A new heterobranch gastropod, *Chelidonura radwanskii* sp. nov., from the middle Miocene of the Korytnica Basin (Holy Cross Mountains, Poland)

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ABSTRACT:


A new species of heterobranch gastropods, the hammerhead *Chelidonura radwanskii* sp. nov., found in the so-called *Pleurotoma*-clays of middle Miocene (Langhian) age in the environs of Korytnica, southern Holy Cross Mountains, Poland, is described. It is the first fossil representative of *Chelidonura* A. Adams, 1850. This tiny gastropod is named in honour of the late Professor Andrzej Radwański.

**Key words:** Heterobranch gastropod; Middle Miocene; Littoral boulder; Korytnica Basin.

INTRODUCTION

Almost fifty years ago, when I was studying Miocene strata from Niskowa near Nowy Sącz (Baľuk 1970), Andrzej Radwański encouraged me to start working on the fauna of the Miocene Korytnica Clays (so-called *Pleurotoma* Clays). His main interest was the Miocene transgression on the southern slopes of the Holy Cross Mountains (Radwański 1969), including a study of the Korytnica Basin, its sediments and fauna. Although he was aware that this locality has been known for almost 200 years (Jaśkiewicz 1787), the knowledge about its fossil content was far from satisfactory. I am extremely grateful for his inspiring me to start research on this fauna. The result is not only my monographic series of publications on the Korytnica gastropods (Baľuk 1975–2006), chitons, scaphopods and cuttlefish (Baľuk 1971, 1972, 1977, 1984), but also a long list of our joint papers on other groups of fossils occurring in the locality (see publication list in Walaszczyk, this volume). Moreover, our students have completed nearly 30 Master’s and Doctoral dissertations on the Korytnica fossils.

During my study on the heterobranch gastropods from Korytnica, I have discovered several undescribed species. By naming one of them, I would like to honour Andrzej Radwański, my school mate from the Tadeusz Reytan Public Secondary School in Warsaw. This gastropod is known only from two specimens collected from clay infilling a boring within a boulder (Text-fig. 1) derived from littoral structures on the north-eastern slope of Mt. Grodzisko in the south-western part of the Korytnica Basin.

SYSTEMATIC PALAEONTOLOGY

The classification used herein follows Bouchet *et al.* (2017). The specimens are housed in the Stanisław Józef Thugutt Geological Museum of the Faculty of Geology, University of Warsaw and are prefixed with MWG UW ZI/93.

Class Gastropoda Cuvier, 1795

Subclass Heterobranchia Gray, 1840
Order Cephalaspidea Fischer, 1883
Superfamily Philinoidea Gray, 1850 (1815)
Family Aglajidae Pilsbry, 1895 (1847)
Genus Chelidonura A. Adams, 1850

TYPE SPECIES: Bulla hirundinina Quoy and Gaimard, 1833.

Chelidonura radwanskii sp. nov.
(Text-fig. 2)

HOLOTYPE: Specimen MWG UW ZI/93/1252, presented in Text-fig. 2B1 and B2.
PARATYPE: Specimen MWG UW ZI/93/1251, presented in Text-fig. 2A1 and A2.

TYPE HORIZON: Middle Miocene (Langhian).

TYPE LOCALITY: Korytnica, 24 km to the SSW of Kielce, southern slopes of the Holy Cross Mountains, Central Poland.

DERIVATION OF NAME: radwanskii – in memory of the late Professor Andrzej Radwański (1934–2015), a highly honoured researcher of the University of Warsaw and a prominent expert of the Korytnica Basin.

DIAGNOSIS: Small conch, composed of protoconch and 1.5 incomplete whorls terminated with (rather) large wing.

MATERIAL: Two specimens.

DIMENSIONS: The larger specimen is c. 2.8 mm long (reaching a total of c. 3.5 mm) and 2.2 mm wide.

DESCRIPTION: Protoconch very small, several microns in cross-section, with oval knob shape. Remaining part of shell composed of 1.5 strongly bent shield, straightening gradually towards front, becoming almost flat and much thinner. Also present wing increasing in size towards the posterior. Distinct thickening, in form of ridge running along posterior margin till end of wing, visible both on inner and outer side. Growth lines visible on external surface; internal surface smooth.

REMARKS: I have found no report on the genus Chelidonura in the references on Miocene and Pliocene gastropods that I am aware of. The Korytnica locality is thus the first site where this gastropod occurs in Miocene deposits. Presently, the genus is a cosmopolitan taxon, with 17 species known, and with many others with uncertain status. All these gastropods have a characteristic shape, reflected in their common name – hammerhead or headshield slugs. They inhabit warm, tropical or subtropical seas, both in the Atlantic Ocean (from the Caribbean Sea to South Africa), and the Indo-Pacific (from Madagascar to the Philippines, and as far as northern Australia). The gastropods usually live near the shore, at 0.5 to 12 m depth, rarely down to 30 m.

The genus is very small, e.g., Chelidonura fulvipunctata (Baba, 1938) inhabiting seas around the islands of the Indo-Pacific has a length of 10–
17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 5–40 mm. They both occur on sandy and rocky seabeds, also under boulders. The latter setting can be suggested for the Korytnica locality. The background colour of the genus is usually almost black, but its ornamentation can be very colourful (e.g., colour of the genus is usually almost black, but its ornamentation can be very colourful (e.g., the shell in Ch. hirundinina has blue and orange stripes; Ch. hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near Guadeloupe, attains 17 mm, whereas Chelidonura hirundinina (Quoy and Gaimard, 1833), living near 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