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Review of the recent species of the genus *Morum* (Gastropoda: Harpidae)

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Abstract: I started collecting **Strombidae** some 25 years ago, and one of the books I used was “Conchs, Tibias and Harps” by Jerry C. Walls. Two years ago I wanted to extend my collection with **Harpidae** and bought “A Conchological Iconography” by S. Peter Dance & Guido T. Poppe, which had great pictures in it but lacked shell descriptions.

Through articles by Franck Frydman of Paris and J. Berkhout of the Netherlands, the genus *Harpa* was well described. However, the genus *Morum* was a different story. Lots of articles, either in print or on the Internet, only gave parts of the puzzle. To my knowledge there was nothing recent covering the entire genus. Hence this article.

Introduction: The genus *Morum* comprises four different subgenera: *Morum*, *Oniscidia*, *Herculea* and *Cancellomorum*, spread in the oceans over three distinct locations: the Indo-Pacific, the Western Atlantic and the Eastern Pacific.

The build-up of this review will follow these locations.

Systematics:

Muricoidea Rafinesque, 1815
Harpidae Bronn, 1849
Moruminae Hughes & Emerson, 1987
Genus *Morum* Röding, 1798

Morum* from the Indo-Pacific**Morum (Oniscidia) amabile*** Shikama, 1973**Figs. 1-2**

Shell is tapering oval with rounded shoulder, a clearly visible suture line on the penultimate and the bodywhorl. Medium strong axial ribs with 4-5 secondary ribs in between them.

Overall colour is cream to brown with darker spots. Some yellow specimens are known.

Protoconch is a light coloured, golden beige.

The parietal shield is slightly pustulous on the columellar side and flush with the bodywhorl on the off side. Outer lip is strongly denticulate.

Distribution: Philippines, China Sea.

Size: 25-40 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) bruuni Powell, 1958**Figs. 3-4**

Shell has rounded, spiked shoulders and a somewhat stepped spire of medium height. Strong axial ribs (12-16) on the body whorl with fine secondary ribs in between. Overall colour is off white with three or four darker bands and an egg-like gloss. The columellar callus is white with a brown patch. Outer lip denticulate. Parietal shield is thick with fine pustules and plicae on the columellar side.

Distribution: Kermadec Islands, New South Wales, New Caledonia.

Size: 30-40 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) cancellatum Sowerby, 1824**Figs. 5-6**

Shell is angular oval with a high conical spire. 10-12 strong axial ribs cross with spiral cords forming rounded nodules. The axial ribs form, together with the spiral cords, a rectangular grid. Between the axial ribs there are very small secondary ribs.

The basic colour is creamy white with four brown bands.

The parietal shield is very pustulous and forms a bigger base as it is attached to the shell.

The outer lip is strongly denticulate.

Protoconch is beige.



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Distribution: China Sea, Japan-Taiwan, Philippines.

Size: 40-70 mm.

Method of development: Non-planktotrophic.

Morum (Oniscidia) clatratum Bouchet, 2002

Figs. 7-8

Large, solid shell with multiple axial ribs crossing the spiral cords, forming small nodules. Well-defined suture above the shoulder.

Basic colour beige-brown with four broad brown bands.

Parietal shield and aperture white.

(after P.Bouchet)

(photo by courtesy of Franck Frydman)

Distribution: Marquesas Islands.

Size: 57 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) exquisitum A.Adams & Reeve, 1848

Figs. 9-10

Heavy, sturdy shell.

Conically shaped. Large, somewhat spiked nodules on the shoulder.

Parietal shield is pustulous and of a pinkish colour. Lip is strongly denticulate.

For collectors, this is one of the more elusive species of the genus. Very difficult to obtain.

Distribution: Philippines.

Size: 30-40 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) fatimae Poppe & Brulet, 1999

Figs. 11-12

Shape triangular, with 3.5 whorls. 10 axial ribs and 11 spiral ridges, 3 above and 8 below the shoulder, on the body whorl.

Strong columellar shield with 13 equally spaced plicae.

Only one dead specimen has been found. The top part of this shell is broken off, so information about the protoconch is not available.

(after Poppe & Brulet)

(Photo by courtesy of Guido Poppe)

Distribution: Mozambique.

Size: 14.2 mm.

Method of development: No data available.

Morum (Oniscidia) grande A.Adams, 1855

Figs. 13-16

Standard form (Figs. 13-14): Thick heavy shell, rounded oval shape.

17-19 axial ribs crossing the spiral cords forming sharp, spiny, flattened nodules. There are multiple secondary axial ribs forming a very coarse surface.

The base colour is creamy white with brown bands, which can differ very much in darkness of colour.

The parietal shield is very expanded, forming a broad base, white in colour and very pustulous. The outer lip can vary in the degree of denticulation.

Specimens from Queensland (Figs. 15-16) are slenderer and more elongated and are not as coarse as the standard form.

Both types have a strongly upturned siphonal canal.

Distribution: from Japan to Queensland, Australia.

Size: 50-75 mm.

Method of distribution: Planktotrophic.

Morum (Oniscidia) joelgreeni Emerson, 1981

Figs. 17-18

The shell has a rounded oval shape with 12-13 heavy axial ribs with 8-10 secondary ribs in between them. There are higher scoop-like nodules on the shoulder which are open towards the direction of growth.

The overall colour is beige with four brown bands across.

The parietal shield is covered with nodules and plicae and has a golden-brown edge.

The lip is denticulate and golden-brown.

The aperture deeper inside is white.

Distribution: Philippines.

Size: up to 40 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) kurzi Petuch, 1979**Figs. 19-20**

A small shell with a medium spire. 8-10 strong axial ribs crossing spiral ridges. Secondary ribs are very small. Very sharp nodules on the crossing points. These are hook-like and turned towards the top.

The colour is variable from off-white to light brown.

The parietal shield is pustulous and orange coloured, with a variable intensity. The lip is strongly denticulate.

Distribution: Central Philippines.

Size: 18-28 mm.

Method of development : Planktotrophic.

Morum (Oniscidia) macandrewi Sowerby, 1889**Figs. 21-22**

Rounded oval shell with a medium high, gradually tapering spire. Axial ribs with rounded, flattened nodules.

Very small secondary ribs. Irregular pattern of brown dots and patches.

Parietal shield with irregular pustules and plicae.

Basic colour pattern is medium to dark brown or even black.

Distribution: Japan, East and South China sea.

Size: up to 40 mm.

Method of development : Non-planktotrophic.

Morum (Oniscidia) macdonaldi Emerson, 1981**Figs. 23-25**

The smallest *Morum*.

The shell is bulbous oval with a rather coarse sculpture formed by axial ribs and spiral ridges. Overall colour is off-white with light brown patches. The parietal shield is small and white.

The lip is denticulate and has an axial ridge on its top. The shell can easily be identified by the small brown lines on the outside of the lip.

Distribution: Marshall Islands.

Size: 13-20 mm.

Method of development: Planktotrophic.



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Morum (Oniscidia) ninomiyai Emerson, 1986

Figs. 26-27

Angular oval shell with medium high spire. 15-16 axial ribs crossing spiral cords. At the intersection sharp scoop-like nodules are formed.

The shell is easily recognizable by the intricate network of fine plicae on the broad parietal shield.

The outer lip is denticulate.

Overall colour is cream-white with four brown bands which considerably vary in darkness.

Distribution: Thailand.

Size: up to 45 mm.

Method of development: Planktotrophic.

Morum (Herculea) ponderosum Hanley, 1858

Figs. 28-29

Shell has a conical shape with low spire. The overall colour is creamy white with brown patches.

There are rather large nodules just below the shoulder which are lightly spiked.

The parietal shield is shiny yellowish with beige dashes and plicae on the callous columella. The lip is denticulate with brown spots coming over the apex.

Distribution: SW Pacific, Pitcairn Island.

Size: 25-40 mm

Method of development: Planktotrophic.

Morum (Oniscidia) praeclarum Melvill, 1919

Figs. 30-32

Triangular shape with 10-12 axial ribs on the body whorl. Very spiny on the intersections with the spiral ridges. Spikes are scoop-like. Overall colour brownish.

Parietal shield is shiny white with pustules and plicae on the columellar side, fading away to the outside. Lip is denticulate with fine brown dotted lines on the outside.

Distribution: Western Indian ocean, South-Africa.

Size: 25-40 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) roseum Bouchet, 2002

Figs. 33-34

Small, solid bulbous oval shell.

18 axial ribs on the last whorl with 4-8 small secondary ribs in between them.

Parietal shield broad and thin, thicker with pustules on the columellar side.

Lip strongly denticulate.

Overall colour is light pinkish brown with deep violet brown speckles.

(after P. Bouchet)

(Photo by courtesy of P. Bouchet)

Distribution: Marquesas Islands.

Size: 21.5 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) teramachii Kuroda & Habe, 1961

Figs. 35-36

Elegant, rather smooth shell with a high spire. 14-17 axial ribs crossing spiral cords and producing small rounded nodules.

The parietal shield and aperture are shiny white. The shield is smooth and merges with the body-whorl on the upper side.

Overall colour varies from cream white to brown with four darker bands which can be difficult to see.

Distribution: Philippines.

Size: up to 60 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) uchiyamai Kuroda & Habe, 1961

Figs. 37-38

Tapering oval shell with medium high spire. 13-15 axial ribs crossing spiral cords form axially flattened spines. Not as frilly as *M. grande*. 5-7 secondary ribs in between the ribs.

Overall colour is creamy white to brown with four brown bands.

The parietal shield is shiny white with pustules that usually flatten out to the outer edge.

Distribution: Japan to New Caledonia.

Size: 45-70 mm.

Method of development: Planktotrophic.



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ADP/IS-Paris



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Morum (Oniscidia) vicdani Emerson, 1995

Figs. 39-40

Similar to *M. grande*, A.Adams 1855, but more fusiform and much less dense.
10-12 axial ribs and a thin mildly pustulous parietal shield.

Distribution: Saya de Malha, Indian Ocean (submerged bank).

Size: 40-50 mm.

Method of development: Planktotrophic.

Morum (Oniscidia) watanabei Kosuge, 1981

Figs. 41-42

Small, slender shell with medium high, somewhat stepped spire.

14-16 axial ribs with sharp spines where they cross the spiral cords.

7-8 equally spaced secondary ribs between the axial ribs, resulting in a coarse surface.

Overall colour is creamy white with four brown bands.

Broad parietal shield heavily speckled with pustules and plicae.

Aperture and shield bright white.

Lip strongly denticulate.

Distribution: Philippines

Size: 28-45 mm.

Method of development: Non-planktotrophic.

Morum from the western Atlantic

Morum (Cancellomorum) dennisoni Reeve, 1842

Figs. 43-44

Tapered, shouldered form with medium high spire. 12-14 axial ribs which are flattened. Sharp scoop-like spines on the shoulder. Multiple secondary ribs in between the major ribs. Colour from white to honey-brown.

The parietal shield is broad, light to dark orange and covered with small pustules. The outer lip is golden brown.

Distribution: Colombia.

Size: 30-65 mm.

Method of development: Non-planktotrophic.

Morum (Cancellomorurum) lindae Petuch, 1987

Figs. 45-46

Beautifully shaped, slightly tapered shell with angulated shoulder. Spiral cords more prominent than axial ribs. The sculpture looks like being packed with squares. The nodules on the intersections are rounded.

Multiple small secondary axial ribs. Overall colour white to brownish.

The parietal shield is peach coloured and covered with white pustules getting larger near the columella. The colour of the outer lip is like the parietal shield.

Lip is denticulate.

Distribution: Colombia-Venezuela.

Size: 28-45 mm.

Method of development: Non-planktotrophic.

Morum (Cancellomorurum) matthewsi Emerson, 1967

Figs. 47-48

Oval shaped shell with very large protoconch.

Very distinct spiral cords with upwards turned small spikes.

Overall colour from off-white to dark brownish purple with dark brown spots or patches.

The parietal shield is medium large and covered with white plicae on a brownish purple background. The lip has the same colour as the parietal shield and is strongly denticulate. (white teeth).

Some very light specimens are offered which are ex pisce.

One golden *M. matthewsi* is known.

Distribution: Brazil.

Size: 20-40 mm.

Method of development: Planktotrophic.

Morum (Morurum) oniscus Linnaeus, 1767

Figs. 49-50

Small, conically tapered shell with a low spire. The protoconch is bulbous and relatively large.

Usually three rows of spiral nodules which can vary in size. Shoulder nodules the largest.

Overall colour is variable from white to grey and from yellowish to beige. Some specimens evenly coloured, some spotted.

Parietal shield is small and white with small pustules.

Distribution: SE Florida, Brazil, Bermuda.
 Size: 15-32 mm.
 Method of development: Non-planktotrophic.

Morum (Morum) purpureum Röding, 1798

Figs. 51-52

Very similar to *M. oniscus*, but the protoconch is often purple and always less bulbous.
 The parietal shield is purplish (hence the name). Even in subadult specimen the purplish shine is already visible.

Distribution: E. Florida, Martinique, Guadeloupe, Brazil.
 Size: 17-30 mm.
 Method of development: Planktotrophic.

Morum (Morum) strombiformis Reeve, 1842

Figs. 53-54

Considered as a form of *M. oniscus* by some authors. Yet, the shell has much smaller nodules and a stepped spire.
 Parietal shield is small and white.
 Lip denticulate.

Distribution: Honduras, Brazil.
 Size: 19-25 mm.
 Method of development: Non-planktotrophic.

Morum from the eastern Pacific

Morum (Morum) tuberculosum Reeve, 1842

Figs. 55-56

Tapered cylindrical shape with a nearly flat spire. Rounded nodules over the body whorl. Usually four rows, which are not aligned axially but laterally.
 Overall colour dull grey to nearly black. Sometimes with white spots or chevrons.
 The parietal shield is thin and transparent. The colour of the aperture goes from white to yellow or orange.

Distribution: Baja California, Mexico, Peru.
 Size: 12-43 mm.
 Method of development: Non-planktotrophic.

Morum (Cancellomorum) veleroae Emerson, 1968

Figs. 57-58

Cancellate shape with low turreted spire. Axial ribs ending in sharp projecting spikes on the shoulder.

Beautiful parietal shield with pinkish lavender colour.

White small pustules on the shield. The inner side of the lip has about 12 weak lirae and ends as a sharp ridge.

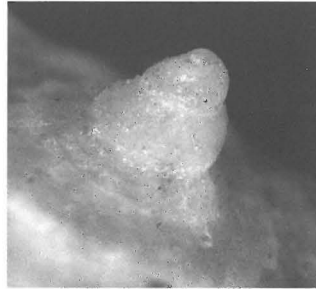
Distribution: Cocos Islands (Costa Rica), Galapagos Islands.

Size: up to 40 mm.

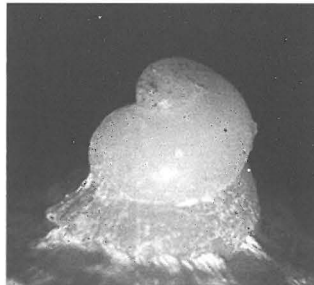
Method of development: Planktotrophic.

Explanations from the text

Planktotrophic: (plankton eating) larvae living a full planktic veliger stage, feeding on phytoplankton. Usually characterized by large a number of small eggs. Protoconch usually multispiral.



Non-Planktotrophic: (also lecithotrophic) Characterized by relatively large-sized eggs with yolk (on which the larvae live in their veliger stage) and a very short, or absent pelagic (free swimming) stage. Protoconch usually paucispiral.





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Problems that might occur during identification

Most species can easily be identified, some however can cause some problems:

Morum grande – *Morum uchiyamai* – *Morum cancellatum*

Morum cancellatum – *Morum macandrewi*

Morum oniscus – *Morum purpureum*

Ad 1. *Morum grande*: -17-19 axial ribs, strongly curved siphochannel, broad pustulous parietal shield.

-very rough surface with sharp nodules

Morum uchiyamai: 13-15 axial ribs, weakly curved siphochannel, parietal shield is less broad and less pustulous, pustules flattening out on the off-side, less rough surface.

Morum cancellatum: 10-12 axial ribs, rounded nodules, angular shape, rough but not sharp surface.

Ad 2. *Morum cancellatum*: Rectangular pattern formed by axial ribs and spiral cords.

Morum macandrewi: Nodules flatter and rounder, overall more rounded and less elegant appearance.

Ad 3. *Morum oniscus*: Protoconch bulbous (paucispiral) and a white parietal shield.

Morum purpureum: -Protoconch turreted (multispiral) and mostly purplish.
-Purplish parietal shield.

Literature

Bouchet, P., 2002. New pacific species of *Morum*. *Journal of Conchology* 37(5).

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Emerson, W.K., 1968. A new species of the gastropod genus *Morum* from the eastern pacific.

Frydman, F., 1991. Quelques mots des *Morum*. *Xenophora* 54: 10-15

Internet resources.

www.jaxshells.org

The genus *Morum* worldwide

www.gastropods.com

Eddie Hardy's pages. (section Moruminae)

www.conchologistsofamerica.org

for the description of *Morum vicdani*

www.worldwideconchology.com

Great pictures of the **Harpidae** family

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