A new species of *Eclysippe* (Annelida, Ampharetidae) from the North Atlantic, with a formal redescription of *E. vanelli* (Fauvel)

Tom Alvestad, Jon Anders Kongsrud & Katrine Kongshavn **Department of Natural History, University Museum of Bergen, Norway**

Background

The genus *Eclysippe* was established by Eliason (1955) for the species *Lysippe vanelli* Fauvel, 1936, originally described from shelf areas off the Atlantic coast of Morocco. Eliason (1955) was working with specimens from Sweden, and although he noted some morphological differences, he considered his specimens to belong to *E. vanelli*. Day (1973) described a new species, *E. eliasoni* (originally as *Samythella*) from off North Carolina, USA, and considered the specimens reported by Eliason from Sweden (as *E. vanelli*) to belong to the same species. According to Day (1973), *E. eliasoni* differs from *E. vanelli* in the presence of distinctly longer paleae. However, *S. eliasoni* is described to have 13-14 abdominal chaetigers, whereas specimens from northern Europe only have 12 abdonimal chaetigers (Holthe 1986; pers. obs.), similar to *E. vanelli*. The name *E. eliasoni* has not been generally accepted for specimens from northern European waters.

Present study

In the present study, a large number of specimens of *Eclysippe* from Norway, Iceland and Northwest Africa have been examined, and two species have been identified. *Eclysippe vanelli* is formally redescribed based on specimens collected from off Northwest Africa, near type locality. A neotype has been selected as the type material of *E. vanelli* is presumed lost. A new species of *Eclysippe* is described from shelf areas off the west coast of Norway. The new species has been shown to be widespread in the North Atlantic, recorded from Norway, Iceland and along the north-west coast of Africa. A number of specimens of both species were selected for molecular characterization. Although the success rate were fairly low (< 50%) DNA-barcodes (COI) and 16S rDNA sequences were obtained for a number of specimens for both species.

Genus *Eclysippe* Eliason, 1955

Diagnosis:

Prostomium triangular, without glandular ridges. Buccal tentacles smooth. Chaetae on segment II (paleae) present. Three pairs of cirriform branchiae. 15 thoracic- (12 thoracic uncinigers), and up to 14 abdominal chaetigers. Posterior thoracic chaetigers strongly elongated. Posterior 5 notopodia with distinct lobes; notopodia connected by ciliated bands. Neuropodia enlarged as pinnules from abdominal chaetiger 3. Pygidium with two lateral lobes; anal cirri absent.

Remarks:

The paleae emerge from conspicuous notopodia which are more or less fused with the branchial membrane. This give the impression of four pairs of branchiphores when the branhiostyles are lost and might explain why some species of *Eclysippe* has been described with four pairs of branchiae. Using SEM, new information on morphological details have been observed, e.g. presence of ciliated tufts between parapodial rami and on parapodial lobes, and dorsal ciliated bands between last five pairs of notopodia.

Eclysippe vanelli (Fauvel, 1936)

Diagnosis:

- Anterior end of prostomium drawn out in a snout
- Paleae inconspicuous and smaller than normal notochaeta
- Speckled with brown spots on anterior part of body

Distribution:

Common in samples from Morocco to Angola, in 20 to 120 m depth.

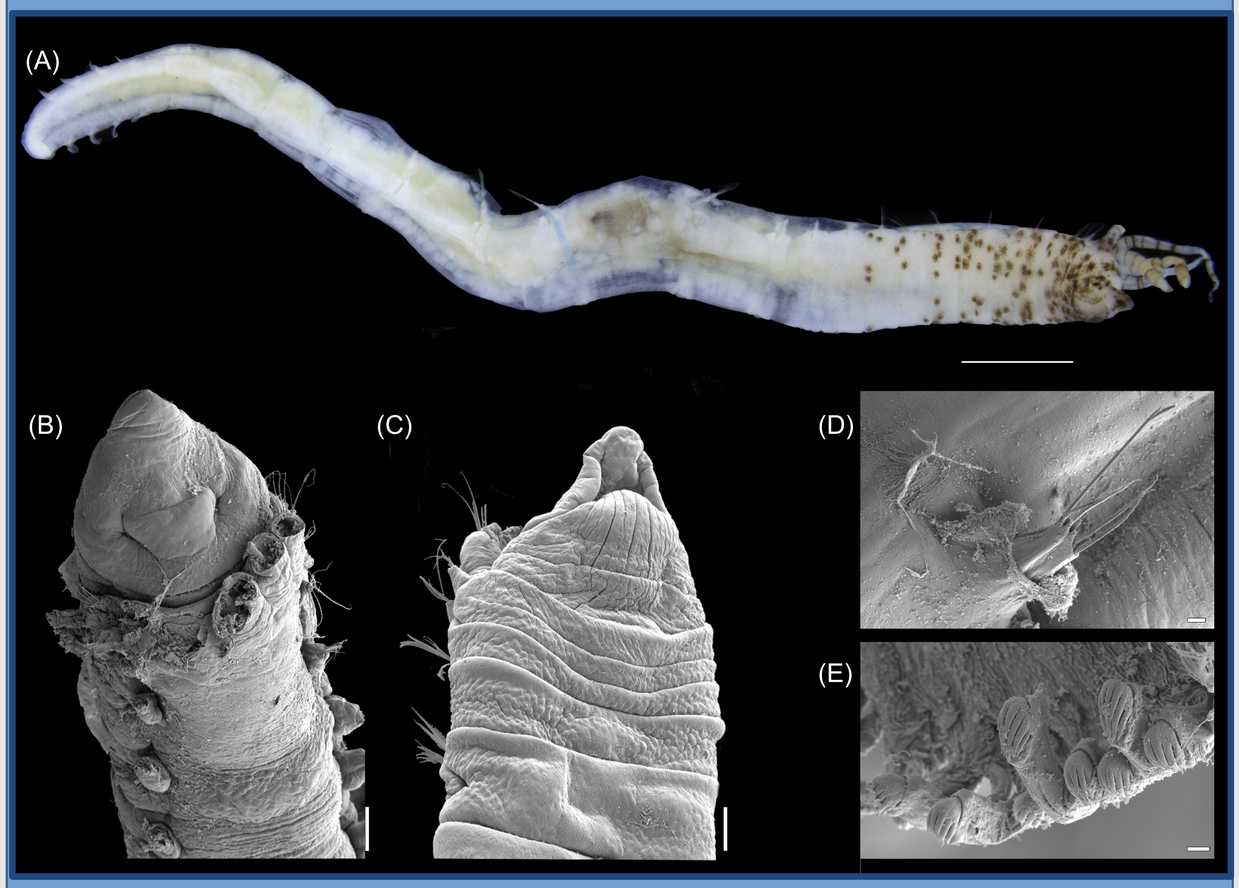

Figure 1. *Eclysippe vanelli*, A – habitus, ventral view, scale= 1mm; B – anterior part of the body, dorsal view, scale=100µm; C – anterior part of the body, ventral view, scale= 100µm; D – 14th parapodium, scale 20µm; E – uncini 18th parapodium, scale 2µm

Eclysippe sp. nov.

Diagnosis:

- Anterior end of prostomium not drawn out in a snout
- Paleae larger than normal notochaeta
- Anterior part of body without pigmentation

Distribution:

Norway and Iceland down to about 400 m depth, and north west Africa in 400-500 m depth.

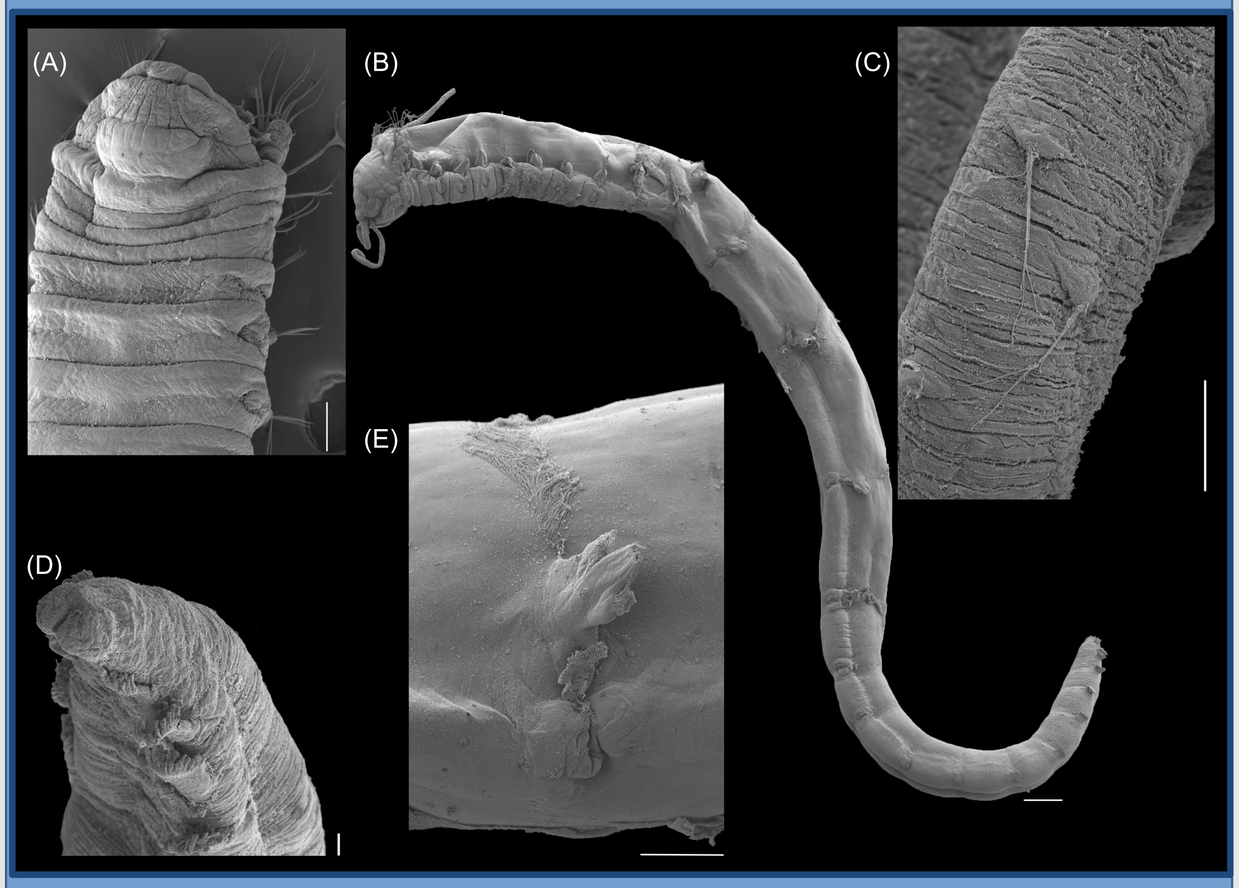

Figure 2. *Eclysippe sp. nov.*, A – anterior part of body, ventral view, scale 100µm, B – habitus, lateral view, scale 500µm, C – buccal tentacle, scale 20µm, D – posterior part of body with pygidium, scale 20µm, E – 12th parapodium, scale 100µm

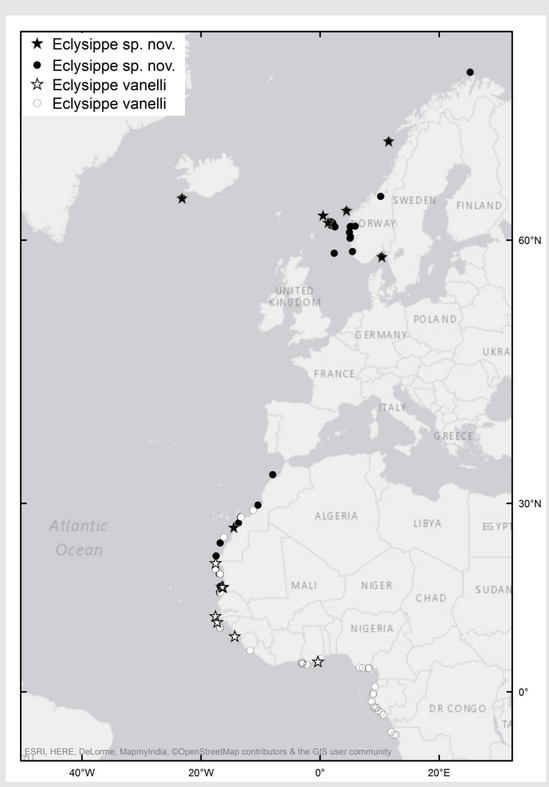

Figure 3. Distribution map. Circles are morphological records. Stars are records with barcodes.

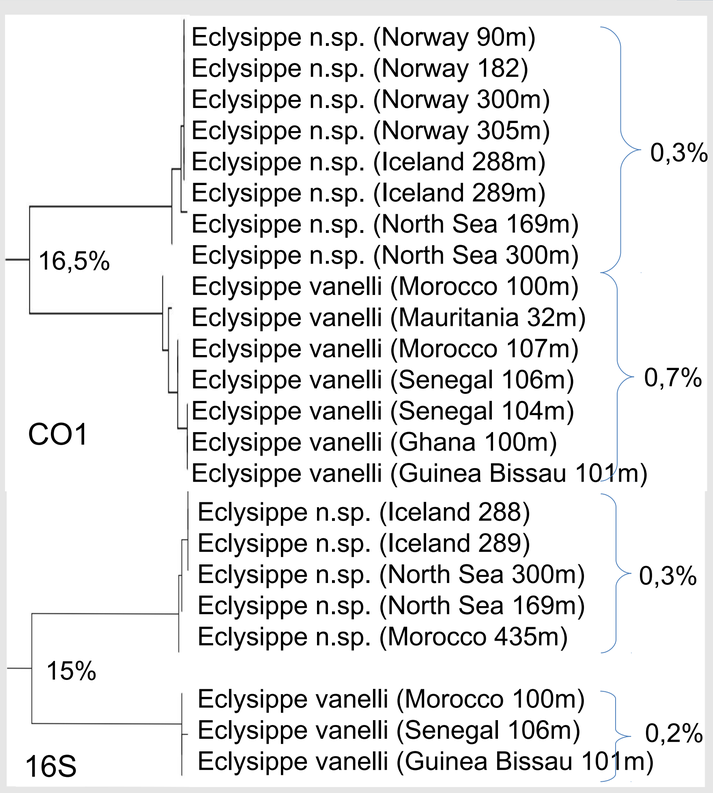

Figure 4. ML trees of CO1 and 16S data, with distances between and within species.

Key to Atlantic species of *Eclysippe*

1. Abdomen with 13-14 segments…… *Eclysippe eliasoni*
- Abdomen with 12 segments……..2
2. With brown spots and small paleae……*Eclysippe vanelli*
- Colourless and with large paleae……*Eclysippe sp. nov.*

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