

XXXIX.—On the Identity of *Morrhua punctata* and *Morrhua vulgaris*. By ROBERT DYCE, M.D.*

[With two Plates.]

IN Turton's 'British Fauna,' published in 1807, a fish is described under the name of the "Speckled Cod," *Morrhua punctata*, as a distinct and peculiar species found in the weirs at Swansea. Since his time, every succeeding author has transcribed his account of it, although each has, to a certain extent, thrown a doubt over its existence, by saying either that it is unknown to them, or that no other author appears to have noticed it.

Thus, Fleming simply copies Turton's account of it, without comment: he, apparently, never had seen it. Jenyns, besides quoting from Turton and Fleming, adds, "This supposed species I am not acquainted with, and I would venture to suggest that it is only a variety of the *Morrhua vulgaris*;" while Yarrell, besides transcribing the descriptions of these authors, adds, "No other record of this fish has appeared, that I am aware of." He also states that a fresh example was brought him, caught at the mouth of the Thames, which the fishermen called "Lord-fish," and considered to be an accidental deformity. Thus, though each has suspected its existence, there has been no attempt made at removing the doubt. Yarrell appears not to have preserved the fish, but he gives a very characteristic drawing, which strikingly resembles the numerous examples I have met with of Turton's fish.

It appears to me that I am now in possession of facts sufficient to set these doubts at rest, from having obtained so many examples, within the last few years, which correspond with Turton's Speckled Cod, with the Lord-fish of the Thames fishermen, and yet so entirely possessing the character of the common Cod as to leave not a doubt in my mind that they are all the same fish, altered only in appearance and shape,—in short, deformed from disease of the spine. In endeavouring to show this, I shall first contrast Turton's fish with the detail of appearances in my own specimen, to show their identity; and then, secondly, exhibit the evidences of the connexion of both of these with the common Cod.

Perhaps this will be more readily understood by referring to the accompanying Table of comparison, which is intended to identify Turton's fish and mine. From this it will readily be admitted that the most notable difference (setting aside the shape of the fish) is that in the number of the fin-rays; but to this particular I do not attach much importance, because, even in fish

* Communicated by the author, having been read at the Meeting of the British Association at Aberdeen, Sept. 1859.

Table of Comparison.

SPECKLED COD (Turton).

DEFORMED COMMON COD (Dyce).

Body 18 inches long.

Body 16 inches long.

Arched on back, and prominent on belly.

Depth 5 inches; circumference over first dorsal 12 inches 11 lines.

Covered above with numerous gold-yellow roundish spots; beneath with dusky specks (which are stellate under a glass).

Crown of head, back and sides of body thickly spotted brown and golden yellow, on a light brownish mottled ground; below lateral line only partially coloured; belly white.

Head large, gradually sloping.

Head large, 5½ inches; profile sharp.

Teeth small, in several rows in the upper jaw; in the lower, a single row.

A broad band of small teeth in the upper jaw; a single row in lower jaw; stronger as they approach the angles of the mouth; (a row of stronger teeth on palatine bones).

Nostrils double.

Nostrils double.

Iris reddish; pupils black.

Irides gold bronze-colour; eyes large.

Chin with a single beard.

One barbule on lower jaw, 1¼ inch long.

Nape with a deep longitudinal groove.

Behind the eyes, on the nape, and extending to near the origin of 1st dorsal, a deep sulcus or groove.

Lateral line near the back, curved as far as the middle of the second dorsal fin, growing broader and whiter towards the end.

Lateral line high on the back, highly curved over pectoral to middle of second dorsal, of a white silvery colour, with the exception of a part before the last dorsal, on which it is entirely extinct; then straight to tail.

Upper fins and tail brown, with obscure yellowish spots, and darker towards the end; lower ones tinged with green.

Ventral fins of a dark blackish colour; all the others dark brown.

Fin Rays.

D. 14. 20. 18. P. 18. V. 6. A. 19. 16. C. 36. D. 14. 19. 17. P. 20. V. 6. A. 15. 18. C. 33.
(Fleming, Yarrell, Jenyns.) and several shorter. Vertebrae 52.

of which there is no doubt, you find no two authors agree. Take, for example, the common Cod, as exhibited in the following Table. The three authors named differ in every particular:—

Table showing the Difference in the rays of the Common Cod, according to different authors.

YARRELL:—

D. 10 . 20 . 18. P. 20. V. 6. A. 20 . 16. C. 26.

JENYNS:—

D. 12 . 20 . 19. P. 19. V. 6. A. 19 . 17. C. 34,
and several shorter.

FLEMING:—

D. 12 . 18 . 16. P. 14. V. 7. A. 20 . 16. C. 36.

I next refer to the evidences of its connexion with the common Cod, which I exhibit in a similar tabular form:—

Table showing the Identity of the Morrhua punctata with the Morrhua vulgaris, or Common Cod.

- | | |
|--|--|
| 1. <i>Jaws.</i> Both have the upper longer than the lower. | dorsal, beginning a little backward." |
| 2. Both have one <i>barbule</i> . | 9. <i>Caudal</i> , nearly even at the extremities, large and square. |
| 3. Both have <i>teeth</i> , card-like, in several rows of unequal lengths; also on palatine bones. | 10. <i>Ventrals</i> placed before the pectorals in both, narrow and pointed. |
| 4. <i>Head</i> smooth in both. | 11. Number of <i>fin-rays</i> differ very slightly. |
| 5. Both have a longitudinal <i>sulcus</i> or <i>groove</i> on nape, extending to first dorsal. | 12. <i>Colour</i> of back, head, and upper half of sides, cinereous brown, obscurely spotted with yellow; lower half of abdomen white; in <i>M. punctata</i> , head, back, and sides of body of two shades of brown and yellow: belly white in both. |
| 6. Both have the <i>lateral line</i> curved to middle of second dorsal, then straight to the tail. | 13. <i>Lateral line</i> forming a narrow white band; in <i>M. punctata</i> , only partially coloured. |
| 7. Both have <i>three dorsals</i> , "commencing at one-third of the length." | 14. <i>Fins</i> in both dusky; ventrals pale; in <i>M. punctata</i> , ventrals dark. |
| 8. Both have <i>two anals</i> , "the first corresponding nearly to the second | |

These, then, are the points proving the connexion between the common Cod and the Speckled Cod of authors in their external characters. It now remains to show the cause of the apparent difference, which can be seen only on dissection. My attention was first directed to this inquiry from noticing a deformity in the spine of the common Haddock similar to that which is found in *Morrhua punctata*. It gave the fish a stumpy, misshapen, bellied appearance, so like *M. punctata*, that in my subsequent examples I readily detected the same cause operating in both as a reason for their deformity. I found the spine compressed, contracted in its length, and at times curved. The vertebræ are not, as the fishermen suppose, *double* (for they call them double-boned Cod and double-boned Haddock, or "stragglers," from their being found after the other fish have left the coast), but very much thickened and compressed throughout, the greater part of the column presenting simply a bony arch, from which the lateral processes arise, the softer spongy body of each bone appearing to have been removed by absorption, while the outer bony ring or arch only remains.

