14 April 1981

Mexico, Sonora, Puerto Peñasco (Golfo de California).

A sentimental journey home to Puerto P.-- Joe Franz & Phil Pepe's course, with Ray Wells & Paul Delaney along as TA's. Weather beautiful; warm days, cool eves. Lots of fine looking women. Lots of fine tasting grass (+ more; thanks Paul!).

Collections made on station Beach Reef. Isopods taken from Sargassum (Idoteids) and the sponges Lucetta (sphaeromids, in chambers) & Geodia mesotriana (sphaeromids, on surface).

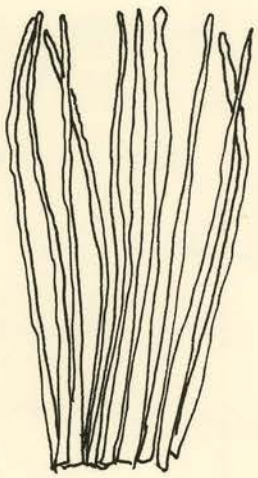
23-25 July 1982

Hawaii, Big Island (Hawaii), Kona Coast.

Three days at Kealakekua Bay diving with A.M. Fauna included: great numbers of *Heterocentrotus mammillatus* (=slate pencil urchins), *Tripneustes gratilla*, & *Echinometra* (either *E. mathaei* or *E. oblonga*; burrowing urchins); a few *Diadema paucispinum* ("wana"); misc. sea cucumbers; many moray fish, esp. anglefish & morish idols. No visible algae in subtidal. Nearly every fish seen was observed "picking" or "grazing" off the rocks & coral, & this is no doubt the reason no macroscopic algae exists here. Similarly, no small crustaceans were seen; no isopods or amphipods at all. Whether or not one considers these multitudes of fishes (both individuals & numbers of kinds) to be "predators," one can hardly deny the fact that "more fish" are picking at the substrate here than would ever be seen in temperate waters (i.e. > predation in lower latitudes!). There is a short, shallow,

gelatinous, finger-like, clumped alga on the intertidal rocks, but no isopods or amphipods appear to be present in it.

actual size of clumped, gelatinous, brown alga common to the intertidal of the Kona coast. Blades are very durable & difficult to tear free from rock or break in half by hand.



26 July 1982

Hawaii, Big Island (Hawaii), "Kona Coast", Hapuna Beach in District of South Kohala.

This is a nice little stretch of sandy beach situated between two rocky lava headlands. There is a small rocky "peninsula" in the middle of the beach that separates it into 2 fairly distinct swimming beaches. Although a gelatinous finger-like alga grows on the rocky promontories at either end of the beach, no isopods or amphipods were found living in it. A few Colobocentrotus atratus were present in the surge channels.

27 July 1982

Hawaii, Big Island (Hawaii), "Kona Coast", Kapaa Beach Park, just So. of Hawi (at NORTH end of island).

Excellent diving. subtidal fauna includes Heterocentrotus mammillatus, Tripneustes gratilla, a slate blue Linckia (large, 6" arm span). In shallow water (~10'): Echinometra (either E. mathaei or E. oblonga) & Diadema paucispinum ("wana"). In spray & splash zone Grapsus tenuicrustatus & Colobocentrotus atratus, and ~30' above water line periwinkles (Littorina sp.).

As at other sites, the subtidal (which here extends quickly to ~40' depth) is barren of macroscopic algae. Seaweeds occur only in tidepools, where 3 forms predominate: ① the finger-like succulent species described from the 2 previous Hawaii sites; ② a Sargassum-like brown, the blades bearing

crisp crinkled edges; (3) a Padina-like form, very small. Again, no isopods or amphipods found in any of the algal.

28 July 1982

Hawaii, Big Island (Hawaii), "kona coast", Punhonau O Honounau Nat'l. Historic Park (so. Kona District). Diving at a site ~ 20 minutes down trail, south of Parking Lot at Picnic Area. known locally as "the ramp", due to presence of accessable rocky pt. down the cliffs to the water line.

Same fauna & flora as at previous site (Kapaa Beach Park). No pods recovered. AM & I scoured the benthos for good habitats & found none. Reminiscent of Panama (Pacific).

15 oct. 1982

Mexico, Baja California Norte (west coast), Ensenada area.

Trip made with A.M. Mackey, F. Schram & J. Schram to Pt. Banda to collect at Cretaceous rudistid fossil beds. Fred noted 3 layers (strata) of rudistids, with sedimentation between each. Largest individual found ~ 18 cm. diameter at hinge end. Specimens retained at San Diego Natural History Museum.

1-3 March 1983

Mexico, Sonora, Guaymas area.

Collections of gastropods made with Roy Houston (Loyola-Marymont Univ.) at Estero Soldado, Bahía San Fraucisco ["San Carlos"] and Bahía Bacochibampo (in front of marine school).

A single oniscoidean isopod was retreived from the Bacochibampo site, from approx. the mid-intertidal region, during low tide on March 18th. (Deposited AHF)

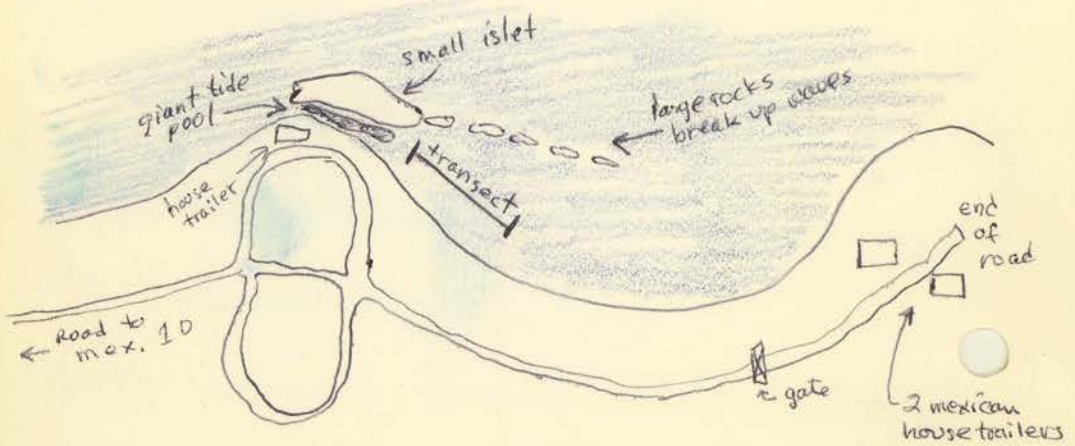
16 Feb. 1984

Mexico, Baja California Norte, coast between Tijuana & Ensenada, Jatay turnoff to Pt. Salsipuedes.

Several days coming with Bio 501 class (U.S.C.). Come to sample snails but found too few species. Made 2nd choice of project & decided to sample Strongylocentrotus purpuratus w/commensal Colidotea rostrata. Selected area of mid-intertidal corresponding to upper limit of surfgrass. Ran 35 m transect line. Selected 1 m^2 quadrats along transect line by use of random # table. Sampled quadrats until ran out of plastic bags for urchin (11 quadrats). All urchins counted in @ quadrat, plus 4 urchins taken from @ quadrat (4 closest to @ corner of the quadrat frame).

Students: Tim Stebbins
Paul Delaney
Mike Steinbeiss
Laura Grierson
Mike Miller
Ann Cohen
Coral Stepien
Kendall Gray

The littoral here is a high energy rocky point, boulders or rock slabs. The beach is fairly steep, the intertidal fairly narrow. The choice of a sampling site was based on selection of the least wave exposed shore around.



Rocky intertidal with abundant Egregia & "fucus-like" brown. Urchins abundant in some areas. Very few large mobile inverts seen (few large snails, no large sea stars, only a few nudibranchs).

Following sheet gives data on 11 quadrats sampled (# urchins/quadrat).

Night of 17 Feb. spent in Ensenada. very good eat, with dancing & dining & merriment. Found good hotel (The San Nicolas Resort Hotel) with rooms at about $50/@ for 2-3 people. Discovered great seafood restaurant (The Mariscos Bahia de Ensenada) with shrimp dinners at ~ $3/@.

16 Feb '84 (cont.)

Colidotea rostrata / Strongylocentrotus Data

Punta Salsa Puerto Bujo

Quad No.	# urchins / m^2
4 (1)	84
7 (2)	20
12 (3)	58
13 (4)	42
16 (5)	16 S. purp (2 S. franc)
19 (6)	10
22 (7)	12 S. purp. (2 S. franc)
23 (8)	2
25 (9)	4 none collected
28 (10)	0
30 (11)	0

$N = 228$

$\bar{X} = 20.7$

$s = 28.2$

14 March 1984 (3/14 - 3/18)

Mexico, Baja Norte, Coloraditos.

off with 501 class (USC) to Coloradito for lowest tides of year (?): -6.5' to -7.0' (22-23 ft. drop over 12 hrs.). Participants include: Tim & Stacey Stebbins, Paul Delaney (+2), Mike Miller, Laura Grierson, Kendall Gray, Roy & Linda Houston, A.M. Mackey, Alec Brusca, Derrick Lake.

Perfect weather, mildly cool eves & warm days. Reef exploring at low tides & fossil hunting during day.

No Heliaster, Echinometra, or Perites to be found. Portions of reef covered with massive colonies of the coral-like bryozoan Fasciculipora pacifica Osburn. Many nemerteans found, including: Boseodiscus punnetti, Baseodiscus mexicanus, and Lineus geniculatus (?). Also lots of Pseudosuberites pseudos on rocks in low

tidepools. *Axius vivesi* seem more abundant than ever. At -6' many gorgons begin to appear (as at other Gulf sites).

July 24, 1984
Mexico, Baja California Sur, Pt. Chivato

With Tim Stebbins at Chivato for his dissertation field work. Chivato is now a private beach, assoc. with Hotel Pt. Chivato (newly reopened). The charge is $3/day to camp. About 15 palm-frond palapas provide shade on the beach.

Reconnaisance dive ~3 pm. noted the following:
Sponges: Haliclona permollis, ~~Tedania mesotriana~~ Terpios zeteki (abundant; colonies with fish(?) bites out of them in subtidal), Leucosolenia sp., Leucetta losangelensis.

Coelenterates: Lytocarpus sp. (white), Aglaophenia sp., Diadumene leucolena, Palythoa, Zoanthus danae, Porites panamensis (= P. californica), [columnar lobate form of Porites common here, in shallow water, as at the old "Catch-22" site near San Carlos], numerous gorgonians (including Lophogorgia alba, Pacifigorgia eximia, Gorgonia adamsi, Eugorgia spp.).

Worms: Eurythoe complanata, Bispira rugosa, Spirobranchus sp., colonial polychaetes identical in superficial appearance to those of "Sample #4" from Playas Coco, Costa Rica (17 Aug. 1981).

Molluscs: not carefully surveyed, but the following noted: Muricanthus princeps, Siphonaria maura

Echinoderms: Phataria unifascialis, many brittle stars, Echinometra vanbrunti (in shallow bore-holes on rocks), Eucidaris thouarsii, Diadema mexicanum (subtidal only?), Isostichopus fuscus (abundant), Neothyone gibbosa

Fishes: Gulf opaleye (Girella simplicidens), Cortez angelfish (Pomacanthus zonipectus), king angelfish (Holacanthus passer), Sergeant major (Abudefduf troschelii), ~~king angelfish~~ rainbow wrasse (Thalassoma lucasanum), bullseye putter (Sphoeroides annulatus), blunthead trigger fish (Pseudobalistes naufragium), hogfish (Bodianus diplotaena).

washed ashore were dozens of Physalia utriculus (1 tentacle forms). Also, local campers found a Porpita. A very large (~25 cm) Mithrodia bradleyi (?).

25 July 1984

Pt. Chivato (cont.)

Worked morning (2:30 AM) tide with Tim. Guaymas tide chart (Mexican) was correct time for low, but I don't believe it reached the "0" tide level, as predicted. It looked like about +1.5 to me at the low point. Five quadrats sampled in mid-intertidal, just above Sargassum in pools. Most quadrats in "rock on sand" habitats, so fewer numbers of porcelain crabs were present. Many Selenkothuria, Pachygrapsus, and large Baseodiscus mexicanus (>2 m. in length). A large spider crab (~ 10 cm long) was collected for Garth. Several large (12-15") purple "trumpetfish" were seen in ~ 3' of water. The only fish resembling this in DAT's book is the reef coronetfish, Fistularia commersonii, but the color is wrong (these fish were swimming, but were a brilliant green color in the light of the Coleman lantern).

Air T° (noon) on beach = 43°C

H_2O (surf) T° = 31°C

Caulerpa (fernlike green alga) growing in short tufts sporadically in low intertidal Zone.

26 July 1984
Pt. Chivato (cont.)

Worked morning tide (3:15 AM) with Tim, to take an additional 5 quadrat samples, for total of 10 quadrats at site, as follows: all crustacea, echinoderms & carnivores of all types removed from .1 m^2; all holothurians & echinoids removed (or counted) from 1 m^2.

Storm began raining ~ 2:30 AM, after several hours of heavy winds. My sleeping bag went from a sandbox to a mud bag. Tim was sick from? (hogfish?) & couldn't sleep either, so we began sampling ~ 2:45 AM in heavy rain, which quit about when we finished our 5th quadrat.

10-14 August 1985

Mexico, Baja California Norte, Golfo de California, Coloradito (~40 mi. So. San Felipe.).

Collections made by R. Brusca & C.A. Brusca. One rock washing - one clump mussels (for Jim McLean; Modiolus capax?)

Mexico, Sonora, Pt. Cirio, near Pt. Libertad (~29°50' N) - Sea of Cortez. 14/15 April 1987

Collections made by R.C. & C.A. Brusca at low tide throughout littoral zone. Ligia & Tylos taken in wash zone (on Sargassum wrack). Rock washes made. Sea pens collected on beach (storm jetsam). This collection looks rich - should be sorted a.s.a.p. (Carlene wants a new pod named after her!).

24 – 26 May 1988

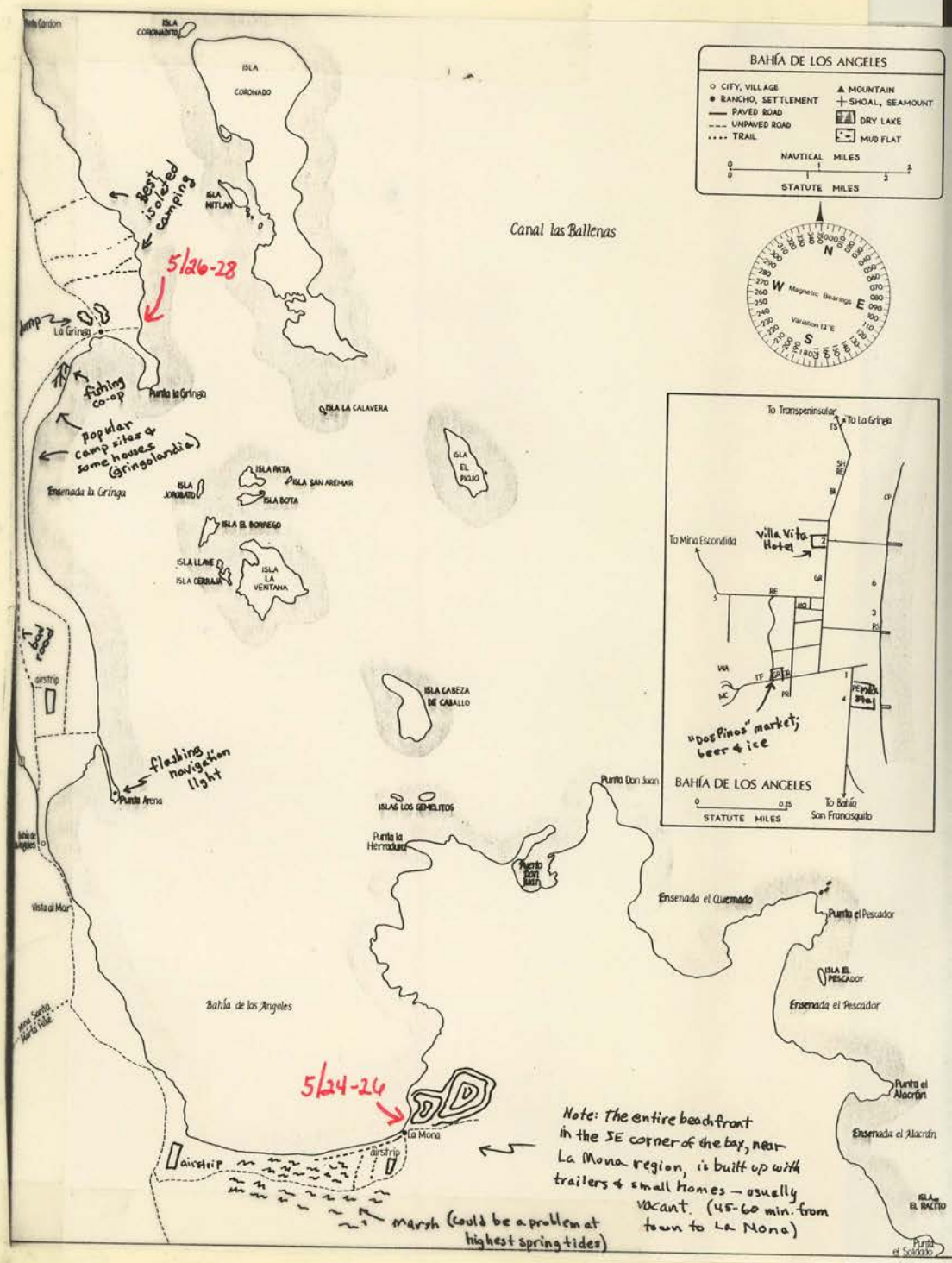
Mexico, Baja California, Sea of Cortez,
Bahía de Los Angeles.

Collecting expedition with LACM Crustacea Lab crew (Sans Delaney, Cohen, Martin & Kuck!). Constance Gramlich (Pacific BioMarine), Dan Richards (Channel Is. Nat. Park Biologist), Tim Stebbins, R. Wetzer, Leslie Powers.

L.A. Bay isn't as nice as it was 10 yrs (my last visit). The La Mona region is entirely built up now, with houses & trailers – reminiscent of Coloradito area – vacation homes that are vacant most of the time. The west shore, that used to be such good camping, is now 80% gone due to expansion of the town to the south. Will explore Pt. Gringa later in the week.

Outstanding isopod collecting in La Mona area. Largest population of Excirolana I've seen anywhere, emerging just before sunset and swimming en mass near the tideline, foraging on whatever was present. A large sample was taken by hand & using a chunk of salami as bait. Just after sunset the Tylos emerged from the sand, from the water line to ~100' up shore. Good large healthy specimens – a large sample was taken. Constance took ~6 large Ligia from rocky point.

The Bay shore is also rich with portunid crabs – more than I've seen anywhere short of Cholla Bay. Sizable mussel beds also occur in 2'-4' water in the La Mona region. (Modiolus capax)


BAHÍA DE LOS ANGELES
CITY, VILLAGE
RANCHO, SETTLEMENT
PAVED ROAD
UNPAVED ROAD
TRAIL
MOUNTAIN
SHOAL, SEAMOUNT
DRY LAKE
MUD FLAT
NAUTICAL MILES
STATUTE MILES
Canal las Ballenas
ISLA CORONADITO
ISLA CORONADO
ISLA MITLAN
best isolated camping
5/26-28
La Gringa
fishing co-op
Punta la Gringa
popular campsites & some houses (gringolandia)
Ensenada la Gringa
ISLA LA CALAVERA
ISLA EL PIOJO
ISLA PATA
ISLA SAN ARMAR
ISLA BOTA
ISLA JORGUITO
ISLA EL BORREGO
ISLA LLANO
ISLA CERRALVO
ISLA LA VENTANA
airstrip
ISLA CABEZA DE CABALLO
flashing navigation light
Punta Arena
ISLAS LOS GEMELITOS
Punta Don Juan
Punta la Herradura
Puerto Don Juan
Ensenada el Quemado
Punta el Pescador
ISLA EL PESCADOR
Ensenada el Pescador
Vista al Mar
Bahía de los Angeles
5/24-26
La Mona
airstrip
airstrip
Punta el Alacrán
Ensenada el Alacrán
ISLA EL PACTO
Punta el Soldado
marsh (could be a problem at highest spring tides)
Note: The entire beachfront in the SE corner of the bay, near La Mona region, is built up with trailers & small homes — usually vacant. (45-60 min. from town to La Mona)
To Transpeninsular
To La Gringa
To Mina Escondida
Villa Vita Hotel
"Dos Pinos" market; beer & ice
BAHÍA DE LOS ANGELES
STATUTE MILES
To Bahía San Francisquito

26-28 May 1988

Mexico, Baja California Norte, Bahía de Los Angeles (Sea of Cortez). Camped on No. side of Pt. Gringa, just No. of L.A. Bay. Rocky headlands with cobble beaches in between. Very nice beaches. Access is by following road to Pt. Gringa camping beaches/trailer court. Follow road all the way to its end, & just before the end turn left (N.) on the graded road that runs through the dump. Follow this road through the pass to several side roads that run down small washes to the beach.

The subtidal algae here is amazingly large. Colpomenia "heads" 2'-3' across, giant Porphyra-like algae 3' tall, giant sheet-like algae (like brown Ulva) 3' across. The cobble beach is rich with a small Ligia (perhaps different from the large one we took at La Mona) and Tetragrapsus jouyi.

An unusual armeind-like nudibranch was taken by Tim & Dan & Constance in ~10' water (photos taken by R.C.B., Constance & Dan). Air T° = 38°C H_2O T° = 17°-18° C (above thermocline!). Fucking cold water.

Numerous juvenile & large adult Heliaster kubiniji were found at La Mona site yesterday; none here at La Gringa. (oops - wetzer claims she saw a dinner plate sized one SCUBA diving - on sand!)

Scuba dive made at No. end of cove (1st cove No. of Pta. Gringa ??) in 10'-40'. The area is rich with large Pseudosuberites & other sponges, small vase sponges (1'-2' tall), about 6 different gorgonians (e.g. Lophogorgia alba, Muricea sp., + the usual gamut of probable undescribed species. Lots of the new armenid slug (~6 collected to relax & preserve). Constance found a small hermit crab with a its shell entirely covered with a colonial hydroid (relaxed & preserved). Also seen: Tridachiella diomedea, Pylopagurus varians (in its coenocium of Janaria mirabilis), Othelia tenuispina, Eucidaris thousarsii, and large beds of Encope grandis & E. micropora (= E. perspectiva ?) - both with commensal pinnotherid crabs running all over their surface (oral surface). If the Encope were turned over, the crabs beat a fast retreat to the other side, over & over, clearly being able to quickly discriminate which side of the host is facing "down".

Low spring tides in L.A. Bay are ~1 HR. behind (later than) the U.A. Tide Calendar predictions. The winds blew gale force here all week again. It seems always to be windy here. I suspect due to the radical T° differential between the land & the sea (~18° this trip).

29 May 1988

Mexico, Baja Calif. Norte, El Rosario region, Pt. Baja.

Isopods (sphaeromatids?) taken in fine sand under rocks in upper mid-intertidal. RCB/RW

These guys flatten themselves out in minute depressions & pits on the small rocks & pebbles in tidepools & are almost impossible to dislodge – plus their coloration is highly cryptic & highly variable (no two are exactly the same).