19-20 Feb. 1978

Panama City, Panama.

Awaiting departure of R/v Alpha Helix Caribbean Expedition. Flight from L.A. to Panama with Bill McClure took 19 hrs. due to side trips through Houston & Miami. Braniff flight Miami - Panama fucked (remember not to fly Braniff again ~ like riding the bus!). Crew & scientists for this leg are as follows.

Ken Rinehart
Bill McClure } chief scientists

Rick Theiler
Paul Shaw
Murray Munro
Joe Martin
Bob Hughes
Don Hewson
Judy Conner
Guy Carter

21 Feb. 1978

Under way; through Panama Canal and up the Caribe coast to San Andres Is. (Colombia). Will pick up Caribbean-Columbian observer in San Andreas (a fisheries biologist).

22 Feb. 1978 - Caribbean

San Andres Is., Bahia de San Andres. SCUBA collections made ca. 1/4 mi. E. wharf. 22'-26'. Thalassia bed; substrate = white "coral" sand, powdery. Dominant animals = Diadema & Tripneustes. 12°34.7'N 81°41.8'W

Animals taken:

Holothuria mexicana
Tripneustes ventricosus
Clypeaster rosaceus
Strombus costatus
Strombus gigas
Dardanus venosus
Clibanarius sp. (ca. C. tricolor, but brown, not blue)
Vasum muricatum
Pinna carnea
Astraea phoebia
Stoichactis helianthus
Haminoea antillarum
Crassispira sp.
Eurythoe complanata
Diadema antillarum

Algae taken (id. by J. Conner):

Dilophus guineensis (Kutzing) J. Agardh
Thalassia testudinum
Turbinaria
Dictyota dentata Lamouroux
Dictyota divaricata Lamouroux

---

algae collected by J. Comer on beach next to wharf; sandy beach with small rocks & trash: Acanthophora spicifera, Centrocerus clavulatum, Chondria sp., Polysiphonia, Jania.

23 February 1978 - Caribbean

San Andres Island, Bahía San Andres. Collections made ca. 1/3 mi. from wharf. White sand bottom with coral & rock outcropping. SCUBA, depth = 20'-30'.

Animals taken:

Cronius tumidulus
Cronius ruber
Condylactis gigantea
Bartholomea annulata
Ircinia strobilina
encrusting black sponge (AHCE 23II 78-1-6)
encrusting grey-green sponge (AHCE 23II 78-1-7)
Polycarpa obtecta (?) - solitary tunicate
Artacama sp. (a terebellid polychaete)

Algae taken (id by J. Conner):
Hydroclathros clathratus

23 Feb. 1978, 2nd collection. Mouth of passage into San Andres Bay, north side of passage; most southern pt. on reef platform. gorgonians predominate. 23'

Animals: Muriceopsis flavida
Gorgonia flabellum
Plexaurella grisea
Pseudopterogorgia bipinnata
Verongia aurea (?) (AHCE 23II 78-2-5)
Erythropodium polyanthes
Haliclona rubens (?)
Eusmilia fastigiata
Agaricia agaricites
Plevrobranchus arealatus
Hippiospongia (?) - bath sponge; massive (AHCE 23II 78-2-11)

Algae: Stypopodium zonale
Dictyopteris delicatula
Liagora sp.
Penicillis capitatus
Spyridia sp.
Cyanophyta & Rhodophyta (spp.?)

23 Feb. 1978, 3rd collection.

Intertidal/ beachrock on w. side of San Andres Island, at town of San Luis; in front of Miss Bess cafe/Bar.

Echinometra
Gelidiella acerosa
Laurencia sp.

Echinometra lucunter - bored into holes on calcareous beach rock.

Miss Bess had a large albacore-like fish in the icebox that she prepared for our dinner, with black beans & steamed rice, fried bananas & rum on the rocks. Judy & Nick Yensen would get along well - both good naturalists.

24 February 1978 - Caribbean

San Andres Island, w. coast of island, Alpha Helix anchored in 47' H_2O over sandy bottom.

---

nite light off Helix; collected isopods (Eurydice?) and a myctophid

---

Shore collection in shallow lagoon sheltered by fossil coral reef.

- *Acanthochitona hemphilli*
- *Nerita versicolor*
- *Littorina ziczac*
- *Cittarium pica*

} molluscs

- *Padina*
- *Codium taylori*
- *Avrainvillea rawsoni*
- *Galaxaura comans*
- *Dictyota jamaicensis*

} algae id. by Judy Conner

---

shore collection on fossil coral reef; littoral; heavy surf. algae (id. by Judy Conner) # 1130

- *Cladophora expansa*
- *Laurencia intricata*? (tetrasporic)
- *Laurencia intricata*? (carposporic)
- *Laurencia* sp.
- *Caulerpa racemosa* var. *uvifera*

24 Feb. 1978 (cont.) Cat. # 1129

SCUBA collection on E. side island, near town of San Luis. 25'-33'

- 27 species of sponge, including ones identical in appearance to *Verongia aurea*, *Iotrochota birotula*, *Chondrilla nucula* & *Oligocerus hemorrhages*.
- white encrusting compound tunicate
- 2 types of *Millipora*
- the corals: *Dendrogyra cylindrus*
  Agaricia agaracites
  Porites furcata
  Porites astreoides

algae: *Amphiroa tribulus*
Dictyota bartayresii

- the gorgonians: *Gorgonia ventalina*
  Plexaura homomalla
  Pseudoplexaura porosa
  Pterogorgia anceps
- *Ophiothrix angulata*, *Ophiocoma pumila* } in large vase sponges
- *Pteria colymbus* (on gorgonians)

Today's dive was one of the finest of my life ~ 1st real taste of Caribbean sponge/gorgonion fauna. Many sponges several feet tall. Outstanding colors. Most noticable is that 60-70 % of the sponges are copious mucus secreters. Is this what allows them to avoid fish predation and thus grow to such luxuriance?? Stung today by [redacted] the sponge *Neofibularia nolitangere* - about 15 hrs. of stinging. Not unbearable.

25 February 1978 – Caribbean

San Andres Island, W. side, near town of San Luis. SCUBA collection off S. point of bay. (Caleta Schooner) #1131

- 18 spp. sponges, including Iotrochota birotula Neofibularia nolitangere & Oysidea etherea (?).
- Pterogorgia citrina, Erythropodium polyanthes & Eunicea tourneforti

---

Sargassum collected from high wave shock shore (S. vulgare). No isopods, few amphipods & a few majid crabs. (from ca. 1 gallon of algae). Also collected on shore: #1132

Ophiocoma pumila
Purpura patula
Nassarius sp.

algae id by J. conner

Dilophus alternans
Galaxaura subverticillata
Galaxaura (squalida?)
Halimeda opuntia
Avrainvillea rawsoni
Avrainvillea sp.
Penicillis capitatus
Caulerpa sertularioides
Caulerpa cupressoides

26 February 1978 Caribbean

Isla Provedencia, NE side island, SCUBA collection between Palm Cay & Basalt Cay. 10'-20'. 13°24N 81°22.5'W. Cat. No. 1133

Acropora palmata

Acropora cervicornis

Millipora (encrusting a dead gorgonian)

Porites astreoides

Pseudopterogorgia acerosa

Muriceopsis flavida

Plexaurella grisea

Eunicea mammosa

Plexaura flexuosa

Ophiocoma pumila

Briarium asbestinium

Isostichopus badionotus

Ophiothrix angulata

Polycarpa (obtecta?) - solitary tunicate

purple compound tunicate

numerous unidentified sponges

Lytechinus variegatus

Calliostoma ?

Astichopus multifidus

The sponge Ircinia fasciculata was collected with numerous isopods living within it (sponge Id. by Liu Croft)

visibility "unlimited" !!

Best dive of my life - incredible - coral reefs - massive gorgonians 5 feet tall, sponges 4 feet tall -- numerous baccaruda. Isla Provedencia is much nicer than San Andres (both Colombian Islands). Very sparsely populated. old cannons (turn of the century?) encircle island, overgrown with jungle growth.

27 February 1978 - Caribbean

San Andres Island, west side of Island, at Rada el Cove. SCUBA collection in 20'-35'. Sand bottom with rock/coral outcroppings.

Many sponges collected. Stylocheliş collected on shore, on Dictyota.

SCUBA collection also made on E. side of island, at entrance to channel into Bahía San Andres.

Gorgonians: Pseudopterogorgia acerosa

Pseudopterogorgia americana

Pseudoplexaura flagellosa

Astichopus multifidus (lacks discrete cuverian organs)

Isostichopus badionotus (with well developed cuverian org.)

Trachythyonidium occidentale (?) (w/o cuverian organs)

numerous sponges

This is our last day in Colombian waters. Tonight we steam for Cayo Media Luna off the coast of Nicaragua, & from there north to Roatan, off Honduras. The most notable differences between the Caribbean & the tropical E. Pacific are: (1) The persistent & ubiquitous presence of hermatypic corals in the Caribbean (2) the large number of noxious animals here, especially sponges (Neotibularia, et al.) & fire corals (Millipora spp.). (3) the large number of mucus secreting sponges in the Caribbean. of the 60 or 70 species wéve collected, easily 2/3 are potent mucus secreters. Some exude copious amounts of mucus w/in seconds -

often colored the same as the sponge itself.
(4) the size of the Caribbean sponges – they are enormous, giant vase-like affairs, within which generally reside small gobies, blennies & a large variety of brittle stars (esp. *Ophiactis* spp.). These large sponges, many rising 2-4 feet above the substratum, literally dominate the underwater scene.

28 February 1998 - Caribbean

Cayo Media Luna, off coast of Nicaragua (ca. 15° 10' N 82° 42' W). collections made of coral reef by snorkle & SCUBA.

algae recoved by snorkling: Codium repens, Caulerpa racemosa, Neomeris annulata.

algae recovered by SCUBA dives in 10'-20': Laurencia intricata (?), Chondria, Stypopodium zonale, Dilophus alternans, Dictyota divoricata.

Inverts collected with SCUBA in 10'-30':

Zoanthus pulchellus

Macrorhynchia sp. (hydroid)

Isostichopus badionotus

Ludwigothuria sp. (brick red dorsum; crimson red ventrum)

Fossothuria sp.

Styela plicata

Echinaster sentus

Cassiopeia xamachana (upside-down jellyfish)

10 species of unidentified sponges

Pterogorgia anceps (gorgonian)

Porites sp.

Palythoa sp.

Oculina diffusa (coral)

Ricordia florida (coral) ?

pink compound tunicate & green compound tunicate

28 Feb. 1978 (cont.)

Clavelina picta (solitary ascidian)
Gorgonia ventalina
Mussa angulosa (coral)

SCUBA collection made under ship, in 30'-80'. Sand bottom carpeted with very large specimens of the algae Caulerpa mexicana, Caulerpa racemosa & Caulerpa ashmeadii. Also Laurencia sp., Chondria sp., Penicillus dumetosus, Udotea flabellum, Udotea "pacifica", Udotea cyathiformis, Halimeda sp., Penicillus sp.) & Laurencia sp.

Rock outcroppings housed large numbers of sponges & gorgonians & brittle stars & lobster. Collected were: Leucozonia nassa leucozonalis (snail), Ophiothrix angulata, & the encrusting gorgonian Erythropodium polyanthes.

1 March 1978 - Caribbean

Cayos Vivorillo, off Honduras (ca. 15°50'N 83°18.6'W). SCUBA collections made under ship in 30'. Sandy bottom with 15' high coral outcroppings, covered with Sargassum & Lobophora. Heavy sedimentation, turbid water. Cat. No. 113884

Ludwigothuria sp.
Clavelina picta
Callyspongia vaginalis
Erythropodium (a brown form & a purple form)
Ophiocnida sp.

Halimeda opuntia
Halimeda tuna
Lobophora variegata
} algae

shore collections made on large island here (about 200 yards long). The island is owned by a man named "Bogus" who lives here alone. He's planted coconut palm trees & what appear to be tomatoes. Its a lovely little island w/a saline pond and a concrete house. He sculpts dead coral into flowers, turtles & other figures & the house is filled with this handiwork & photos of nudes.

1 March 1978 (cont.)

Bogus was very pleased to see people. We had a long talk & drank a lot of beer & smoked a lot of cigarettes together. He had lunch with us the Kelis & gave many of us his carved "coral flower arrangements"

The shore collection turned up the following algae: Sargassum sp., Chaetomorpha sp., Bryopsis sp., Ectocarpus (?), Laurencia intricata ?, & Stypopodium zonale.

2 March 1978 - Caribbean

Isla Roatan, off Honduras, anchored of Punta Oeste. Scuba collection in 10'-90', near small island offshore from town. Ca. 86°38'W 16°15'N.

A beautiful dive spot, massive coral reefs breaking surface then dropping off to ca. 150'. Numerous sponges collected, the sponge fauna being very similar to that of San Andres. Also collected: Cat. No. 1135

Mithrax (Mithrax) spinosissimus
Agaricia agaricites
Acropora palmata
Acropora cervicornis
Muriceopsis flavida
Mussa sp.
Eunicea palmeri
Neofibularia nolitangere
numerous ascidians
crinoid
Lytechinus variegatus
Stoichactis helianthus
Condylactis gigantea
Tripneustes ventricosus
Siderastrea radians
Fasciolaria tulipa

} shallow collection near shore

Isla Roatan, N. side island. ca. 86°38' N 16°17' W.

Fossil reefs & giant crevaces & tunnels & caves - bitchin' dive. 1st reef shelf drops to 60', then 2nd reef drops to ca. 100'.

Night light - Eurydice + a pelagic crab (or large megalopa) - ch. Planes!

3 march 1978 - Caribbean

Isla Roatan. SCUBA collections on fringing reef off SW corner of island. surface to 90'. seaward (N) face of reef drops off sheer to ca. 150'

numerous sponges & gorgonians collected, including Plexaura homomalla (the prostaglandin gorgonian) & 10 foot long sea whips. ~~Tethya~~ Tethya occurs here also, as well as the coral Montastrea cavernosa & the usual assemblage of Acropora, pirites, etc. Many caves & deep fissures that allow the diver to swim down from the surface in near blackness, to emerge at depths of 80'-120'. very exciting. Tomorrow Belize — then Miami & home. Will take time in Belize for some company business.

2/3 January 1979

Mexico, Baja California Norte, ca. 15 mi SE El Rosario (in Boojumland). Cloudy & overcast; Hwy 1 washed out in various places (in riverbed washes that have flooded during recent heavy rains). Boojums all very very green – more green than I've ever seen them (but w/o flowers). Camping with AM, Boyer & Staley. Will spend time today looking for terrestrial isopods. Air T° (10 AM) = 15°C. [Air T° midnite <0°C] (& other small arthropods)

The day is cloudy & cool, but w/o rain or wind, so very comfortable. Staley collected 2 isopods under a rock near camp, and 2 more on the side of a steep, eroded hill. All 4 were under small, shallow rocks in areas recently hit by heavy rains & runoff.

The all night drive from Guaymas to Ensenada via Tijuana was actually quite tolerable, thanks to good ol' A.M.'s company. It froze last nite in Boojumland & I was again glad we were traveling in a V.W.

4/5 January 1979
Mexico, Baja California Norte (Golfo de California), Bahía de Los Angeles.

Camped @ 4 mi. S. settlement at Bahía Los Angeles (in San Felipe Desert), near head of Bay but not as far as the "Diaz campground" (ie. "the lagoon").

16.5°C

Air T° = 62° F H_2O (surf) T° = 62° F   light clouds (evening rain).

There are a number of small boulder outcroppings along this stretch of the beach, thinning into pure sand sand beaches all the way around the head of the bay until you reach the outer shore, where it becomes continuous rocky beach.

Shore collecting revealed no large algae, only turf (sparse) greens, reds & browns. Many young (1" long) Aplysia californica [do they indeed have an annual replacement, as Masashi Yamaguchi has suggested for Japanese Aplysia?), and many young Onchidella binneyi (under every rock) & even young Heliaster kubiniji. Also present were many Stenoplax, Collisella, Selenkothuria lubrica, Modiolus capax, Polinices reclusianus, many many porcelanids & Leptodius occidentalis, large rock oysters, Eriphia, a lovely aeolid nudibranch, & a single large orange polyclad (preserved) & two large echiuran worms (preserved). Acanthina laying eggs all over the beach. A handsome

Bruce Thompson Id. ~~Echiurans~~ ~~both are So. Hemisphere species~~

Urechis ~~chilensis~~ caupo (~~Müller~~ 1852)
ochetostoma sp.

porcelain crab was photographed & preserved for J. Haig, as well as some shrimp for Mary Wicksten (cariids & callianassids). Sphaeromid isopods collected & preserved for E. Iverson. The isopods occurred on the tops & sides of rough, granite rocks that were under (or at least largly protected by) overlying rocks. They were not associated w/ sponge, algae or other biota, but did occur in clusters of 2-4 individuals.

1 medium-sized, pale brown scorpion collected in camp (in EtOH).

The unpredictable cold winters that "crop-back" more than the usual fare of stenothermal species in the northern Gulf seem to come to a rather abrupt close, earlier in the new year, the further one gets south of San Felipe. Coloraditos just about always has Sargassum for example, & already L.A. Bay is beginning to show signs of the spring bounce-back (eg. Heliaster, Aplysia, Acanthina, Onchidella, etc.)

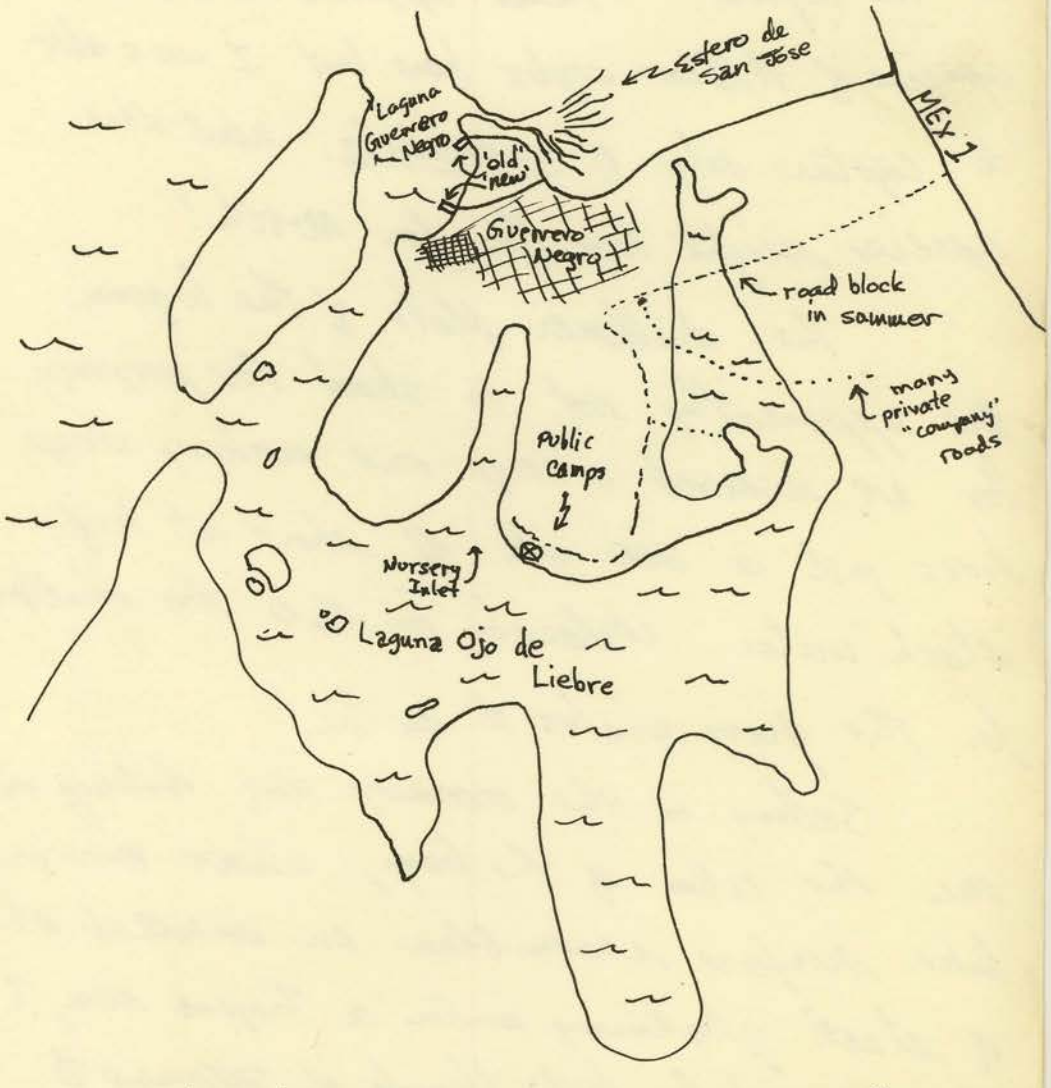
6 January 1979
Mexico, Baja California Sur (mar de Cortez), Bahía de Los Angeles. (same locality as 4/5 January 1979).

Took long walk along beach from camp towards head of bay. Nice sandflats, many clams, including razors. Many Bulla gouldiana, polychaete tubes & sea biscuits (small) washed up, suggesting recent storm surge. There are a few Ocypode occidentalis on the shore, the one I dug up being very slow & lathargic (too cold?)(Is this the northern-most record?) Many Nassarius & moon snails (shells only). Salicornia & Distichilis are abundant here, but no Baetis or Monanthoclore seen. Also a lot of turkey vultures, crows, brown pelicans, (long billed)? curlews, & [sandpipers &/or plovers]. Fishermen stashed a small dolphin on the beach yesterday, ca. 3½ - 4 ft. long, simple coloration (black w/white belly, white extending from back of mouth to anus), dimple dorsal fin. Small Eagle Ray also washed up on beach, being consumed by vultures & crows. No Ancinus found.

8 January 1979

Mexico, Baja California Sur, Scammon's Lagoon (Pacific coast of Baja). Camped on small peninsula w/in Laguna Ojo de Liebre, near the area refered to by Bostic/Stinsen as "Nursery Inlet"; see map below.

H_2O T° = 60°F = 15.5°C



While these government camp site are pristine & attractive, they offer a poor view of whales which are quite far offshore, in the deeper channels. Today

will drive to the old pier & the nursery Channel to try for better whale views.

The tides are diurnal here at this time, high being ca. 6-7 AM., low ca. the same time in the P.M. Is this a phenomenon restricted to the lagoon? There appear to be 2 species of fiddler crabs here but I was able to capture only *U. cumulata*. What other species might live this far north?

The shallower flats of the lagoon are apparently not to shoal for porpoise, for we observed a large one making steep dives just ca. 200 yds. off shore at high slack water, certainly in H_2O too shallow for the grey whales to enter.

Setting in the morning sun, looking out over the calm of the bay, whose mirror like surface resembles an unrolled sheet of steel glistening under a tropic sun, I cannot help but think of Morgie & the many hours she spent staring at this same sight, thinking leviathan thoughts & Easter dreams.

Whale views from old pier much better than from Government campsites. Locals tell us that large numbers of whales will be arriving during the next 15 days, making Feb. 1 prime time for whale watching in Scammon's.

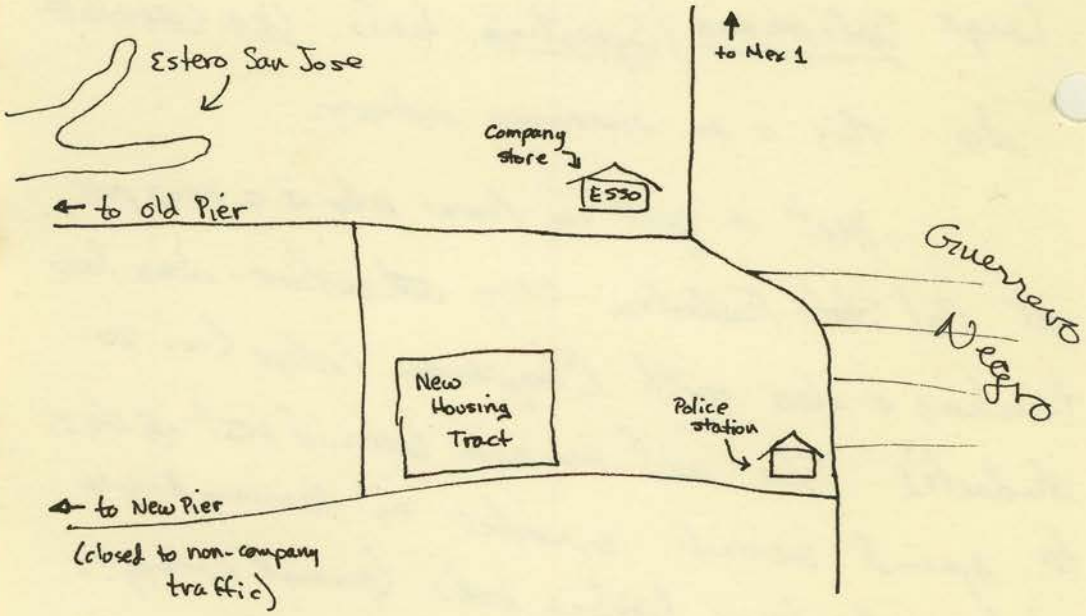
Worked Estero San Jose, near road to old salt pier, this afternoon, collecting 2 species of brachyurans. Melapes dimeceus is here, in large Salicornia/Spartina beds. Uca crenulata also. This is an enormous estuary.

Met a girl in town who is a new prof. at Cal State Fullerton - very attractive - down here teaching a class with Chapman College (ca. 30 students). She will remain behind rest of class to spend several weeks in Guerrero Negro studying the large Spartina beds (general ecology?) for the 3rd yr. in a row. What aspect I do not know (Hasn't all the Spartina stuff been done by now - on the E. coast!?)

Staley got more isopods under a rock ca. 200' from the main channel of Scammon's, as well as

some under a log in dry sand (not mud) off Estero San Jose.

Although the early morning whale views from the old pier are reasonably good, they do not compare with those afforded from boats & vivid remembrances of grey whale watching from laguna San Ignacio in Zodiacs & Avons still stand out as the real way to watch whales.



The old road to the estero affords some of the best H_2O-bird watching I've come across.

10 January 1979

Mexico, Baja California Norte, Ensenada (Punta Banda area, out of Maneadero).

Stopped en route to "motel la Fonda" to collect rudistid clam fossils on Punta Banda (Staley is becoming an amateur geologist). Coralliodroma

The fossil bed is quite large but not easily located from the main highway going out Punta Banda (towards "la Bufadora"). Once past the large, populated sand spit that separates the Bay (Bahia Todos Santos) proper from its back water tide flats, the road begins to gradually climb towards the higher terraces en route for "La Bufadora". Just as the climb is begun 2 large arroyos may be seen off to the seaward side. Between these 2 arroyos is a "motel-like" cluster of well kept small houses. A dirt road goes down into the 2nd arroyo, to a hand-built boat launching ramp on the beach. The fossil bed is at the seaward face of this 2nd

arroyo, near the boat ramp. It is a vein in the shore cliff about 1/2-1 m. thick, and about 300 m. long. Due to the heavy recent rains many good fossils has become eroded out & carried in runoff H_2O onto the beach proper. We spent about 1 hr. collecting several dozen good specimens.

This is the wettest I've ever seen Baja. Every arroyo & "dry river bed" we've seen in the past week has had running water in it. The large wash of the Arroyo El Rosario was flooded out entirely & closed to traffic for a day or two. We got across her going south O.K. but got stuck coming N. yesterday. We were pulled out by a tractor but ol' Paints muffler filled with water & if it hadn't been for the "green angles" giving us a high speed push we'd still be there.!!

11-13 April 1979

Cat. No. 1582 AHF

Mexico, Baja California Norte (Gulf Coast), Coloraditos (40 mi. so. San Felipe; 20 mi. no. Puertocitos).

Camping with Roy & Martha Hooston (+ kids), Barry Wallerstein, Maggie Callahan, Diane Perry & Bob Cimberg (+ Alec & Corlene).

Reef fairly depauperate, possibly due to winter die-off. Fresh clumps of Colpomenia & Codium abundant; Sargassum sparse. Aplysia breeding & depositing egg masses. Typical cold water fauna abundant: Aplysia, Lysmata californica, Betaeus longidactylus, Alpheus californiensis, etc. Very few isopods; Barry collected ~ 50 Colidotea findleyi & only 2 Paracerceis. No cirolanids or Ancinus or Tylos seen. Zoanthids taken for John L.

H_2O T° = 20°-22° C (surf); Air T° = 70-80° F (days). Full moon. Very pleasant weather.

5 June 1979

Mexico, Sonora, San Carlos (ca. 10 mi. N. Guaymas).

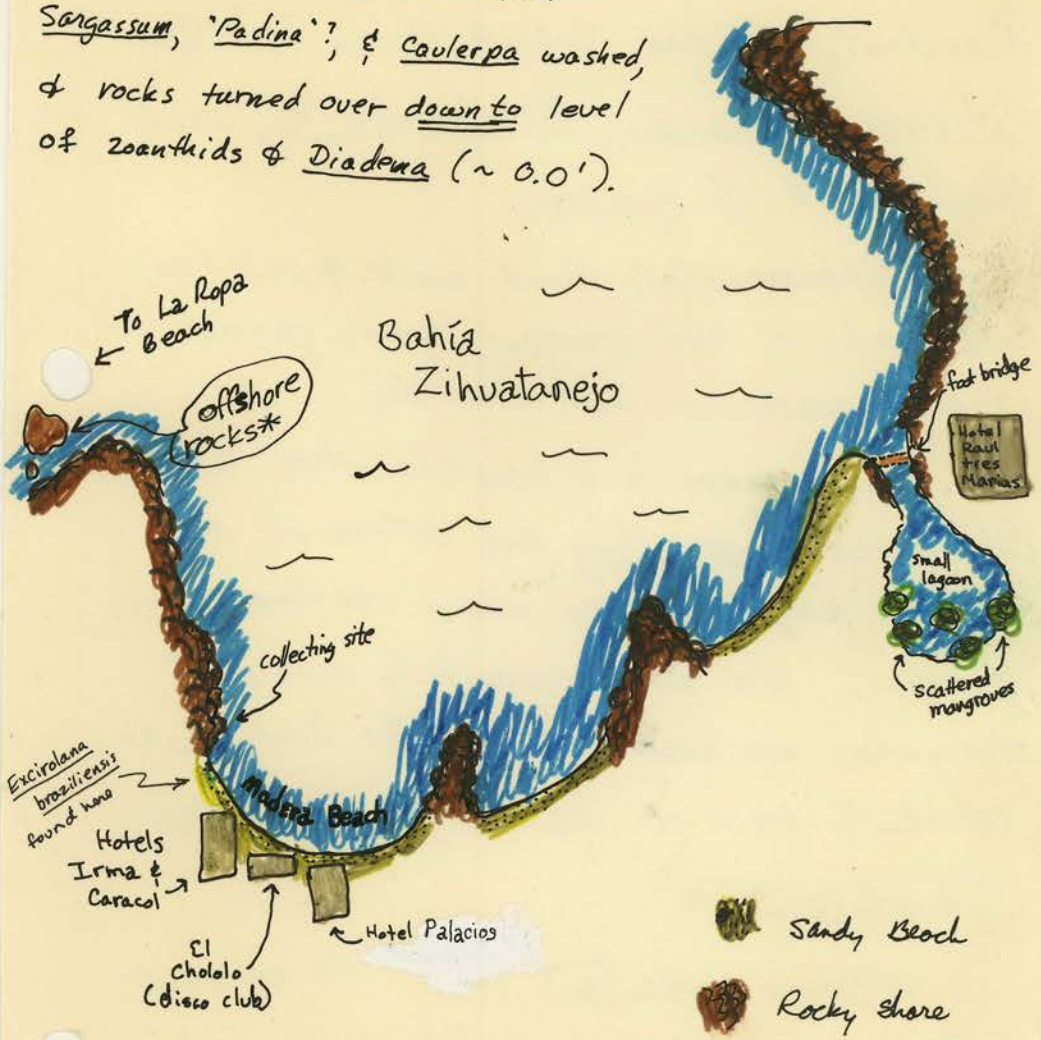
A.M. & I visiting L.T. & Sonie at their new home (7 mos. now since Stayley/Boyer & us moved them down). L.T. has finished his 1st semester teaching at the Marine School, 2 classes - Oceanography & Ichthyology. He apparently worked his butt off but was highly successful. Today Sonie took AM & I out to "Honeymoon Is.", the small "islote" just offshore of their house. The inner shore was banded, along the hi tide zone, with an extremely dense mussel colony, whose 3 predominant members appear to be Brachiodontes, Chthamalus, & Litorina. A small sample (scraping) was taken. H_2O T° = low 80's. Air T° (day) high 80's/low 90's. Very pleasant.

Went to the Ciencias y Tech. school graduation ceremony & dinner/dance with the Findleys, & ran into ol' Carl-Heinz Holtschmitt (a student in my Baja '76 class). He is now on the faculty at Guaymas, as is Ed Phyler (from the marine school at Ensenada). Also met Fernando Manrique (Dr.), jefe de escuela Ciencias Marinas, who seems like a very nice fellow & works on crustaceans (esp. zooplankton). The degrees awarded here are B.S.'s. The UNAM marine school in Mazatlan awards M.S.'s (& presently has about 10 students only!!)

11 June 1979 #1644

Mexico, Guerrero, Zihuatanejo (150 mi. No. Acapulco). Collections made on rocks at S. end of Playa Madera. ^Low Tide = +1.2' at ~07:30 (USCGS chart reads low at 9 A.M. !!!). H_2O T°= 27°C; air = 30-32°C (daytime). USCGS tide charts give spring range here of 2 feet, altho their tide charts give low/high range today as 4.6 feet !!!

Sargassum, 'Padina'?, & Caulerpa washed, & rocks turned over down to level of zoanthids & Diadema (~ 0.0').



Three to four spp. isopods collected, plus numerous brachyurans, including a large "Lophopanopeus-like" form in the higher intertidal (with Ligia). Selected anomurans & gastropods & worms collected for Haig, McLean & Kuderov. Fish from algal washes taken for LTF & LACM. Spanish Dancers abundant, as are Selenkothuria lubrica, Ophiocoma alexandri, Brachiodontes, rock scallops & G. grapsus.

Sphaeromatids (small, white to pale tan) under rocks in mid-intertidal region; idoteids in algal washes in low intertidal.

Zihuatanejo is a beautiful place, but the prices of everything are extremely high, & the people pretty damn unfriendly to gringos. We were essentially ripped off everywhere we went (except the Bank, which reluctantly gave us 22.65 pesos/$).

Offshore rocks [*] look like excellent collecting - too bad we didn't have time. Our site was quite rich, however.

12 June 1979

AHF #1643

Mexico, Guerrero, Acapulco

Collected morning tide at two localities; rocks on s. point of Playa Langosta & rocks on Playa Hornos (main beach downtown, in front of SCUBA shop). The rocks around Acapulco are all large granite boulders, with very little algae of any sort (some "Padina-like" alga is scarce, but most common macroscopic form; also scattered corallines & one bushy, tuft-like red). Algal washes produced no isopods altho some minute sphaeromatids were found under the rocks at Playa Langosta. In general Acapulco does not appear to be a very rich area. The tidal range is quite small, the shores steep & w/o loose rocks or sedimentary features (resulting in very low substrate heterogeneity), and much of the shore appears quite polluted with a combination of sewage and boat/ship offal. The nicest beach for swimming is Playas Caleta & Caletilla. These sit outside the main part of Acapulco Bay (thus escaping much of the city & harbor pollution), but are protected from large offshore swells by Isla La Roqueta. The latter island might be a good place to collect & boats go over regularly from the mainland.

Acapulco is, like Zihuatanejo, a very very expensive place. The only trailer court in town (Playa Suave Trailer Park) got us for $10/night (off-season rates !!). Best entertainment is the high dive (cliff divers) at La Quebrada. The outrageous hotel there (El Mirador) produces an excellent & inexpensive meal in their Cafeteria (not the main hotel restaurant), about $3.50, & one can sip gin 'n tonics from one of the hotels 6 balconies & watch the divers.

The road is washed out about 20 miles south of Acapulco (at Las Homas, on Hwy. 200) so we couldn't get to our collecting site at Copala. We'll head on in to Taxco/Cuernavaca today, then to Oaxaca & down to Salina Cruz (which is as close to Brigg's "Tangola Tangola Bay" as we'll get, to collect. The tides along this entire coast are of low amplitude, this combined with steep shores or sandy beaches, & few roads to the beach, make collecting difficult!

No collections were made on sandy beaches around Acapulco, but virtually all of them are heavily used by beach goers. Caleta Beach is primarily used by locals and on each day we were there was heavily trafficed. It seems this human disturbance is more likely than not the reason Dexter (1976) found no macroscopic animals here. The grain size & surf protection both should be favorable for sandy-beach community development!

16 June 1979

Mexico, Oaxaca, Oaxaca

Camped in Trailer Court "Rosa Isabel" ca. 3 mi No. of town. First sight I awoke to this morning was an oniscoidean crawling across the wet grass in front of our tent. Air T° = 20° C. 0630 - 0700. Rained lightly all nite.

Oaxaca is beautiful. Its far enough S. that the Indian blood predominates over the Spanish/Mexican & the people are generally more friendly, honest & handsome. Prices on hand-woven goods are incredible (3'x6' rugs $12-$15; serapes $10; etc).

Visited the Zapotec ruins at Monte Alban yesterday, wandering through the passageways of their Astronomical Observatory I felt we were stealing a moment from time's passing circle. Wished the kids were with us. Today is market day in Oaxaca - we hope to blow a couple hundred $ on rugs for the Lennox House.

17 June 1979

Mexico, Oaxaca, Salina Cruz (on coast, 8 km. w. of Tehuantepec. H_2O T° ≈ 29°-30°C Air = 28°-29°C (day)
16°10'N 95°12'W

Salina Cruz is a small port of about 15,000 people, mostly concerned with the large Pemex refinery & loading facilities here. Many tankers & some freighters were tied up behind a large, long breakwater in this deepwater facility. The beach is all sand, and was at this time of year coarse with a moderate to steep slope. Breakers 2'-4'; weak cusp formation. Overall a very beautiful beach for surfing & playing - but very little in the way of marine life - in fact, a distinct wrack line was not even present.

Seiving at various levels down to ~ +1.5' tide level revealed almost nothing; 3 worms, (2 Excirolana brazilieusis,) & 1 sand crab were collected (Hippa strigillata).

There is no place reasonable to spend the nite in Tapachula ~ and this border town offers little of interest to anyone in their right mind.

18 June 1979 AHF #1642

Guatamala, Sipacate (on Pacific Coast over from Siquinala (on Hwy CA-2), & La Democracia].

Sipacate is, like so many coastal villages in tropical west America, not actually on the coast, but rather sits about ½ km. inland on the mouth of the Rio ? . To reach the playa it is necessary to take a launch down the mangrove-lined river to the open sandy beach, which apparently has large surf similar to Salina Cruz. We did not approach the sea, but collected Uca (2 spp.) in the 12 ft. mangroves (Reds) of the brackish swampland along the Rio.

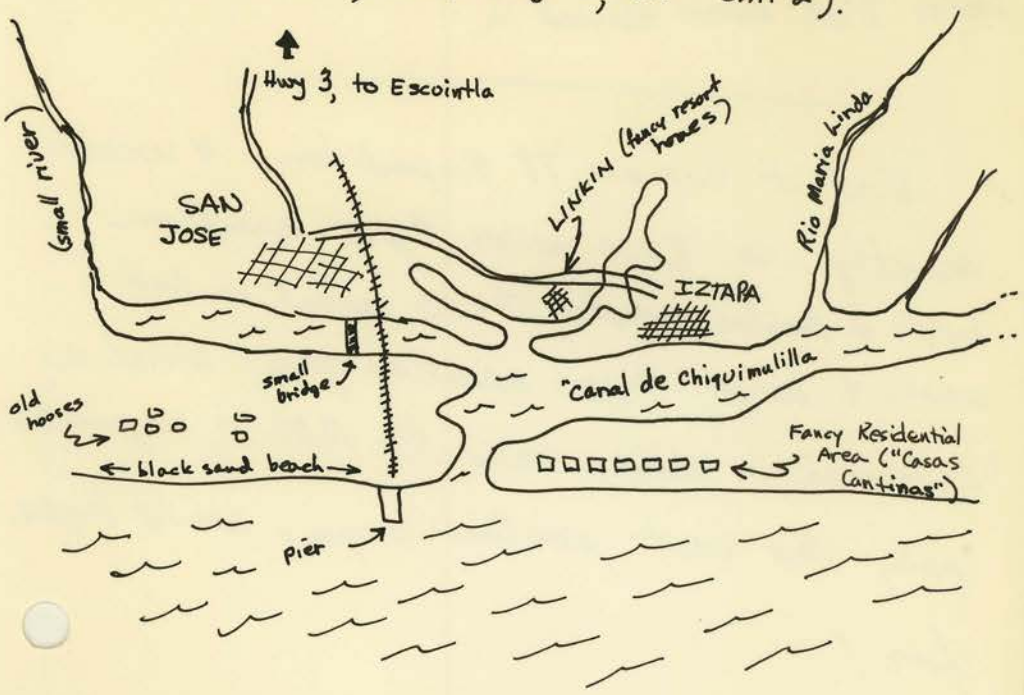
Tomorrow we will travel south to Puerto San Jose ~ presumably another sandy open Pacific beach. Rocks are hard to come by on this coast.

Tonite we are camped at a site ~ 5 mi. S. Lago Amatitlan, at ~ 1200' on the road to Guatamala City. We'll pick bananas from the trees next to our tent (2 varieties) to fry up with some black beans & fresh coconut. Bought a bottle of fine

fine rum in a whore house in Esquintla, & a 6-pack of coke (total = Q 6.80) - put some lime in de coconut & dug the clouds rolling in to hide the tops of these steep volcanic peaks the surround Lake Amatitlan.

19 June 1979

Guatamala, Puerto San Jose/Iztapa (on Pacific Coast, down Hwy. 3, off C.A. 2).



Most of these regions are mangrove lagoon (20' tall Rhizophea mangle). The pier-end of San Jose is an open, surf-swept, deep anchorage, with a black sand beach. Altho we were there at high tide no evidence of life was to be seen. The beach is steep with very very large surf. Air T° (10 AM) = 33°C, H_2O T° = 28°C, black sand (dry, 1 cm depth) = 50°C !!!

We've spent 3 nites (19th, 20th, 21st) at the Hotel PanAmerican in zona 1, downtown Guatemala City. It is probably the neatest hotel I've ever stayed in.

End of summer '79 Expedition. 4 weeks exactly. ca. 8,000 miles. $275 spent on hotels & trailer courts; $370 spent on food & meals & booze; $280 spent on gas. What a summer — mama mia !! AM is unquestionably the best partner anyone could hope for!