

niger is that the keel and a line continuing it along the back to where it joins the shield is the last part of the body to retain the light ground-colour. Except in the totally black variety (v. *maura*) *L. cinereo-niger* always has this keel and line more or less evident as a thin pale stripe.

This evidence will suffice to make it clear that, whatever views we may hold as to the specific or subspecific rank of *L. cinereo-niger*, it is not open for us to acquiesce in the statement that it "is simply one of the many colour-variations of the well-known *L. maximus*, L."

XXXVII.—*Note on the Variations of the Lateral Shields in the Three-spined Stickleback* (*Gastrosteus aculeatus*). By G. A. BOULENGER.

EVER since Cuvier proceeded to divide the Sticklebacks into species according to the presence or absence and the development of the lateral armour, the question of the value of this character has been much discussed. Most modern European writers, with the exception of Blanchard and Sauvage, have refused to accept Cuvier's species as such, although they have usually retained them as varieties or subspecies. These supposed species are, however, maintained provisionally by American authors, Jordan not long ago remarking that he has not yet met with distinctly intermediate forms either on the Atlantic or Pacific coast. Bonizzi, Day, and Fatio have published results of investigations into the variations of the spines and shields in the smooth-tailed form from one locality; but the differences in the lateral armour in northern brackish-water specimens do not appear to have yet been subjected to a thorough statistical examination.

In July last I collected indiscriminately in a tidal pool close to Ostend Harbour sixty-six specimens of the three-spined stickleback, with the object of testing their characters, as I had observed that the three principal forms, viz. *G. trachurus*, *G. semiarmatus*, and *G. gymnurus*, occurred promiscuously both in and outside the harbour. The result is interesting, as showing how complete the gradation between the shielded and the smooth form is and how much the characters may differ on the two sides of one and the same specimen. I have therefore recorded the number of lateral shields in all the specimens, and arranged them in a series from the most perfectly armoured to the naked specimens. The numbers given refer to the shields on either side, those of the left side

separated from those on the right by a dash, the cross indicating a gap between the thoracic and caudal shields.

The first group represents *G. trachurus*, with an uninterrupted series of shields from the shoulder to the end of the tail; the third the *G. semiarmatus*, with a naked gap between the thoracic shields and the caudals; the fifth the *G. gymnurus*, with the tail completely naked; whilst the second and fourth groups are of special interest as comprising individuals which belong to two different forms, according to whether the right or the left side is examined. It will be observed that the intermediate specimens (*G. semiarmatus*) are the most numerous.

I.

1. 32—31.
2. 30—30.
3. 30—29.
- 4-6. 29—29.
- 7, 8. 28—29.
- 9-13. 29—28.
- 14-16. 28—28.

II.

17. 18+7—30.
18. 30—12+10.
19. 13+7—29.
20. 28—17+10.
21. 28—14+6.

III.

22. 19+7—17+8.
23. 17+7—19+7.
24. 17+6—18+6.
25. 18+7—16+7.
26. 14+1+6—18+6.
27. 11+7—17+7.
28. 16+8—16+5.
29. 16+8—15+7.
30. 15+5—16+6.
31. 15+8—15+8.
32. 14+7—15+7.
33. 10+2+4—15+3.
34. 14+6—14+6.

35. 14+2—14+3.
36. 14+7—13+7.
37. 14+7—13+7.
38. 14+7—11+7.
39. 12+8—13+7.
40. 13+7—12+6.
41. 12+6—12+7.
42. 12+7—11+6.
43. 12+6—11+7.
44. 11+8—11+7.
45. 10+5—11+5.
46. 10+6—10+6.
47. 9+7—10+7.
48. 8+2—8+3.
49. 7+6—7+6.
50. 6+4—7+4.

IV.

51. 9+3—9.

V.

52. 12—12.
- 53, 54. 10—10.
- 55, 56. 7—7.
57. 7—6.
- 58, 59. 6—7.
60. 5—7.
- 61-64. 6—6.
65. 6—5.
66. 4—4.

XXXVIII.—Description of a New Porcupine from East Africa. By OLDFIELD THOMAS.

MR. F. J. JACKSON, the discoverer of so many new East-African mammals, picked up on the beach at Lamu the skull of a porcupine which, on comparison, appears to me to differ



Boulenger, George Albert. 1893. "XXXVII.—Note on the variations of the lateral shields in the three-spined Stickleback (*Gastrosteus aculeatus*).*" The Annals and magazine of natural history; zoology, botany, and geology* 11, 228–229. <https://doi.org/10.1080/00222939308677505>.

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