Copied for USC V:04: 1947

TO UCLA V:12:53

Sta. No. H47-53

Locality: Baja California, Golfo de California, off the flats between "Morelos" (lava hills near shore) and Ometepec Bay, ② between San Felipe and mouth Colorado R. approx.

Lat. 31° 18-m 22 'N.; Long. 114° 47-50 'W. (USC & GS Hydrog. chart 0619, 1942)

Water: greenish gray; visibility ab. 6-18"; salt ①

Vegetation: considerable quantity of green alga, form of ribbon

Bottom: soft gray clay, with bits of shell Surf. Temp.: 65°-69.5°F ③

Shore: very extensive tidal flats Current: tidal, sometimes strong

Distance from shore: variable and indefinite Tide: various

Depth of capture: on bottom Depth of water: 6-15 ft.

Method of capture: shrimp trawl on "Felipe Angeles" ④

Collected by: Carl L. Hubbs Date: IV:6-9:1947

Orig. preserv.: 10% form + boraxx Time: various (see below)

① Becomes dirty orange where disturbed by dredge or current. con.over

②. which is merely one of a number of lagoons

③. Temperatures taken with Tycos pocket thermometer #1870:

Date	Time	Temp.	Remarks
IV:6	20:00	67°	
IV:7	6:00	67°	→ warmed up during day?
"	9:30	68°	
"	17:30	69.5°	
"		68°	
IV:8	6:30		
IV:9	7:00	67°	
"	9:02	65°	— in yellow area
"	9:07	67°	— at side of boat.
"	9:08	66.5°	— in churn of propeller
"	9:28	69.5	— just before trawler wake
"	9:30	65.5	— in wake
"	9:32	66	— beyond wake
"	9:34	65.5	—
"	9:31	65	— water clear
"	12:40	68	—

(3) con. The drops of 4 degrees in 2 minutes at a speed of about 3 mi. per hour, suggested a relation between trawling and temperature but this was not confirmed by subsequent tests. The temperatures were taken in buckets of water dipped from surface.

~~(5)~~ (1) con.

The water here as in the whole upper gulf is turbid. Everyone locally thinks this is Colorado R. silt, and the bottom does churn up readily. However it seems to settle rather fast and much of the turbidity may be due to plankton. It gives that appearance and this was Martin Johnson's conclusion from work on the "E. W. Scripps". Hydro medusae were very abundant throughout the entire period as also on most of the trips up from San Felipe. The large quantity of "malagua" considerably slows down the fishing and causes some discomfort. Some effort was made at a quantitative determination. At 6:45 P.M. IV:8 when staging medusae seemed to be about av. density. con. on back of next page.

(4) Trawl said to be about 70' long, which means the length of the float line and of the lead line, and also the length of the bag. It seemed however to fish with the mouth about 10-12 ft. wide. The mesh is about 7/8" square at the cod end, and at 1 1/4" elsewhere. This is about the standard type of net.

H47-53 con.

Some notes on invertebrates:

Some invertebrates were saved from many of the hauls, and some jars were saved separately by days.

The Natica-like snail is fairly common and invariably carries one at least, rarely 2-4 sea anemones, of a kind that flattens down quietly when contracted. The same anemone was seen on some other snails or even on Culy clam shells. The other molluscs frequently lack this anemone.

The striped ecto-parasitic isopod frequently detaches itself in the trawl and then reattaches itself in the trawl or in the bucket in which the fish have been placed. One was even seen attached to a pipe fish and ray. ~~Crabs~~ The true relationship as to host and position on host is certainly not indicated by trawled or dredged specimens. The newly attached isopods cling very tightly. Obviously the true relationships are not indicated by the published records.

(1) con.

Chiefly Hydromedusae at 6:45, IV:8, at apparent average abundance

172 of various sizes were caught in 15 sec. in a dip net 12" in diam., held just submerged for 15 sec. at ship's towing speed of about 3 mi. per hour. These just filled a one pound coffee, having a content of 30 fluid oz. Mesh in net 1/4" square measure.

At 7:05 A.M. IV:8 the Hydromedusae appeared thicker. In 5 sec. at the same ship speed 129 were caught, and it was estimated that there had a volume of 25.5 fluid oz.

During these trials a few Scyphomedusae were seen but no were caught.

At this time the turbidity was in clouds, and definitely looked like plankton.

About 7:20 a.m. IV:9 con. estimate of Hydromedusae + found them very variable.

Time of dip. netting Sec.	No. of Hydro-medusae	
5	11	51
5	30	
5	10	
5	5	23
5	10	
5	8	
5	31	57
5	7	
5	19	

(con.)

Time	No	
5	1	26
5	2	
5	23	
5	3	46
10	43	
15	104	104

90 Sec. for 307 = 3.41/sec.

47-53 cm.

Haul No.	Date	Time*	Remark
A	IV:6	16:45-17:45	N. bound. 7-8 ft. few invertebrates saved. Small quantity shrimp
B.	IV:6	17.55-19:15	mostly 7-9 ft., heading South. Dark
C.	IV:6	19:30-21:00	moonlight. N. bound. Some invertebrates. Very few shrimp.
D.	IV:6	21:15-22:20	S. bound. Bright moon.
E	IV:7	5:40-7:00	Mod. haul of shrimp. ~~Temp. 67~~
F.	IV:7	7:10-8:00	S. bound, Few shrimp.
G.	IV:7	8:20-9:50 † ~~8:05-8:20~~	a few invertebrates saved. Circling haul
H.	IV:7	9:55-11:30	Continuing "redonda"
~~I~~	IV:7	11:40-13:30	Circling; good catch of shrimp
J	IV:7	13:40-15:05	Circling, rather small catch of shrimp
K.	IV:7	15:10-16:55	Circling, very few shrimp
L	IV:7	17:00-18:10	Circling. Dark.

One haul stopped by mud; not recorded in detail

M	IV:7	18:30-20:30	moonlight.
N	"	20:40-22:00	" ; a few invertebrates
O	IV:8	5:45-7:30	1-2.5 fath. Set near anchorage, deeper than usual
P	"	7:40-9:05	

(Con.)

* Left San Felipe IV:6 - 13:30 † Ran northward 8:05-8:20

con.

Haul No.	Date	Time	Remarks
Q	IV:8 (con.)	9:10-10:10	Best haul of shrimp yet.
R	"	10:15-13:00	
S	"	13:10-16:00	Mod. No. of shrimp
T	"	16:05-18:15	To nearly dark; moderate no. of shrimp
U	"	18:30-20:15	From nearly to quite dark; few shrimp. Continued S.
V	"	20:20-20:35	Quick haul; current bothered. Anchored then for night. Some invertebrates.
W	IV:9	6:50-8:05	Fair haul of shrimp. Some invertebrates saved.
X	IV:9	8:15-10:00	Good catch of shrimp
Y	IV:9	10:15-11:25	Large catch of shrimp
Z	"	11:30-12:40	Tore and broke + released nearly all of a very large catch.
Z'	"	12:50-13:25	Attempt to repeat catch - met with even more complete failure.

1947-53
Apr. 6-9; 1947

Species notations:

The variation in the catches of fishes as well as shrimps was very noteworthy, considering the relatively uniform depth and bottom conditions. Probably the differences in currents, possibly in temperatures are responsible. An indication of the variation in the fish population could be had from tabulating the catch by hauls from the data given below. The initial capital letters for the entries under each species refer to the hauls, as specified above. S = saved; n.s = discarded in field

5A Carcharhinus velox "tiburón"
1(1400) tank
P - 2 yg. ♂'s S
Q - 1 ad. ♂ S

Sphyrna tiburo reident. by C. Gilbert, 13 May '60 "cornuda"
~~zygaena~~
S - 1 sl. gr. ♀ S, measurements when fresh
T.L. 1245 mm.
L. to Base C 920
Base C. to Tip C. 328
L. to origin D_1 415
" " " D_2 780
" " " P_2 578

L. to Origin A. 733
The head and fins saved tied together by strips of skin. The stomach contained shrimp heads, obviously cast off from trawlers and one fresh squid, probably picked up in trawl

6A Rhinobatos leucorhynchus "guitara"
1 - 1 ad ♀, S

6B Urobatis maculatus "mantaraya"
B - 2 ad ♀'s S
D - several S
E - 1 S
G - 1 ad S
J - 1 ad ♂ S
L - 2 ad, 1 S
O - 2 ad. n.s.
P - 1 ad. n.s.
R - 3 n.s.
W - 1 n.s.

The amount of dark spotting varies greatly. Some have many spots, others few, some almost none. Or the spots may be broken up into dark specks. The one saved from haul L was selected because it showed a concentric arrangement of the spots. The validity of U. concentrica needs to be evaluated.

6C Dasyatis [redacted] brevis 1(44,5) tank "mantaraya"
~~E - 1 sm. ad. S~~
V - 1 sm. ♂ n.s.
G - 1 ad ♂ S.
X - 1 ad ♂ n.s.
Apparently all belong to a single

6D Dasyatis longa 1147-53 1(360) tank width

species, the one with Δ tooth-like
tucklers in front of C. spine.

Disc. March 1962 KH.R. Holorhinus Californian "gavilán"
J – 1 ad ♀, S cut so as to go into tank

. Rhinoptera steindachneri "ratón"
A – 1 ad. n.s. This was not carefully
checked and may have been a Holorhinus
E – 1, too large to save
F – 2, n.s.
J – 1 ad. cut to fit into tank
K – 1 ad., n.s.

6E Gymnura 1(440) tank

Gymnura called "mariposa",
but possibly as result of suggestion.
This is the broader species with
a minute C. spine. The color is somewhat
the duller and the dark and light
pattern finer. The tail is not ringed.
D – 1 lg. ♀ S. The species is
not certain because spec. was
preserved before 2 species noted.
G – several, S. P – 1 ad., n.s.
L – 1, S. X – 2 n.s.
N – 1, small, S.
O – 1 ad. ♀. S.

Gymnura Species
not distinguished by Mexicans until
differences were pointed out. This

species is a little less broad and apparently less short tailed and has no C. spine. The fine pattern of light and dark is somewhat coarser and bolder than in other species. Ordinarily the tail is more or less strongly banded with ~~light~~ cream and dark, though occasionally as in ~~the~~ one of the 2 specimens ~~saved~~ from "Haul O", the bands are obsolescent. The light spots on the body are usually cream-colored. Usually the lower side is an orange-ochre on the outer part of the wings.

G – 1 (?), S.
H – 1, S.
O – 2 ads, n.s
P – 1 ad., n.s.
R – 2 ads (1 ♂ S.)
W – sev, 1 S.
Y – 1, n.s.
Z – 1 ad ♂, S.

Narcine entemedor 1(358) TL

G – a few, S.
H – 1 S.
M – 1 ad. gr., S.
T – 3 ad. gr. ad., 2 smaller S.
U – 1 lg. ad. n.s.
X – 1 ad. n.s.

The four main spots are blackish brown, yellow bordered. In addition there is sometimes a spectacle shaped median mark, and traces of other spots. Are some of the nominal species invalid? Once when handling a specimen, pricking it for preservation, I received a startling though not painful shock.

* ONLY ONE saved? *
(of 12)

H47-53 con.

8. Anchoa mundeoloides "cristalina" or "sardina cristalina"

A – many, sev. S.
B – 1 yg. spec. S.
C – sev. S.
H – 1 hl-gr. S.
9 – 1, S.
J – many a few S.
K – a few, n.S.

chicla species
L – 1, S.
O – 1, S.
R – 1 ad S.
S – 1, S.
X – 1, n.S.

~~Cetengraulis mysticetus~~ ~~Anchovia macrolepidota~~ "sardina"
(It is generally insisted that this is the true sardina. The term anchovetta is not generally used for this species; some say that it is used for a larger kind)

A – a few ad, some S.
B – some S.
E – a few, hl.gr., S.
F – a few, n.S.
G – sev. hl.gr. ad., S.
others, n.S.
H – a few, n.S.
9 – hl-gr.-ad., major part of haul, n.S.
J – a few, n.S.
K – " "
L – 1 yg. ad., S.
M – few, n.S.
N – several, n.S.
O – " "
P – " "
Q – " "
R – mod. number, n.S.
S – a few, n.S.
T – several, "
W – " "
X – " "
Y – " "
Z – many, n.S.
Z' – " "

25. Synodus saurus "tapajuevo"

A - 1 ad., S. W - 2 lvl. gr., S.
F - 1 " S. X - 1 lvl gr. S.
G - 1 lvl. gr., S. 3(270-355)
J - " "
P - 1 ad., S.

34. Sphaeroides annulatus "botete"

Y - 1 lvl. gr. S. C. yellow cream at base, black outward.

40. Colpichthys regis "pejerrey"

F - 1 ad., S. J - a few ad., S.
G - sev. ad., S. K - " "
H - 1 " S. P - 1 ad. S.
I - sev. ad., S. S - " "

Most of the specimens when touched extruded the rectum as a large cone. This may indicate some anatomical different from Atherinops.

These pejerreys are recognized as a chunkier species than the beach spawning one.

The traveled specimens have a translucent yellowish streak, extending from the lower part of the P base onto the urosome, narrowing backward; also a parallel streak along the edge of the belly, continued backward along A. base. It will interesting to see if there is any differential scale structure.

H47-53 can

Palometa media

42. Stromateid "palometa" or "luna" ~~or "luna"~~

A — some lt.gr., S.
B - 1 lt.-gr., S.
C - a few, S.
D - 2, S.
E - a few, S.
F - " "
G - several, S.
J - " , lt.gr.-ad., S.
K - a few, S.
Caudal yellow.

M — a few, 1 lt.-gr., S.
N - a few, n.s.
O - " "
P - several, "
S - a few, "
U - " "
X - 2 lt.-gr., S.
Z - 2 lt.-gr., S.

43A Scomberomorus concolor "sierra"
B - 1 lg.-yg. or lt.-gr., S. (520) tank

43B Trichiurus nitens 1(256) "listón"
C - 1 lt.-gr. S.
J - 2 lg.-yg.-lt.-gr., S.
M - 3 lt.-gr., S.
O - 1 ad. S.
} ?

? Sopiathus remifer 4(80-119)
46. ~~Aeroplus~~ politus "salivaso"
A - 1 lt.-gr., S.
B - ser., yg.-lt.-gr., S.
C - some, S.
D - 1 lt.-gr., S.
E - 1, n.S.
G - ser. lt.-gr.-ad., S.
H - a few, S.
J - ser., lt.-gr. S.
J - ser.; a few, S.
L - few, S.
M - mod. numbers a few S.
N - a few, ~~not~~ n.S.
O - 1 lt.-gr., S.
P - a few, 2, S.
Q - several, n.S.
R - mod. numbers, n.S.
S - a few, n.S.

T – several, n.s.
U – a moderate number, n.s.
W – small number, 1 sm. spec. S.
X – small number, n.s.
Y – small number, n.s.
Z – a few? n.s.

46. Cynoscion parvipinnis "corbina"
All are yg. to hlf gr., if these fish represent the same species as caught at San Felipe.

A – some (S?)
B – many, n.s.
C – several, n.s.
D – " , 1, S.
E – mod. numbers, n.s.
F – few, S.
G – several, n.s.
H – " , 1, S.
I – 2 hlf gr., 1, S.
J – a few, n.s.
L – very few, 1, S.
M – small numbers, n.s.
N – a few, n.s.
O – several, n.s.
P – a few, "
Q – several, "
R – a few, "
S – " "
T – several, "
U – moderate numbers, n.s.
V – " " "
W – " " "
X – " " "
Y – small " "
Z – some, "

46 Totoaba macdonaldi "totuava"
All are large young.

F – 1, S.
H – 3, S.
U – 1, S.
W – 1, n.s.
X – 1, n.s.

~~3(238-265)~~
5(238-270)

H47-53

46 Microgonias megalops 1(75)

~~Bairdiella sp~~ "chano"

This was the most abundant fish probably represents a small species? The sample was taken before it was noted at San Felipe that there are locally 2 very distinct species of latter Bairdiella. When this was noted it was not remembered that any of those taken in the shrimp trawling trip were of the species with the long A. spine and yellow lower fins. Both kinds pass as "chano".

A - ~~series~~ lg. yg., some s., a few n.s.
B, C - many, n.s.
D - very many, mostly lg. yg., n.s.
E, F - mod. numbers, n.s.
G, H - common, n.s.
I - mod. numbers, n.s.
J, K - a few, n.s.
L - common, n.s.
M, N, O - many, n.s.
P - a few, n.s.
Q - many, n.s
R, S, T mod. numbers, n.s
U - many, 1 lg. yg. s.
V - considerable numbers, n.s.
W - many, 1 sm. s.
X, Y - many, n.s.
Z - mod. numbers, n.s.
Z' - some, n.s.

46 Menticirrhus ~~ITASUS~~ 2(236-247.8) "chano sociatero"

~~Ethmis~~ It is almost that all are of the long-nosed species with high D, spine. The sample was taken however before it was clearly realized that there is also at San Felipe, a larger species with shorter snout and lower D.

The first specimen taken at haul C,

was bright gilt on the cheeks and lower sides. P, is yellowish, the C. somewhat so. Other specimens showed only a little yellow and some hardly any. D, has a blue-white edge.

C - 1 hl.gr., S.
G - 1 hl.gr., S.
P - " "
R - 1 hl.gr., S.
S - " "
U - 1 ad., S.

51. Chaetodipterus zonatus "fajardo"

A - several, hl.gr., S., a few, n.s.
B - series, S.
C - very few, S.
D - many, n.s.
E - mod. number, a few small, S.
F - a few, n.s.
G - several, 1, S.
H-K - a few, n.s.
L - one, n.s.
M - a few, 1 hl.gr., S.
N - a few, n.s
O - several, n.s.
P - a few, n.s.
Q - several, n.s
T - a few, n.s.
W - several, n.s.
X - " "
Y - small number, n.s.

— 4,7(32-165)

57. Synganthus carinata "aguja"

B - (no?) S
D - 1, S.
E - a few, S.
F - " S.
G, H - several, S.
J - a few, S.
L - several, S.
M, N - about 10 each, S.
O - several S
P - a few S
Q - several, S.
R - a few, S.
T - one, S.
W - series, S.
X - " S.
Y - many, S.
Z - some, S.

H47-53

59A Quietula guaymasiae 1(35)

59 Sobiomellus sp.

O – one ad., S.

The middle of P_2 is yellow; A. with the yellow inside the black margin; C. is pale yellow near the whitish lower edge. Bars are pale brown. A shining blue crescent on each side of the black median gular ~~bar~~ stripe.

60. Porichthys margaritatus "roncador"

E – 1 lg. yg., S.

One of the boys in the crew gave the name roncador though the others did not seem to recognize the species. The general color is brassy ~~tan~~ purple, with some pink on the C., which has a black submarginal bar. I was warned of the "espinas".

64A Paralichthys aestuarius 1(233) "linguada"

It is odd that the name "linguada" is used in general for the flat ~~fish~~ fishes. This is presumably because large fish and other sea food is so abundant that the minor species are little eaten

B – 1 ad. gr., S. H – 1 ad. gr. S.

L – " " K – " "

64 Scyaciium sp. "linguada

C – 1 ad., S. Plainly colored.

Etropus crossotus "linguada"

B - 1 ad., S.
E - 4, S.
F - several, lg. - ad., S.
G - several, S.
Q - a few, lg. - ad., S.
X - 1 ad., S.

Hippoglossina macrocephala "linguada"

Z - 1 lg. yg., S. Small agates on the body are rich brown and blue on the eyed side. On the blind side, the chin, the front of the face and a broad margin on the front part of D. are yellow.

64E Pleuronichthys ocellatus 1(95). "linguada"

G - 1 lg. yg., saved The ocellus is blue-black in the center, then yellow, finally brown on the outside.

64F Achirus mazatlanus 2(56-68.5) "linguada."

No special name could be ascertained from the travelers.

B - sev. lg. ad., S.
C - sev. ad., 1, S.
D - several, S
E - mod. number, 1, S.
G - several, few, S.
H - " , n.S.
J - few ad., "
L - several, 1, S.
M - 2 lg. yg., S.
N - several, n.S.
O - 1 yg., S., several ad., n.S.
P., a few ads., n.S.
Q, a few, n.S.
V, W, X - 1 ad. each, n.S.
Y - 2 ads, n.S.

Check smaller ones for species.

1+47-53

Symphurus atricauda-like "lingua".
The D. and A. fins are pale lavender, posteriorly becoming blackish with a cream border. The bars are faint to strong and are variously disrupted - apparently all belong to a single species.

B - series, S.
D - 2 or 3, n.s.
F - a few, S.
G - several, a few S.
H - 1, n.s.
J - a few, S.
M - 1 yg., S.
N - 2, S.
P - 1 ad, S.
Q - 2, S.
R - W - 1 ad each, S.
X - 2 ad., S.
Y - 1 yg. + 1 ad., S.

Check the yg. specimens carefully.

PARATYPE

64 Symphurus chabanaudi (MS) 1(109)
42 Peprilus ovatus (MS) 2(59-66)

Notes on birds on Felipe Angeles Trip.

I did not confirm Lewis Walker's claim that the pelicans in the Bay do their feeding at night because they see the fish better by the phosphorescence they produce than by day in the silty water. Pelicans were feeding very extensively, almost always those that were feeding were followed by Herman gulls, one to several. Gulls follow closely and pounce on the pelicans as they sit on the water following a dive.

Herman gulls looks somewhat different than those seen at La. Jolla.

Herman gulls were also seen pestering the terns jaeger fashion.