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**Two new western Pacific deep water species of *Nassarius*
 (Gastropoda: Prosobranchia: Nassariidae):
Nassarius herosae sp. nov. and *Nassarius vanpeli* sp. nov.**

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Key words: Gastropoda, Prosobranchia, Nassariidae, *Nassarius*, taxonomy, western Pacific, Chesterfield Islands, Solomon Islands, New Caledonia, Vanuatu, Fiji, Tonga, Marquesas Islands.

Summary: During several expeditions by the Muséum National d'Histoire Naturel, Paris, two hereby described deep water species of *Nassarius* were collected.

Abbreviations:

HHK, collection H.H. Kool, Dieren, The Netherlands;
 MNHN, Muséum National d'Histoire Naturel, Paris, France;
 RMNH, Nationaal Natuurhistorisch Museum, Leiden, The Netherlands;
 ZMA, Zoölogisch Museum, University of Amsterdam, The Netherlands.

Systematics.

Nassariidae Iredale, 1916

***Nassarius* Duméril, 1806**

Type species: *Buccinum arcularia* Linnaeus, 1758

[SM: Forriep, 1806]

Nassarius herosae sp. nov.
(figs 1-3)

Holotype: MNHN (no number) Length 8.0 mm, width 4.6 mm.

Type locality: New Caledonia, Exp. BIOCAL, DW 51, 23°05'S 167°45'E, 680-700 m, 31.viii.1985

Paratypes: The co-ordinates are preceded by the station codes of the expeditions in question.

New Caledonia. Exp. BIOCAL, DW 51, 23°05'S 167°45'E, 680-700 m, 31.viii.1985 MNHN 17; ZMA Moll. 4.05.001 (=138821)/1; RMNH 99589/1; HHK 111.01/2), '*Nassarius himeroessa* [Melvill & Standen, 1903]'; DW 33, 23°10'S 167°10'E, 675-680 m, 29.viii.1985 (MNHN/2 '*Nassarius himeroessa* Melvill & Standen, 1903'); DW 48, 23°00'S 167°29'E, 775 m, 31.viii.1985 (MNHN/5; HHK 111.02/2 '*Nassarius himeroessa* [Melvill & Standen, 1903]'; DW 49, 23°03'S 167°32'E, 825-830 m, 31.viii.1985 (MNHN/1 '*Nassarius himeroessa* [Melvill & Standen, 1903]'); DW 56, 23°35'S 167°12'E, 695-705 m, 1.ix.1985 (MNHN/1 '*Nassarius himeroessa* [Melvill & Standen, 1903]'); DW 66, 24°55'S 168°22'E, 505-515 m, 3.ix.1985 (MNHN/6 '*Nassarius himeroessa* [Melvill & Standen, 1903]'); DW 106, 21°36'S 166°29'E, 625-650 m, 08.ix.1985 (MNHN/1 '*Nassarius himeroessa* [Melvill & Standen, 1903]'); MUSORSTOM 4: DW 197, 18°51'S 163°21'E, 550 m, 20.ix.1985 (MNHN/1, 1 in alc. '*Nassarius crebricostatus*, [Schepman, 1911]');

BIOGEOCAL: DW 296, 20°38'S 167°10'E, 1230-1270 m, 28.iv.1987 (MNHN/1 '*Nassarius himeroessa* [Melvill & Standen, 1903]');

BERYX 11: DW 09, 24°52'S 168°22'E, 635-680 m, 15.x.1992 (MNHN/1); DW 35, 23°33'S 167°16'E, 550-570 m, 19.X.1992 (MNHN/1).

SMIB 8: DW 146-147, 24°55'S 168°22'E, 508-532 m, 27.i.1993 (MNHN/3); DW 148, 24°56'S 162°21'E, 510 m, 27.i.1993 (MNHN/2); DW 193-196, 22°59'S-23°00'S 168°21'-168°23'E, 494-558 m, 01.ii.1993 (MNHN/1).

BATHUS 3: DW 776, 24°44'S 170°08'E, 770-830 m, 24.xi.1993 (MNHN/2); DW 778, 24°43'S 170°07'E, 750-760 m, 24.xi.1993 (MNHN/1); DW 783, 23°57'S 169°47'E, 614-617 m, 25.xi.1993 (MNHN/1); DW 786, 23°54'S 169°49'E, 699-715 m, 25.xi.1993 (MNHN/2); DW 790, 23°49'S 169°48'E, 685-715 m, 25.xi.1993 (MNHN/4); DW 793, 23°47'S 169°49'E, 731-751 m, 26.xi.1993 (MNHN/4); DW 795, 23°47'S 169°49'E, 735-755 m, 26.xi.1993 (MNHN/1); DW 800, 23°35'S 169°37'E, 655 m, 26.xi.1993 (MNHN/1); DW 809, 23°39'S 167°59'E, 650-730 m, 27.xi.1993 (MNHN/1); DW 810, 23°40'S 167°59'E, 850-900 m, 27.xi.1993 (MNHN/1).

HALIPRO 2: BT 04, 23°31'S, 169°34'E, 790-845 m, 06.xi.1996 (MNHN/1).

NORFOLK 1: DW 1679, 24°43'S 168°10'E, 298-324 m, 22.vi.2001 (MNHN/2); DW

1691, 24°54'S 168°22'E, 509-513 m, 23.vi.2001 (MNHN/1); DW 1692, 24°56'S 168°21'E, 507-967 m, 23.vi.2001 (MNHN/2); DW 1695, 24°40'S 169°39'E, 562-587 m, 24.vi.2001 (MNHN/1); DW 1697, 24°39'S 168°38'E, 569-616 m, 24.vi.2001 (MNHN/2).

Material examined:

Vanuatu. VOLSMAR: DW 51, 20°59'S 170°03'E, 450 m, 04.vii,1989 (MNHN/1).

Fiji Islands. BORDAU 1: DW 1485, 19°03'S 178°30'W, 700-707 m, 10.iii.1999 (MNHN/1).

Tonga. BORDAU 2: DW 1553, 20°42'S 174°54'W, 650-676 m, 06.vi.2000 (MNHN/2); DW 1569, 21°02'S 175°19'W, 433 m, 10.vi.2000 (MNHN/2); DW 1585, 18°33'S 173°57'W, 578 m, 13.vi.2000 (MNHN/2); DW 1588, 18°40'S 173°52'W, 630-710 m, 13.vi.2000 (MNHN.1).

Marquesas. MUSORSTOM 9: DW 1146, 9°19'S 140°06'W, 200 m, 22.viii.1997 (MNHN/1); DW 1148, 9°19'S 140°06'W, 300 m, 22.viii.1997 (MNHN/6); DR 1194, 9°00'S 139°59'W, 500 m, 27.viii.1997 (MNHN/1); DW 1206, 9°51'S 139°09'W, 352-358 m, 28.viii.1997 (MNHN/1); DR 1244, 10°28'S 138°42'1"W, 1015-1020 m, 01.ix.1997 (MNHN/1); DR 1247, 10°34.0'S 138°41.6'W, 1150-1250 m, 01.ix.1997 (MNHN/9; HHK 111.03/1); DR 1250, 9°47'S 139°38'W, 500-650 m, 02.ix.1997 (MNHN/1); DR 1253, 9°48'S 139°38'W, 360-405 m, 02.ix.1997 (MNHN/3); DR 1255, 9°38'S 139°48'W, 416-440 m, 02.ix.1997 (MNHN/5); DW 1281, 7°48'S 140°21'W, 450-455 m, 07.ix.1997 (MNHN/2).

Habitat: *N. herosae* sp. nov. is a deep water species, known from 200-1230 m. Live taken specimens are from 350-550 m.

Distribution: From the Chesterfield Islands and New Caledonia to Fiji, Tonga and the Marquesas Islands.

Description: Shell rather thin, protoconch with 4-4 1/4 broad whorls, last 2 whorls strongly keeled. Teleoconch of about 4 weakly convex whorls, prominently angulate at suture. Axial sculpture of equally strong, rounded ribs, about 15 on the penultimate and 16 on the body whorl. Varix strong. Spiral sculpture consists of 2 or 3 subsutural over-riding cords, one or two on, and one, at some wider distance, below the shoulder which produce 2 or 3 rows of rather sharp nodules. About 12 weak spiral cords between the ribs of the body whorl, the 4-5 basal cords more prominent and over-riding the ribs. Siphonal area with 3-4 weak cords. Aperture ovate, transparent, showing outside axial and spiral sculpture. Outer lip with about 10 weak lirate denticles. Columella smooth; shiny, well-bordered columellar callus spread over a part of the body whorl. Parietal

denticle extremely weak or absent.

The species is variable in size, from about 5 to about 10 mm. The number of the whorls of the teleoconch varies from 3 1/2-4. The ribs vary in number and can be less strong than those of the type or become obsolete on the ventral side of the body whorl. Most specimens are white, but some (fresh?) specimens are yellowish. Operculum yellow.

Etymology: Named after Mrs. Virginie Héros, curatorial assistant of MNHN.

Remarks: In an earlier publication (Cernohorsky 1991: 193) this species was mentioned as *Nassarius (Niotha) himeroessa* (Melvill & Standen, 1903) and as *Nassarius (Zeuxis) crebricostatus* (Schepman, 1911) (Cernohorsky 1991: 200).

Nassarius himeroessa (Melvill & Standen, 1903) is a smaller species, type 4.4 mm, type locality Gulf of Oman. Types are figured in Cernohorsky 1984 pl. 17-2 and Kaicher, card 3466. *Nassarius herosae* sp. nov. is bigger in size, has more whorls, is more prominently shouldered, is less convex in shape, has less but stronger ribs and has a different shape of the columellar callus.

Nassa innocens Thiele, 1925, according to Cernohorsky (1984:106) a synonym of *N. himeroessa* (Melvill & Standen, 1903) and figured on plate 17-3, has more similarity with *N. herosae* sp. nov., but is less tabulated, the spiral cords are stronger and less numerous. The shape of its columellar callus is different: less widely spread over the body whorl.

The difference between *N. herosae* sp. nov. and *N. crebricostatus* (Schepman, 1911) needs no further explication after the discussions and figures in earlier publications (Kool 2004a and 2004b).

***Nassarius vanpeli* sp. nov.**
(figs 4-6)

Holotype: MNHN (no number), length 6.6 mm, width 3.8 mm.

Type locality: New Caledonia, Exp. BIOCAL, DW 77, 22°15S 167°15E, 440 m, 05.ix.1985

Paratypes: The co-ordinates are preceded by the station codes of the expeditions in question.

New caledonia, exp, BIOCAL, DW 77, 22°15'S 167°15'E, 440 m, 05.IX.1985 MNHN/20; ZMA Moll. 4.05.002 (=138822)/1; RMNH 99590/1; HHK 112.01/2, '*Nassarius himeroessa* [Melvill & Standen, 1903]'

BIOCAL: DW 08, 20°34'S 166°54'E, 435 m, 12.viii.1985 (MNHN/5 '*Nassarius himeroessa* [Melvill & Standen, 1903]'); DW 66, 24°55'S 168°22'E, 505-515 m, 03.ix.1985 (MNHN/2, '*Nassarius himeroessa* [Melvill & Standen, 1903]'); DW 83, 20°35'S 166°54'E, 460 m, 06.ix.1985 (MNHN/1, '*Nassarius himeroessa* [Melvill & Standen, 1903]')

MUSORSTOM 4: DW 156, 18°54'S 163°19'E, 525 m, 15.ix.1985 (MNHN/1, '*Nassarius himeroessa* [Melvill & Standen, 1903]'); CC 247, 22°09'S 167°13'E, 435-460 m, 04.x.1985 (MNHN/1, '*Nassarius himeroessa* [Melvill & Standen, 1903]'), (MNHN/1 in alc '*Nassarius crebricostatus* [Schepman, 1911]');

BIOGEOCAL: DW 253, 21°32'S 166°29'E, 310-315 m, 16.iv.1987 (MNHN/5, '*Nassarius himeroessa* [Melvill & Standen, 1903]'. CP 260, 21°00'S 166°58'E, 1820-1980 m, 17.iv.1987 (MNHN/1); DW 291, 20°34'S 166°54'E, 510-520 m, 27.iv.1987 (MNHN/2, 1 in alc.; DW 292, 20°28'S 166°48'E, 465-470 m, 27.iv.1987 (MNHN/1, '*Nassarius himeroessa* [Melvill & Standen, 1903]'); DW 307, 20°35'S 166°55'E, 470-480 m, 01.v.1987 (MNHN 3, '*Nassarius himeroessa* [Melvill & Standen, 1903]')

VOLSMAR: DW 38, 22°22'S 168°44'E, 380-420 m, 8.vi.1989 (MNHN/1).

SMIB 8: DW 146-147, 24°55'S 168°22'E, 508-532 m, 27.i.1993 (MNHN/8; HHK 112.02/2); DW 152, 24°54'S 168°22'E, 514-530 m, 27.i.1993 (MNHN/1); DW 166, 23°38'S 167°43'E, 433-450 m, 29.i.1993 (MNHN/1); DW 169, 23°37'S 167°42'E, 447-450 m, 29.i.1993 (MNHN/1); DW 189, 23°18'S 168°06'E, 400-402 m, 31.i.1993 (MNHN/2).

BATHUS 1: DW 678 20°48.79'S 165°18.82'E, 94-100 m, 15.iii.1993 (MNHN/1).

BATHUS 2: DW 719, 22°48'S 167°16'E, 440-445 m, 11.v.1993 (MNHN/1); DW 720, 22°52'S 167°16'E, 530-541 m, 11.v.1993 (MNHN/1); DW 730, 23°03'S 166°58'E, 397-400 m, 12.v.1993 (MNHN/1); DW 739, 22°35'S 166°27'E, 465-525 m, 14.v.1993 (MNHN/1); DW 760, 22°19'S 166°11'E, 455 m, 16.v.1993 (MNHN/1); CP 761, 22°19'S 166°11'E, 490-500 m, 16.v.1993 (MNHN/1).

BATHUS 3: DW 807, 23°40'S 167°59'E, 420-438 m, 27.xi.1993 (MNHN/1).

BATHUS 4: DW 927, 18°56'S 163°22'E, 444-452 m, 07.viii.1994 (MNHN/2).

NORFOLK 1: DW 1680, 24°45'S 168°10'E, 385-392 m, 22.vi.2001 (MNHN/2); CP 1706, 23°44'E, 168°17'E, 383-394 m, 25.vi.2001, (MNHN/1).

Material examined.

Chesterfield Islands. MUSORSTOM 5: St. 304, 22°10'S 159°26'E, 385-420 m, 12.x.1986 (MNHN/1, '*Nassarius himeroessa* [Melvill & Standen, 1903]'); St. 306, 22°08'S 159°21'E, 375-415 m, 12.x.1986 (MNHN/1, '*Nassarius himeroessa* [Melvill

& Standen, 1903]'); St. 361, 19°53'S 158°38'E, 400 m, 19.x.1986 (MNHN/1, '*Nassarius* cf. *himeroesa* [Melvill & Standen, 1903]'); St. 362, 19°53'S 156°40'E, 410 m, 19.x.1986 (MNHN/1).

Solomon. SALOMON 1: DW 1767, 8°19.4'S 160°39.9'E, 98-200 m, 28.ix.2001, (MNHN/3)

Vanuatu. VOLSMAR: DW 51, 20°59'S 170°03'E, 450 m, 04.vii.1989 (MNHN/13, '*Nassarius himeroessa* [Melvill & Standen, 1903]'). MUSORSTOM 8: DW 958, 20°21'S 169°47'E, 497-570 m, 20.ix.1994 (MNHN/1).

Fiji. BORDAU 1: DW 1477, 20°58'S 178°45'W, 390-405 m, 9.iii.1999 (MNHN/2).

Tonga. BORDAU 2: DW 1509, 21°05'S 175°22'W, 465-510 m, 31.v.2000 (MNHN/1); DW 1543, 21°16'S 175°18'W, 427-436 m, 5.vi.2000 (MNHN/1); DW 1544, 21°18'S 175°18'W, 441-443 m, 5.vi.2000 (MNHN/1; HHK 112.03/1); DW 1585, 18°33'S 173°57'W, 578 m, 13.vi.2000 (MNHN/1); DW 1607, 22°15'S 175°23'W, 356-367 m, 16.vi.2000 (MNHN/1); DW 1614, 23°02'S 175°51'W, 429-549 m, 17.vi.2000 (MNHN/1); DW 1615, 23°03'S 173°53'W, 482-504 m, 17.vi.2000 (MNHN/1).

Habitat: *N. vanpeli* sp. nov. is a deep water species, collected between about 100-550 m; the holotype, with operculum, from 440 m. There is only one lot, Biogeocal, CP 260 Bassin des Loyauté, consisting of only one specimen, from a depth of 1820-1980 m.

Distribution: Western Pacific, from the Chesterfield Islands and the Solomon Islands, New Caledonia, to Fiji and Tonga.

Description: Shell ovate, rather bulbous. Protoconch of 3 1/2-3 3/4 whorls, last 1 1/2 whorls keeled. Teleoconch of about 3 1/4-3 1/2 convex whorls. Suture weakly impressed. Axial sculpture of equally strong, rounded ribs, about 21 on the penultimate and about 15 on the last whorl; varix strong. Ribs on the ventral side of the body whorl occasionally weaker. The ribs of the first teleoconch whorls ending in a low bead at the suture. On the last whorl 1 or 2 strong subsutural over-riding spiral cords, causing strong roundish beads; on the rest of the body whorl about 18 spiral cords between, but incidentally slightly over-riding the ribs, strongest at base, near to and on the broad varix.

Aperture ovate, outer lip thick with a very strong tooth at the periphery, a strong siphonal pleat and some more weak denticles. Siphonal area with about 8 ribs.

Columella with some weak pleats anteriorly and a thick, shiny callus, well bordered and widely extended over the body whorl, especially posteriorly. Parietal denticle weak, anal canal wide.

Colour white to creamy, aperture and callus glossy white, operculum yellowish.

The size varies from 5.2 – 7.3 mm. Shape and sculpture are rather constant.

Etymology: The new species is named after Peter van Pel, honorary associate of ZMA, who helped the author during years with his computer problems.

Remarks: In Cernohorsky (1991: 193, 200) this species was mentioned as *N. himeroessa* (Melvill & Standen, 1903) and *N. crebricostatus*, e.g. lot MUSORSTOM 4 CC 247.

The main differences between *N. herosae* and *N. vanpeli* are the more obese shape, the less complicated subsutural sculpture, the wide and thick callus and the strong denticle on the outer lip of *N. vanpeli* sp. nov. The shell is less prominently shouldered, smaller, more convex and thicker than *N. herosae* sp. nov. The protoconch of *N. herosae* sp. nov. has more whorls and is more strongly keeled.

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Summarizing translation into Dutch/ Samenvattende Nederlandse vertaling

Gedurende verschillende expedities in het west-pacifische gebied door het MNHN werden in diep water twee nieuwe soorten *Nassarius* verzameld.

Nassarius herosae sp. nov. met een grote protoconch van ruim 4, deels sterk gekielde windingen. Op en onder de sutuur van de geschouderde windingen van de teleoconch 2 of 3 sterke spiralen, die over de ribben heen lopen.

In Cernohorsky (1991:193) werden sommige monsters vermeld als *N. himeroessa* (Melvill & Standen 1903), andere (Cernohorsky 1991:200) als *Nassarius crebricostatus* (Schepman, 1911). Beide soorten missen de bovengenoemde kenmerken.

Nassarius vanpeli sp. nov. is een tamelijk bolvormige, gedrongen schelp met een dikke buitenlip met aan de binnenkant een zware tand, een stevige siphonale plooi en enkele kleinere tanden. Callus wit en glanzend, aan de columella verdikt en duidelijk begrensd, uitgespreid over een deel van de laatste winding.

Verschillen tussen de beide nieuwe soorten zijn de meer gedrongen maar minder geschouderde vorm, de minder opvallende subsuturale sculptuur, de vorm en dikte van de eeltlaag en de sterke tand aan de binnenzijde van de buitenlip van *N. vanpeli* sp. nov.

Plate:

Figs 1-3. *Nassarius herosae* sp. nov.

Holotype MNHN (no number) New Caledonia, Exp. BIOCAL, sta. DW 51, 23°05S 167°45E, 680-700 m, 31.viii.1985. Length 8.0 mm, width 4.6 mm.

Figs 4-6. *Nassarius vanpeli* sp. nov.

Holotype MNHN (no number) New Caledonia, Exp. BIOCAL, sta. DW 77, 22°15S 167°15E, 440 m, 05.ix.1985. Length 6.6 mm, width 3.8 mm.

