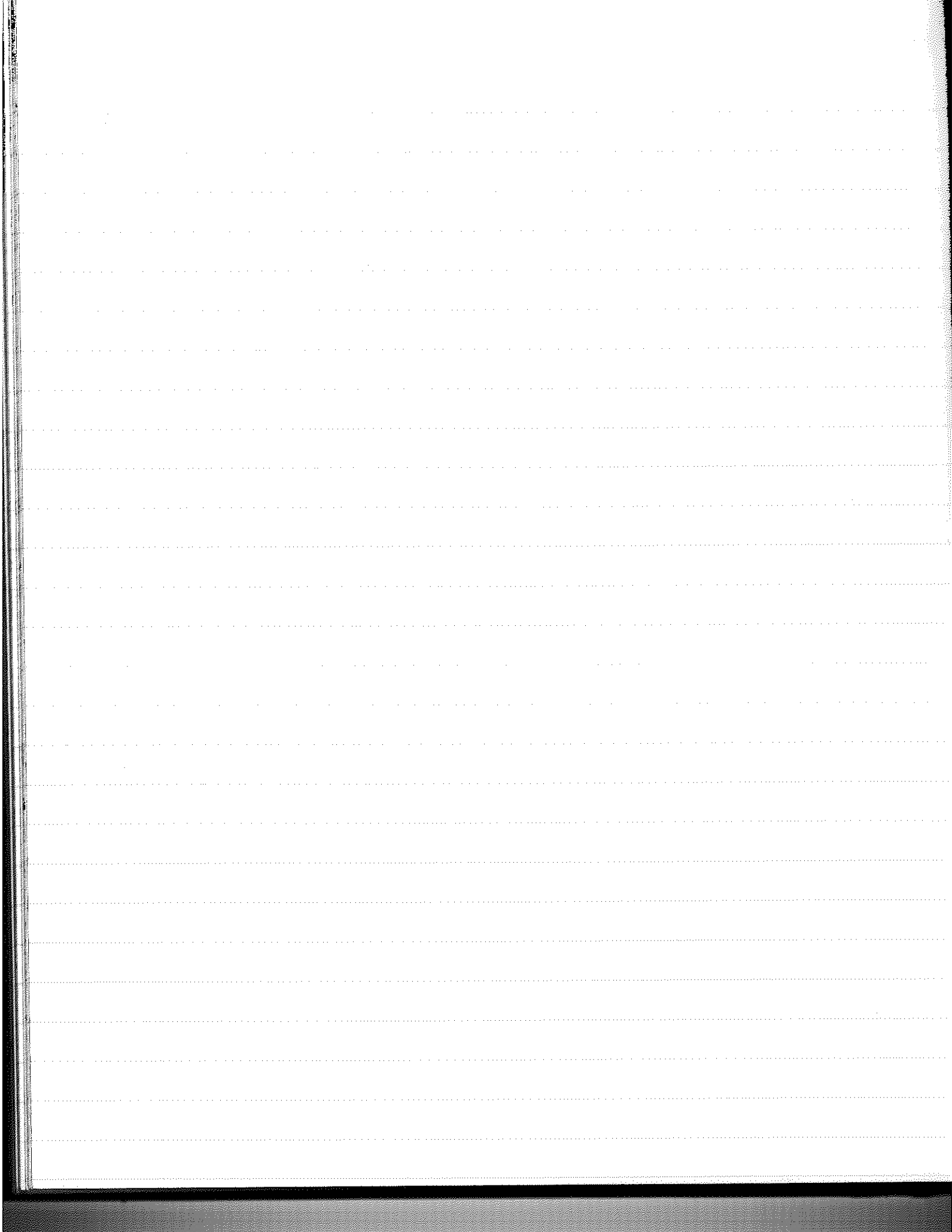
Up to Bagnat to 'do' the Oxygen titrations - Dive 1243

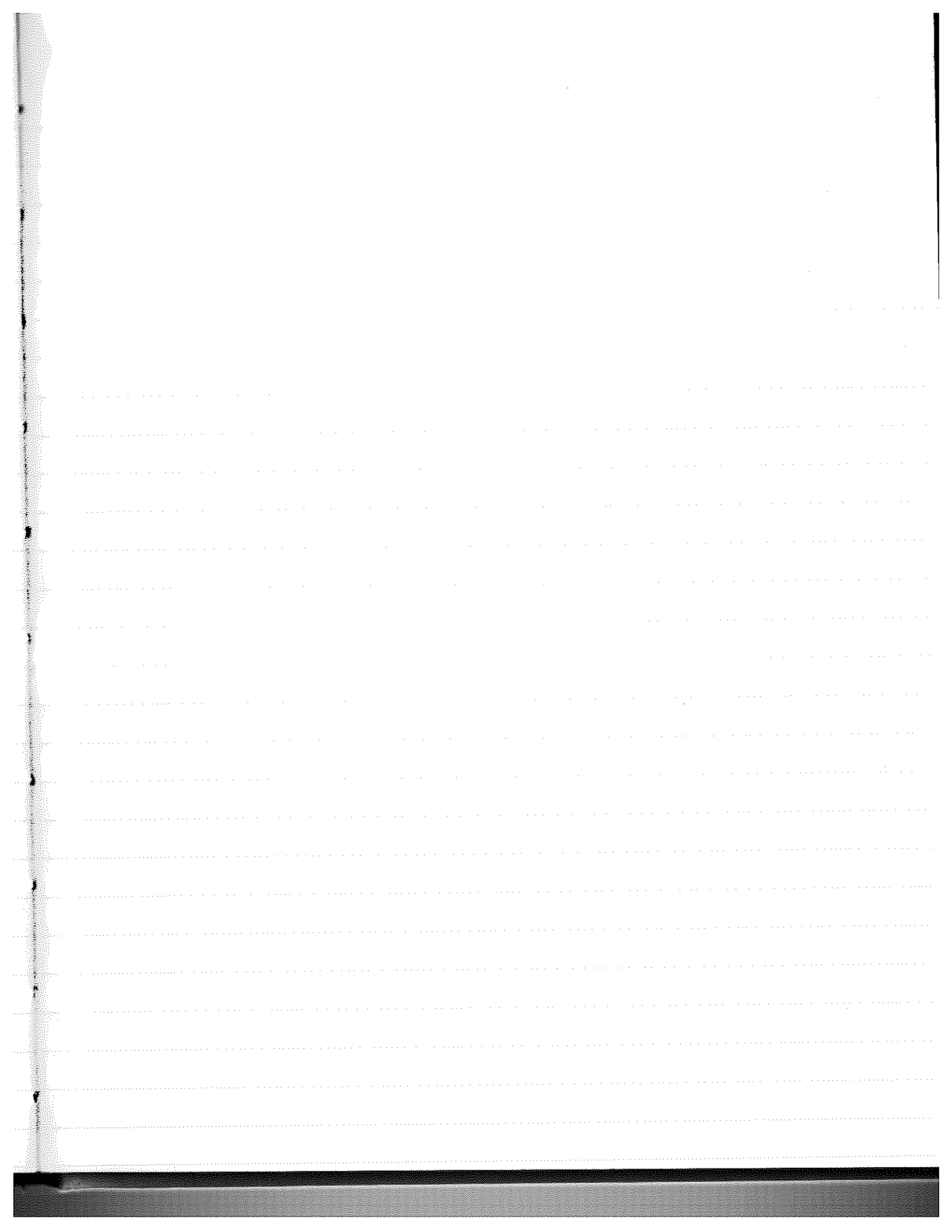
Depth Z	Bottle	ml Thiosulfate	mg-at O ₂ /l	ml O ₂ /l	mg O ₂ /l
178m	11	1.) 0.35 2.) 0.35 > .35	.042	0.48	0.68
157m	83	1.) 0.30 2.) 0.35 > .325	.039	0.44	0.63
135m	22	1.) 0.35 2.) 0.35 > .35	.042	0.48	0.68
118m	103	1.) 0.2 2.) 0.2 > .20	.024	0.27	0.39
107m	79	1.) 0.25 2.) 0.3 > .275	.033	0.37	0.53
92m	105	1.) 0.65 2.) 0.65 > .65	.079	0.88	1.26
76m	127	1.) 3.70 2.) 3.60 > 3.65	.442	4.96	7.09

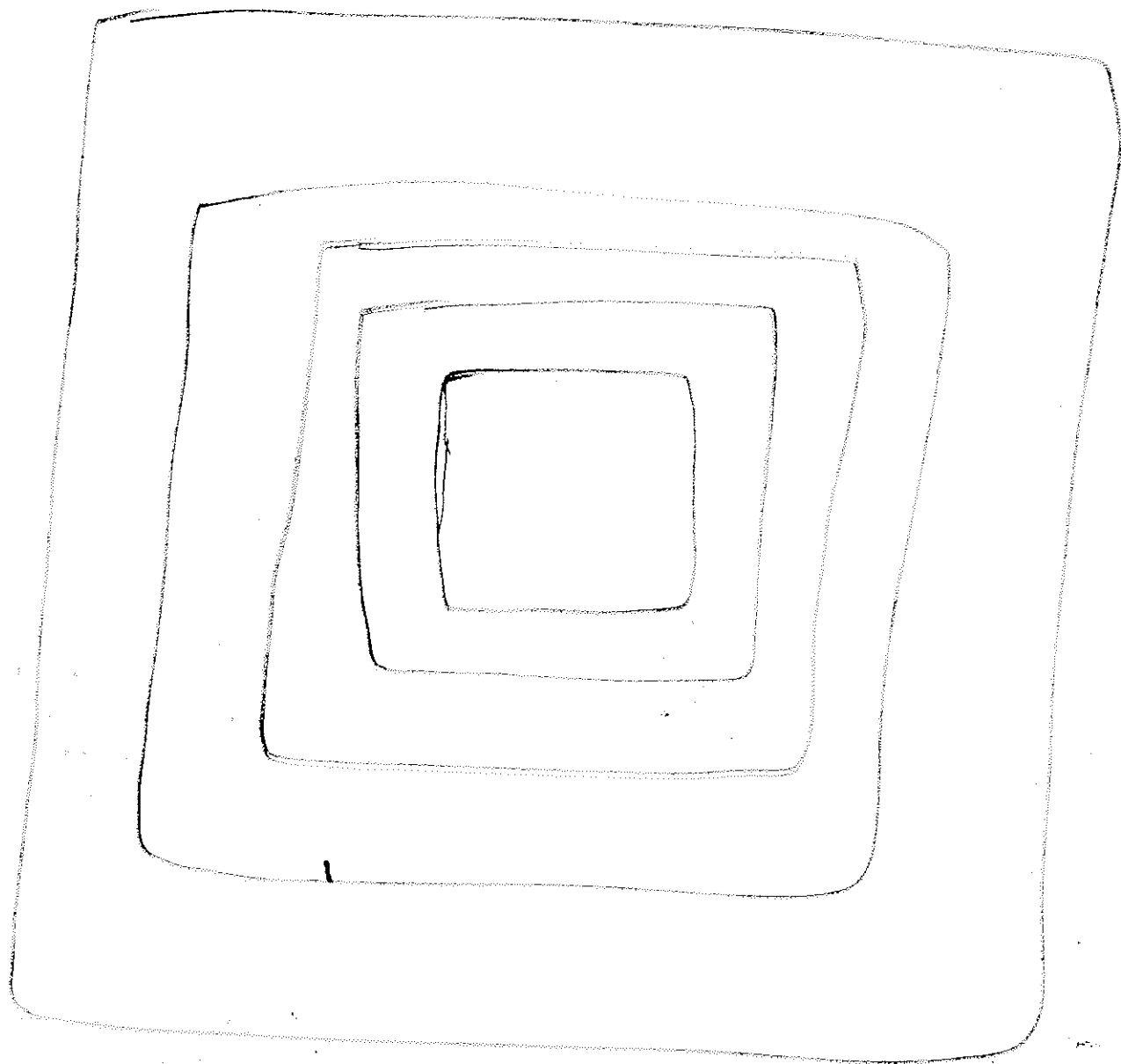
Dive 1243

Slides

3433 - 3455







13
14
15

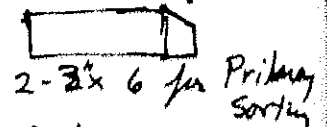
see
Varah's
Electronics
vacuum

or
RAE Industrial Electronics
vacuum

ANATEK - 3000 series
Switchmode Lab Power Supply

(NEED: 1) Flashlight!
" Super Q light)

- 2) Extension Cord
- 3) Multiple outlet Plug
- 4) Lots of Rope + Tubing
- 5) Tubs - Cooler types w Straps
- 6) More Buckets
- 7) Medium sized cake pans



2-3' x 6' for Primary Sorting

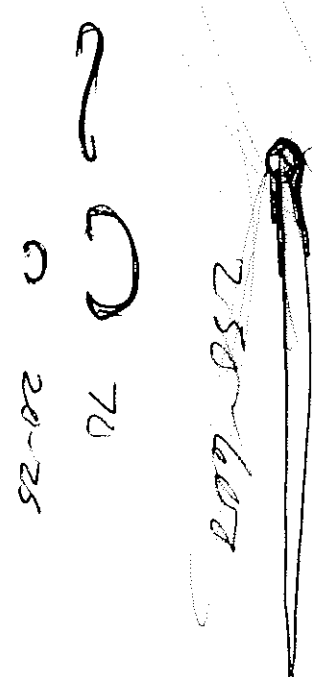
- 8) Little Buckets - "
- 9) Long forceps
- 10) Clothes hangers
- 11) 10 Cassette Tapes
SONY LMX 90
- 12) 10 Video Tapes Cassette
L-500
Dynamicon
150mhz Video Cass

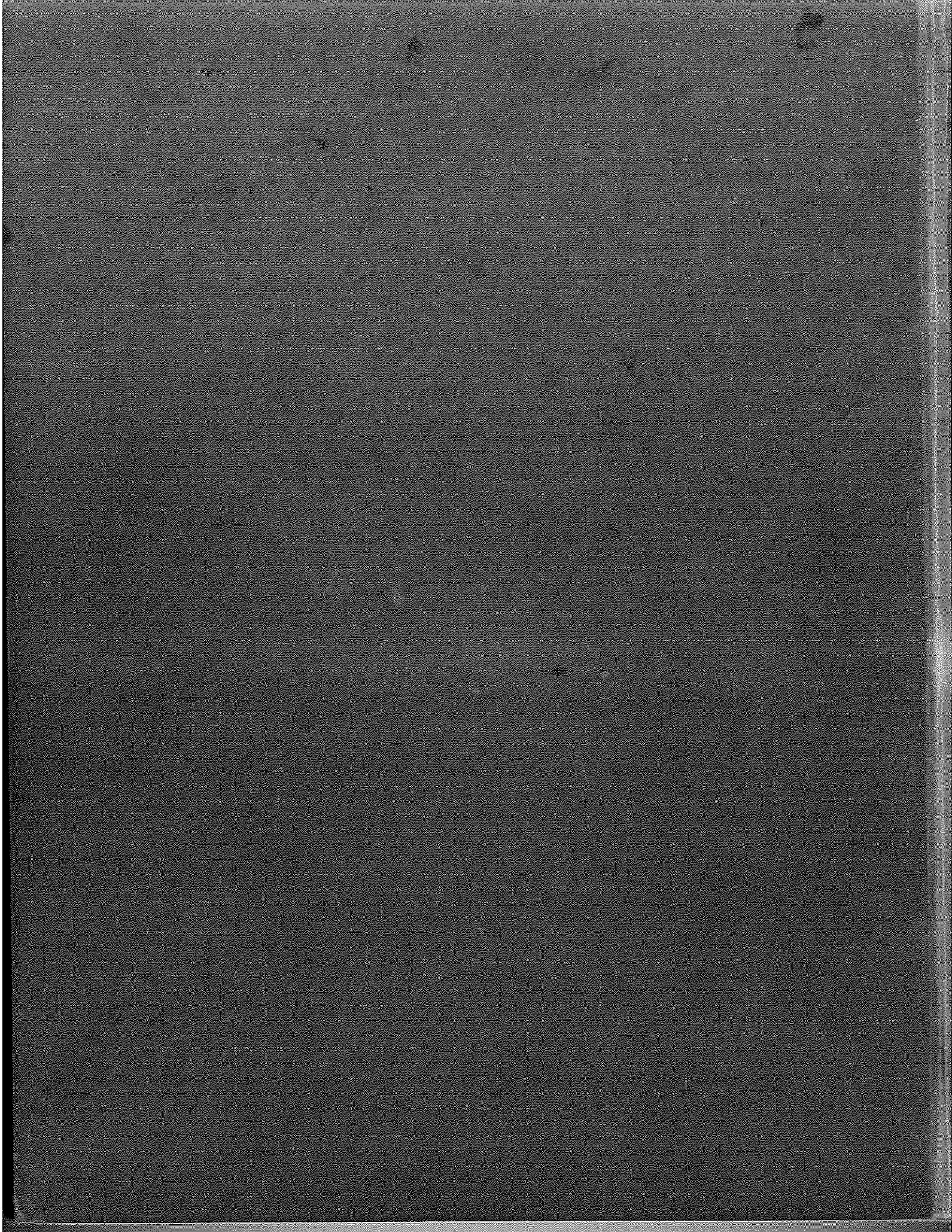
- 13) Good Leather Deck Gloves
- 14) Rubber Gloves w Skene Seal at wrists
- 15) Aquarium for Photos
- 16) Tripod
- 17) Long Tongs - Good ones
- 18) Deep Buckets - Tall!
- 19) Garbage Can Buckets

Containers

~ 10 ea size
clear wall plastic!

- Paper Towels
- Kimwipes
- Pipettes Disp
- Tools + Box/Bag
- Disssect Tools
- Vials, Jars, Bags
- Fixatives
- Oven - Drying type
- Microscopes
- Scient vials
- Calculators
- Tape Recorders + Music
- Radio





U. H. M. REISWIG

FIELD NOTES - 19 AUG '82

1982