



EXPLANATION OF FIGURES

- 1: adult male.
2: postlarva 11 mm. excl. C.

DIAGNOSIS — Body fusiform, somewhat compressed. Maximal height to total length (excl. C.) 1: $4-4\frac{1}{2}$; length of head to total length (excl. C.) 1: $3\frac{1}{2}-4$; diameter of eye to length of head 1: $2\frac{1}{2}-2\frac{3}{4}$. Maxilla with a broad distal end, reaching very slightly beyond posterior margin of eye. Insertion of dorsal fin slightly nearer to snout than to origin of caudal fin; anal fin originating under anterior half of dorsal fin. Scales large, cycloid, with a silvery lustre. D: 12-15; A: 16-20; P: 11-12; V: 8. Scales in lateral line: 33-36. Number of vertebrae: 33-37. Maximal length in the Atlantic and northern waters 84 mm. (excl. C.), 47 mm. in the Mediterranean.

Photophores: one postero-lateral organ; anal organs in two groups; second ventral organ displaced slightly dorsally; no photophore situated posterior and a little ventrally to the eye; supra-ventral organ nearly equidistant from the lateral line and base of ventral fin or nearer the latter. First supra-anal organ nearly in a straight line between supra-ventral organ and second supra-anal organ; it is situated above second to third ventral organs. Ultimate precaudal organ near the lateral line. Number of anal organs 5-7+5-9.

Adult male has a supracaudal *luminous plate* situate in a pit with raised posterior margin; adult female has a simple circular infracaudal luminous plate. Faint indications of these plates may be discernible in specimens of 23-24 mm. length (excl. C.), always in specimens of 30 mm. and over in the Mediterranean form, at a larger size in the Atlantic form.

The postlarval stages have strong characteristic pigment at the posterior margin of

operculum, below the posterior end of the lower jaw, on the point of the snout and of the lower jaw. 3-4 preanal chromatophores, abt. 3 internal abdominal chromatophores, faint occipital pigment, 1-2 ventral chromatophores, faint pectoral pigment etc. Only melanophores present. Eye oblong with a small tapering prolongation of the lower margin; the larval marginal fin-fold is present up to the oldest stages as a dorsal sinus ("floater"). Snout not unusually flattened in the smaller stages. Metamorphosis takes place at a length of 10-11 mm. (excl. C.); the metamorphosis is connected with a pronounced ontogenetic vertical migration.

DISTRIBUTION — *Horizontal*: pelagic, normally outside 500 metres isobath; sometimes cast ashore or observed in fjords etc. (Norway). Occuring as the most common north-atlantic Scopelid from arctic seas (Davis Strait up to abt. 70° N. Lat., NW of Jan Mayen, Spitzbergen abt. 80° N. Lat.) south to about 40° N. Lat. in mid-Atlantic, penetrating with the lower temperatures south to about Cape Hatteras in west (abt. 35° N. Lat.) and to the Cape Verde Isl. in east (abt. 15° N. Lat.). Enters the Mediterranean (most numerous in the western part), even to the Sea of Marmora.

Vertical: Adolescent and adult specimens especially in the upper 300 metres of water, the metamorphosis stages also deeper down (ontogenetic migration).

Propagation — Maturity attained at a length of abt. 30 mm. (excl. C.) in the Mediterranean, at a larger size in the Atlantic and northern waters. Eggs floating. Spawning principally in winter and spring in the Mediterranean, in spring and summer in northern waters. Age reached: 1-1 $\frac{1}{2}$ year in the Mediterranean, in northern waters abt. 3 years.

The population of this species in the Mediterranean and the Sea of Marmora has on account of the lower number of vertebræ, photophores etc. besides the smaller size been described as a distinct race: *M. g. thori* Tåning 1918.

SYNONYMY

Scopelus glacialis Reinhardt 1837, *Scopelus Mülleri* Gill 1861, *Myctophum glaciale* Jordan and Gilbert 1882, *Benthoosema Mülleri* Goode and Bean 1895.

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Å. VEDEL TÅNING — 1931.