

Note upon a nest constructed by Catfish.

BY CHARLES GIRARD.

A few days since, in visiting a small pond, situated above Schuylkill Falls village, an innumerable quantity of small fish were seen along shore, near the surface of the water. On approaching them they all suddenly disappeared, and the water being muddy, we could not tell where they went. A scoop net brought to light a subspherical mass, composed exclusively of green confervæ, and which after examination proved to be a regular nest, constructed, as we suppose, by the parent fish, whose progeny it contained; for in it, the small fishes seen a moment before near the surface had gone to seek shelter. In all probability, the eggs were deposited in it, and when hatched, the young, instead of dispersing themselves, remain for some time congregated, under the care of the parent who provides food for them.

The number of young fish gathered around the nest, was at least from three to four hundred, and of different sizes. The largest were about $1\frac{1}{2}$ inch long, and the smallest about $\frac{3}{4}$ of an inch. This difference in size seems to us, as indicating that eggs had been deposited and fecundated at different periods in the nest.

They all had the abdomen distended like full grown individuals before spawning. But this was owing to the stomach gorged with food. The skin of the belly was so tender that soon after death it was entirely decomposed, the intestine and stomach then appearing outside of the abdominal cavity.

The structure of the nest was very simple, confervæ in strings were disposed circularly all around. The size of the entire structure was about eight inches in its longest, and six inches in its shortest diameter. There was at least one opening to get in and out, but this portion of the nest we could not examine thoroughly from the want of clear water; and after having been kept for some time out of the water, it was entirely deformed.

The nest laid at the bottom of the pond, one foot and a half deep in that place, and protected by aquatic plants growing along shore. The water here is never subjected to any violent motion, and thus the soft materials of which it was constructed, were resistant enough for that particular locality.

We should think that under other circumstances, as, for instance, a current of water, catfish would construct their nests of a substance more capable of resisting a chance of destruction.

Further observations will tell us more about this interesting subject, and it is with the hope that some one, more favorably situated than we are, will devote some attention to it, that we have brought before the Academy the very little it was our good fortune to observe on this occasion.

The Committee on the following papers by Prof. Baird and Mr. Girard, reported in favor of publication in the Proceedings.

Descriptions of New Species of Fishes collected by Mr. John H. Clark, on the U. S. and Mexican Boundary Survey, under Lt. Col. Jas. D. Graham.

BY SPENCER F. BAIRD and CHARLES GIRARD.

PILEOMA CARBONARIA, B. and G.—Body elongated, subfusiform, compressed; peduncles of the tail slightly detached from the outline of the body. Head forming about the fifth of the entire length. First dorsal lower than the second, composed of fifteen rays; second dorsal containing thirteen rays, the extremity of the posterior ones extending farther back than those of the anal. The latter have eleven rays, the two anterior of which are short spines. The posterior margin of the caudal is very slightly emarginate and composed of seventeen well developed rays and several rudimentary ones above and below. The ventrals are lanceolated and composed of one spiny ray and five soft ones; their tip extends beyond that of the ventrals, and their insertion is a little in advance of the anterior margin of the first dorsal. Their pectorals are broad and composed of thirteen rays.

D XV. 13. A II. 9. C 3. I. 8. 7. I. 2. V I. 5. P 13.

Ground color reddish yellow with transverse bars of black. A black spot at the base of the caudal; latter barred. Base of dorsals, anal and ventrals black. Pectorals unicolor.

Rio Salado, Texas.

2. *BOLEOSOMA LEPIDA*, B. and G.—Body compressed, rather thick in the middle and attenuated towards the extremities. The head is continuous with the body, and forms one-fourth of the entire length. The first dorsal, the ventrals and the anal are quite small compared with the pectorals and second dorsal.

D IX. 11. A II. 6. C 3. I. 6. 5. I. 2. V I. 5. P 14.

Ground color reddish, with indistinct transverse blackish bars; base of the scales black; belly and fins unicolor. A vertical black spot beneath the eye.

Upper tributaries of the Rio Nueces, Texas.

3. *POMOTIS AQUILENSIS*, B. and G.—Resembles *P. longulus* in the shape of its body which, however, is proportionally less elongated. The flap of its operculum is much more developed, and directed obliquely downwards. The mouth is smaller; the posterior extremity of the maxillary not extending beyond the vertical line of the anterior rim of the eye. The first dorsal is higher than the second, just the reverse being observable in *P. longulus*. The tips of the ventrals reach the anterior margin of the anal fin. The caudal is slightly emarginate.

D X. 11. A III. 10. C 3. I. 8. 7. I. 2. V I. 6. P 12.

There are twenty-four rows of scales on the deepest portion of the body.

The ground color as preserved in alcohol, is uniform reddish brown. The bases of ventrals, anal and dorsal exhibit a large black patch.

Eagle Pass, Texas.

4. *CATOSTOMUS LATIPINNIS*, B. and G.—General shape subfusiform; head proportionally small, contained five times and a half in the total length. Eyes small, situated near the upper surface of the head; the mouth is small, the lips large and fleshy. All the fins are very much developed and constitute a very prominent feature. The upper margin of the dorsal is slightly concave; the posterior margin of the caudal, crescent shaped; the anal, ventrals and pectorals are posteriorly rounded or subconical.

D I. 14. A II. 8. C 5. I. 8. 8. I. 6. V 10. P 18.

The scales are of medium size, considerably smaller on the back than on the sides and belly. The lateral line runs through the middle of the sides from head to tail.

The upper part of the body is reddish brown; the upper part of tail and sides, greenish brown: the belly, yellowish orange; the caudal is olive; the anal, ventrals, and pectorals, show traces of deep orange, especially on their outer margin.

Rio San Pedro, of the Rio Gila.

5. *GILA EMORYI*, B. and G.—Body elongated, compressed. Head continuous with the body, gradually tapering from the nape to the snout. Head forming the fifth of the entire length. Mouth almost terminal, though inferior; the upper jaw overlapping the lower one of the thickness of the lip. Eyes circular, of medium size. Anterior margin of the dorsal a little nearer to the snout than to the base of the caudal; anterior margin of the anal nearly opposite to the posterior margin of the dorsal. The caudal fin is deeply forked and slender. The insertion of the ventrals is in advance of the dorsal, but does not extend to the anterior margin of the anal. The pectorals are lanceolated, and do not reach with their extremity to the insertion of ventrals.

D III. 9. A II. 10. C 8. I. 9. 9. I. 7. V 9. P 14.

The lateral line makes a slight curve on the sides, being a little nearer to the belly than to the back.

Collected by Dr. John L. Leconte, near the mouth of the Gila.

6. *GILA GRAHAMII*, B. and G.—Body subfusiform, compressed. Head forming a little less than the fourth of the entire length. General disposition of the fins as in the preceding species, they differ in their structure as follow.

D II. 10. A II. 10. C 10. I. 9. 8. I. 10. VI. 10. P 17.

The disposition of the scales presents likewise differences which will be better understood by figures.

Head above and back, reddish brown; upper half of sides greyish brown; inferior half of sides, greyish yellow. Abdomen, dull yellow, the whole with a metallic reflection. Fins unicolor, of the hue of the region to which they belong.

Rio San Pedro, of the Gila.

7. *FUNDULUS GRANDIS*, B. and G.—Body stout and very much compressed, five inches long; the head forming the fourth of that length. Back bluish black, sides greyish, with yellow spots. Beneath dull yellow. Dorsal and caudal deep bluish black, margined with yellow; other fins yellow; the base of anal spotted. Body and fins of the female unicolor.

Formula of fins: D 11. A 12. C 2. I. 9. 9. I. 2. V 7. P 18.

Brackish waters in the vicinity of Indianola, Texas.

8. *FUNDULUS TENELLUS*, B. and G.—Body regularly fusiform, compressed, the head forming two-ninths of the entire length. Eyes large. The back greyish yellow, with small black dots irregularly dispersed. A black vitta extends from the snout, across the eye, down through the sides, to the base of the caudal fin. Beneath light yellow. Dorsal, anal and caudal greyish with minute black dots; ventrals and pectorals yellow, without dots. Anterior margin of anal in advance of the dorsal. Tip of ventrals almost reaching the anal.

D 8. A 10. C 2. I. 8. 7. I. 1. V 6. P 12.

Prairie Mer Rouge, La. (James Fairie, Esq.,) and Russellville, Ky.

9. *HYDRARGYRA SIMILIS*, B. and G.—Back, bluish grey; sides and abdomen, yellowish. Transverse narrow black bands in both sexes. Fins yellow, unicolor in the female, dorsal, caudal and anal bluish grey. In the male the posterior margin of the dorsal being provided with one black spot and two yellow ones, one above, the other below the black. The caudal fin is posteriorly truncated.

D II. A 8. C 3. I. 8. 7. I. 2. V 5. P 18.

Brackish waters in the vicinity of Indianola.

10. *CYPRINODON ELEGANS*, B. and G.—The general form varies according to the sexes; the back in the male is very much arched, the body consequently is deeper than in the female. The largest individuals are two inches and three-eighths in total length. The head forms two-sevenths of the length. Back deep bluish black; sides variegated with bluish black and greenish yellow. The posterior edge of the caudal is margined with black in the male. A black spot, more conspicuous in the female, is observed on the posterior margin of the dorsal.

D 11. A 10. C 3. I. 8. 8. I. 2. V 6. P 14.

Rio Grande del Norte.

11. *CYPRINODON MACULARIUS*, B. and G.—Body elliptically elongated, an inch and six-eighths long; head short and rounded forming one fourth of the entire length. Above reddish brown, yellowish beneath, maculated with black; spots on the sides with an irregular tendency to arrange in vertical bands. Dorsal blackish; other fins dull yellow, with a greyish base.

D 8. A 10. C 3. I. 7. 6. I. 2. V 7. P 12.

From the Rio Gila.

12. *CYPRINODON BOVINUS*, B. and G.—Has a general resemblance in shape to *C. elegans*; the head, however, is more truncated. The color in the male is uniform blackish brown above; yellowish green beneath. The fins are unicolor except the caudal which has a blackish margin. The coloration of the female differs from that of the male in having the lower portion of the flanks irregularly

maculated; the fins are unicolor except the dorsal which has a black spot at its posterior margin.

D 9. A 8. C 6. I. 7. 6. I. 5. V 6. P 14.

Leon's Springs, Rio Grande del Norte.

13. *CYPRINODON GIBBOSUS*, B. and G.—The back forms a very prominent arch in the individuals of both sexes. The nape is often depressed and subconcave. The head is proportionally small, and the eyes large. The back, upper part of sides, head, and dorsal fins, are uniformly bluish black in the male; beneath golden yellow, and the caudal margined with black; the anal, ventrals and pectorals, yellow. The female exhibits vertical bars of black on the sides from the head to the caudal fin which is unicolor like the anal, ventrals and pectorals. The dorsal is provided posteriorly with a black spot.

D 10. A 11. C 4. I. 8. 7. I. 3. V 5. P 15.

Brackish waters of Indianola.

14. *HETERANDRIA AFFINIS*, B. and G.—Body elongated, subfusiform and compressed. Head forming about one-fifth of the entire length. Body yellowish brown above, orange beneath. Fins unicolor, except the caudal which has two narrow bands of black.

D 6. A 8. C 3. I. 7. 6. I. 2. V 5. P 12.

Rio Medina and Rio Salado.

15. *HETERANDRIA NOBILIS*, B. and G.—General form much stouter than in the preceding species; back arched. Head forming the fourth of the entire length. Ground color reddish; margin of scales black.

D 8. A 7. C 4. I. 7. 7. I. 3. V 6. P 10.

From Leona and Camanche springs, valley of the Rio Grande del Norte.

16. *HETERANDRIA PATRUELIS*, B. and G.—Body rather elongated, compressed. Head stouter than in *H. affinis*, though forming the fifth of the entire length. Reddish brown above, yellowish beneath.

D 5. A 8. C 3. I. 7. 6. I. 2. V 6. P 11.

Inhabits the Hydrographic basin of the Rio Nueces; specimens were collected in the Rio Sabinal, Rio Leona and Rio Nueces, and Elm creek.

17. *HETERANDRIA OCCIDENTALIS*, B. and G.—Body slender; back slightly arched; head small and conical, forming the fifth of the entire length. Reddish brown above; reddish yellow beneath. Fins unicolor, of a light yellowish white. The ventral line is marked by a black stripe. A black and heavier line may be observed under the tail, between the posterior margin of the anal fin and the base of the caudal.

D 6. A 7. C 4. I. 7. 6. I. 3. V 6. P 10.

Collected in the Rio Santa Cruz of the Rio Gila.

Description of New Species of Fishes, collected by Captains R. B. Marcy, and Geo. B. M'Clellan, in Arkansas.

By SPENCER F. BAIRD, and CHARLES GIRARD.

1. *POMOTIS BREVICEPS*, B. and G.—Body subelliptical, rather short; head very short, fore part convex and elevated; peduncle of tail of medium size. The greatest depth is more than half of the length, the caudal fin excluded. The origin of the dorsal fin is in advance of the opercular flap, and is composed of eleven spiny rays and ten soft ones. The origin of the anal is under the first soft ray of the dorsal, and contains nine soft and three spiny rays. The posterior extremities of these two fins extend a little beyond the middle of the peduncle of the tail. The caudal is slightly emarginated posteriorly, and its angles rounded; it is composed of seventeen fully developed rays and a few rudimentary ones. The ventrals inserted behind the base of pectorals, extend by their tips to the anus. The pectorals, composed of thirteen rays, do not reach quite so far.

D XI. 10. A III. 9. C 2. I. 8. 7. I. 2. V I 5. P 13.