

**Selected original species descriptions of land snails from  
Guam, Mariana Islands, by Quoy & Gaimard (1832),  
Pfeiffer (1857) and Quadras & Möllendorff (1894)**

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University of Guam Marine Laboratory Technical Report 144

January 2013





## **ACKNOWLEDGEMENTS**

For much help along the way, I am indebted to Scott Bauman (Florida Museum of Natural History), Carl Christensen (Bernice P. Bishop Museum, Hawaii), and Barry Smith (University of Guam). I also thank Dirk H. R. Spennemann (Charles Sturt University, Australia) for his important online compilation of early German works on the natural history of Micronesia.

*Dankulu na Saina Ma'åse!*



## **SUMMARY**

This report provides translations and annotations for most of the Latin and French taxonomic descriptions by the most prolific 19th-century collectors and taxonomists of land snails from the island of Guam, Mariana Islands, western Micronesia. The papers describe 51 species, for a total of 59 descriptions when including new genera and varieties. Of the latter tally, 40 descriptions (35 species and five varieties) are translated into English here. This constitutes just over 66% of the described species diversity endemic to Guam and the other islands of the Mariana archipelago.



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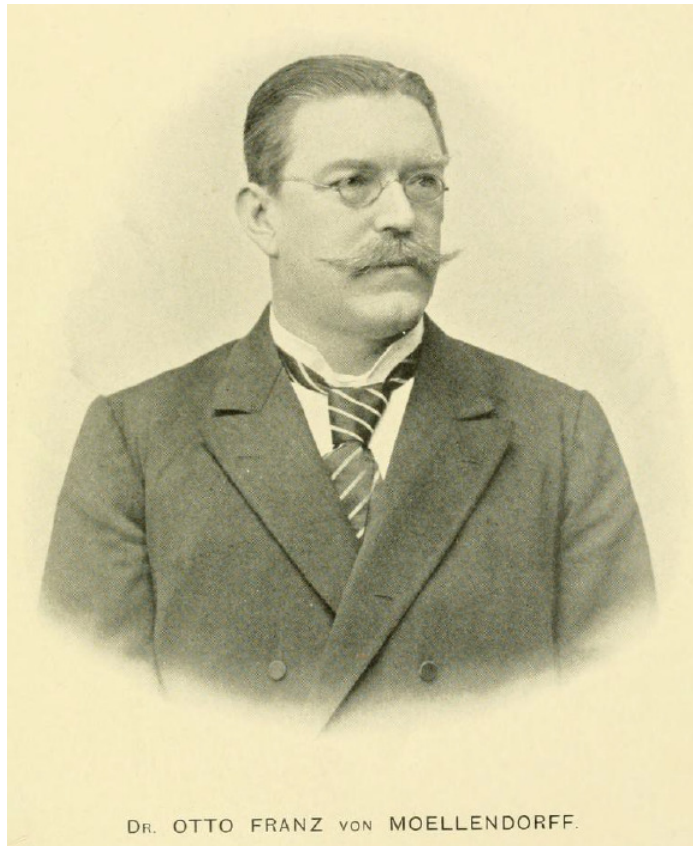
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## INTRODUCTION

This paper has been prepared as part of a study on the systematics of the terrestrial snails of the Mariana Islands, Micronesia. It presents selected translations from the Latin descriptions by the earliest, and among the most prolific collectors and taxonomist of Mariana Island snails, J. R. C. Quoy, J. P. Gaimard, L. Pfeiffer, J. F. Quadras and O. F. von Möllendorff.

Jean-René Constant Quoy and Joseph Paul Gaimard served as zoologists during two voyages around the world (Freycinet 1825; d'Urville 1834) and, as a result, they are remembered today amongst taxonomists for their many discoveries of species new to Western science. On each of their circumnavigations, they stopped at Guam for a short time and collected, among many other organisms, several land snails. On the other hand, Ludwig Karl Georg Pfeiffer, often as Lous Pfeiffer, an important describer of Marianas snails, never visited Guam, but described shells from Guam that had been collected by others. Likewise, Otto Franz von Möllendorff, one of the world's most well-known conchologist in his day and a specialist on terrestrial and aquatic species, appears not to have visited Guam, yet described many species collected from there by his colleague Quadras. von Möllendorff's profession in the German consulate office enabled



**Figure 1.** Dr. Otto Franz von Möllendorff, the most prolific describer of terrestrial snails from the Mariana Islands. (From his obituary in the *Journal of Malacology*; Plate XI in Kobelt 1903).

his travels and his correspondingly geographically wide studies of land snails, including those of the Philippines, beginning in 1886. Indeed, by his departure in 1896, he had described over 800 species from the Philippine islands, over half of the total of the 1500 species he described worldwide (Kobelt 1903). While stationed in Manila, Philippines, he met with another malacologist, the Spanish forester José Florencio Quadras. I can find very little information on D. Quadras, other than his botanical collections (several plants were named in his honour, e.g., *Selaginella quadrasii* Hieron), his long and fruitful collaboration with von Möllendorff, and his correspondence with the great Spanish biologist Dr. Joaquín González Hidalgo, with whom he apparently ceased collaboration shortly after the arrival in Manila of Möllendorff.

The aforementioned taxonomists together described numerous species of snails inhabiting the Mariana Islands. Quoy and Gaimard described numerous new plants and animals collected on their global voyages, including several snails, one of them endemic to the island of Guam, Mariana Islands. Pfeiffer in a paper describing 31 species collected world-wide by others, included three species from Guam. Quadras and Möllendorff co-authored two papers dedicated exclusively to the malacofauna of Guam. They were published in the German Malacological Society's journal, *Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft*. The papers provide 47 species descriptions, or 54 descriptions in total when including the two new genera and all five varieties. All of the material for their papers was apparently collected from Guam by Quadras. Their jointly authored papers contain no text beyond that of the taxonomic descriptions, and so we do not learn the context of the work, such as when Quadras was on Guam to collect. Still, his excursion(s) to the island must have been after Möllendorff's arrival in Manila in 1886 when he first revealed to Quadras the high diversity of tiny land molluscs (Kobelt 1903), yet prior to 1893 when Quadras published a catalogue of Philippine shells (Quadras 1893) that included the undescribed taxa from "Guajan" that were to form the subject of the two later papers in early 1894.

## **ABOUT THE TRANSLATIONS**

The relevant publications were obtained as digital copies downloaded from the internet. Quoy & Gaimard's (1832), as well as Pfeiffer's (1857), descriptions were obtained from the *Biodiversity Heritage Library* (<http://www.biodiversitylibrary/>). The papers of Quadras & Möllendorff (1894a-b) were obtained from *Digital Micronesia - An Electronic Library & Archive* (<http://marshall.csu.edu.au/>) maintained by Charles Sturt University, Australia (see also Spennemann 2004). Because all of these papers were published well before 1923, international copyright has unambiguously expired (Hirtle 2012).

**Table 1. Descriptions not translated herein from Quadras & Möllendorff 1894a-b.**

Species	Reference	Page
<i>Endodonta heptptychia</i> Q. et Mlldff.	1894a	15
<i>Endodonta mariannarum</i> Q. et Mlldff.	1894a	14
<i>Georissa laevigata</i> Q. et Mlldff.	1894b	42
<i>Lamprocystis (Microcystina) denticulata</i>	1894a	13
<i>Melampus (Signia) quadrasi</i> Mlldff.	1894a	18
<i>Omphalotropis (Solenomphala) conica</i> Q. et Mlldff.	1894b	34
<i>Omphalotropis (Scalinella) gracilis</i> Q. et Mlldff.	1894b	35
<i>Omphalotropis (Chalicopoma) laevigata</i> Q. et Mlldff.	1894b	35
<i>Omphalotropis (Scalinella) pilosa</i> Q. et Mlldff.	1894b	35
<i>Omphalotropis (Scalinella) pilosa</i> var. <i>pilosella</i> Q. et Mlldff.	1894b	36
<i>Omphalotropis (Chalicopoma) semicostulata</i> Q. et Mlldff.	1894b	34
<i>Omphalotropis submaritima</i> Q. et Mlldff.	1894b	33
<i>Partula quadrasi</i> Mlldff.	1894a	15
<i>Patula fusca</i> Q. et Mlldff.	1894a	13
<i>Patula rotula</i> Q. et Mlldff.	1894a	13
<i>Patula rotula</i> f. <i>pallens</i> var. <i>intercedens</i> Q. et Mlldff.	1894a	14
<i>Patula Quadrasi</i> Mlldff.	1894a	14
<i>Truncatella mariannarum</i> Q. et Mlldff.	1894b	39

Thus, I include the original Latin and French descriptions with their translations together as columns of parallel text.

My knowledge of Latin and French is limited. Hence, I relied on the aid of dictionaries and on-line translators. The translations have not been checked by a proficient Latinist, but the French portion by Quoy & Gaimard has been eyeballed critically by a native gallophone and pronounced 'adequate' (*contra* élégant, I presume). As evident from the Table of Contents, I have organised this report into four sections, one for each publication. Then, within each section, the species descriptions appear in the order that they occurred in each published article. Page numbers from the original papers are given in square brackets, untranslated portions are noted by bracketed ellipses. Finally, I employ modern ICZN conventions regarding the rendering of the scientific names given in the papers, i.e., such names are italicised, specific epithets are not capitalised nor permitted diacrits. I make no taxonomic changes. Finally, there appears to be one possible typesetting error: Quadras & Möllendorff (1894b, p. 37) write "*Operculum illi M. quadrasi simile.*"; the authors undoubtedly intend to refer to the previous and congeneric species *H. quadrasi*.

All of Quoy and Gaimard's (1832) and Pfeiffer's (1857) few descriptions of endemic snails are included, a total of four. A total of 35 translations of the 47 species descriptions in Quadras & Möllendorff (1894a-b), or 74%, are also provided. Species and varieties in these papers whose descriptions were not translated into English for this report are listed in Table 1. Whether or not a description was translated depended largely on whether a trustworthy and detailed, if necessarily secondary description in English of the species could be found elsewhere (e.g., Abbott 1949; Harry 1966). Further, sometimes other authors have also translated parts of Quadras & Möllendorff's work. Hence, I eagerly employed translations available in Pilsbry & Cooke's (1915-1916, 1916-1918) *Manual of Conchology* for four of Quadras & Möllendorff's original descriptions: *Tornatellina quadrasi*, *T. (Lamellina) microstoma*, *T. (L.) subcylindrica*, and *Vertigo (Prychochilus) quadrasi*.

## DISCUSSION

Of the four authors considered here, only Quadras appears to have spent time collecting on Guam. Despite Quadras's potentially short time on the island, he found 47 species new to science. This constitutes about 80% of the currently described fauna endemic to the islands, or 56% when including more recently discovered undescribed taxa (see Bauman 1996a for the most recent comprehensive species list). Further, many of the species found by Quadras appear to be based on multiple specimens. Either Möllendorf described one to four varieties of a given species, or he mentions colour range for a species, indicating that he had in hand at least two specimens. Most telling of the abundance of many of the newly discovered species is the number of paralectotypes derived from the original type series that have made their way into major repositories worldwide. Quadras's Guam specimens, often as multi-specimen lots, are presently housed in the Academy of Natural Sciences, Philadelphia, the Museum of Comparative Zoology, Harvard University, and the Bernice P. Bishop Museum, Honolulu, as well as elsewhere.

Collecting that many specimens of that many species would take far longer today. This precipitous drop in catch per unit effort is apparently because of the intervening steep decline in snail populations on Guam (and elsewhere in the Pacific Islands) since the mid 20th c. due to habitat loss and the often intentional introductions of generalist molluscivores, i.e., gastropods and a bipaliid flatworm, to control an exotic gastropod agricultural pest (Hopper & Smith 1992). Several endemic species in the Mariana Islands, including those restricted to Guam, are undoubtedly now extinct, such as the non-Quadras & Möllendorf species *Partula salifana* Crampton, 1925 and *P. langfordi* Kondo, 1970 (see Smith 2008). Ominously, many Quadras & Möllendorf species have not been seen in nearly a century. Bauman (1996b; unpubl.) and Smith (2008) have made careful searches of several islands and were unable to find several species, such as *Succinea* spp. on Guam and Rota. These and others may well be extinct or, one hopes, maintain populations on the larger poorly sampled northern islands, at least those not devastated by recent volcanism. No one has really checked carefully on most

of them. Despite this certainly dire situation, many new species are still being discovered the Marianas. Bauman (1996a) lists 25 likely undescribed species from the Marianas, 12 of them from Rota, alone.

Kobelt (1903) wrote in an otherwise laudatory obituary that the only downside to Möllendorf's prodigious output (he described over 1500 species and varieties!) was that he did not illustrate his specimens. Fortunately, many to all of his types acquired during his peregrinations and exchanges with colleagues he entrusted to the Senckenberg Museum, Dusseldorf, where they remain today for study. Later, Zilch (1953, 1962, 1967, 1973a-b, 1978) designated lectotypes from Möllendorf's series and provided rather small, but still quite helpful photographs in apertural view, including all of the Guam species. As noted earlier, many paralectotypes from his type series have been distributed to other museums worldwide. We are indeed very fortunate to have such a good record of the Mariana Island species via Quadras's collections, Möllendorf's descriptions and Zilch's illustrations, evidence of the enduring legacy of von Möllendorf's exquisite scholarship.

The charming tailpiece of a snail below is from the title page of Quadras (1893).

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Christmas Day 2012



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[page 191]

**CYCLOSTOME A BANDEAU.**

**BANDED CYCLOSTOME**

*Cyclostoma erosa*, nob.

*Cyclostoma erosa*, n. sp.

PLANCE 12, FIGURES 40-44.

PLATE 12, FIGURES 40-44

*Cyclostoma, testa turrata, conica, perforata; apice acuta, ultimo anfractu semper erosa, violacea, aut rubra; spira luteola; apertura rubeola; peristomate simplici, integro, subovali; umbilicus canaliculato.*

Cyclostomate [i.e. shaped like other *Cyclostoma* (= *Omphalotropis*)], shell turrated, conical, perforate; apex acute, body whorl always eroded, violet, or red; spire yellow; aperture reddish; peristome simple, entire, almost oval; umbilicus grooved.

Petite espèce, de même forme, mais un peu plus grand que la précédente, conique, à spire pointue, dont les tours, au nombre de cinq et demi, sont arrondis à sutures profondes; le dernier, qui est aussi grand que tous les autres ensemble, est un peu ventru et constamment couvert de rugosités obliques, qu'on ne voit bien qu'à la loupe. Elles effacent en partie une carène, qu'on aperçoit cependant pres de l'ombilic. Celui-ci est en fente demi-circulaire, et limité en dehors par un bourrelet. L'ouverture est demi-circulaire, un peu anguleuse en arriere. Le péristome est simple

A small species, of the same form, but a bit larger than the preceding species [*Cyclostoma rubens*, p. 189], conical, spire pointed, whose whorls, five and one half in number, are separated by a deep suture; the body whorl, which is as big as the others combined, is a little inflated and completely covered in obliquely set, rugose bumps, clearly visible through a lens. A somewhat faint carina occurs, which is more distinct near the umbilicus. The umbilicus is semi-circular, and bordered by a distinct edge. The peristome is simple and continuous. These latter parts are

et continu. Ces dernières parties sont rosées. Cette coquille est rougeâtre ou violacé sombre [page 192] à sa base, jaunâtre au sommet avec de petites flammules rougeâtres.

L'animal porte un muflle assez long d'un jaune clair, surmonté d'une ligne violette en chevron brisé en avant de tentacules. Ces derniers sont gros, courts, et portent à leur base, sur un petit renflement, des yeux noirs et volumineux. Le pied est de la même couleur que la tête. L'opercule est membraneux, paucispéré.

Ce Mollusque habite l'île Guam, une de Marianes. Il n'y est pas très-répandu, car il nous avait échappé dans notre premier voyage.

pink.. This shell is reddish or dark violet near the base, yellow towards the apex with small reddish streaks.

The animal bears a fairly long proboscis of light yellow, surmounted by a violet line in the shape of a broken chevron in front of the tentacles. These are large, short, and have at their tips, a small bulge with large black eyes. The foot is of the same colour as the head. The operculum is membranous of few whorls.

This mollusk inhabits Guam, one of the Mariana islands. It is not very common, as we had missed it on our first voyage.

DIMENSIONS.

Height 4 mm, width 2 mm.

lignes.

Longuer.....4  
Epaisseur.....2

[...]

[End Quoy & Gaimard 1832]

**From: Pfeiffer, L. 1857. Descriptions of thirty-one new species of land-shells, from Mr. Cuming's collection. *Proceedings of the Zoological Society of London* 25: 107-113.**

[page 110]

[...]

15. PARTULA MASTERSI, Pfr. *T. dextrorsa*, *anguste umbilicata, ovato-conica, solidula, spiraliter subconferte sub lente striata, lutea, carnea vel violacea, in anfractibus superioribus interdum fusco-fasciata; spira conica, acultiuscula; anfr. 5 convexiusculi, ultimus spiram subæquans, deorsum turgidus; columella superne subinflata, recedens; apertura obliqua, truncato-oblonga; perist. callosum, undique subæqualiter expansum, subplanum, album vel fusco-carneum.*

Long. 18, diam. 9 2/3 mill.

*β. Carnea, anfr. ultimo pone peristoma strigata lata violacea notato, dente parvulo albo profundo in ventre anfr. penultimi.*

*Hab.* Isle of Guam.

16. SUCCINEA GUAMENSIS, Pfr. *T. conico-ovata, tenuis, ruguloso-plicata et subgranulata, semipellucida, pallide cornea, albo irregulariter erosopunctulata; spira brevis, vertice subpunctiformi; anfr. vix 2 1/2, penultimus*

15. *Partula mastersi*, Pfr. Shell dextral, narrowly umbilicate, ovate-conical, fairly solid, whorls almost crowded, becoming more widely spaced below, white, flesh coloured or violet, in the superior side of the whorls sometimes brown-banded; spire conical, fairly acute; whorls five almost convex, the last whorl not equal in size, base swollen, upper columellum not well expanded, receding; aperture oblique, truncate oblong; peristome callosed, spreading not quite equally on all sides, not quite flattened, white or brownish red.

Height 18 mm, width 9 2/3 mm.

Form B. Flesh coloured, basal whorl behind peristome marked in violet, a small white tooth deep underneath the penultimate whorl.

Locality, Guam.

16. *Succinea guamensis*, Pfr. Shell ovate conical, thin, wrinkled-folded and not quite granulate, translucent, pale yellowish brown, irregular white erosion and pitting, short spire, whorls scarcely 2.5, the penultimate whorl convex, the last comprising 3/4 of the shell's length,

*convexus, ultimus 3/4 longitudinis subaequans, basi vix angustatus; apertura obliqua, ubique incumbens, angulato-ovatis; perist. somplex, marginibus callo tenui junctis, columellari leviter arcuato, filari.*

Long. 12, diam. 7, alt. 5 1/2 mill. (*Helix putris*, Fér. Hist. t. 10 A. f. 10.)

*Hab.* Isle of Guam.

[...]

[page 113]

[...]

30. HYDROCENA (OMPHALOTROPIS) GUAMENSIS, Pfr. *T. perforata, ovato-conica, solidula, conferte striata, opaca, carnea, rufo submarmorata et fasciata; spira conica, acuta; sutura subcanaliculata; anfr. 5 1/2 planiusculi, ultimus spira vix brevior, infra medium carinatus, circa perforationem carina compressa munitus; apertura parum obliqua, ovalis; perist. tenue, margine dextro expansiusculo, basali in carinam umbilicatem producto, columellari vix dilatato.*

Long. 6 1/2, diam. 4 mill.

*Hab.* Isle of Guam.

[...]

[End Pfeiffer 1857]

the base scarcely narrower, aperture oblique, angular oval, peristome simple, its margin thin and hardened, columellum slightly arched, threaded.

Height 12 mm, width 7 mm, height 5.5 mm. (*Helix putris*, Férussac, *Historia de Mollusca*, plate 10 A, figure 10)

Locality, Guam.

30. *Hydrocena (Omphalotropis) guamensis*, Pfr. Shell perforate, ovate-conic, fairly solid, closely packed striate, opaque, flesh coloured, vaguely marbled and banded in reddish; spire conical, acute; sutures shallow grooves; whorls 5.5, flattened somewhat, last whorl barely shorter, the umbilicus surrounded by a flattened carina; aperture barely oblique, oval; peristome thin, the right margin expanded a little, and basally by the umbilical carina, columella scarcely expanded.

Height 6.5 mm, width 4 mm.

Locality, Guam.

**From: Quadras & Moellendorff 1894. Diagnoses specierum novarum a J. F. Quadras in insulis Mariannis collectarum scripserunt. *Nachrichtenblatt der Deutschen Malakozoologischen Gesellschaft* 26: 13-22.**

[page 16]

8. *Tornatellina quadrasi* Mlldff.

T. imperforata, ovato-globosa, tenuis, pellucida, subtiliter striatula, nitidula, pallide luteo-cornea; spira parum elevata apice obtusulo. Anfr. 3 1/2 vix convexiusculi, rapide accrescentes, ultimus magnus tumidulus. Apert. modice obliqua, ovalis, peristoma simplex acutum margine columellari levissime reflexo, appresso. Lamella parietalis valde elevata, spiraliter intrans, columella valde lamellatim dilatata, basi angulo recto profunde excisa.

Diam. maj. 2, alt. 2.5 mm.

8. *Tornatellina quadrasi* Mlldff.

Shell imperforate, ovate-globose, thin, pellucid, delicately striate, somewhat shining, pale buff-corneous; spire little elevated, the apex rather obtuse; whorls 3.5, a trifle convex, rapidly increasing, the last large, swollen; aperture moderately oblique, oval peristome simple, acute; columellar margin very slightly reflexed, appressed; parietal lamella strongly elevated, spirally entering; columella strongly lamellarly dilated, deeply excised at base in a right angle.

Maximum width 2 mm; height 2.5 mm.

9. *Tornatellina (Lamellina) microstoma* Q. et Mlldff.

T. subrimata, oblongo-conica, tenuis, subpellucida, subtiliter striatula, parum nitens, luteo-cornea; spira turrata, lateribus convexiusculis, apice acuto. Anfr. 6 1/2 planiusculi, sutura parum impressa discreti, lente accrescentes, ultimus pone aperturam spiraliter impressus, subsulcatus. Apertura sat obliqua, rhomboidea; peristoma simplex, acutum, margine columellari

9. *Tornatellina (Lamellina) microstoma* Q. et Mlldff.

Shell subrimate, oblong-conic, thin, subpellucid, delicately striate, slightly shining, buff-corneous; spire turreted, sides slightly convex, apex acute; whorls 6.5, rather flattened, parted by slightly impressed suture, slowly increasing, the last spirally impressed, subsulcate before the aperture. Aperture rather oblique, rhombic; peristome simple, acute,

paullum dilatato, patente; columella valde spiraliter torta, lamellatim intrans, superne excisa, processu dentiformi extus porrecta. Lamella parietalis modice elevata intus longe procutsa, palatalis una breviuscula, a margine remota.

Diam. 1,75, alt. 3.5 mm.

In junioribus columella trilamellata, lamella parietalis magis elevata, anfractus ultimus costis transversis internis denticulatis 3 sat distantibus in adultis omnino evanescentibus munitus.

10. *Tornatellina (Lamellina) subcylindrica* Q. et Mildff.

T. non rimata, subcylindraceo-turrita, subtiliter striatula, tenuis, subpellucida, nitidula, luteo-cornea; spira sensim [page 17] attenuata, apice obtusulo. Anfr. 6 1/2 sat convexi, ultimus distinctius plicato-striatus, ab initio profundiuscule medio spiraliter impressus. Apert. modice obliqua, rotundato-trapezoidalis, peristoma simplex acutum. Columella superne dilatata, extus processu dentiformi patens, valde spiraliter torta, superne subdentata. Lamella parietalis obliqua, valde elevata, longe intrans, palatalis nulla.

columellar margin a little dilated, spreading; columella strongly twisted spirally, lamellarly entering, excised above, projecting in dentiform process externally; parietal lamella moderately elevated, deep; a single palatal plica remote from the margin.

Width 1.75 mm; height 3.5 mm.

In young shells columella trilamellate, parietal lamella more elevated, last whorl with three internal transverse denticulate ribs absent in adults.

10. *Tornatellina (Lamellina) subcylindrica* Q. et Mildff.

Shell not rimate, subcylindric-turreted, delicately striatulate, thin, subpellucid, a little shining, buff-corneous; spire gradually tapering, the apex rather obtuse; whorls 6/5, rather convex, the last more distinctly plicate-striate, from the beginning rather deeply impressed spirally in the middle; aperture moderately oblique, rounded-trapezoidal, peristome simple and acute; columella dilated above, running forward forming a dentiform process, strongly twisted spirally, sub-dentate above; parietal lamella oblique, strongly elevated, extending deep within, no palatal plicae.

Diam. 1.5, alt. 3.33 mm.

In junioribus collumella bidentata, anfractus ultimus ut sp. praec. constis internis munitus.

11. *Vertigo (Prychochilus) quadrasi* Mlldff.

T. subperforata, oblonge ovata, tenuis, costulis tenuissimis subdistantibus sculpta, sericina, brunnea. Anfr. 5 convexi, lente accrescentes, sutura profunda discreti, ultimus antice vix ascendens, basi compressus, pone apertuam distincte scrobiculatus. Apert. fere verticalis, rotundatao-triangularis, peristoma sat expansum, fuscolabiatum, marginibus convergentibus, dextro profundiuscule sinuato, callo noduliformi munito. Plica angularis sat alta, extus curvata, cum nodulo marginis externi sinulum ellipticum formans, parietales 2, una valde elevata longe intrans, altera minima, columellares 2, palatales 3 profundae quarum dextra longiuscula, lamelliformis.

Diam 1, alt. 1,9 mm.

12. *Succinea (Neritostoma) quadrasi* Mlldff.

T. oblongo-ovata, tenuiuscula, pellucida, sat fortiter plicato-striata, indistincte malleata, fulva, sursum rubella. Anfr. 3 celriter

Width 1.5 mm; height 3.33 mm;

Young with bidentate columella, last whorl as for preceding species, bearing internal ribs.

11. *Vertigo (Prychochilus) quadrasi* Mlldff.

Shell subperforate, oblong-ovate, thin, sculptured with quite delicate, rather widely-spaced riblets, silky, brown; whorls five, convex, slowly increasing, separated by a deep suture, the last slightly ascending in front, compressed at base, distinctly pitted behind the lip; aperture nearly vertical, rounded-triangular, the peristome well expanded, with a brown thickening, the margins converging, right margin deeply sinuate, with a noduliform callus; angular lamellar rather high, curving outward, and together with the nodule of the external lip forming an elliptical sinulus; two parietal lamellae, one strongly elevated, entering deeply, the other smaller, two columellar lamellae, three deeply placed palatal plicae, of which the right one is rather long and lamelliform.

Width 1 mm; height 1.9 mm.

12. *Succinea (Neritostoma) quadrasi* Mlldff.

Shell oblong-ovate, a little bit thinner, almost transparent, strongly enough multiply striate, indistinctly malleated, yellow, apex



acrescentes, sutura profunda discreti, convexi, ultimus sat inflatus 3/4 altitudinis [page 18] aequans. Apert. modice obliqua, fere exacte ovalis, peristoma rectum acutum, columella subplicata.

Diam. 8, alt. 13,5, apert. long. 10, lat. 5.5.

13. *Succinea (Amphibina) piratarum* Q. et Mlldff.

T. ovato-oblonga, tenuis, confertim plicato-striata, indistincte decussatula et malleata, luteo-cornea, apice fulvo. Anfr. 3 convexi, ultimus valde descendens, superne paullum applanatus. Apert. modice obliqua, acuminato-ovalis.

Diam. 7, alt. 11.25, apert. long. 8, lat. 5 mm.

[...]

15. *Palaina taeniolata* Q. et Mlldff.

T. sinistrorsa aut rarius dextrorsa, rimata, ovato-conica, tenuiuscula, subpellucida, costulis acutis sat distantibus sculpta, flava, pallide fulva, fulva aut corneo-brunnea. Anfr. 6 1/2 convexi, penultimus magnus, ultimus initio constrictus, paullum devians, ad suturam plerumque taenia rufofusca interdum usque in anfractum pentultimum producta ornatus, antice sat ascendens. Apert. [page 19] verticalis, subcircularis;

reddish. Three whorls quickly becoming wider, deep discrete suture, convex, the last somewhat inflated to 3/4 of the shell's height, aperture moderately oblique, almost exactly oval, peristome edge acute, columella not quite folded.

Shell width 8 mm, height 13.5 mm, aperture height 10 mm, width 5.5 mm

13. *Succinea (Amphibina) piratarum* Q. et Mlldff.

Shell oblong-ovate, thin with close-lying fold-like grooves, indistinct malleation, light yellowish-brown, yellow at apex, three convex whorls, the last rapidly descending, slightly flattened above, aperture slightly oblique and acuminate oval.

Width 7 mm, height 11.25 mm, aperture height 8 mm and width 5 mm.

15. *Palaina taeniolata* Q. et Mlldff.

Shell sinistral, rarely dextral, rimate, ovate-conical, thin, almost transparent, widely spaced sharp axial ribs, yellowish through pale reddish-brown to reddish brown or horn brown; 6.5 rounded whorls, penultimate largest, ultimate whorl initially constricted; for most of the suture from the second whorl, there is sometimes a reddish brown material; aperture vertical, subcircular, peristome with four or five thin

peristoma multiplex, labiis 4--5 tenuibus lamellatim expansis sulcis profundiusculis separatis sistens.

Alt. 2,3, diam, max. 1.3 mm.

16. *Palaina hyalina* Q. et Mlldff.

T. amphidroma, non rimata, ovata, tenuissima, pellucida, hyalina, costulis filiformibus acutis, sat distantibus sculpta. Anfr. 6 convexi, sutura profunda discreti, ultimus decrescens, initio valde constrictus, tum inflatus, antice paulum ascendens. Apert. fere verticalis, subcircularis, peristoma duplex, externum expansum internum porrectum, vix expansum.

Alt. 2,4, diam. 1.4 mm.

17. *Omphalotropis elongatula* Q. et Mlldff.

T. rimata, oblongo-conica, transverse subtilissime striatula, lineis spiralibus impressis sat distantibus decussata, pallide flavescens aut rubella; spira turrata, fere exacte conica apice obtusulo. Anfr. 7 planiusculi, sutura parum impressa disjuncta rimae valde approximata cinctus ad peripheriam confuse angulatus. Apertura vix obliqua, ovalis, peristoma vix expansum, intus sat labiatum, basi subeffusum.

Alt. 8,25, diam. 4.5 mm.

Var. *brunnescens*. Corneo brunnea,

distinct lamellae.

Height 2.3 mm; maximal diameter 1.3 mm.

16. *Palaina hyalina* Q. et Mlldff.

Shell sinistral or dextral, not rimate, ovate, very thin, widely spaced, well-defined filiform axial ribs; whorls rounded, six in number, deep discrete suture, the last part less deep, the very beginning becoming more inflated and prominent; aperture almost vertical, subcircular, double peristome, the external part expanded, the internal portion extended barely.

Height 2.4 mm; maximal diameter 1.4 mm.

17. *Omphalotropis elongatula* Q. et Mlldff.

Shell umbilicate, oblong conical, quite subtle transverse striae, impressed, intersecting spiral lines moderately spaced, pale yellow to red; spire turriform, almost exactly conical, apex obtuse. Whorls seven, somewhat flattened, suture a little flattened, disjunct, distinct crest next to the columellar groove. Aperture scarcely oblique, oval, peristome scarcely expanded, almost labiate, flaring more basally.

Height 8.3 mm; width 4.5 mm.

var. *brunnescens*. Horn-brown colour,

interdum bifasciata, anfractibus paullo convexioribus, carina basali paullo magis distincta.

*Var. chrysostoma.* Anfr. paullo celerius accrescentibus ultimo magis convexo, colore vario: luteo-flava, carneo, rubello, apertura intus laete flava aut aurantiaca aut rubella.[page 20]

*Var. contracta.* Differt a var. praec., cui proxima, anfr. 6 1/2, labro validiore, basi magis effuso. Alt. 6,3, diam. 4 mm.

18. *Omphalotropis picta* Q. et Mlldff.

T. anguste perforata elongate pyramidata, tenuis, subpellucida, laevigata, nitens, rubello fulva flavido-marmorata; spira elongata, exacte conica. Anfr. 7 vix convexiusculi, sutura submarginata discreti, ultimus vix angulatus, basi crita compressa, bene exserta perforationi aproximata cinctus. Apert. fere verticalis, acuminato-ovalis, peristoma haud expansum, intus sublabiatur.

Alt. 5.5, diam. 3.20 mm.

19. *Omphalotropis ochthogyra* Q. et Mlldff.

T. anguste perforata, graciliter conico-turrita, tenuis, subpellucida, laevigata, lineolis spiralibus microscopicis indistincte

sometimes two-toned, whorls slightly convex, slightly more distinct basal carina.

*var. chrysostoma.* Whorls a little more quickly increasing in size, the body whorl more convex, colours various: yolk yellow, flesh-toned, reddish, aperture interior light yellow or orange or reddish.

*var. contracta.* Different from the preceding variety, which is otherwise closest in form, whorls 6.5, peristome stronger, the basal part more flaring. Height 6.3, width 4 mm.

18. *Omphalotropis picta* Q. et Mlldff.

Shell narrow perforation, elongate pyramidal, thin shelled, translucent, smooth, shiny, reddish brown with yellowish blotches; spire elongate, perfectly conical. Whorls seven almost convex, suture thin and discrete, last whorl almost angulate, flattened basal carina, well exsert nearest the perforation. Aperture almost vertical, acuminate oval, peristome not flaring, interior sublabiate.

Height 5.5 mm, width 3.20 mm.

19. *Omphalotropis ochthogyra* Q. et Mlldff.

Shell narrow perforation, a graceful conical turrete, thin shell, translucent, shiny, indistinct and microscopic crosshatched

decussata, burnneo-cornea, flavido-marmorata; spira turrata apice obtuso. Anfr. 8 lente accrescentes, sutura submarginata discreti, supremi convexiusculi, sequentes planiusculi, ultimus paullo convexior, infra medium obtuse angulatus, basi carina valida, bene exserta, perforationi approximata cinctus. Apert. fere verticalis, acuminato-ovalis, peristoma haud expansum, intus sublabiatum, basi ad carinam subeffusum, ad columellam profundiuscule sinuatum.

Alt. 6,5, diam. 3.5 mm.

*var. attenuata*, paullo gracilior. anfr. ultimo vix angulato, columella magis sinuata, lineolis spiralibus paullo magis distinctis. Alt. 6, diam. 3 mm.

20. *Omphalotropis laticosta* Q. et Mlldff.

T. angustissime perforata, graciliter elongato turrata, transverse striatula, lineis spiralibus confertis, tenuibus sed [page 21] distinctis decussata, costis transversis validis, latis, sat planis, albis eleganter sculpta, alternatim flavido- et frufu-strigata; spira gracillime elongato-conica apice obtuso. Anfr. 8 1/2 convexiusculi, ultimus infra medium subacute angulatus, basi laevigatus, crista sat distincta perforationi sat approximata cinctus. Apert. paulum obliqua, acuminato-ovalis, peristoma

spiral lines, horn brown, marbled in yellow; spire turrete, the apex obtuse. Whorls eight slowly expanding, suture thin and discrete, upper whorls convex becoming successively more flattened, the last whorl a little curved, submedially obtusely angulate, strong basal carina, strongly exsert near the perforation. Aperture almost vertical, acuminate oval, peristome quite expanded, almost labiate within, more flared basally, more curved near the columella.

Height 6.5 mm, width 3.5 mm.

*var. attenuata*, slightly smaller, a little slimmer, the last whorl less angulate, columella more curved, spiral lines a little more distinct. Height 6 mm, width 3 mm.

20. *Omphalotropis laticosta* Q. et Mlldff.

Shell very narrowly perforate, gracefully elongated turrete, transverse striae, compact spiral lines, slender but distinctly crosshatched, strong wide but flattened costae, elegantly carved out in white, alternating yellow and reddish stripes; graceful elongate conical spire, apex obtuse. Whorls 8.5 convex, the last whorl submedially subacutely angulate, below this angle the basal portion is smooth, columellar groove fairly distinct. Aperture a little oblique, acuminate oval, peristome

obtusum, expansiusculum, intus  
sublabiatum.

Alt. 5,75, diam. 2, 5 mm.

21. *Omphalotropis latilabris* Q. et Mlldff.

T. aperte perforata, conico-ovata, solidula, plicis sat confertis flexuosis et lineis spiralibus elevatis paullum distantibus sculpta, flavo- aut fulvo-cornea aut brunnea, interdum bitaeniata; spira sat elate conoidea lateribus paullulum convexiuxculis apice acutulo. Anfr. 6 planulati, carina bene exserta cincti, sutura profunde canaliculata discreti, ultimus magnus, spiram subaequans, basi crista compressa, valida, subcrenulata a perforatione sat remota cinctus. Apertura parum obliqua, acuminato-ovalis, peristoma duplex, internum continuum, superne solutum, paullum expansum, externum pro genere late expansum, ad insertionem recedens, subalatum, basi ad cristam longiuscule effusum, auriculatum. Operculum normale.

Alt. 7,5, diam. 6 mm.

22. *Omphalotropis quadrasi* Mlldff.

T. sat aperte perforata, sat depresso turbinata, solidula, transverse striata, lineis spiralibus elevatis confertis et costis validis distantibus flexuosis subtus evanescentibus

obtuse, a little flaring, not quite labiate.

Height 5.75 mm, width 2.5 mm.

21. *Omphalotropis latilabris* Q. et Mlldff.

Shell wide perforation, ovate conical, solid, fairly compactly coiled with moderately separated and elevated spiral lines, a yellow or brownish horn or brown, sometimes as two stripes; a rather elevated cone-like spire, the sides a little convex, apex acute. Whorls six, flattened, carina quite exsert, suture a deep discrete groove, last whorl quite large, whorls subequal, a flattened and crenulate basal carina surrounding at some distance from the perforation. Aperture a little oblique, acuminate oval, double peristome, continuous internally, separated from the coil above, a little bit flared, rather widely so for a member of the genus, ..., subalate, at the base confluent with the basal carina, auriculate. Operculum ordinary [for the genus].

Height 7.5 mm, width 6.0 mm.

22. *Omphalotropis quadrasi* Mlldff.

Shell fairly open umbilicus, somewhat depressed turbinata, solid, transverse striae, lightly engraved with elevated, well-spaced, wavy spiral lines, horn brown or

sculpta, corneo-fulva aut brunnea aut flava, interdum marmorata; spira fere exacte conica, apice obtusulo. Anfr. 6, supremi convexi, reliqui ad suturam profunde canaliculatam angulati, fum fere plani, ultimus ad peripheriam carina acuta eleganter undulata et basi crista a perforatione valde remota, valde elevata, compressa, crenata cinctus. Apertura sat obliqua, acuminato-ovalis, peristoma duplex, internum continuum, superne appressum, expansiusculum, externum late expansum, superne ecisum, subalatum, ad carinam canaliculatum, ad columellam attenuatum. Operculatum normale.

Alt. 6, diam. 5,75 mm.

23. *Omphalotropis elegans* Q. et Mildff.

T. anguste perforata, elate turbinata, tenuis, subpellucida, costulis filiformibus distantibus sculpta, pallide conrea; spira exacte conica, apice acutulo. Anfr. 6 convexi, sutura profunda discreti, ultimus ad peripheriam carina tenui, ad aperturam evanescente, altera basali valida a perforatione sat remota cinctus. Apertura parum obliqua, ovalis, sat excisa, peristoma rectum, vix labiatum, ad columellam profundiuscule sinuatum.

Alt. 4,25, diam. 6 mm.

brown or yellow, sometimes marbled; spire almost exactly conical, apex obtuse. Whorls six, initially convex, then the rest with deep, angular suture and whorls flattened, the last whorl with an acute elegant undulating carina and a basal crest that is far from the umbilicus, very elevated, compressed and crenulate. Aperture fairly oblique, acuminate oval, two layered, ..., subalate, grooved at the basal carina, ...

Height 6 mm, width 5.75 mm.

23. *Omphalotropis elegans* Q. et Mildff.

Shell narrow umbilicus, super turbinate, thin, translucent, widely spaced filiform costae, clear horn in colour; spire exactly conical, apex acute. Whorls six, convex, with discrete deep suture, on the body whorl towards the periphery a faint angulation fading towards the aperture, additional well-developed carina somewhat removed from the umbilicus. Aperture a little oblique, oval, a little exsert, peristome blunt, scarcely labiate, towards the columella somewhat curved.

Height 4.25 mm high, width 6.0 mm.

24. *Omphalotropis suturalis* Q. et Mlldff.

T. rimata, ovato-conica, solida, subtiliter striatula, flava; spira gradata, convexo-conoidea. Anfr. 6 ad suturam impressam albotaeniatus, basi pallens, carina parum distincta, rimae maxime approximata cinctus. Apertura varticalis, acuminato-ovalis, peristoma rectum, obtusum, intus labiatum, basi subeffusum, ad columellam sinuatum. Operculum normale.

Alt. 5, diam. 3,5 mm.

[End Quadras and Moellendorff 1894a]

24. *Omphalotropis suturalis* Q. et Mlldff.

Shell rimate, ovate conical, solid, subtly striatulate, yellow; gradually ascending, convex-conical spire. Whorls six with a impressed white-lined suture, convex but laterally compressed, the last whorl peripherally scarcely angulated, for the most part with a white stripe, pale basally, carina a little bit distinct, .... Aperture vertical, acuminate oval, peristome blunt, obtuse, internally labiate, base almost flaring, curved columella. Normal operculum.

Height 5 mm, width 3.5 mm.

**From: Quadras Moellendorff 1894. Diagnoses specierum novarum a J. F. Quadras in insulis Mariannis collectarum scripserunt. *Nachrichtenblatt der Deutschen Malakozoologischen Gesellschaft* 26: 33-42.**

[...]

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[...]

31. *Heteropma quadrasi* Mlldff.

T. anguste umbilicata, turbinata, solidula transverse striatula, lineis spiralibus minutis confertis decussata, costis validis sigmoideis distantibus eleganter sculpta; spira sat elevata, conoidea, lateribus paullum concavis apice obtuso. Anfr. 5 convexi, ad suturam valde profundam, subcanaliculatam subangulati, tum planiusculi, ad suturam inferiorem obtuse cristati, ultimus ad peripheriam carina bene exserta, valida, obtusa, crenata, altera minore media basi, utraque usque ad peristoma producta cinctus. Apert. fere verticalis, late elliptica, peristoma multiplicatum, incrassatum, haud expansum. Operculi lamina externa parum concava, radiatim striata, nucleo corneo, nitente, interna vix concava.

Alt. 3.33 diam. 3,25 mm.

32. *Heteropma pyramis* Q. et Mlldff.

T. sat aperte umbilicata, pyramidata, solidula, subtilissime striata, costulis tenuibus

31. *Heteropma quadrasi* Mlldff.

Shell rather open umbilicus, pyramidal, solid, quite subtle striae, narrow flattened and widely-spaced costae, horn brown; spire very elevated, almost exactly conical, fairly obtuse apex. Whorls six, slowly increasing in size, curving towards the upper suture very deeply and discretely, a subangular groove, then a little bit flattened, towards the inferior suture as a blunt crest, and on the last whorl towards the periphery a strong, blunt, crenulate and exsert carina, and the other, a lesser, medial basal carina, both extending to the peristome. Aperture almost vertical, rather elliptical, peristome in multiple layers, thickened, not spreading....

Height 3.3 mm, width.2 mm.

32. *Heteropma pyramis* Q. et Mlldff.

Shell 2.8 mm high, 2.0 mm wide, rather open umbilicus, pyramidal, solid, subtlest of



foliaceis, distantibus sculpta, corneo-brunnea; spira valde elevata, fere exacte conica apice sat obtuso. Anfr. 6 lente accrescentes, sutura profunde canaliculata discreti, convexi sed lateraliter compressi, ultimus carinis 2 ad peripheriam et media [page 37] basi obtusis sed bene exsertis cinctus, costulis in carinis in alas longiusculas elongatis. Apertura verticalis, late elliptica, peristoma rectum obtusum. Operculi lamina externa valde concava, marginibus andractuum sat elevatis.

Alt. 2,75, diam. 2 mm.

33. *Heteropma tuberculatum* Q. et Mlldff.

T. perforata, conico-turrita, solida, lineis spiralibus valde confertis decussata, costis transversis valde distantibus, validis, subflexuosis sculpta, corneo-fulva; spira valde elevata, fere exacte conica, apice obtusulo. Anfr. 5 1/2 sutura profunda subcanaliculata disjuncti, convexi, lateriliter compressi, ultimus ad peripheriam et media basi carinis 2 obtusis sed bene exsertis per costas tuberculatis cinctus. Apert. verticalis, ellipsoidea, peristoma rectum, obtusum, margo superus ad insertionem recedens, medio protractus, columellaris profundiuscule sinuatus. Operculum illi M. quadrasi simile.

striae, slender flattened costae widely spaced, horn brown; spire very elevated, almost exactly conical, the apex fairly obtuse. Whorls six, slowly increasing in size, suture deep and distinct, convex but a little compressed laterally, the last whorl with two carina, peripheral and medial, the bottom one a pronounced exsert band, somewhat alate where it crosses the costae. Aperture vertical, spreading and elliptic, peristome quite blunt. Operculum external lamina very concave, the margins elevated and separated.

Height 2.75 mm, width.2 mm.

33. *Heteropma tuberculatum* Q. et Mlldff.

Shell perforate, conico-turritiform, solid, with closely spaced intersecting spiral lines, costae well separated, strong, slightly winding, horn yellow; spire well elevated, almost exactly conical, apex obtuse. Whorls 5.5, convex, laterally compressed, suture a deep disjunct groove, the last whorl with two thick carina but more exert at the costae. Aperture vertical, ellipsoidal, peristome blunt, obtuse, the upper margin receding, the middle extended and the columella somewhat deeply curved. Operculum similar to that of [*H.?*] *quadrasi*.

Alt. 3,1, diam. 2,5 mm.

34. *Heteropma turritum* Q. et Mlldff.

T. anguste umbilicata, elongate conico-turrita, solidula, lineis spiralibus tenuibus valde confertis decussata, costis crassis valde distantibus, subtus tenuioribus sculpta, corneo-brunnea; spira valde elevata, exacte conica apice obtuso. Anfr. 6 lente accrescentes, sutura profunde canaliculata discreti, convexi, lateraliter compressi, ultimus carinis 2 crassiusculis, obtusis, bene exsertis, confertim tuberculatis cinctus, antice breviter solutus. Apertura verticalis, ellipsoidea, peristoma rectum, obtusum, multiplicatum, sat porrectum.

Alt. 3, diam. 2 mm.

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35. *Heteropma fulvum* Q. et Mlldff.

T. anguste umbilicata, turbinata, solidula, subtilissime striata, costulis tenuibus foliaceis distantibus sculpta; spira sat elevata lateribus fere strictis, apice obtusulo. Anfr. 5 perconvexi, sutura profunda subcanaliculata discreti, ultimus ad peripheriam et media basi carinis obtusis sed bene exsertis, per costulas subalatis cinctus. Apertura sat obliqua, subcircularis, peristoma simplex, obtusum, margo superus ad insertionem valde recedens, fere excisus, medio profunde

Height 3.1 mm, width 2.5 mm.

34. *Heteropma turritum* Q. et Mlldff.

Shell 3.0 mm high, 2.0 mm wide, narrow umbilicus, elongate conico-turritiform, with solid, narrow, closely spaced, intersecting spiral lines, very thick widely spaced costae, thinner beneath, horn brown; spire well elevated, exactly conical, apex obtuse. Whorls six, slowly expanding, convex, laterally compressed, suture a deep discrete groove, the last whorl with two somewhat thick, exsert carina with closely spaced tuberculae. Aperture vertical, ellipsoidal, peristome blunt, obtuse, multiple, extended.

Height 3 mm, width 2 mm.

35. *Heteropma fulvum* Q. et Mlldff.

Shell umbilicus narrow, turbinate, solid, with the subtlest of striae, slender, widely spaced ribbing, flattened costae, spire fairly well elevated, apex obtuse. Five convex whorls, deep distinct sutures, towards the base becoming surrounded by thick, but well-exserted carina, peripherally and mid-basally, subalate where it crosses the costae. Aperture rather oblique, subcircular, peristome simple, obtuse, the upper margin sinusoidal. The operculum like that of *H. quadrasi*.

sinuatus. Operculum illi H. quadrasi simile.

Diam. 2, 5, alt. 2,75 mm.

Height 2.5 mm, width 2.75 mm.

36. *Heteropma glabratum* Q. et Mlldff.

T. perforata, turbinata, vix striatula, subnitens, luteo-cornea; spira sat elevata, fere exacte conica, apice obtusulo. Anfr. 5 convexi, sutura profunda discreti. Apert. Fere verticalis, ovato-rotundata, peristoma simplex rectum obtusum. Diam. 2,3, alt. 2.3 mm.

36. *Heteropma glabratum* Q. et Mlldff.

Shell perforate, turbinate, scarcely striatulate, almost shiny, light horn colour, spire rather elevated, almost conical, apex obtuse, five convex whorls, suture deep and distinct, aperture nearly vertical, rounded ovate, simple unreflexed lip, peristome blunt. Width 2.3 mm, height 2.3 mm.

[...]

37. *Quadrasiella mucronata* Mlldff.

T. late et aperte umbilicata, depressa, plerumque fere discoidea, tenuis, lineis spiralibus valde confertis et costulis tenuibus foliaceis sat distantibus sculpta, corneo fulva; spira plus minusve elevata, lateribus [page 39] lateribus concavis, apice mucronato, obtusulo, rubello. Anfr. 5 convexi, sat celeriter accrescentes, sutura profunde canaliculata discreti, ultimus prope suturam obtuse angulatus, ad et infra peripheriam carinis obtusis sed exsertis cinctus, costulis in carinis elongatis, inter carina planulatus. Apertura fere verticalis, subcircularis, peristoma rectum obtusum. Operculum acuminato-ovale, anfr. 4 transverse plicato-striati, ultimus valde dilatatus undique apertuam suerans et circa

37. *Quadrasiella mucronata* Mlldff.

Shell wide and open umbilicus, shell flattened, for the most part discoidal, thin shelled, very strong and compact spiral lines, thin costae rather widely spaced, horn brown; spire very little elevated, ..., apex pointed, obtuse, reddish. Whorls five, convex, ascending quickly enough, discrete deep groove-like suture, last whorl becoming obtusely angular, near and below the periphery carinate, the costae crossing the carina elongate, flattened in between. Aperture almost vertical, subcircular, peristome quite blunt. Operculum acuminate oval, four plicate striatulate whorls, the last very broad, on all sides curving over the peristome.

peristoma revolutum, superne longe patens.

Diam. maj. (sine operculo) 4 alt. 2,25 apert. diam. 1,5, operculi long. 2, lat. 1,66 mm.

Forma conoidea: Diam 3,25, alt. 3 mm.

38. *Quadrasiella clathrata* Mlldff.

T. anguste sed aperte umbilicata, depresso conica, solidula, lineis spiralibus elevatis et costulis acutis sat confertis clathrata, undique pilis brevibus hirsuta, corneo-brunnea; spira sat elevata, lateribus paullum concavis, apice acutulo rubello. Anfr. 5 convexi, sutura profunda discreti, ultimus paullum lateraliter compressus haud carinatus. Apert. fere verticalis, late ovales, peristoma rectum, obtusum. Operculum extus valde concavum, anfr. 4, ultimus latissimus plicato-striatus, margine crenulatus, haud reflexus, intus lamellatim transverse costatus.

Diam. maj. 4, alt. 3,5 apert. long. 1.75, lat. 1,66, operc. long. 2,5, lat. 2 mm.

[...]

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[...]

40. *Truncatella subauriculata* Q. et Mlldff.

T. rimata, cylindraneo-turrita, solidula, sat distanter costata, costis 23-25 in anfr. ultimo, luteo-albida; spira sensim attenuata.

Maximum width 4.0 mm wide (without operculum), height 2.25 mm, aperture width 1.5 mm, operculum 2.0 mm by 1.66 mm

Conical form: width 3.25 mm, height 3 mm.

38. *Quadrasiella clathrata* Mlldff.

Shell always with a wide open umbilicus, shell depressed conical, solid, elevated spiral lines and sharp costae giving a lattice appearance, hairy with short hairs all over, horn brown; spire fairly elevated, apex acute and reddish. Whorls five convex, deep discrete suture, last whorl a little bit laterally compressed, not carinate. Aperture about vertical, wide oval, peristome blunt, obtuse. Operculum externally very concave, of four whorls, the last one with wide folds, margin crenulate, not reflexed, internally lamellate with transverse costae.

Maximum width 4 mm, height 3.5 mm, aperture 1.75 mm by 1.66 mm, operculum 2.5 mm by 2 mm.

40. *Truncatella subauriculata* Q. et Mlldff.

Shell rimate, subcylidric turritiform, opaque, rather separated costa with 23 to 25 on the body whorl, yellowish white; spire

Anfr. superst. 5 convexi, sutura profunda discreti, ultimus basi crista compressa valida usque ad peristoma producta cinctus. Apertura verticalis, acuminato-ovalis, peristoma simplex, continuum, superne breviter adnatum, sat expansum, basi ad cristam leviter sinuatum, breviter effusum.

Operculum ut praec.

Alt. 10, diam. maj. 4 mm.

41. *Truncatella expansilabris* Q. et Mliff.

T. vix rimata, turrita, solidula, subpellucida, costis validis substrictis interstitia aequantibus, ad suturas subtuberculatis - 31 in afr. ultimo - sculpta, luteo-alba. Anfr. qui superstunt 5 convexi, sutura marginata discreti, ultimus antice paulum ascendens, basi crista crassula paulum exserta usque ad peristoma producta cinctus. Apertura verticalis, acuminato-ovalis, peristoma extus late expansum, basi sat effusum, profundiuscule sinuatum, ad columellam sat expansum, superne expansiusculum, breviter adnatum. Operculum extus valde convexum, radiatim plicatum.

Alt. 10,5, diam. 4,5 mm.

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42. *Truncatella (Taheitia) parvula* Q. et Mliff.

T. imperforata, fere cylindrica, solidula, subpellucida, alba, costis validis latiusculis

gradually narrowing. Whorls five, convex, deep discrete suture, .... Aperture vertical, acuminate oval, peristome simple, continuous, adjoining the whorl above, somewhat expanded, the base gently reflexed. Operculum as the preceding species.

Height 10 mm, maximum width 4 mm,

41. *Truncatella expansilabris* Q. et Mliff.

Shell barely rimate, turrete, little bit solid, not quite translucent, strong narrow ribs with equally wide interstices, towards the sutures becoming subtuberculate, 31 ribs on the basal whorl, yellowish white. Basal whorls five rather convex, suture with a discrete margin, the last whorl in front slightly ascending, .... Aperture vertical, pointed oval, peristome exterior widely expanded, more flaring basally, a little bit folded at the bottom, towards the columella less expanded, the top the least expanded and joined to the whorl above. Operculum externally very convex with radiating folds.

Height 10.5 mm, width 4.5 mm.

42. *Truncatella (Taheitia) parvula* Q. et Mliff.

Shell imperforate, almost cylindrical, fairly solid, not quite translucent, the strong ribs

distantibus - 13-14 in afr. ultimo - sculpta. Anfr. superst. 4 planiusculi, ad suturam perprofundam stubtabulati, ultimus basi crista bene exserta crenulata in labrum externum desinente cinctus. Apertura verticalis, oblique ovalis, peristoma duplex, externum sat expansum, valde incrassatum, basi cum crista junctum, internum valde porrectum undique solutum expansiusculum.

Alt. 5,5, diam 2,5 mm.

43. *Truncatella (Taheitia) lamellicosta* Q. et Mildff.

T. non rimata, subcylindrico-turrita, tenuis, costis tenuibus, acutis sat elevatis distantibus - 18 in anfr. ultimo - sculpta. Anfr. super st. 5 convexi, lente accrescentes, sutura profunda discreti, ultimus basi crista valida, valde compressa, lamellatim costata cinctus. Apertura verticalis, oblique ovalis, peristoma simplex, undique solutum, sat expansum, marine dextro sat effuso.

Alt. 7, diam. 2,75 mm.

44. *Truncatella (Taheitia) alata* Q. et Mildff.

T. imperforata, elongate turrita, solidiuscula, lamellose costata, costis 22 in anfractu ultimo, albida; spira sensim attenuata, decollata. Anfr. qui supersunt 6 convexi,

well spaced with 13 to 14 on the basal whorl. The bottom whorls four, not a little flattened, .... Aperture vertical, slanted oval, peristome duplex, the external one rather expanded, very thick, ..., the internal one very extended ....

Height 5.5 mm in, width 2.5 mm.

43. *Truncatella (Taheitia) lamellicosta* Q. et Mildff.

Shell not rimate, subcylindrical, turrite, narrow, ribs narrow, acute, sharp, rather separated - 18 on the last whorl. The lower whorls five, convex, slowly ascending, suture deep and discrete, strongly crest-like atop the last whorl, very flattened, .... Aperture vertical, slanted oval, peristome simple and free all around, rather expanded, the right margin rather flaring.

Height 7 mm, width 2.75 mm.

44. *Truncatella (Taheitia) alata* Q. et Mildff.

Shell shell imperforate, elongate turritiform, rather solid, ribbed, 22 ribs on the last whorl, whitish; spire gradually attenuating, then decollate. Six lower whorls, suture

sutura profunda disjuncti, ultimus basi haud cristatus. Apertura verticalis, anguste ovalis, peristoma duplex, internum sat expansum, incrassatum, subporrectum, externum latissime expansum, sinuosum, superne magis dilatatum, alae instar patens. Operculum cartilagineum, extus convexum, costulis lamelliformibus radiatis ornatum.

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Alt. 10, diam. fere 3, apert. c. perist. lat. 3, long. fere 4, alt. 3,5 mm.

45. *Georissa elegans* Q. et Mlldff.

T. conico-globosa, solidula, transverse striatula, corneo-fulva; spira sat elevata, lateribus convexiusculis, apice acutulo glabrato. Anfr. 4 convexi, medio subcompressi. pone suturam et infra peripheriam angulati, in angulis costulis aliformibus curvatis sculpti. Apertura diagonalis, truncato-ovalis, peristoma simplex obtusum, intus sublabiatum, margine columellari reflexo, callo latiusculo apresso. Operculum normale.

Alt. 2,5, diam, 2,5 mm.

46. *Georissa biangulata* Q. et Mlldff.

T. globoso-conica, tenuis, subtiliter striata, costulis tenuissimis membranaceis valde deciduis sculpta, corneo-lutescens aut

deep, disjunct, appearing crest-like above the last whorl. Aperture vertical, narrow oval, peristome is duplex, the internal one quite expanded, a little thickened, the external one widely expanded, wavy, the top part more spread out, like opened wings. Operculum cartilaginous, externally convex with lamelliform ribs radiating ornately.

Height 10 mm, width about 3 mm, width of aperture at the peristome 3 mm, across the peristome about 4 mm and 3.5 in height,

45. *Georissa elegans* Q. et Mlldff.

Shell conical globose, thick, transverse striations, brownish horn colour; spire fairly elevated, laterally a bit convex, apex acute and smooth. Whorls four, convex, slightly flattened medially, forming an angle below the suture along which run curved, wing-like costae. Aperture oblique, truncated oval, peristome simple and blunt, within sublabiate, columellar margin reflexed and flattened. Operculum typical.

Height 2.5 mm, width 2.5 mm.

46. *Georissa biangulata* Q. et Mlldff.

Shell globose conic, thin, fine striae, very thin membraneous costae sticking out, whitish or yellowish horn colour. Whorls four,

flavescens. Anfr. 4 convexi, lateraliter compressi, supra et infra peripheriam obtuse angulati, in angulis alis brevibus curvatis ornati. Apertura valde obliqua, late ovalis, truncata, peristoma rectum obtusum, margine columellari reflexo, appresso.

Alt. 1,75, diam. 1,5-1,66 mm.

[...]

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convex, laterally flattened with obtuse angles resulting above and below, at the angles, short wing-like projections. Aperture very oblique, a wide oval, truncate, peristome quite blunt, columellar margin reflected and appressed.

Height 1.75 mm, width 1.5 to 1.66 mm.





