

***Onobops umbilispiralis* nov. spec., a new species of gastropod  
from the Miocene of western Amazonia**

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The gastropod *Onobops umbilispiralis* nov. spec. is described from the late Middle to early Late Miocene Pebas Formation of Peruvian Amazonia. The new species is characterised by the coarse but relatively well developed spiral ribs that extend well into a broad umbilicus. The broad umbilicus distinguishes the species from other Miocene and Recent *Onobops* species. The name of the new species materialised after suggestions from the general audience visiting an exhibition on systematics at Naturalis.

Key words: *Onobops*, Cochliopidae, new species, public awareness systematics

In 2007 an exhibition commemorating the 250th birthday of Carolus Linnaeus was held at Naturalis, the Nationaal Natuurhistorisch Museum at Leiden, The Netherlands. The exhibition explained the origin and role of systematics and nomenclature to a wider audience. As part of the exhibition, three species new to science were displayed and shortly characterised. The audience was invited to give suggestions for new names for these taxa. One of the species concerned was a Miocene snail, from the Pebas Formation of western Amazonia, that is described here.

SYSTEMATIC PALAEOLOGY

Family Cochliopidae Tryon, 1866

*Onobops* Thompson, 1968

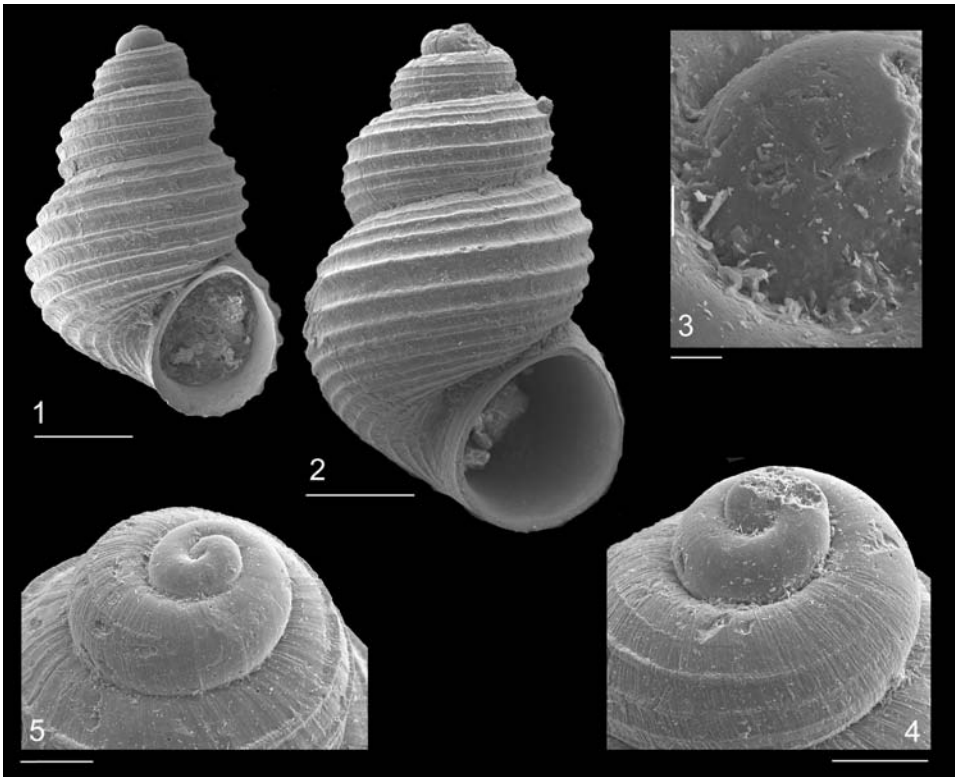
Type species – *Onobops crassus* Thompson, 1968, coastal marshes, Florida.

Diagnosis – Small to intermediate (L 1.5-5 mm), ovate conical to elongate cochliopid; shells usually ornamented with fine spiral ribs that may be absent in populations of some of the species; spirals lacking or reduced in the subsutural part of the whorl; umbilicus rimate or closed, with the exception of the species described below; aperture ovate to semicircular and usually adnate; left-most margin to the left of the axis of the shell.

***Onobops umbilispiralis* nov. spec. (figs 1-5)**

Type material – holotype: RGM 550 165, Nuevo Horizonte I (Loreto dept., Peru), outcrop in eastern side of road Iquito-Nauta km 45.2 in village, ca. 73°25'W, 3°58' S. Pebas Formation, Mollusc Zone 9 (Wesselingh et al., 2006), late Middle – early Late Miocene. Leg. F.P. Wesselingh, 16-9-1996. paratypes: RGM 550 166-RGM 550 169, same locality; RGM 550 170, nine specimens, same locality.

Diagnosis – Small (H 1.7 mm), robust *Onobops* with strong, regularly developed spiral ribs that extend well into the umbilicus.



Figures 1-5. *Onobops umbilispiralis* nov. spec. 1, RGM 550 165, holotype, scale bar 500  $\mu$ m; 2, RGM 550 166, paratype, scale bar 500  $\mu$ m; 3, RGM 550 167, paratype, detail apex, poorly visible low malleations visible in the margin of the nucleus, scale bar 10  $\mu$ m; 4, RGM 550 168, paratype, apical overview showing papery surface around protoconch-teleoconch boundary, scale bar 100  $\mu$ m; 5, RGM 550 169, paratype, apical overview showing onset teleoconch ornament, scale bar 100  $\mu$ m. All specimens are from the type locality at Nuevo Horizonte I (Loreto, Peru).

**Description** – This small, ovate shell has a spiral angle of 51-53°. The nucleus is slightly inclined. The margins of the nucleus contain very low, irregularly placed pustules. A very fine axial depression at ca. 0.5 whorls marks the transition between the protoconch-1 and the protoconch-2. The protoconch is smooth apart for very fine opisthocline growth lines. At about 1.6-1.7 whorls, a somewhat gradual increase of densely spaced, slightly irregular axial ribs/wrinkles marks the transition towards the teleoconch. This area has a papery appearance. The onset of spiral ribs is about 0.1-0.2 whorls after this transition. The order of the onset varies between specimens; commonly the middle ribs are the first to develop. The ribs strengthen within about one whorl. They are either rounded or even box-form in section. There are three-five well-developed ribs about one whorl after the onset of the teleoconch, six-eight on the penultimate whorl and up to fifteen ribs on the body whorl. The ribs in the middle of the whorls are slightly larger and have interspaces about four times as wide. The upper and especially the lower ribs are finer and usually more closely spaced (spacing on the upper part of whorls on the holotype remains more

or less constant). Growth lines are fine, numerous and slightly prosocline. The aperture is ovate and detached. The outer lip is not thickened. The umbilicus is wide for the genus, but not very deep. The lower spiral ribs are also seen within the umbilicus, where they are developed as slightly irregular threads.

#### Dimensions – (in mm)

	H	Hap	W	whorls
RGM 550 165	2.08	0.76	1.32	5.05
RGM 550 166	2.34	0.86	1.44	4.95
RGM 550 167	1.34	0.62	1.08	n.a.
RGM 550 168	0.70	0.36	0.60	n.a.
RGM 550 169	1.10	0.52	0.84	4.15

**Derivatio nominis** – The name has been inspired on the continuation of the spiral threads into the umbilicus.

**Differentiation** – The general outline of *Onobops umbilispiralis* resembles that of *O. communis* Wesselingh, 2006, also from the Pebas Formation of western Amazonia. The latter species has a variable ribbing: most populations are smooth, but within mollusc biozone MZ 8-9 (late Middle - early Late Miocene), samples occur with more pronounced ribbed specimens as well as intermediate specimens (Wesselingh, 2006, figs 120-122). The ribbed morphs of *O. communis* have rounded ribs that are not as pronounced as in *O. umbilispiralis*. The former also has a smooth subsutural ramp. Finally, *O. communis* lacks ribs in the umbilicus. The type species of *Onobops*, *O. crassus* Thompson, 1968 (Recent, coastal marshes, Florida), is more elongate, has a flatter whorl profile and has very fine spiral ribs. Its umbilicus is shallow and rimate.

**Remarks** – *Onobops umbilispiralis* is found in a single Pebas Formation sample from mollusc biozone MZ9 (late Middle-early Late Miocene). The sample has been assigned to the small-*Dyris* association by Wesselingh et al. (2002) representing a long-lived lake shelf biotope. It concerns an endemic species of the Pebas system.

#### ACKNOWLEDGEMENTS

This paper is dedicated to Prof. Dr. E. (Edi) Gittenberger to celebrate his 65th birthday. Apart from being a very good evolutionary biologist, Edi is also an excellent taxonomist and, as can be judged from his translation work on popular shell books as well as his work on books such as the *Nederlandse Zoetwatermollusken*, he has keen eye on the popularisation of the field of malacology. The current description has resulted from an exhibition aimed at raising public awareness for taxonomy and systematics. I thank Liselotte Timp (Zuidland, The Netherlands) for suggesting the name for the new *Onobops* species. The review by Steve Donovan has greatly improved this manuscript.

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