

## IV.—FISHES.

By G. A. BOULENGER, F.R.S.

(Two Plates.)

THE collection is a very small one, consisting of representatives of ten species only, from within the Antarctic Circle, but of these four are here described as new. In addition to these species an example of a very large *Notothenia*, apparently closely related to *N. colbecki*, Blgr., was obtained, harpooned, with a seal, from a hole at the Winter Quarters. It was in a damaged condition, the head gone, and the caudal fin partly torn away. All I have seen of the fish is a photograph and the bones of the body. Dorsal with viii, 27 rays, anal with 26; scales, in a longitudinal series, 125. Total length, 3 ft. 10 ins.; weight, 39 lbs. (without the head).

### 1. TREMATOMUS BORCHGREVINKI.

Boulenger, Rep. 'South. Cross' (1902), p. 179.

Ten specimens, measuring from 170 to 250 millimetres. Winter Quarters, taken in April and December, 1902, and May, 1903.

### 2. TREMATOMUS HANSONI.

Id., op. cit., p. 180.

Twenty-five specimens, measuring from 115 to 290 millimetres. Winter Quarters, taken in March and April, 1902; also to the south-west of the Balleny Islands, at a depth of 254 fathoms, March 4th, 1904.

### 3. TREMATOMUS BERNACCHII.

Id., op. cit., p. 181.

Forty-two specimens, measuring from 100 to 280 millimetres. Winter Quarters, taken throughout the year.

### 4. NOTOTHENIA LONGIPES.

Steindachner, SB. Ak. Wien. lxxii. i. (1876), p. 70.

Three specimens, measuring up to 120 millimetres, from Tent Island, January 3rd, 1904.



## 5. NOTOTHENIA NICOLAI.

Boulenger, op. cit. p. 184.

Five specimens, measuring up to 100 millimetres. Winter Quarters, February and March, 1902, and February, 1904.

## 6. NOTOTHENIA SCOTTI.

(Plate I., fig. 1.)

Depth of body five and a-half times in the total length; length of head thrice and one-third. Diameter of eye twice and four-fifths in the length of the head; interorbital width nine times; maxillary extending to below the anterior border of the eye; lower jaw not projecting; head densely scaled, except on the upper surface of the snout. Gill-rakers short, eleven on lower part of anterior arch. Dorsal fin V, 32; longest rays nearly half the length of the head. Anal fin 34; longest rays two-fifths the length of the head. Pectoral fin rounded, three-fourths the length of the head, reaching beyond origin of anal. Ventral also three-fourths the length of the head. Caudal fin rounded. Caudal peduncle as long as deep. Scales  $56\frac{5}{8}$ ; lateral lines  $\frac{40}{18}$ (?) Brownish, with irregular darker spots, first dorsal fin, and a blotch on the posterior part of the dorsal and anal, black. Total length, 115 millimetres.

A single badly preserved specimen taken at a depth of 300 fathoms off the Ice Barrier, January 27th, 1902.

## 7. NOTOTHENIA HODGSONI.

(Plate I., fig. 2.)

Depth of body four and one-third to five times in the total length; length of head thrice and a half to thrice and four-fifths. Diameter of eye thrice to thrice and a-half in the length of the head, interorbital with thrice and a-half; maxillary extending to below the anterior third of the eye; lower jaw not projecting; interorbital region and occiput naked. Gill-rakers long, 16 to 18 on lower part of anterior arch. Dorsal fin VI-VII, 34-38, longest rays about half the length of the head. Anal fin 33-35, longest rays about one-third the length of the head. Pectoral fin rounded, as long as or a little shorter than the head, reaching beyond origin of anal. Ventral fin about three-fourths the length of the head. Caudal fin truncate. Caudal peduncle as long as deep. Scales  $90-95\frac{8-9}{28-30}$ ; lateral lines  $\frac{43-52}{8-10}$ , sometimes very indistinct. Brownish, with dark spots, which may form irregular vertical bars on the side of the body.

The largest specimen, from the stomach of a seal (Sept. 30, 1903), measures 160



millimetres, but is partially digested. There are twenty-four specimens, up to 95 millimetres, from the winter quarters, taken throughout the year. All more or less poorly preserved. This species is most nearly related to *N. colbecki*, differing in the more numerous dorsal and anal rays, somewhat larger scales, and truncate caudal fin.

#### 8. CHAMPSOCEPHALUS MACROPTERUS.

(Plate II.)

Body feebly compressed, gradually attenuate towards the very short caudal peduncle. Head large, twice and three-fourths to twice and four-fifths in the total length, twice and one-fourth to twice and a-half as long as broad; snout spatulate, nearly half the length of the head, with a hook-like spine in front, some longitudinal striæ on its upper surface; diameter of eye five to five and a-half times in the length of the head, once and a-half to once and two-thirds in the width of the interorbital region, which is smooth and concave; jaws equal in front, with a double series of slender, sharply pointed, feebly curved teeth; maxillary extending to below the anterior third of the eye; operculum produced above into a group of four spines, the upper of which is shaped like a Lochaber axe, having an anterior, recurved hook. Dorsal fin with XIII–XIV, 29–32 rays, the anterior portion commencing at a short distance from the occiput, the posterior commencing immediately behind the anterior; the spines flexible and produced into filaments much longer than the articulated rays, measuring about two-thirds the length of the head. Anal fin similar to the second dorsal, but a little shorter, with 25 to 27 rays. Pectoral fin as long as the ventral, about two-thirds the length of the head. Caudal fin small.\* Body naked, with a series of 64 to 77 soft tubular scales forming the principal lateral line, high up on the back from the gill-opening to the caudal peduncle, but not extending to the root of the caudal fin; a very short second lateral line, of 3 to 7 scales, on the middle of the caudal peduncle. Head and body pale olive† with blackish spots and vermiculations, forming more or less regular cross-bands on the body, these cross-bars enclosing a lighter field; the membrane between the first dorsal and the ventral fins blackish; isis pale golden.

Eleven specimens, measuring from 65 to 240 millimetres, the largest being a female with the oviducts full of ripe eggs, measuring 3 millimetres in diameter. They were obtained from the stomach of a Weddell Seal; winter quarters; Sept. 27, 1903. The head of another specimen was taken from a seal's stomach, March 14, 1903. The very large first dorsal fin well distinguishes this species from Dr. Günther's *C. esox*. With respect to this character the *C. gunnari* recently described by Dr. Lönnberg is intermediate.

In addition to the specimens described above, there are three very young and post-larval specimens, measuring from 20 to 30 millimetres, obtained at the winter quarters,

\* Its exact shape cannot be made out from any of the specimens.

† According to a coloured sketch by Dr. Wilson.



February 2nd, 1903, which I must refer to the same species. As in *Trachinus*, the post-larval fish is remarkable for the very large size of the ventral fins, which are about three times as long as the pectorals, and of an intense black.

Other post-larval fishes, collected with the above, and also a few days later, February 23, 1903, appear to be referable to *Gymnodraco acuticeps*, Blgr., and are also remarkable for the very long ventral fins; there are two black bars on the body and a third at the root of the caudal fin.

#### 9. BATHYDRACO MACROLEPIS.

(Plate I., fig. 3.)

Body slightly depressed, gradually attenuate towards the caudal peduncle; its depth nine times in the total length. Head large, three times in the total length, twice and one-fourth as long as broad; snout spatulate, one-third the length of the head; diameter of eye one-fourth the length of the head, and three times the width of the interorbital region; jaws with broad bands of villiform teeth, the lower projecting beyond the upper; maxillary extending to below the anterior border of the eye. Gill-rakers moderately elongate, widely set, six on lower part of anterior arch. Seven branchiostegal rays. Dorsal fin with 39 rays; its base slightly longer than its distance from the end of the snout, the longest rays two-fifths the length of the head. Anal fin with 29 rays, the longest measuring two-sevenths the length of the head. Pectoral fin longer than the ventral, three-fifths the length of the head. The distance between the extremity of the ventral and the vent one-fourth the length of the fin. Caudal fin rounded, half as long as the head. Scales strongly ctenoid,  $96\frac{5}{2}$ ; lateral line 56, extending from the upper extremity of the gill-cover to the root of the caudal fin. Uniform brownish, posterior half of the ventral fins blackish. Total length, 210 millimetres.

A single specimen, taken at a depth of 252 fathoms, to the south-west of the Balleny Islands, March 4th, 1904. Distinguished from *B. antarcticus*, Gthr., by the much larger scales, fewer and longer gill-rakers, and fewer branchiostegal rays.

#### 10. PLEURAGRAMMA ANTARCTICUM.

Boulenger, op. cit., p. 187.

Twenty specimens, measuring up to 200 millimetres, mostly from the stomachs of seals, January 23rd, 1903, and February, 1904, but one found among ice crystals at the seal hole off Cape Armitage, September 22nd, 1902, and one taken at a depth of 254 fathoms to the south-west of the Balleny Islands, March 4th, 1904.

Series of young showing the development were also obtained by Mr. Hodgson. In specimens measuring about 20 millimetres, the body is very elongate, and a series of black dots borders the base of the dorsal and anal fins.

## EXPLANATION OF THE PLATES.

## PLATE 1.

FIG. 1.—*Notothenia scotti*.

„ 1a.—*Notothenia scotti*. Upper view of head.

„ 2.—*Notothenia hodgsoni*.

„ 2a.—*Notothenia hodgsoni*. Upper view of head.

„ 3.—*Bathydraco macrolepis*.

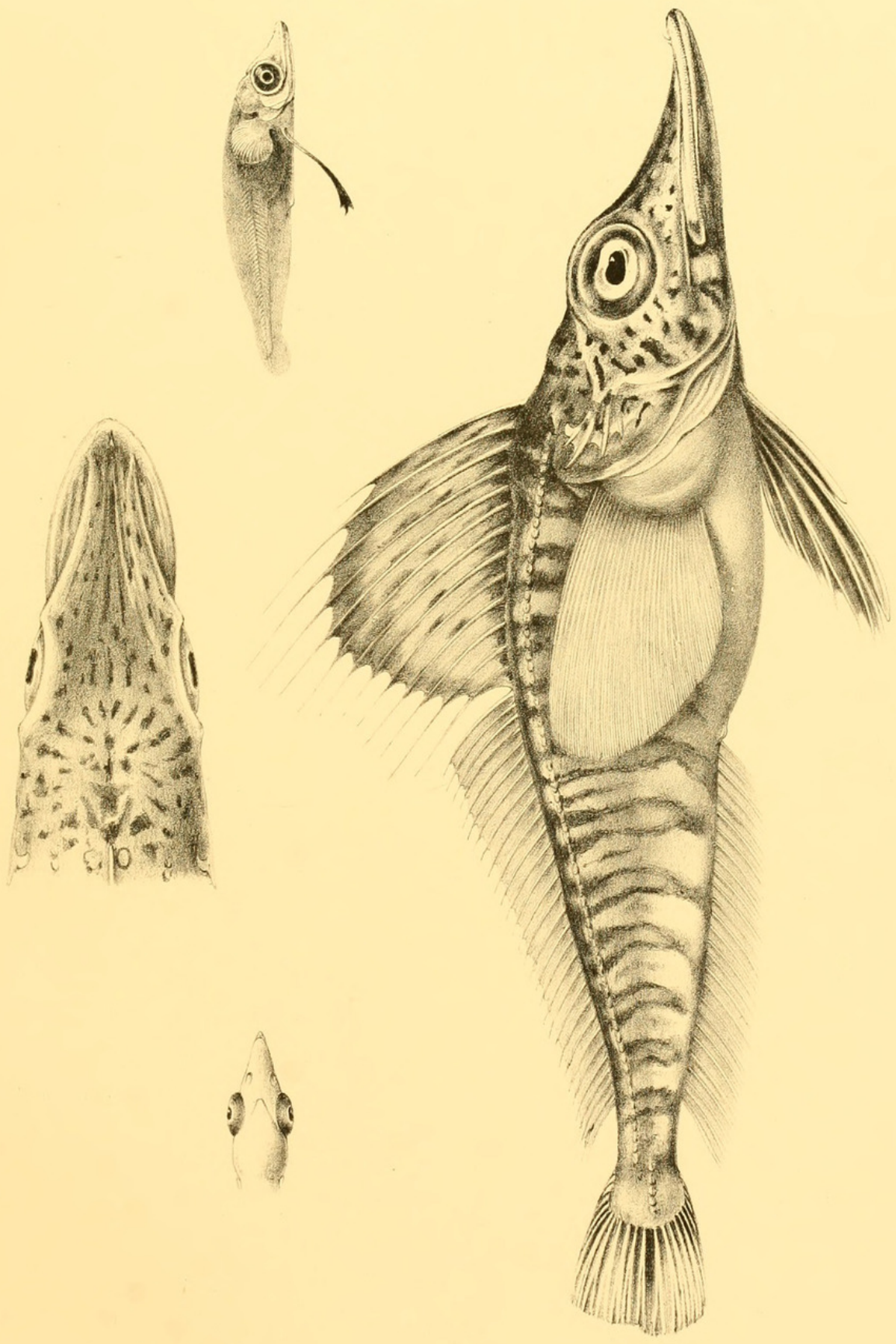
„ 3a.—*Bathydraco macrolepis*. Upper view of head.

All natural size.

## PLATE 2.

*Champscephalus macropterus*. Adult, natural size, with upper view of head; and young, enlarged three times, with upper view of head.

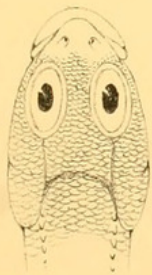




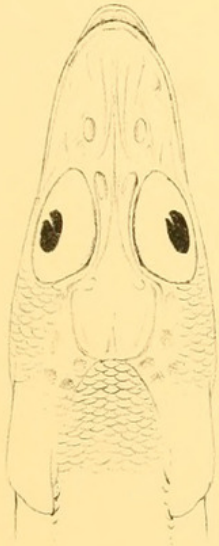
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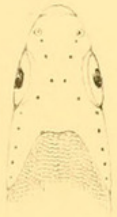
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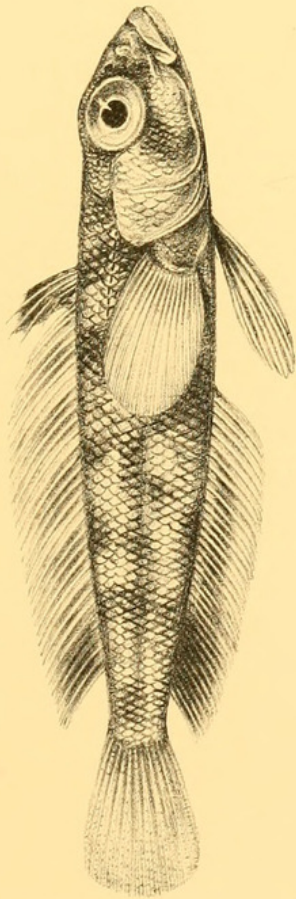
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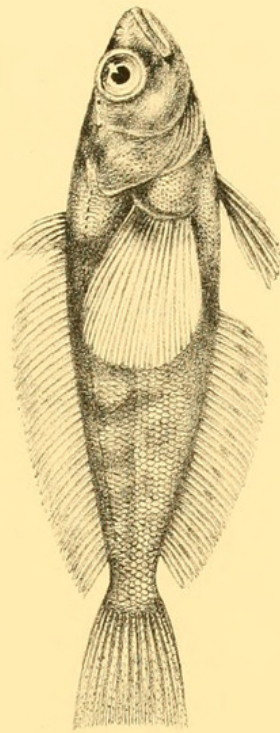
3 a.



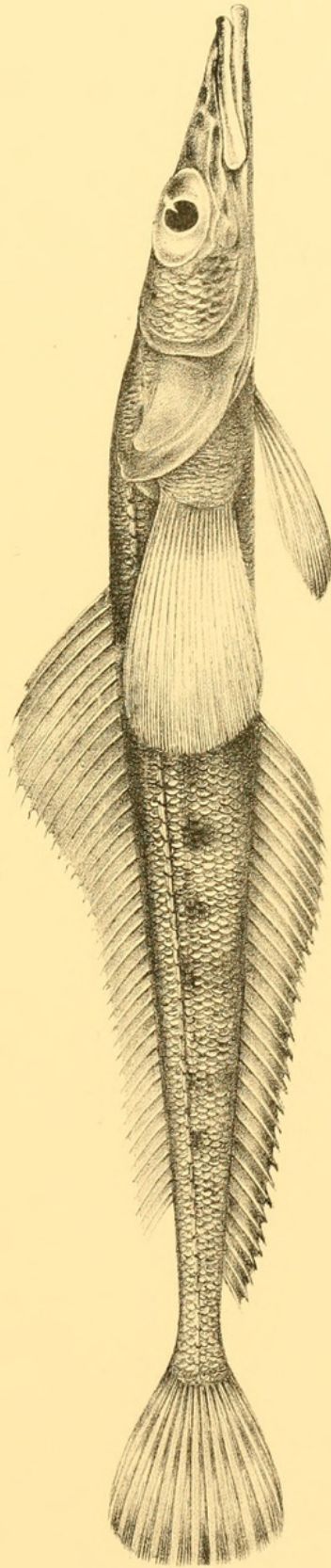
2 a.



1.



2.



3.



Boulenger, George Albert. 1907. "IV.—Fishes." *Natural history* 2, 1–5.

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