

CONSEIL INTERNATIONAL POUR L'EXPLORATION DE LA MER

**Identification Sheets on
Fish Eggs and Larvae
Sheet 1**

CLUPEOIDAE

(By ALAN SAVILLE)

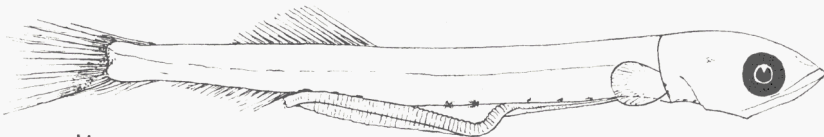
1964



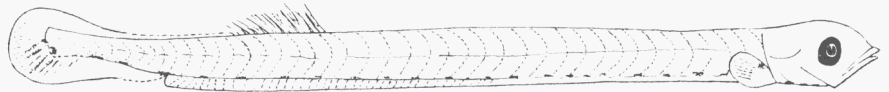
1a



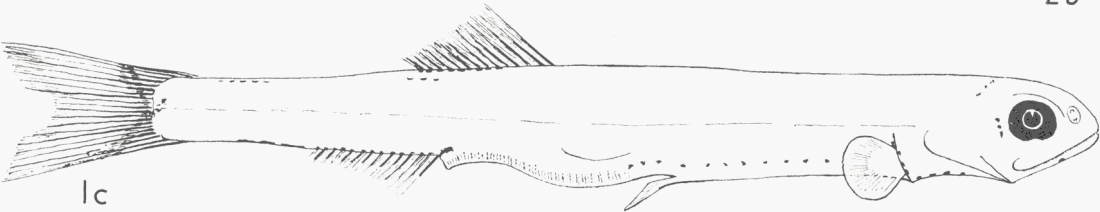
2a



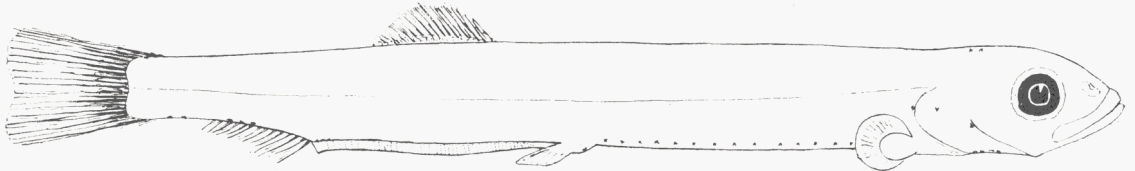
1b



2b



1c



2c

PLATE I

1. Anchovy; a, 6 mm; b, 11 mm; c, 25 mm. — 2. Pilchard; a, 7.2 mm; b, 11 mm; c, 30 mm.

Key to Identification of Clupeoid Eggs

1. Egg planktonic, oval, about 1.2 mm × 0.5 mm. Yolk segmented, perivitelline space narrow Anchovy – *Engraulis encrassicholus* (L.)
2. Egg planktonic, round, diameter 1.5–1.9 mm. Yolk segmented with oil globule, diameter 0.10–0.16 mm. Perivitelline space wide Pilchard – *Sardina pilchardus* (Walbaum)
3. Egg planktonic, round, diameter 0.93–1.5 mm. Yolk segmented, no oil globule. Perivitelline space narrow Sprat – *Sprattus sprattus* (L.)
4. Egg benthic, irregularly round, diameter 0.9–1.4 mm. Yolk segmented, no oil globule Herring – *Clupea harengus* (L.)

Key to Identification of Clupeoid Larvae

Clupeoid larvae are easily distinguished from the larvae of other marine fish by their slender elongated body containing numerous myotomes, their straight digestive tract with plainly visible annular folding of the intestine and the very posterior position of the anus. The last characteristic results in the length of the tail being contained more than $3\frac{1}{2}$ times in the total length of the body. In other larvae, even those with elongated digestive tracts, the tail length is more than $\frac{1}{3}$ of the total length.

Because of the changes which take place during development a single key cannot be used to cover all the planktonic phase. For convenience of identification the planktonic stage is divided into three size groups – the dimension given being the total length.

Larvae less than 10 mm

1. Head about $\frac{1}{5}$ of total length Anchovy
Head about $\frac{1}{7}$ of total length 2
2. 46–48 myotomes in body, 37 in trunk Sprat
51–52 myotomes in body, 42 in trunk Pilchard
56–58 myotomes in body, 47 in trunk Herring

Larvae 10–20 mm

1. Head shorter than tail, anus below dorsal fin Anchovy
Head and tail of same length, anus behind dorsal fin 2
2. Pelvic fins appear at 17.5–20 mm, some distance behind the pylorus. 35–37 trunk myotomes Sprat
Pelvic fins appear at 18–22 mm, at level of pylorus. 41–42 trunk myotomes Pilchard
Pelvic fins not yet appeared. 46–47 trunk myotomes Herring

Larvae 20–40 mm

1. Pelvics at level of pylorus 2
Pelvics behind pylorus 3
2. Tail at least $1\frac{1}{2}$ times length of head and $\frac{2}{7}$ of total length Anchovy
Tail of same length as head and less than $\frac{1}{5}$ of total length Pilchard
3. Length of tail about $\frac{1}{4}$ of total length. 31–35 trunk myotomes Sprat
Length of tail less than $\frac{1}{6}$ of total length. 41–46 trunk myotomes Herring

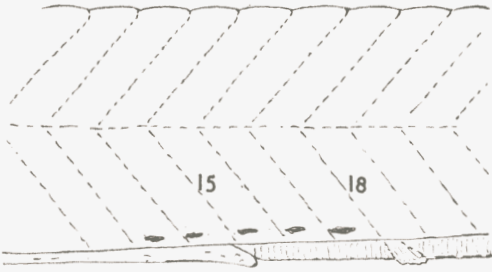
Definitions:— Total length = distance from point of snout to end of caudal fin.
Trunk length = distance from posterior edge of operculum to anus.
Tail length = distance from anus to the beginning of caudal fin.



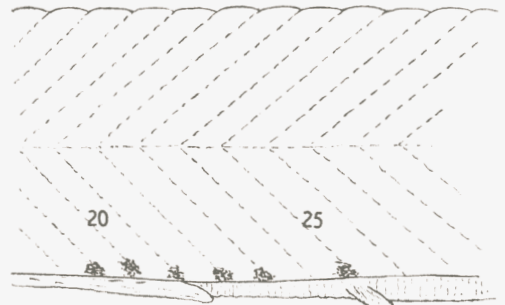
3a



4a



3b



4b



3c



4c

PLATE II

3. Sprat; a, 10 mm; b, position of pelvic fins in a sprat of 20.5 mm; c, 31 mm. — 4. Herring; a, 11 mm; b, position of pelvic fins in a herring of 22 mm; c, 41 mm. Figures from FAGE (1920).

Further Information on Identification

Anchovy

Length at hatching about 3 mm. Easily identified from others by elongation of yolk-sac and multi-columnar notochord. From a size of 6 mm characteristic pigmentation with a pair of ramifying chromatophores behind pylorus, a similar pair on anal papilla and an oblique line of small pigment spots from skeleton of caudal fin to lower part of fin fold. - RAFFAELE, 1888; FAGE, 1920; D'ANCONA, 1931; GAMULIN, 1940.

Pilchard, Sprat and Herring

From hatching to yolk-sac absorption pilchard distinguishable from herring and sprat by presence of an oil globule in yolk and by the more obviously segmented yolk. After yolk-sac absorption these three species identical in pigmentation and body proportions and can be identified only by myotome counts until pelvic fins developed.

Pilchard - CUNNINGHAM, 1889, 1894; MARION, 1890, 1891; FAGE, 1920; LEBOUR, 1920; D'ANCONA, 1931; GAMULIN, 1940.

Sprat - HOLT, 1899; EHRENBAUM, 1909; FAGE, 1920; LEBOUR, 1920.

Herring - CUNNINGHAM, 1889; MACINTOSH and MASTERMAN, 1897; EHRENBAUM, 1897, 1909; FAGE, 1920; LEBOUR, 1920.

Distribution

Species

Gulf of Bothnia.....	3, 4
Gulf of Finland.....	3, 4
Baltic proper.....	3, 4
Belt Sea.....	3, 4
Kattegat.....	3, 4
Skagerak.....	3, 4
Northern North Sea.....	3, 4
Southern North Sea.....	1, 2, 3, 4
English Channel (eastern)...	2, 3, 4
English Channel (western)...	2, 3, 4
Bristol Channel and Irish Sea	3, 4
S and W of Ireland and At-	
lantic.....	1, 2, 3, 4
Faroe-Shetland Area.....	3, 4
Faroe-Iceland Area.....	4
Norwegian Sea.....	4
Barents Sea.....	4

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