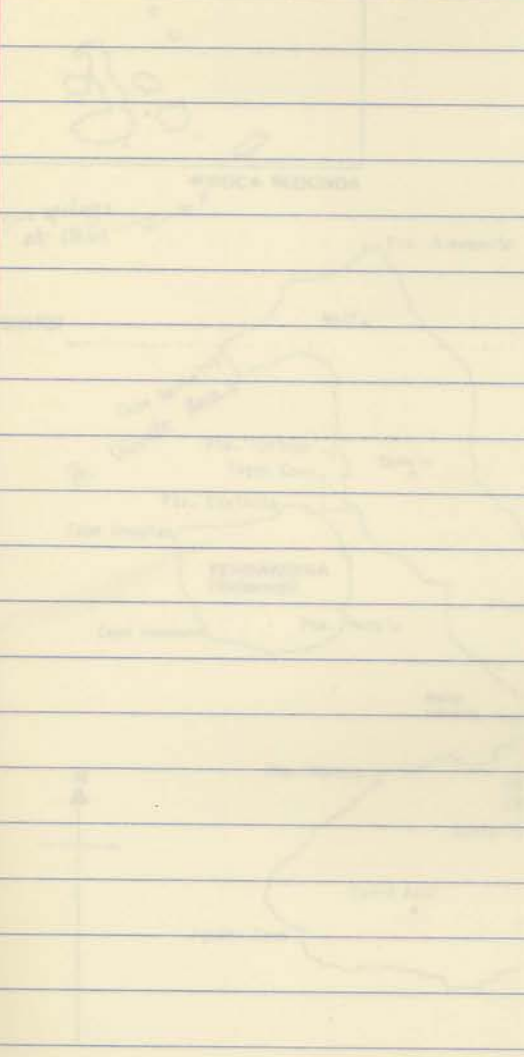


SEAPHARM GALAPAGOS
EXPEDITION

NOVEMBER 1986



10 November 1986

Arrival on Santa Cruz Is. Overnight at Hotel
Galapagos. Cruise personnel:

Ken Rinehart

Ed Armstrong

Bob Hughes

Glynn Faircloth

Shirley Pomponi (sponges)

Francoise Monniot (ascideans) Director of Research CNRS
Nat. Museum Hist.

Steve Cairns (coelenterates) (USNM)

Judy Conner (algae) (Hopkins/Monterey Aquarium)

Christina Acebal Sarabia

Dorilyn Forleo

John Reed

Dana Beach - paramedic

Francisco Villamar - Ecuadoran observer

Ship delayed in Panama Canal transit due to landslide
at Gorgas Cut - to arrive Pto. Ayora late 11th.

This cruise funded in part by NCI contract recently
awarded to SeaPharm. Janice Thompson (Scripps PhD)
is new NCI staff person charged with administering
the shallow & deep-water contracts (both to SeaPharm).

Brusca departs Nov. 17th when Spanish T.U.
crew arrives. Must be at Baltra airstrip that
morning. Bus run from Pto. Ayora departs
Tame office 8 A.M. sharp for airport. Plane
departs Baltra for Guayaquil 1:30 p.m. Customs
at Guayaquil takes up to an hour (after arrival
~ 3:00 p.m.).

stock solutions of fixatives & preservatives prepared.
 4% formalin, 10% formalin (both buffered w/ sodium borate to 7.5 pH), 80% ethanol. saturated solution of MgCl for relaxing, as well as a menthol + CH₂O solution & MgSO₄ (Magnesium sulfate, epsom salt).

NCI.-based preservation methods:

<u>taxon</u>	<u>relaxation</u>	<u>fixation</u>	<u>preservative</u>
Hydrozoa	menthol, MgSO ₄	4% buf. form.	70-80% EtOH
Anthozoa	Menthol, MgCl	10% EtOH	" *
Scyphozoa	Menthol, MgSO ₄	10% buf. form.	" "
		(* 4% buf. form. for anemones)	
Ctenophora	Menthol, MgSO ₄	-	" "
Platyhelminthes	" "	70-80% EtOH	" "
Nemertea	" "	10% buf. form.	" "
Bryozoa	" "	"	" "
Brachiopods	70-80% EtOH	70-80% EtOH	" "
Sipuncula	Methanol or EtOH	4% buf. form.	" "
Echiura	" "	"	" "
Polychaeta	MgCl or MgSO ₄	10% buf. form.	" "
Crustacea	"	4% buf. form.	" "
Xiphosura	"	4% buf. form.	" "
Pycnogonida	"	10% buf. form.	" "
Molluscs	Menthol, MgCl, MgSO ₄	4% buf. form.	" "
Asteroids	MgSO ₄	70-80% EtOH	" "
Ophiuroids	MgSO ₄ (or water)	"	" "
Echinoids	-	"	" "
Holothurians	MgSO ₄ , menthol	10% buf. form.	" "
Crinoids	water (or chill)	70-80% EtOH	" "
Ascideans	menthol, MgCl, MgSO ₄	10% buf. form.	10% buf. form.

12 November 1986

N.E. side of Santa Cruz. 1st sub dive. Rinehart in sphere, Christina in rear. A-frame malfunctioned after sub released -- cannot retrieve sub. Towed sub (with crew in her) to lee side of Baltra (NW side). Tow begins ~ 1820 hrs (just after sunset) using nylon sub line, which is under excessive stress due to moderate seas & long surface tow. 2100 hrs. A-frame repaired, sub brought on board. Sub down off "Rocas Gordon", retrieved near Pta. Carrion (off Canal de Itabaca). Excellent collection of sponges & hydrocerals, plus some crabs & many brittlestars. (Collection #1). Corals included: anthozoans: Madrepora galapagensis, Paracyathis sp. Hydrocerals: Desmophyllum cristagalli, Javania sp., Stenohelia sp., Swiftia sp., Nidalia sp., Cryptothelia sp., Stylaster marenzelleri, Cyathoceras n. sp., Javania cailleti, Cryptothelia gigantea, Stenohelia concinna. No samples retained for LACM. (sub dive #1911)

13 November 1986

LACM 86-208 Collection #2: Scuba (15-25 ft.), between ~~Baltra~~ ^{Greater Daphne} Is. & Seymour Is. Typical E. Pacific shallow-water fauna, plus 2 unusual forms, a green (yellow-green) Lytechinus-like urchin (but w/ longer spines), and a black cucumber that may be the same common black cuc at Guam & throughout the W. Pacific. Also: S. thorcarsii, Megabalanus (Coccoloma?), Oreaster occidentalis, Dendrophylliidae (Balanophyllia sp.), Isostichopus fuscus, Nidorellia armata, the "flacid leather star" (also in Gulf), Murex (elenensis?), Mithrodia bradleyi,

% buf. form.

Tripneustes depressus

LACM 86-209 Collection #3: n.w. shore ^{Baltra}~~Seymour~~ Is. Collections made on shore (1-6 ft. depth) in small cove, from ~~the~~ man-made rock wall. Collections included the following: Echinometra vanbrunti, Thais melones, Fissurella longifossa, Murexiella radwini, Barbatia reeveana, Anthopleura dowii, Brandtothuria (2 spp.?), Eucidaris thourasii, Didemnum mexicanum, Tubastrea tagusensis, Columbella castanea, Ophiocoma aethiops, & Chiton sulcatus. Copulating turtles followed for ~10 min. at 15' ^{tetralonia mydas?} (Leptochelys olivacea)

LACM 86-210 14 NOV. 1986

Collection #4. Sub dive off NE coast of Seymour Is. 2400' to 2600'. Crinoids, basket stars, soft coral ^(Anthomast sp. - 10), weird clams (obovate, like brachiopods, 5" long x 2" wide), brachiopods, weird solitary ascideans (Oectacnemidae, Dicopia? id by F. Monnoit), a few crabs taken by PCB for LACM. (sub dive #1912) 90°15.7'W, 00°22'S.

LACM 86-211

Collection #5. Sub dive off N. shore Is. Santa Maria (off Post office Bay). Dive #1913. 744ft to 1634ft. Many sponges of all sorts. Large brown & white cucumbers, two with attached molluscs (parasitic according to Francois), that were removed for Jim McLeaw. 1°12.4'S, 90°26'W.

Dr. FRANCISCO VILLAMAR
P.O. BOX 5940

INSTITUTO OCEANOGRAFICO
GUAYAQUIL - ECUADOR

send both books + zool. paper

"Acta Oceanografica^{del} Pacifica" ~~Journal~~ Journal of
Inst. Oceanogr.
(Vol. 2 #2 is catalogue of fault species)

Some data: Sea level depth maximum = ~3000'
Alvin " " = ~17,000'
Cost of operating R/V Seward Johnson = \$13,500/day
Population of Galapagos: ~11,000 (5,000 on
Santa Cruz).

Fidi Angemyer - cpt. of "Cachalote"

ACM 86-212

Collection #6. Afternoon shore work & shallow snorkling in Post Office Bay, Isla Santa Maria. Did not take time to look for Post Office Box. Beautiful area, clean mangroves growing out of lava bed on shore. Loose lava rocks turned & misc inverts & algae collected. Two sea lion pups mistook us for sealions & played with us for ~45 min. in water. Good sediment/crustacean sample taken by rock washes of lava rocks (low tide). Many new sea

cucumbers. Photos taken of "w. Pacific black
cucumber" and what appears to be Selenkothuria
lubrica but w/o yellowish tube feet.

Kothurda

LACM86-213 15 Nov. 1986

Morning sub dive. Brusca in sphere, Judy Connor in rear.
Collection #7. Sea mount @ 1°18' S, 90°17' W, W. of
Gardner Is. (E. of Florena Is.).
Beautiful dive. Saw sea lion at 550' depth!

Morning scuba dive. Collection #8. W. side Gardner
Is. (W. of Florena). Armstrong et al., with
Fini from "Cahcalote" & Mort Collim.

Tripneustes depressus, Antipathes panamensis
Antipathes galapagensis, Antipathes sp(?),
Brandtothulia sp(?), Isostichopus fuscus,
Tubastraea taguensis, Pacificorgia sp., Muricea sp.,
Mithrodea bradlegi, Aplidium sp., Megabalanus
coccopoma (?), Plumularia (s. cavus ID).

LACM86-214

Afternoon scuba dive. Collection #9. NW corner
Isla Espanola (= Is. Hood), 70' (Brusca, Connor, Armstrong).
Oreaster occidentalis, Toxopneustes roseus, Eucidaris
thouarsii, Muricea sp., green urchin (Lytechinus sp.),
Terebra strigata, Columbella castanea, Turbo
scitalus, Cerithium (maculosum?), Dardanus
sinistripes (w/ Calliatis polypus). Great dive;
giant sea turtle (Ridley?), playful bull sea lion charging
us, hordes (thousands) of E. thouarsii in windrows on

bottom (probably mating clusters). Two hammerhead seen on surface. Cuba libres on-board the "Cachalote" with Fidi Angeweyer & his 3 man crew (including the charming Macarena), & Mort Collim (one of the 5-member board of Sea Pharm & head of Liposome Corp.).

Afternoon sub dive. N. Isla Española (01°17.2' S, 89°48.7' W). JSL Dive #1915. Collection #10.

16 Nov. 1986

Pt. Suarez
(Gordon Bay)

Isla Española, n.w. corner (around point to windward side of E shore), scuba at 75'. Brusca & Monnoit buddies (+ Armstrong, Connor, Faircloth, Reed). Great dive. Much algae, Tripneustes very abundant, some crustaceans taken, plus some molluscs for McLean, many many tropical fish. (Collection #11).

Hiked trail on Española. Incredible. Blue footed boobies, masked boobies, iguanas (marine + terrestrial) everywhere, sea lions playing with us in the water, pups rolling over to have their tummies scratched, all the animals very very tame (except Sally Lightfoot). Boobies nesting right on trail (eggs, hatchlings, subadults, one clutch of 3 hatchlings), sea lions + crabs + iguanas crawling all over one another! Tripneustes depressus, Nidorellia armata, Maricea (californica?), Conus sp. (not in Keen; solid brown), Pacitigorgia sp., Hexaplex sp. (not in Keen), Aniculus elegans, Thais melones, Isostichopus fuscus, Neorapana grandis, Cymatium sp., Toxopneustes roseus, Antipathes galapagensis, Tubastraea tagusensis.

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Conus sp.

Keen), Aniculus
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Sub dive, N. Isla Española (collection #12)
N.W. side island, off Pt. Saurez. Many sponges,
comatulid stalked crinoids, long chelate galatheids,
soft-shelled toxic urchin (common), long-spined
club urchin (spines 3-4 times size of test), coral (Madrepora
galapagensis), Iridogorgia (photographed).

17 Nov. 1986 Morning sub-dive, S. San Cristobal Is.
(JSL dive #1919), 1800' depth. Especially interesting
animals on this dive. Photos taken of glass sponge
(Hyalonema), stoloniferans growing on Hyalonema stalk,
pelagic sea cucumber (purple), pelagic worm-like
organism (cucumber?) or ~~polychaete~~, sea-pen (Umbellula)
and a 5" decapod (scyllarides-like). (collection #13)

LACM86-215

Afternoon scuba dive, Kicker Rock, west end of
Isla San Cristobal. (Collection #14). Collection
of crabs & shrimp taken for LACM. Other invertebrates included
Antipathes galapagensis, Maricea californica?, Nidorellia
armata, Mithrodia bradleyi, Conus sp. (solid brown,
not in Keen), Hexaplex sp. (not in Keen), Anthopleura
dowii, Phoria pyramidata, Aplidium, Didemnum
Isostichopus fuscus, Tabastraea sp., Thais
melonea.

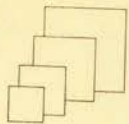
This was the last ^{scuba} dive to take place during
my leg of this Sealhorn Expedition. Tonight
(or tomorrow morning) I board the "Albacora"
with the 4-persons team of newsmen from
Spanish National Television, to steam back

to Baltra for the ~~morning~~ ^{afternoon} flight to
Susayquil (on the 18th). I'll be back
in L.A. on the 19th or 20th. As much
as I love the Galapagos, I'm ready
to return to work at the Well. Juan
Carlos seems like rather a prick to me,
but Glynn says he is nice & I trust
Glynn's opinion. Neerthelen, Jr. treated
me like shit, as well as the Spanish
film crew. Perhaps it was just circum-
stances - the time & situation.

LACM 86-216 Afternoon sub dive, off Kicker Rock (San Cristobol Is.)
(collection #15). 215'-340'. Crustacea & brittle
stars taken for Well (small specimens only).

It to
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much
you ready
Juan
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I trust
He treated
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DSV PARTNERS



MORTON COLLINS
GENERAL PARTNER

A reel Jerk!

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Tel. 638-90-81

- Spanish TV crew

<p>LACM 86-208</p> <p>5-8 m, between Greater Daphne Island and Isla Seymour, Galapagos Ids (0°22'S, 90°18'W). Leg. R.C. Brusca, 13 NOV 1986. 186-2081.</p> <p>Los Angeles Natural History Museum</p>	<p>LACM 86-209</p> <p>Intertidal-1.8 m, man-made rock wall, on shore in small cove, NW shore of Isla Baltra, Galapagos Ids (0°22'S, 90°18'W). Leg. R.C. Brusca, 13 NOV 1986. 186-2091.</p> <p>Los Angeles Natural History Museum</p>	<p>LACM 86-210</p> <p>731-792 m, off NE coast of Isla Seymour, Galapagos Ids (0°22'S, 90°15.7'W). Leg. R.C. Brusca, 14 NOV 1986. 186-2101.</p> <p>Los Angeles Natural History Museum</p>
<p>LACM 86-211</p> <p>227-498 m, off Post Office Bay, off N shore of Isla Santa Maria (Charles), Galapagos Ids (1°12.4'S, 90°26'W). Leg. R.C. Brusca, 14 NOV 1986. 186-2111.</p> <p>Los Angeles Natural History Museum</p>	<p>LACM 86-212</p> <p>Intertidal-1 m, Post Office Bay, N shore of Isla Santa Maria (Charles), Galapagos Ids (1°12.4'S, 90°26'W). Leg. R.C. Brusca, 14 NOV 1986. 186-2121.</p> <p>Los Angeles Natural History Museum</p>	<p>LACM 86-213</p> <p>168 m, seamount, E. of Isla Florena, N of Isla Gardner, Galapagos Ids (1°18'S, 90°17'W). Leg. R.C. Brusca, 15 NOV 1986. 186-2131.</p> <p>Los Angeles Natural History Museum</p>
<p>LACM 86-214</p> <p>21 m, NW corner of Isla Espanola (Hood), Galapagos Ids (1°17.2'S, 89°48.7'W). Leg. R.C. Brusca, 15 NOV 1986. 186-2141.</p> <p>Los Angeles Natural History Museum</p>	<p>LACM 86-215</p> <p>66-104 m, off Kicker Rock, Isla San Cristobal (Chatham), Galapagos Ids (0°48'S, 89°32'W). Leg. R.C. Brusca, 17 NOV 1986. 186-2151.</p> <p>Los Angeles Natural History Museum</p>	<p>LACM 86-216</p> <p>12-21 m, Kicker Rock, W end of Isla San Cristobal (Chatham), Galapagos Ids (0°48'S, 89°32'W). Leg. R.C. Brusca, 17 NOV 1986. 186-2161.</p> <p>Los Angeles Natural History Museum</p>