

New records of the White-banded Grapple-worm (*Melinna albicincta*) from marine waters in Western Scotland.

Myles O'Reilly, Stephen Nowacki & Emma Gerrie

Scottish Environment Protection Agency, Angus Smith Building, 6 Parklands Avenue, Eurocentral, Holytown, North Lanarkshire, ML1 4WQ

E-mail: myles.oreilly@sepa.org.uk

Grapple-worms are tube-dwelling polychaetes with a serrated or scalloped dorsal skin flap (brim) and a distinctive pair of curved grapple-like hooks just behind the gills. The White-banded Grapple-worm, *Melinna albicincta*, is a relatively recently recognised species from Norway, Sweden, Novaya Zemlya and the Gulf of St. Lawrence (Mackie & Pleijel, 1995). It is distinguished from other species of grapple-worm by its serrated brim, strongly curved "grapple" hooks, the absence of a band of eyespots on the prostomium, and the distinctive white banding present on the inner gills (Fig. 1). The white banding is usually retained in specimens fixed in formalin and is best observed if illuminated from above rather than with transmitted light.

Melinna albicincta was found for the first time in British waters in 2006 during a new SEPA survey in the Sound of Jura (O'Reilly & Nowacki, 2008). Of five sites sampled it was found at one site only, at 176m depth, around 10km east of the Small Isles, with ten *M. albicincta* collected between four 0.1m² Day Grab samples. The following year another 50 specimens were recovered from four more grabs at the same site. The worms produced conspicuous elongate tubes protruding from the sediment, which were ornately decorated with small shells and shell fragments. The Sound of Jura was subsequently sampled in 2008, 2009, 2010, 2013, and 2016. *Melinna albicincta* was found only at the one original site (10km east of the Small Isles) with eight, one, forty, zero, and ten worms recovered respectively, from a single Day Grab in each year and two grabs in 2016. Until recently, *M. albicincta* had not been recorded at any other locations in Scottish (or British) waters. Hence this species, known from a single site in Scottish waters, could have been regarded as one of the rarest polychaetes in Scotland's coastal seas.



Fig. 1. White-banded Grapple-worm, *Melinna albicincta*. (A) Dorsal anterior view of a Loch Linnhe specimen showing feeding tentacles (FT) and gills (G). White banding on gills not visible in this specimen. Scalebar: 5 mm. (B) More magnified dorsal view of another Loch Linnhe specimen showing gills (G), grapple-hooks (H), and serrated brim (SB). Faint white-banding just visible on gills (wb). Scalebar: 1 mm.

However, some investigative grab sampling by SEPA at six new sites in south Loch Linnhe in 2014 and 2015 revealed the presence of a number of *M. albicincta* at two sites and, in 2015, additional specimens were also collected in Loch Erisort, in the Isle of Lewis (Western Isles) (Table 1). The grapple-worms at all the new locations displayed the characteristic tubes decorated with shell fragments. The tubes are quite similar to that of another polychaete, the Shingle-worm *Owenia fusiformis* (see Koh *et al.*, 2003), which may occur at the same sites, though the shell fragments used by *M. albicincta* appear to be larger and less neatly arranged than those of *Owenia fusiformis*, allowing these two polychaete species to be distinguished by their tubes alone.

It is evident from these new records that *M. albicincta* is probably quite widely distributed on the west of coast of Scotland, even at relatively shallow depths. It is easily confused with *Melinna elizabethae*, which is also widespread in Scottish waters. The differences between these species are tabulated in some detail by Mackie & Pleijel (1995). The most obvious features distinguishing *M.*

elizabethae is the presence of a band of eye spots on the prostomium and the absence of any white banding on the branchiae. The Loch Erisort specimens of *M. albicincta* were accompanied by 32 specimens of *Melinna palmata* collected in the same grab sample. *Melinna palmata* is a common species which has a brim with scalloped (not toothed) edges, smaller less curved “grapple” hooks and no white banding on the gills. It has plain accreted mud tubes without any shell fragment decoration.

A subsequent review of benthic faunal data submitted to SEPA by aquaculture licensees revealed some additional records of *M. albicincta* in the Sound of Barra, Little Loch Broom, and the Isle of Kerrera (see Table 2). These records have not been verified by SEPA. Specimens of a putative record of *M. albicincta* from Maol Bhan (Caol Mor), Isle of Skye, in 2014, were examined and found to be *M. palmata*. Careful examination of *Melinna* specimens is required to confirm further records of *M. albicincta* and delineate its true distribution in Scottish waters.

Location & Station	Date	Lat. Long.	Depth (m)	No. worms
Sound of Jura @ SJ1	2006-16	50° 50.507'N, 05° 46.829'W	174	119
Loch Linnhe @ GT 30	27/5/2014	56° 34.600'N, 05° 24.623'W	34.5	4
Loch Linnhe @ GT 73	27/5/2014	56° 40.893'N, 05° 15.848'W	21	1
Loch Linnhe @ GT 30	27/4/2015	56° 34.616'N, 05° 24.630'W	39	16
Loch Erisort @ Eilean Mor Lacasaidh	18/8/2015	58° 05.489'N, 06° 31.805'W	11	2

Table 1. SEPA locations for the occurrence of *Melinna albicincta*.

Location & Station	Date	Lat. Long.	Depth (m)	No. worms
Gighay, Sound of Barra	31/8/2010	57° 01.677'N, 07° 19.892'W	18	2
Ardessie, Little Loch Broom	19/9/2012	57° 51.960'N, 05° 18.803'W	36.3	1
Charlotte Bay (Rubh' Ard an Duine), Kerrera	16/6/2015	56° 25.184'N, 05° 32.003'W	22.9	1

Table 2. Additional unconfirmed records of *Melinna albicincta*.

REFERENCES

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