

FICHES D'IDENTIFICATION DU ZOOPLANCTON

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LABRIDAE OF THE EASTERN NORTH ATLANTIC

by

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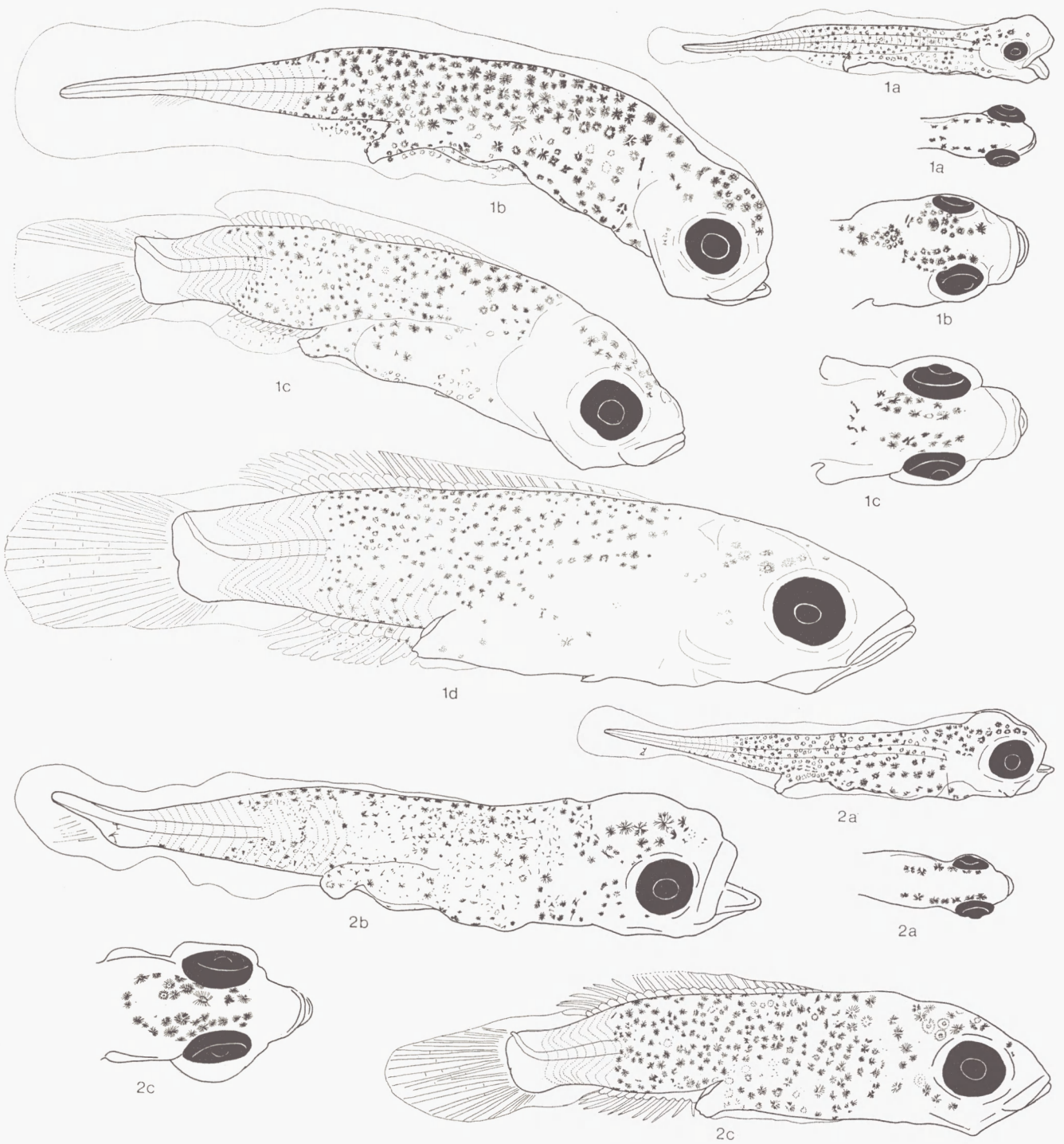


Figure 1. *Labrus bergyllta* Ascanius:

- (a) larva (with yolk), 3 mm. (Fives);
- (b) post-larva 5.5 mm. (Fives);
- (c) post-larva 8 mm. (Fives);
- (d) post-larva 9.5 mm. (Fives);

Figure 2. *Centrolabrus exoletus* L.:

- (a) larva (with yolk), 3.75 mm. (Fives);
- (b) post-larva 5 mm. (Dunne);
- (c) post-larva 7 mm. (Fives);

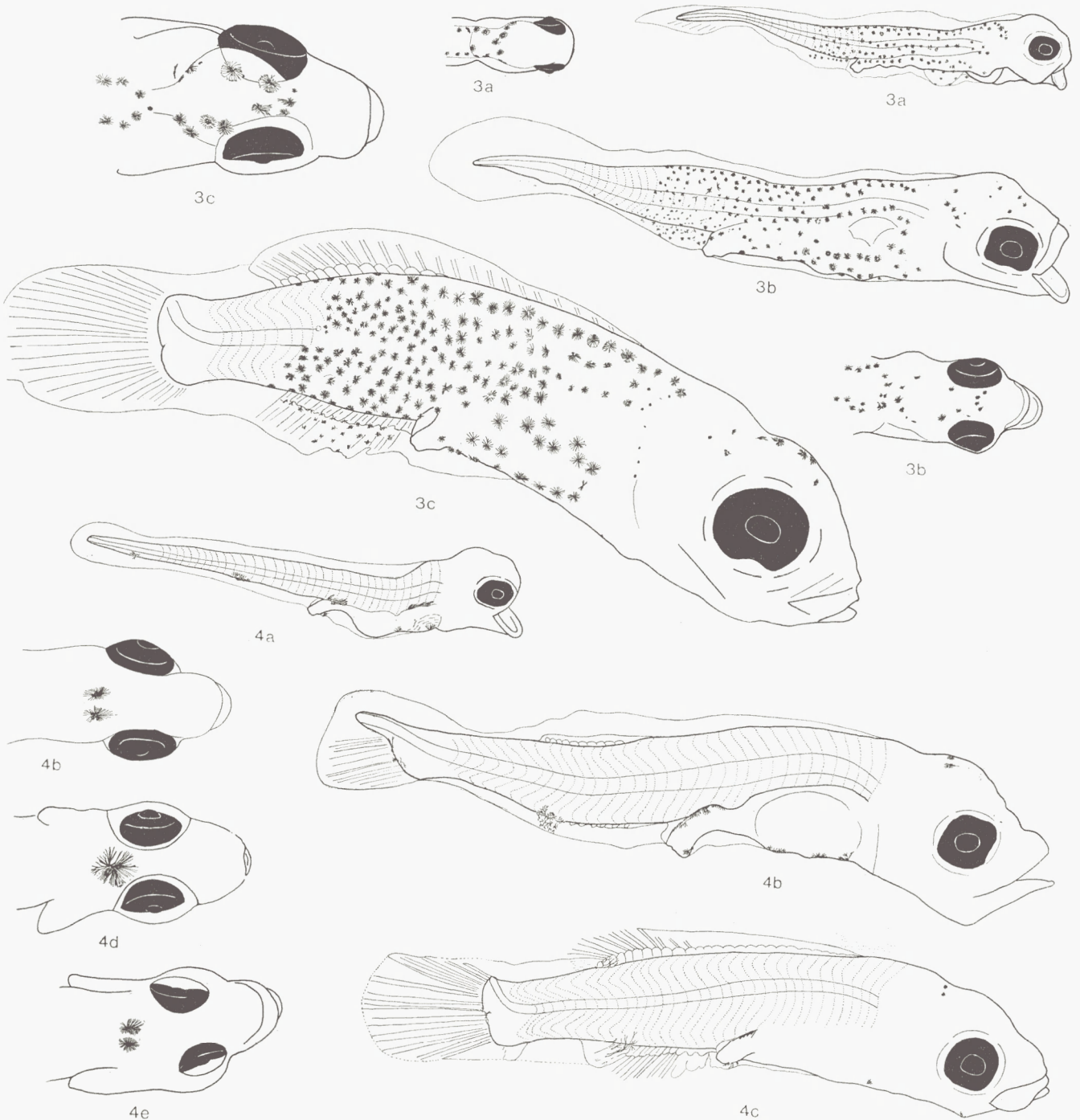


Figure 3. *Symphodus (Crenilabrus) melops* (L.):
 (a) larva (with yolk) 2.8 mm. (Fives);
 (b) post-larva 4.5 mm. (Fives);
 (c) post-larva 6.5 mm. (Fives);

Figure 4. *Ctenolabrus rupestris* (L.):
 (a) larva (with yolk) 2.95 mm. (Fives);
 (b) post-larva 5 mm. (Fives);
 (c) post-larva 6.9 mm. (Fives);
 (d) dorsal head pigment, post-larva 7.5 mm. (Fives);
 (e) dorsal head pigment, post-larva 8 mm. (Fives);



Figure 4. *Ctenolabrus rupestris* (L.):
 (f) post-larva 9 mm. (Fives);
 (g) post-larva 10 mm. (Fives);

Figure 5. *Labrus bimaculatus* L.:
 (a) post-larva 4.9 mm. (Fives);
 (b) post-larva 9 mm. (Dunne);
 (c) post-larva 10 mm. (Fives);

Figures 2b and 5b were drawn from specimens collected and identified by James Dunne, M. Sc., Marine Zoological Station, Carna, Co. Galway, Eire.

Labridae of the North Atlantic

The five species of Labridae occurring in the area of the North Atlantic dealt with in this paper are listed and their approximate distributions are shown in Table 1. Adults of a further species, *Coris julis* (Linnaeus, 1785), have been recorded near Plymouth (Wheeler, 1969) but as the larval stages do not appear to have been recorded from the North Atlantic, descriptions of developmental stages of this species, given in earlier works (Holt 1899, Fage 1918, Ford 1922, Sparta 1956), have not been included here. The approximate period of larval occurrence of these species is indicated on Table 2.

The figures are drawings of specimens taken from plankton samples collected off the west coast of Ireland. As the specimens were preserved in 4% formalin-sea-water buffered with borax, slight shrinkage may have occurred. The description of eggs is a resumé of descriptions by previous authors.

The very distinctive patterns of dark, stellate chromatophores which remain even after preservation in the formalin solution make the individual species of the group being dealt with easily distinguishable. Vertebral counts are here included but need not normally be resorted to during identifications.

The definitive nomenclature used is from the "Check-list of the fishes of the north-eastern Atlantic and of the Mediterranean", by Hureau and Monod, 1973.

Description of Eggs

Eggs laid in nests constructed by parents from fine algae wedged in a crevice and bound with mucus threads. The eggs, which are attached to the algae, are spherical, creamy-white; egg diameter 1 mm to 1.15 mm Ballan Wrasse, *Labrus bergylta* Ascanius 1767.....
 No description available Rock Cook, *Centrolabrus exoletus* (Linnaeus, 1758)
 Eggs are attached to the algae of which the nest, constructed by the parents, is composed. Each egg is spherical, yolk very little coloured and homogenous, diameter 0.75 to 0.78 mm Corkwing, *Symphodus (Crenilabrus) melops* (Linnaeus, 1758).
 Eggs planktonic, without oil, homogenous yolk, egg diameter 0.7 to 1 mm Goldsinny, *Ctenolabrus rupestris* (Linnaeus, 1758).
 Eggs laid in nests constructed by parents. No description of eggs available Cuckoo Wrasse, *Labrus bimaculatus* (Linnaeus, 1758).

Key to identification of Larvae

Larvae and early post-larvae of Labridae are easily recognisable through the following characteristics: Pre-anal region may be close to, or slightly greater than, $\frac{1}{2}$ the total length of body; no swim-bladder visible; intestine forms a right angle with the primordial fin membrane; height of head is less than $\frac{1}{5}$ total length of body; (total length of body = distance between the anterior extremity of the head and the posterior extremity of the body).

Newly-hatched larvae

1. Body heavily pigmented with chromatophores from posterior to the head to approximately the eighth post-anal segment 2
 Body very lightly pigmented with chromatophores 5
2. Head pigment restricted to two crescent-shaped areas running longitudinally on either side of the mid-dorsal line 3
 Head pigment absent 4
3. Anal fin membrane with a scattering of stellate chromatophores. Approximately 2.75 mm to 3 mm. There may be some small pigment spots along the posterior ventral margin of the body and on the primordial fin membrane in that region *Labrus bergylta* Ascanius 1767.
 Anal fin membrane without chromatophores. Approximately 3 mm. There may be some pigment along the posterior ventral margin of the body and on the primordial fin membrane in that region *Centrolabrus exoletus* (Linnaeus 1758).
4. Anal fin membrane with a single row of stellate chromatophores. Approximately 2.5 to 3 mm. The body pigment is usually less dense than that of either of the two previous species *Symphodus (Crenilabrus) melops* (Linnaeus, 1758).
5. Body pigments confined to ventral margin of body and intestine. Approximately 2.5 mm; two areas of pigment on dorsal intestine, a few chromatophores along ventral intestine, one very large branching chromatophore approximately mid-way between anus and extremity of notochord and one small branching chromatophore nearer the end of the body *Ctenolabrus rupestris* (Linnaeus, 1758).
 Body pigments confined to dorsal and ventral margins of body and intestine. Approximately 4 mm; a series of large branching chromatophores, usually five, along the dorsal margin and usually three or four along the ventral post-anal margin; some branching chromatophores along dorsal and ventral intestine and on centre of ventral lip *Labrus bimaculatus* Linnaeus, 1758.

Post-larvae to 10 mm

There is so very little change in the pigmentation patterns during the post-larval stages that the key for identification of larvae can still be used. Additional notes on the characteristics of the individual species are given below. The largest specimen of any of these species taken in the plankton was 10 mm. Larger specimens are taken regularly amongst the weed in the inshore waters.

Labrus bergylta Ascanius.

5.5 mm. Anal fin pigment becoming restricted to anterior anal fin region.

8.0 mm. Bases of dorsal and anal fins, which were just becoming apparent in 6.5 mm specimens, are now easily discernable; caudal fin formed; ventral fins developing; anal fin pigment restricted to the anterior interradial membrane and fin rays.

9.5 mm. Dorsal fin: 19 spines + 10 or 11 rays. Anal fin: 1 to 3 spines + 8 to 10 rays. Vertebrae: 19 pre-anal + 19 post-anal.

Centrolabrus exoletus (Linnaeus).

5.0 mm. Extension of head pigment to ventrolateral head region; caudal fin developing.

7.0 mm. Bases of dorsal and anal fins apparent. Dorsal fin: 18 to 20 spines + 5 to 7 rays. Anal fin: 4 to 6 spines + 6 to 8 rays. Vertebrae: 17 pre-anal + 18 post-anal.

Symphodus (Crenilabrus) melops (Linnaeus).

4.5 mm. Anal fin pigment more plentiful and scattered; some pigment spots evident along posterior ventral margin; head pigment consisting of scattered stellate chromatophores; ventral lip pigment present.

6.5 mm. Anal fin pigment now confined to the base of the fin rays and below; caudal fin developing; bases of dorsal and anal fin rays apparent. Dorsal fin: 15 to 18 spines + 8 to 10 rays. Anal fin: 3 spines + 8 to 10 rays. Vertebrae: 14 pre-anal + 19 post-anal.

Ctenolabrus rupestris (Linnaeus).

5.0 mm. Bases of dorsal and anal fins becoming apparent; dorsal head pigment apparent; caudal fin developing.

6.9 mm. Occasionally some pigment evident at posterior base of dorsal fin; pigment at angle of jaw.

7.5–9 mm. Dorsal head pigment may vary from one to three large radiating chromatophores; ventral fins developing.

10 mm. Dorsal fin: 16 to 18 spines + 8 to 10 rays. Anal fin: 3 to 4 spines + 7 to 8 rays. Vertebrae: 15 pre-anal + 20 post-anal.

Labrus bimaculatus Linnaeus.

9 mm. One large branching chromatophore dorsal on head; small chromatophore at base of pectoral fins, angle of jaws, and some on centre of upper lip; ventral fins developing; bases of dorsal and anal fins apparent.

10 mm. Dorsal fin: 16 to 18 spines + 11 to 14 rays. Anal fin: 3 spines + 9 to 11 rays. Vertebrae: 17 or 18 pre-anal + 21 to 22 post-anal.

TABLE 1

- Species:* 1. *Labrus bergylta* Ascanius, 1767.
 2. *Centrolabrus exoletus* (Linnaeus, 1758).
 3. *Symphodus (Crenilabrus) melops* (Linnaeus, 1758).
 4. *Ctenolabrus rupestris* (Linnaeus, 1758).
 5. *Labrus bimaculatus* Linnaeus, 1758.

<i>Distribution:</i> Greenland	2.
Atlantic coast of Norway	1, 2, 3, 4, 5.
British coasts: west and north west	1, 2, 3, 4, 5.
south west	1, 2, 3, 4, 5.
south	1, 2, 3, 4, 5.
east	1, 3, 4, 5.
English Channel (eastern)	1, 3, 4, 5.
English Channel (western)	1, 2, 3, 4, 5.
Irish coasts: west	1, 2, 3, 4, 5.
north-west	1, 2, 3, 4, 5.
south-west	1, 3, 4, 5.
south and east	1, 3, 4, 5.
Atlantic coast of France and Spain	1, 2, 3, 4, 5.
Mediterranean, including Adriatic	1, 3, 4, 5.
Maderia	1, 5.
Azores	1, 5.
Canary Islands	1, 3.
Black Sea	4.

TABLE 2

Species	Recorded occurrence of larval stages					
	Apr.	May	Jun.	Jul.	Aug.	Sep.
1. <i>L. bergylta</i>	+	+	+	+	+	-
2. <i>C. exoletus</i>	-	-	+	+	-	-
3. <i>S. melops</i>	-	+	+	+	+	-
4. <i>C. rupestris</i>	-	-	+	+	+	+
5. <i>L. bimaculatus</i>	-	+	+	-	-	-

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