



SHORT REPORT

First record of the sea cucumber *Trachythyone nina* (Echinodermata: Holothuroidea) in Canadian waters, with a redescription of the species and notes on its distribution and biology

ANNIE MERCIER^{1*}, DAVID L. PAWSON², DORIS J. PAWSON² & JEAN-FRANÇOIS HAMEL³

¹Ocean Sciences Centre (OSC), Memorial University, St. John's (Newfoundland & Labrador), Canada; ²National Museum of Natural History, Smithsonian Institution, Washington D.C., USA; ³Society for the Exploration and Valuing of the Environment (SEVE), St. Philips (Newfoundland & Labrador), Canada

Abstract

The original and only description of the cucumariid holothurian species *Trachythyone nina* (Deichmann, 1930) is based on material collected near George's Bank, by the US Fish Commission Steamer *Albatross* 125 years ago. No additional material of this species has been formally reported ever since. We hereby record *T. nina* for the first time in Canadian waters, from several sites along the continental slope of Newfoundland and Labrador (43–55° N) at depths of 1088–1308 m and from the Arctic (60° N) at 590 m, as well as from two sites near the type locality at 132–155 m along the coast of New England. A more detailed and accurate description of the species is provided, along with notes on its ecology and distribution. This tiny (≤ 15 mm long) gonochoric sea cucumber is usually associated with hard substrata, including deep-sea corals.

Key words: Deep sea, Dendrochirotida, Holothuroidea, Newfoundland and Labrador, Arctic

Introduction

In her brief description of the sea cucumber *Cucumaria nina*, Deichmann (1930) noted that 'the relationships of this small form are not easily determined. At present it occupies a quite isolated position'. Deichmann's material consisted of 25 specimens collected by the US Fish Commission *Albatross* in 1883, off Cape Cod, USA. Despite frequent sampling in the general area of the type locality over the past 125 years, no further specimens of this species have apparently been reported in the scientific literature. Recent collections made in deeper water off Newfoundland and Labrador, and in the Arctic, have included several specimens of *Trachythyone* (= *Cucumaria*) *nina*. We therefore take the opportunity to redescribe the species, to update its geographical distribution, and to provide some preliminary data on its habitat, reproductive biology, and ecology.

Material and methods

Deep-sea trawls were conducted in October, November and December 2005 by the CCGS *Teleost* along the continental slope of eastern Canada, off the coast of Newfoundland and Labrador, at depths of 350 and 1450 m (Figure 1). Up to 96 trawls were made every month. The total surface area sampled by the gear (Campelen 1800 shrimp trawl; Walsh & McCallum 1997) was estimated at 26,390 m², based on a net span of 19 m and 15 min on the bottom at a vessel speed of ca. 3 knots (covering 1.4 km). Specimens of *Trachythyone nina* were collected in some of these trawls and preserved in 4% formaldehyde for further analysis. Some specimens were found associated with deep-sea corals. All samples collected by the Department of Fisheries & Oceans, Canada (DFO) were frozen aboard the vessel at -20°C . Additional specimens of *T. nina* were found and preserved in ETOH 95% during trawl surveys

*Correspondence: Annie Mercier, Ocean Sciences Centre (OSC), Memorial University, St. John's (Newfoundland & Labrador) Canada A1C 5S7. E-mail: amercier@mun.ca.

Published in collaboration with the University of Bergen and the Institute of Marine Research, Norway, and the Marine Biological Laboratory, University of Copenhagen, Denmark