

Length of head  $4\frac{1}{3}$ – $4\frac{2}{3}$  times in the total length.—Greatest depth of body from a little more than ten to a little less than eleven times.—No lateral line.”

M. B. 6; D. 90; A. 70; P. 18.

As will be thus seen, the two fishes are certainly congeneric, and are evidently very closely related. Even the slight discrepancies are apparently such (as in the case of the color) as result from difference of interpretation of the same characters. The vertical fins in the Californian form, however, are distinctly said to be “margined with black,” while in the Japanese form it is at least implied that they are not. It is quite probable, nevertheless, that even these alleged differences may be found to be rather of degree than of kind. In view, however, of the difference of distribution, it is reasonable to suppose that the two forms will be found to be distinct, and, as the genus appears to be perfectly valid, they will rank as species, with the following names:

1. LYCODOPSIS PACIFICUS.

*Lycodes pacificus* Collett, Proc. Zool. Soc. London, 1879, p. 381.

*Hab.*—Japan.

2. LYCODOPSIS PAUCIDENS.

*Leurymnis paucidens* Lockington, Proc. U. S. Nat. Mus. 1879, p. 326.

*Hab.*—California.

**DESCRIPTION OF A NEW CHIROID FISH, MYRIOLEPIS ZONIFER, FROM MONTEREY BAY, CALIFORNIA.**

**By W. N. LOCKINGTON.**

*Myriolepis*, gen. nov. (*Chirida*).

Body oblong, rather stout; mouth moderate; cardiform teeth in both jaws, slightly larger anteriorly; no canines; teeth on vomer and palatines; preopercle entire; no spines about the head. Gill-openings separated by a narrow isthmus; gill-rakers short. Branchiostegals seven. Pseudobranchiæ present. Dorsal fins two, united at base, the first with about 14 rather stiff spines, the second with as many soft rays. Anal short, of about 13 rays, without distinct spine. Scales very small, ctenoid, covering the whole surface of the body and head and the greater portion of all the fins except the first dorsal. Lateral line single.

Etymology: *μυρίον*, myriad; *λεπίς*, scale.

This genus bears little resemblance to any of the previously known *Chirida*, its general appearance being quite *Serranoid*. It has, however, a bony stay connecting the suborbital and preoperculum, and possesses the technical characters of the *Chirida*, in which group it should form a distinct subfamily, differing especially in the shorter anal fin without distinct spines.

*Myriolepis zonifer*, sp. nov.

Lower jaw slightly projecting; snout to summit of ascending process of premaxillary inclined backwards at about  $45^\circ$ ; forehead slightly con-

cave longitudinally; dorsal outline, from occiput to caudal peduncle, regularly arched, the highest point at anterior part of first dorsal; mandible straight; abdominal outline regularly curved.

Greatest depth  $3\frac{8}{13}$  times, depth of caudal peduncle 12, length of head  $3\frac{9}{10}$ , length of pectoral  $4\frac{1}{2}$  in total length to extremity of caudal fin; orbit (longitudinal diameter)  $5\frac{1}{5}$ , mandible  $2\frac{1}{3}$ , interorbital width about  $2\frac{9}{10}$  in length of head:

Gape straight, maxillary extending to a little in front of the center of the pupil, its upper edge received in a groove below the preorbital for most of its length.

Teeth of mandibles and intermaxillaries slender, sharp, recurved; in several rows in front, gradually diminishing laterally to a single row; front teeth slightly longer than lateral teeth. A few similar but smaller teeth on vomer and palatines. Upper pharyngeals with a cushion of similar teeth; lower pharyngeals slender, with a patch of similar teeth in the form of a very obtuse triangle, the internal row largest.

Gill-rakers short, ciliated, those on the anterior aspect of the first pair of gill-arches longer than the others.

Branchiostegals seven; gill-membranes continuous below, but attached to an isthmus throughout the entire length of their junction except the posterior margin.

Nostrils just above a line joining the upper margin of the orbit with the tip of the snout, simple, elliptical, the posterior far the larger.

Eyes lateral, subelliptical, the upper margin of the orbit less curved than the lower; interorbital space wide, slightly convex transversely.

Longitudinal diameter of orbit  $1\frac{1}{3}$  in length of snout.

Opercular bones without spines or denticulations.

Pectoral base vertical; pectoral broadly lanceolate, the upper margin curved; 5th ray longest; 4th, 6th, 7th, and 8th only slightly shorter, thence diminishing rapidly downwards. Tip of pectoral about vertical with base of 11th ray of spinous dorsal, but considerably short of the vent. Rays twice branched.

Ventrals inserted a little behind pectorals, their length  $1\frac{2}{5}$  in that of the pectorals. Rays twice bifurcate.

Spinous dorsal commencing about opposite 20th scale of lateral line; first spine very short; 2d and 3d rapidly increasing; 4th longest; thence diminishing regularly to 12th; 13th and 14th directed backwards, horizontal, their points only free; 15th spine at base of 1st soft ray.

Third ray of soft dorsal longest, thence diminishing regularly; rays split up at tips.

Anal commencing about opposite base of 7th ray of 2d dorsal, and preceded by two weak spines hidden in membrane. First soft ray longest; rays split at tips.

Caudal with many accessory rays and about sixteen principal rays, so that its lateral margins are convex; posterior border somewhat emarginate; rays much divided at tips.

Lateral line continuous to end of caudal peduncle, not very conspicuous; tubes simple. From its origin to above the pectoral it curves downwards, thence follows parallel to the dorsal outline till it reaches the caudal peduncle, along which it is median.

Scales of body small, strongly etenoid, larger upon hinder part of trunk and on caudal peduncle than anteriorly, and smallest on head and under pectoral base. Scales elongate, almost rectangular, but with the free margin convex, imbedded portion striated. Entire surface of gill-covers, branchiostegal rays, mandibles, maxillaries, preorbitals, and snout scaly, the only scaleless portions being the lips and the portions of the gill-membrane folded up between the rays. A shallow, scaleless groove at sides of 1st dorsal.

The vertical fins, except the spinous dorsal, covered almost to the tips of the rays with similar but smaller scales, and the paired fins similarly covered on their exterior surfaces.

A band of small scales along some of the anterior spines of the 1st dorsal.

Dorsal region and head, to the level of the upper margin of maxillary and of pectoral fin, black; four broad transverse black stripes between pectorals and caudals.

The spaces between these bands, the abdomen, and the lower part of the head white.

The 1st band is at about the center of the length of the pectoral, and fades out level with the lower margin of that fin; the 2d is anterior to the vent, and almost encircles the body; the 3d continues to the anal base, but is much lighter on its lower portion; while the 4th encircles the caudal peduncle.

A 5th but narrower black band encircles the caudal base, and two black bands cross the caudal, the posterior one broadest; rest of caudal white. All the other fins banded or blotched irregularly with black and white, the former predominating. The etenoid tips of the scales are white.

I have only seen a single specimen of this fish. Before the description was written it was exposed to alcohol for about two months.

It was obtained in San Francisco market August, 1879, and was taken in Monterey Bay.

In appearance it somewhat resembles some of the small-scaled *Serranidae* or *Rhypticidae*. The presence of a suborbital stay, however, shows that its affinities are really with the *Chiridae*.

*Dimensions of type* (No.

*United States National Museum).*

	Inches.
Total length, to tip of caudal.....	11.75
Greatest depth, about.....	3.25
Greatest thickness, at opercles.....	1.72
Depth of caudal peduncle, about.....	.98
Length of head.....	3.02
Interorbital width.....	1.05
Length of snout.....	.77

	Inches.
Longitudinal diameter of orbit.....	.58
Length of lower jaw, in straight line.....	1.42
Length of upper jaw, in straight line.....	1.15
Tip of snout to insertion of pectoral, about.....	3.00
Tip of snout to origin of dorsal, along axis of fish.....	3.62
Tip of snout to origin of dorsal, along dorsal profile.....	4.03
Tip of snout to origin of anal, along axis of fish.....	6.45
Tip of lower jaw to insertion of ventrals, along abdominal profile.....	3.32
Width of pectoral base.....	.90
Length of pectorals.....	2.40
Length of ventrals.....	1.50
Length of base of 1st dorsal to XIIth spine.....	2.08
Height of longest (4th) dorsal spine.....	1.25
Length of base of 2d dorsal.....	2.60
Height of longest (3d) ray of dorsal.....	1.44
Length of base of anal.....	1.62
Height of longest (1st) ray of anal.....	1.38

*Fin formula.*—B. 7; D. XII + 11,  $\frac{1}{15}$ ; A.  $\frac{2}{11}$ ; P. 18; V.  $\frac{1}{5}$ ; C. lat. line circa 128-134.

**DESCRIPTION OF A NEW SPECIES OF RAY, RAIA RHINA, FROM THE COAST OF CALIFORNIA.**

**By DAVID S. JORDAN and CHARLES H. GILBERT.**

*Raia rhina*, sp. nov.

Disk rather broader than long, the snout very sharp and long-acuminate. Outer angle of pectoral sharp; posterior edge of pectoral nearly straight. Region from pectoral angle to snout slightly convex, then almost uniformly and *strongly concave* to near the tip of the snout, which tapers to a sharp point. A straight line from the snout to the tip of the pectoral passes far from the edge of the disk. Length of snout nearly four times the interorbital width.

Interorbital space quite narrow, very little concave, somewhat depressed in the middle. Nasal ridges separated for more than half their length. Supraocular ridges slightly elevated. Eyes larger and much longer than spiracles. Ventral fins deeply cmarginate. Caudal fin reduced to a small fold. Dorsal fins moderate, rather close together, the interspace less than the base of the fin.

*Female* with the spines on the body moderately strong, arranged as follows:

Five or six rather strong spines above the eyes. Two in front of the center of the back. None along the middle line of the back until opposite the *posterior end of the ventrals*, where a median series begins on the tail. A lateral caudal series on each side, and two or three long sharp spines between the dorsal fins.

Roughnesses on the skin above rather large, sharp-pointed, and evidently stellate. Those on the snout especially conspicuously stellate and larger than the others. These prickles are *everywhere present* on the