

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

Translated and annotated by

Alexander M. Kerr

University of Guam Marine Laboratory Technical Report 144

January 2013

(Revised March 2025)



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!

[This is a revised and expanded version of UOGML Technical Report 144 first released in January 2013. It now includes translations of all the descriptions from Quadras & Moellendorff (1894a–b) and another from Zilch (1957), as well as small edits to the original set of translations and text. Revision and re-release date: March 2025.]

SUMMARY

This report provides annotated translations in English for all of the French, German, and Latin taxonomic descriptions of native land snails from the island of Guam, Mariana Islands, western Micronesia. The papers describe 51 species, for a total of 60 descriptions when including new genera, subgenera, subspecies, and varieties. All of these descriptions are translated into English here. This constitutes just over 80% of the described species diversity native to Guam and the other islands of the Mariana archipelago.

TABLE OF CONTENTS

Acknowledgements	iii
Summary	v
Introduction	1
About this translation	3
Discussion	4
Literature cited	7
Quoy & Gaimard (1832)	
<i>Cyclostoma erosa</i> Quoy et Gaim.	10
Pfeiffer (1857)	
<i>Partula Mastersi</i> Pfr.	12
<i>Succinea Guamensis</i> Pfr.	12
<i>Hydrocena (Omphalotropis) Guamensis</i> Pfr.	13
Quodras & Möllendorff (1894a)	
<i>Lamprocystis (Microcystina) denticulata</i> Q. et Mlldff.	14
<i>Patula fusca</i> Q. et Mlldff.	14
<i>Patula rotula</i> Q. et Mlldff.	15
<i>Patula Quodراسi</i> Mlldff.	16
<i>Endodonta mariannarum</i> Q. et Mlldff.	16
<i>Endodonata heptatptychia</i> Q. et Mlldff.	17
<i>Partula quodراسi</i> Mlldff.	18
<i>Tornatellina quodراسi</i> Mlldff.	19
<i>Tornatellina (Lamellina) microstoma</i> Q. et Mlldff.	19
<i>Tornatellina (Lamellina) subcylindrica</i> Q. et Mlldff.	20
<i>Vertigo (Ptycholchilus) quodراسi</i> Mlldff.	21

<i>Succinea (Neritostoma) quadrasi</i> Mlldff.	21
<i>Succinea (Amphibina) piratarum</i> Q. et Mlldff.	22
<i>Melampus (Signia) quadrasi</i> Mlldff.	22
<i>Palaina taeniolata</i> Q. et Mlldff.	23
<i>Palaina hyalina</i> Q. et Mlldff.	23
<i>Omphalotropis elongatula</i> Q. et Mlldff.	24
<i>Omphalotropis elongatula</i> var. <i>brunnescens</i> Q. et Mlldff.	24
<i>Omphalotropis</i> var. <i>chrysostoma</i> Q. et Mlldff.	25
<i>Omphalotropis</i> var. <i>contracta</i> Q. et Mlldff.	25
<i>Omphalotropis picta</i> Q. et Mlldff.	25
<i>Omphalotropis ochthogyra</i> Q. et Mlldff.	25
<i>Omphalotropis</i> var. <i>attenuata</i> Q. et Mlldff.	26
<i>Omphalotropis laticosta</i> Q. et Mlldff.	26
<i>Omphalotropis latilabris</i> Q. et Mlldff.	27
<i>Omphalotropis quadrasi</i> Mlldff.	28
<i>Omphalotropis elegans</i> Q. et Mlldff.	29
<i>Omphalotropis suturalis</i> Q. et Mlldff.	29
Quadras & Möllendorff (1894b)	
<i>Omphalotropis submaritima</i> Q. et Mlldff.	31
<i>Omphalotropis (Solenomphala) conica</i> Q. et Mlldff.	31
<i>Chalicopoma</i> Mlldff.	32
<i>Omphalotropis (Chalicopoma) semicostulata</i> Q. et Mlldff.	32
<i>Omphalotropis (Chalicopoma) laevigata</i> Q. et Mlldff.	33
<i>Omphalotropis (Scalinella) gracilis</i> Q. et Mlldff.	33
<i>Omphalotropis (Scalinella) pilosa</i> Q. et Mlldff.	34
<i>Omphalotropis (Scalinella) pilosa</i> var. <i>pilosella</i> Q. et Mlldff.	35
<i>Heteropoma</i> Mlldff.	35

<i>Heteropoma quadrasi</i> Mlldff.	35
<i>Heteropoma pyramis</i> Q. et Mlldff.	36
<i>Heteropoma tuberculatum</i> Q. et Mlldff.	37
<i>Heteropoma turritum</i> Q. et Mlldff.	37
<i>Heteropoma fulvum</i> Q. et Mlldff.	38
<i>Heteropoma glabratum</i> Q. et Mlldff.	39
<i>Quadrasiella</i> Mlldff.	39
<i>Quadrasiella mucronata</i> Q. et Mlldff.	39
<i>Quadrasiella clathrata</i> Q. et Mlldff.	40
<i>Truncatella mariannarum</i> Q. et Mlldff.	41
<i>Truncatella subauriculata</i> Q. et Mlldff.	42
<i>Truncatella expansilabris</i> Q. et Mlldff.	42
<i>Truncatella (Taheitia) parvula</i> Q. et Mlldff.	43
<i>Truncatella (Taheitia) lamellicosta</i> Q. et Mlldff.	43
<i>Truncatella (Taheitia) alata</i> Q. et Mlldff.	44
<i>Georissa elegans</i> Q. et Mlldff.	45
<i>Georissa biangulata</i> Q. et Mlldff.	45
<i>Georissa laevigata</i> Q. et Mlldff.	46
Zilch (1953)	
<i>Palaina (Palaina) taeniolata apapaensis</i> Zilch	47

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 all English translations from French, German, and primarily Latin descriptions, primarily by the earliest and most prolific collectors and taxonomists 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 of plants and animals new to Western science. On each of their global circumnavigations, they stopped at Guam for several weeks and collected, among many other organisms, several land snails. On the other hand, Ludwig Karl Georg Pfeiffer, often as Louis 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 freshwater species, appears not to have visited Guam, yet described many species collected from there by his colleague Quadras. von



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).

Möllendorff's profession in the German consulate office enabled his travels and his correspondingly geographically wide studies of land snails, including those of the Philippines, beginning in 1886. Indeed, by his departure from that archipelago 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.

Adolf Zilch was an important German malacologist (Janssen 2006) who worked at the Senckenberg Museum, which houses most of Möllendorff's type specimens. As part of cataloguing the museum's vast collection of malacological type, Zilch designated lectotypes from Möllendorff's syntype series of Mariana material and in one case described a new subspecies, which is translated here.

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 55 descriptions in total when including the two new genera, one subgenus, and all five varieties. All of the material for their papers was apparently collected from Guam by Quadras (Möllendorff 1900). 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 miniscule 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" (= Guam) 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). Thus, I include the original Latin and French descriptions with their translations together as columns of parallel text. I also include a single description of a subspecies described by Zilch (1953). This publication is still under copyright, but is used under the fair use clause in that it is reproduced in a limited fashion in the service of research and education.

My knowledge of French, German, and Latin is limited. Hence, I relied on the aid of dictionaries and on-line translators, primarily Google Translate and, ultimately, ChatGPT-4o (OpenAI 2023). 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 suspect). As evident from the Table of Contents, I have organised this report into five 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 embedded and 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, not permitted diacrits, and specific epithets are not capitalised. I make no nomenclatural emendations.

Finally, there appears to be a *lapsus* by the author or typesetter: Concerning the description of *Heteropoma tuberculatum*, Quadras & Möllendorff (1894b, p. 37) write "*Operculum illi M. quadraasi simile.*"; the authors undoubtedly intend to refer to the previous and congeneric species *H. quadraasi*, hence my rendering.

All of Quoy and Gaimard's (1832) and Pfeiffer's (1857) few descriptions of endemic snails are included, a total of four, as are all of the 47 species descriptions in Quadras & Möllendorff (1894a-b). The single subspecies described by Zilch (1957) rounds out the list. Sometimes a 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 also employed translations available in Pilsbry & Cooke's (1915-1916, 1916-1918) *Manual of Conchology* for four of Quadras & Möllendorff's original descriptions: *Tornatellina quadraasi*, *T. (Lamellina) microstoma*, *T. (L.) subcylindrica*, and *Vertigo (Prychochilus) quadraasi*.

DISCUSSION

Of the five authors considered here, only Quadras appears to have spent time collecting on Guam. Despite Quadras's short time on the island of about two months (Möllendorff 1900), he found 47 species of land snails new to science (as well as many other new terrestrial and aquatic species of animals and plants). His haul of snails constitutes about 80% of the currently described fauna endemic to the Mariana 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 Möllendorff 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 original 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.

These high abundances appear to have continued into the mid 20th c. as evidenced by the large collections amassed then by Yoshio Kondo and colleagues of partulids (e.g., Kondo 1970) and endodontids (Solem 1982). Collecting that many specimens of that many species would take far longer today if even possible. This qualitatively obvious 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 at least the latter quarter of the 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 non-Quadras & Möllendorf species endemic to the Mariana Islands, including those restricted to Guam, are undoubtedly now extinct, such as *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, 1957, 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 Möllendorf's 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 below of a snail is from the title page of Quadras (1893).

Alexander M. Kerr
alexander.kerr@aya.yale.edu
Marine Laboratory
University of Guam
Christmas Day 2012
[Revised Canada Day 2023]



LITERATURE CITED

- Abbott, R. T. 1949. New syncerid mollusks from the Marianas [sic] Islands (Gastropoda, Prosbranchiata, Synceridae). *Occasional Papers of Bernice P. Bishop Museum* 19: 261-274.
- Bauman, S. 1996a. *Diversity and Decline of Land Snails on Rota, Mariana Islands*. Masters Thesis, University of Guam.
- Bauman, S. 1996b. Diversity and decline of land snails on Rota, Mariana Islands. *American Malacological Bulletin* 12: 13–27.
- d'Urville, D. 1834. *Voyage de découvertes de L'Astrolabe: Exécuté par ordre du Roi, pendant les années 1826-1827-1828-1829, sous le commandement de M. J. Dumont D'Urville, Capitaine de vaisseau*. Philologie. Tome 1, pt. 2. Paris: Le Ministère de la Marine.
- Freycinet, L. 1825. *Voyage Autour du Monde, Entrepris par Ordre du Roi ... Exécuté sur les Corvettes de S. M. l'Uranie et la Physicienne Pendant les Annees 1817, 1818, 1819 et 1820*. Paris.
- Harry, H. W. 1966. Land snails of Ulithi Atoll, Caroline Islands: A study of snails accidentally distributed by man. *Pacific Science* 20: 212-223.
- Hirtle, P. B. 2012. *Copyright Term and the Public Domain in the United States, 1 January 2012*. <http://copyright.cornell.edu/resources/publicdomain.cfm>. [Accessed 23 August 2012]
- Hopper, D. R. and B. D. Smith. 1992. Status of tree snails (Gastropoda: Partulidae) on Guam, with a resurvey of sites studied by H.E. Crampton in 1920. *Pacific Science* 46: 77-85.
- Janssen, R. 2006. Obituary: Adolf Zilch. *Archiv für Molluskenkunde* 135: 1-21.
- Kobelt, W. 1903. Otto Franz von Moellendorff. *Journal of Malacology* 10: 122-125.
- Kondo, Y. 1970. Some aspects of Mariana Islands Partulidae (Mollusca, Pulmonata). *Occasional Papers of Bernice P. Bishop Museum* 24: 73–90.
- Möllendorf, O. F. 1900. The land shells of the Caroline Islands. *Journal of Malacology* 7: 101-126.

- OpenAI. 2023. *ChatGPT-4o* (Mar 14 version). <https://chat.openai.com/chat> [Accessed 21 July 2023].
- 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
- Pilsbry, H. A. & C. M. Cooke, Jr. 1915-1916. Appendix to Amastridae. Tornatellinidae. *Manual of Conchology*, 2nd Series 23.
- Pilsbry, H. A. & C. M. Cooke, Jr. 1918-1920. Pupillidae (Gastrocoptinae, Vertigininae). *Manual of Conchology*, 2nd Series 25.
- Quodras, J. F. 1893. *Catálogo de la colección de moluscos de Filipinas existente en la inspección general de montes*. Manila: Colegio de Santo Tomás.
- Quodras, J. F. & O. F. Möllendorf. 1894. Diagnoses specierum novarum a J. F. Quodras in insulis Mariannis collectarum scripserunt. *Nachrichtenblatt der Deutschen Malakozoologischen Gesellschaft* 26: 13-22.
- Quodras, J. F. & O. F. Möllendorf. 1894. Diagnoses specierum novarum a J. F. Quodras in insulis Mariannis collectarum scripserunt. *Nachrichtenblatt der Deutschen Malakozoologischen Gesellschaft* 26: 33-42.
- Quoy, J. R. C. & J. P. Gaimard. 1832. *Voyage de la corvette l'Astrolabe: Exécuté par ordre du Roi, pendant les Années 1826-1827-1828-1829, sous le Commandement de J. Dumont d'Urville. Zoologie*. Volume II. Part 1. Paris: J. Tastu. 320 pp.
- Smith, B.D. 2008. Seven Decades of Disruption, Decline, and Extinction of Land Snails in Aguiguan, Mariana Islands. Report to the Division of Fish and Wildlife Commonwealth of the Northern Mariana Islands Saipan, CNMI. *University of Guam Marine Laboratory Miscellaneous Report* 116: 1-21.
- Solem, A. 1982. *Endodontoid land snails from Pacific Islands (Mollusca: Pulmonata: Sigmurethra)*. Part II. Families Punctidae and Charopidae, Zoogeography. Field Museum of Natural History, Chicago. 336 p.
- Spennemann, D. H. R. 2004. *An Annotated Bibliography of German Language Sources on the Mariana Islands*. Saipan, Commonwealth of the Northern Mariana Islands: Division of Historic Preservation. 351 p.

- Zilch, A. 1953. Die Typen und typoide des Natur-Museums Senckenberg, 9: Mollusca, Cyclophoridae, Diplommatininae. *Archiv Für Molluskenkunde* 82: 1-47.
- Zilch, A. 1957. Die Typen und typoide des Natur-Museums Senckenberg, 19: Mollusca, Cyclophoridae, Pupininae. *Archiv Für Molluskenkunde* 82: 41-56.
- Zilch, A. 1962. Die Typen und typoide des Natur-Museums Senckenberg, 26: Mollusca, Achatinellacea. *Archiv Für Molluskenkunde* 91: 77-94.
- Zilch, A. 1967. Die Typen und typoide des Natur-Museums Senckenberg, 36: Mollusca, Assimineidae. *Archiv Für Molluskenkunde* 96: 67-100.
- Zilch, A. 1973a. Die Typen und Typoide des Natur-Museums Senckenberg, 52. Mollusca: Hydrocenidae. *Archiv für Molluskenkunde* 103, 263-272.
- Zilch, A. 1973b. Die Typen und Typoide des Natur-Museums Senckenberg, 53. Mollusca: Truncatellidae. *Archiv für Molluskenkunde* 103: 273-282.
- Zilch, A. 1978. Die Typen und typoide des Natur-Museums Senckenberg, 60: Mollusca, Succineacea. *Archiv Für Molluskenkunde* 109: 109-136.

From: Quoy, J. R. C. & J. P. Gaimard 1832. Voyage de la corvette l'Astrolabe: exécuté par ordre du Roi, pendant les années 1826-1827-1828-1829 / sous le commandement de M. J. Dumont d'Urville. Zoologie. Tome II. Part 1.

[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 mufler 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, paucispire.

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 striga 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 eroso-punctulata; spira brevis, vertice subpunctiformi; anfr. vix 2 1/2, penultimus*

15. *Partula mastersi*, Pfr. Dextral shell, narrowly umbilicated, ovate-conical, somewhat solid, finely striated in a spiral pattern under low magnification, yellow, fleshy, or violet, sometimes with brown bands on upper whorls; conical spire, rather sharp; 5 whorls somewhat convex, the last one nearly equaling the spire, swollen downwards; upper part of the columella somewhat inflated, receding; oblique aperture, truncate-oblong; peristome thickened, evenly expanded all around, somewhat flattened, white or brownish-flesh colored.

Height 18 mm, width 9 2/3 mm.

Form *β*. Flesh-colored, the last whorl marked behind the peristome with a broad violet stripe, with a small, deep white tooth on the ventral side of the penultimate whorl.

Locality, Guam.

16. *Succinea guamensis*, Pfr. Conical-ovate shell, thin, rugulose-plicate and somewhat granulated, semitranslucent, pale horn-colored, irregularly eroded and punctuated with white; short spire, with a subpunctiform apex; barely 2 1/2 whorls, penultimate whorl

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]

convex, the last whorl about 3/4 of the length, barely narrowed at the base; oblique aperture, leaning in all directions, angular-ovate; simple peristome, with the margins joined by a thin callus, columellar margin slightly arched, thread-like.

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. Perforated shell, ovate-conical, somewhat solid, densely striated, opaque, fleshy, reddish with a marbled and banded pattern; conical spire, sharp; suture slightly channelled; 5 1/2 somewhat flattened whorls, the last one barely shorter than the spire, carinated below the middle, fortified around the perforation with a compressed keel; slightly oblique, oval aperture; thin peristome, with the right margin slightly expanded, the basal margin extending into an umbilical keel, columellar margin barely dilated.

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.

1. *Lamprocystis (Microcystina) denticulata* Q. et Mlldff.

T. imperforata, conoideo-globosa, tenuis, pellucida, levissime striatula, pallide flavescens; spira fere semi-globosa apice obtuso. Anfractus 5 convexiusculi, sutura anguste marginata discreti, lente accrescentes, ultimus basi subapplanatus, medio paulum excavatus. Apertura fere verticalis, late elliptica, valde excisa, peristoma simplex acutum, margine columellari calloso, reflexiusculo, appresso; columella superne tuberculo dentiformi sat valido munita.

Diam maj. 4, alt. 3,25 mm.

2. *Patula fusca* Q. et Mlldff.

T. modice sed aperte umbilicata, umbilico $\frac{1}{4}$ diametri adaequante, lenticularis, tenuis, striis transversis pliciformibus et lineis spiralibus valde confertis sculpta, opaca, fusca; spira parum elevata. Anfr. 4 planiusculi, infra medium subconcavi, lente

1. *Lamprocystis (Microcystina) denticulata* Q. et Mlldff.

The shell is imperforate, conical-globular, thin, translucent, and very lightly striated. It is pale yellowish in color. The spire is nearly semi-globular with a blunt apex. There are 5 slightly convex whorls, separated by a narrow, raised suture. They increase gradually in size, with the last whorl being slightly flattened at the base and slightly excavated in the middle. The aperture is almost vertical, wide-elliptical, and deeply incised. The peristome is simple and sharp, with a callosity on the columellar margin that is slightly reflexed and pressed against the body; the columella is equipped with a moderately strong dentiform tubercle at its upper part.

Maximum diameter 4 mm, height 3.25 mm.

2. *Patula fusca* Q. et Mlldff.

The shell is moderately but openly umbilicated, with the umbilicus measuring one-fourth of the diameter. It has a lenticular shape and is thin, with transverse plicate stripes and densely arranged spiral lines. The shell has an opaque, brown color. The

acrescentes, sutura profundiuscula discreti, acute carinati, carina crenata ad suturas paullum exserta, ultimus vix descendens, basi convexiusculus, circa umbilicum indistincte angulatus. Apertura modice obliqua, securiformis, peristoma simplex, acutum.

Diam. maj. 6, min. 5,5 alt. 2,75 mm.

3. *Patula rotula* Q. et Mildff.

T. aperte umbilicata, umbilico $2/7$ diametri adaequante, discoidea, tenuis, striis transversis, ineis spiralibus tenuissimis maxime confertis et costulis arcuatis sat [page 14] distantibus sculpta, in costulis cuticula membranacea lamellatim induta, fuscobrunnea; spira plana, vix prominens. Anfr. $4\frac{1}{2}$ convexiusculi, lente acrescentes, sutura sat profunda discreti, ultimus convexus, non descendens, apertura modice obliqua, circularis, valde excisa, peristoma rectum, acutum.

spire is slightly elevated. There are 4 slightly flattened whorls, with a subtle concavity below the middle. They increase gradually in size, separated by a moderately deep suture. The whorls are sharply keeled, with the keel exhibiting small crenations and slightly protruding at the sutures. The last whorl descends only slightly, and its base is slightly convex and indistinctly angulated around the umbilicus. The aperture is moderately oblique and securiform, and the peristome is simple and sharp

Maximum diameter 6 mm, minimum 5.5 mm; height 2.75 mm.

3. *Patula rotula* Q. et Mildff.

The shell is openly umbilicated, with the umbilicus measuring $2/7$ of the diameter. It has a discoidal shape and is thin, with transverse stripes, very densely arranged spiral lines, and moderately spaced curved ridges. The ridges are covered with a membranous cuticle, giving them a lamellate appearance. The shell is a dark brown color. The spire is flat and barely prominent. There are 4.5 moderately convex whorls, increasing gradually in size, and separated by a moderately deep suture. The last whorl is convex and does not descend. The aperture is moderately oblique, circular, and highly excavated. The peristome is straight

Diam. maj. 4,75, min. 4, alt. 2 mm.

4. *Patula Quadrasi* Mildff.

T. aperte umbilicata, umbilico $1/3$ diametri adaequante, discoideo-depressa, tenuis, striis transversis tenuibus, lineis spiralibus maxime confertis et plicis arcuatis sat validis distantibus sculpta, in plicis et lineis spiralibus cuticula membranacea valde decidua lamellatim obduta, fuscobrunnea; spira vix elevata apice plano. Anfr. $4\frac{1}{2}$ planiusculi, infra medium sat concavi, fere sulcati, carina rotundata per plicas undulata carinati, ultimus non descendens. Apert. modice obliqua rotundato-securiformis, peristoma simplex acutum.

Diam. maj. 5, min. 4,5, alt. 2 mm.

5. *Endodonta mariannarum* Q. et Mildff.

T. modice umbilicata, umbilico $2/7$ diametri adaequante, depresso-conoidea, solidula, costulis acutis, arcuatis sat distantibus sculpta, opaca, fusca; spira sat elevata,

and sharp.

Maximum diameter 4.75 mm, minimum 4 mm; height 2 mm.

4. *Patula Quadrasi* Mildff.

The shell is openly umbilicated, with the umbilicus measuring $1/3$ of the diameter. It has a discoidal-depressed shape and is thin, with fine transverse stripes and densely arranged spiral lines. It also has moderately spaced, distinct curved ridges. The ridges and spiral lines are covered with a highly deciduous membranous cuticle, giving them a lamellate appearance. The shell is a dark brown color. The spire is barely elevated and has a flat apex. There are 4.5 somewhat flattened whorls, with a moderately concave area below the middle that is almost sulcate. The whorls are rounded and undulated by a rounded ridge along the folds. The last whorl does not descend. The aperture is moderately oblique, roundly securiform, with a simple, sharp peristome.

Maximum diameter 5 mm, minimum 4.5 mm; height 2 mm.

5. *Endodonta mariannarum* Q. et Mildff.

The shell is moderately umbilicated, with the umbilicus measuring $2/7$ of the diameter. It has a depressed-conical shape and is solid, with sharp, arched ribs that are moderately

apice plano flavescens. Anfr. 5 sat convexi, sutura profunda discreti, lente accrescentes, ultimus basi bene convexus, non descendens. Apertura fere verticalis [page 15] circularis, sat excisa, peristoma simplex acutum. Lamella parietalis a peristomate sat remota, validiuscula, longe intrans, palatalis nulla, columella dente brevi validiusculo munita.

Diam. maj. 3,5, alt. 2,25 mm.

6. *Endodonta heptptychia* Q. et Mlldff.

T. aperte umbilicata, umbilico $\frac{3}{8}$ diametri adaequante, discoidea, tenuis, subpellucida, confertim et arcuatim costulata, flavida strigis castaneis flexuosis regulariter et eleganter picta; spira plana, rarius paullum prominens. Anfr. $4\frac{1}{2}$ convexiusculi, sutura sat profunda discreti, ultimus convexus, supra peripheriam paullum applanatus, non descendens. Apert. sat obliqua, subcircularis, valde excisa, peristoma simplex, acutum. Lamellae 7, parietales 2 approximatae, valde triangulariter elevatae, palatales 4, columellaris 1 validae.

spaced. The shell has an opaque, brown color. The spire is moderately elevated, with a flat, yellowish apex. There are 5 moderately convex whorls, separated by deep sutures. They slowly increase in size, and the last whorl is well rounded at the base and does not descend. The aperture is almost vertical, circular, moderately excised, with a simple, sharp peristome. There is a parietal lamella, somewhat distant from the peristome, which is moderately strong and extends inward. There is no palatal lamella, but the columella is armed with a short, moderately strong tooth

Maximum diameter 3.5 mm, height 2.25 mm.

6. *Endodonta heptptychia* Q. et Mlldff.

The shell is openly umbilicated, with the umbilicus measuring $\frac{3}{8}$ of the diameter. It has a discoidal shape, thin, and somewhat translucent. The surface is densely and arcuately ribbed, and it is painted with regular and elegant flexuous chestnut-colored stripes on a yellow background. The spire is flat, occasionally slightly raised. There are $4\frac{1}{2}$ moderately convex whorls, separated by a moderately deep suture. The last whorl is convex and slightly flattened above the periphery, and it does not descend. The aperture is moderately oblique, nearly circular, deeply excised, with a

Diam. maj. 4, min 3,5, alt. 2 mm.

7. *Partula quadrasi* Mildff.

T. dextrorsa, anguste et semiobtectate perforata, ventricosulo-ovatoconica, tenuissima, pellucida, transverse subtiliter striatula, lineis spiralibus valde confertis decussata, parum nitens, pallide lutescens, strigis angustis saturatoribus et albidis variegata, interdum taeniis 2 confusis ornata; spira subregulariter conica apice obtusulo. Anfr. 4 convexiusculi sutura appressa, marginata discreti, ultimus bene convexus, fere tumidus. Apert. sat obliqua, ovalis, parum excisa, peristoma simplex tenue, sat expansum, columella superne dilatata, recurvata cum pariete angulum distinctum fere canaliformem formans.

Diam. maj. 10,5, alt. 15, apert. lat. 7, long. 9, alt. 8,25 mm.

[page 16]

simple, sharp peristome. There are 7 lamellae: 2 parietal lamellae are closely situated and highly triangularly elevated, and there are 4 palatal lamellae and 1 strong columellar lamella.

Maximum diameter 4 mm, minimum 3.5 mm; height 3 mm.

7. *Partula quadrasi* Mildff.

The shell is dextral, narrowly and semi-obscurely perforated, ventricosely ovate-conical, extremely thin, translucent, finely transversely striated, and densely decussated by prominent spiral lines. It has a slightly shiny appearance, pale yellowish with narrow darker and whitish stripes, sometimes adorned with two confused bands. The spire is subregularly conical with a blunt apex. There are 4 moderately convex whorls, separated by a closely appressed, marginated suture. The last whorl is well-rounded and almost swollen. The aperture is moderately oblique, oval, slightly excised, with a thin and moderately expanded simple peristome. The columella is dilated and curved inward at the upper part, forming a distinct angle with the parietal wall, almost canal-like.

Maximum diameter 10.5 mm, height 15 mm, apertural width 7 mm, length 9 mm, height 8.25 mm.

8. *Tornatellina quadrasi* Mildff.

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.

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

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 paulum dilatato, patente; columella valde spiraliter torta, lamellatim intrans, superne excisa, processu dentiformi extus porrecta. Lamella parietalis modice elevata intus

8. *Tornatellina quadrasi* Mildff.

Imperforate shell, ovate-globose, thin, translucent, finely striated, shiny, pale yellow-horn colored; spire slightly elevated with a blunt apex. 3 1/2 whorls, barely convex, rapidly increasing in size, the last one large and swollen. Aperture moderately oblique, oval, with a simple, sharp peristome and a columellar margin very slightly reflected and pressed. The parietal lamella highly elevated, crossing spirally, the columella greatly dilated in a lamellar manner, deeply excised at the base at a right angle.

Maximum width 2 mm; height 2.5 mm.

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

Shell slightly rimmed, oblong-conical, thin, somewhat translucent, finely striated, slightly shiny, yellow-horn colored; spire turret-shaped, with somewhat convex sides and a sharp apex. 6 1/2 somewhat flattened whorls, separated by a slightly impressed suture, slowly increasing in size, the last one spirally impressed and somewhat grooved behind the aperture. Aperture moderately oblique, rhomboidal; simple peristome, sharp, with the columellar margin slightly dilated and open; columella strongly spiral twisted, crossing lamellarly, deeply excised at the upper part,

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, subcylindraneo-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.

Diam. 1.5, alt. 3.33 mm.

extending outward with a tooth-like process. The parietal lamella moderately elevated, extending inward for a long distance, and one short palatal lamella, set apart from the margin.

Width 1.75 mm; height 3.5 mm.

In juveniles, the columella is trilamellar, with the parietal lamella more elevated. The last whorl is equipped with three internal transverse ribs, denticulated and somewhat spaced apart, which completely vanish in adults.

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

Shell not rimmed, subcylindric-turreted, finely striated, thin, somewhat translucent, shiny, yellow-horn colored; spire gradually attenuated, with a blunt apex. 6 1/2 moderately convex whorls, the last one more distinctly plicate-striated, initially spirally impressed to a certain depth in the middle. Aperture moderately oblique, round-trapezoidal, with a simple sharp peristome. The columella is dilated at the upper part, extending outward with a tooth-like process, strongly spiral twisted, and somewhat dentate at the upper part. The parietal lamella is oblique, highly elevated, extending inward for a long distance, and there is no palatal lamella.

Width 1.5 mm; height 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 accrescentes, sutura profunda discreti,

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

11. *Vertigo (Prychochilus) quadrasi* Mlldff.

Subperforated shell, oblong-ovate, thin, sculpted with very fine and somewhat spaced costules, silky, brownish. 5 convex whorls, slowly increasing in size, separated by a deep suture, the last one barely ascending anteriorly, compressed at the base, distinctly scrobiculate behind the aperture. Aperture almost vertical, rounded-triangular, peristome moderately expanded, brown-lipped, with converging margins, the right margin slightly sinuous with a nodular callus. There is a moderately high angular fold, curved outward, forming an elliptical sinus on the outer edge, two parietal folds, one highly elevated and extending inward for a long distance, the other very small, two columellar folds, and three deep palatal folds, of which the right one is somewhat longer and lamelliform.

Width 1 mm; height 1.9 mm.

12. *Succinea (Neritostoma) quadrasi* Mlldff.

Oblong-ovate shell, somewhat thin, translucent, moderately strongly plicate-striate, indistinctly malleated, fulvous, becoming reddish towards the top. 3

convexi, ultimus sat inflatus $\frac{3}{4}$ 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.

14. *Melampus (Signia) quadrasi* Mlldff.

T. ovato-oblonga, solida, sulcis spiralibus profundiusculis confertis et striis transversis pliciformibus undique granulata, opaca, brunnea; spira convexo-conoidea apice mucronato, peracuto. Anfr. 9 plani, sutura appressa, lacerata discreti, ultimus $\frac{4}{5}$ altitudinis adaequans, supra medium obtuse angulatus, infra medium subimpressus, plerumque albobitaeniatus. Apert. parum

rapidly increasing whorls, separated by a deep suture, convex, the last one moderately inflated, about $\frac{3}{4}$ of the height. Aperture moderately oblique, almost perfectly oval, with a straight sharp peristome and a slightly folded columella.

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

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

Ovate-oblong shell, thin, densely plicate-striate, indistinctly decussated and malleated, yellow-horn colored, with a fulvous apex. 3 convex whorls, the last one strongly descending and slightly flattened at the upper part. Aperture moderately oblique, acuminate-oval.

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

14. *Melampus (Signia) quadrasi* Mlldff.

Shell oblong ovate, solid, with closely spaced deep spiral grooves and pliciform transverse ridges, granulated all over, opaque, brown in color. The spire is convex-conical with a sharp, pointed apex. There are 9 flat whorls, separated by an appressed and torn suture. The last whorl occupies about $\frac{4}{5}$ of the shell's height, is obtusely angled above the midpoint, and slightly impressed below the

obliqua, angusta, oblona, peristoma rectum, obtusum, intus sublimbatum, margine columellari valde calloso-incrassato, appresso. Lamellae parietales 2, supera sat humilis, infera valida horizontalis, longe intrans, columellaris parva.

[No shell dimensions given.]

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; 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

midpoint. It is often marked with whitish bands. The aperture is slightly oblique, narrow, and elongated. The peristome is straight, blunt, with a slightly thickened inner lip and a strongly thickened and adherent columellar margin. There are two parietales lamellae, the upper one is relatively low, and the lower one is strong, horizontal, extending far inward. There is a small columellar lamella.transversis.

15. *Palaina taeniolata* Q. et Mlldff.

Shell sinistral, occasionally dextral, rimmed, ovate-conical, somewhat thin, translucent, sculpted with sharp and somewhat spaced ribs, yellow, pale tawny, or fulvous to horn-brown. 6 1/2 convex whorls, with the penultimate one large, the last one initially constricted, slightly deviating, often adorned with a reddish-brown band along the suture, sometimes extending up to the penultimate whorl, anteriorly somewhat ascending. Aperture vertical, somewhat circular; multiple peristome, with 4-5 thin lamellar lips separated by moderately deep grooves.

Height 2.3 mm; maximal diameter 1.3 mm.

16. *Palaina hyalina* Q. et Mlldff.

Shell sinistral or dextral, not rimmed, ovate shell, extremely thin, translucent, hyaline,

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 Mildff.

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

sculpted with slender and sharp filiform costules, somewhat spaced apart. 6 convex whorls, separated by a deep suture, the last one decreasing in size, initially strongly constricted, then slightly inflated, and anteriorly ascending. Aperture almost vertical, subcircular, with a double peristome, the outer part expanded, the inner part slightly protruding, and not significantly expanded.

Height 2.4 mm; diameter 1.4 mm.

17. *Omphalotropis elongatula* Q. et Mildff.

Rimmed shell, oblong-conical, finely striated in a transverse direction, crossed by impressed spiral lines at somewhat spaced intervals, pale yellowish or reddish in color; turret-shaped spire, almost perfectly conical with a blunt apex. 7 somewhat flattened whorls, separated by a slightly impressed suture, encircled by a closely spaced rim near the periphery, confusedly angulated. Aperture hardly oblique, oval, with a slightly expanded peristome, internally somewhat lipped, and slightly effuse at the base.

Height 8.3 mm; width 4.5 mm.

var. brunnescens. Horn-brown colour, sometimes in two bands, whorls slightly more convex, slightly more distinct basal carina.

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 approximata cinctus. Apert. fere verticalis, acuminato-ovalis, peristoma haud expansum, intus sublabiatum.

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

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

The shell is narrowly perforated, elongated-pyramidal, thin, somewhat translucent, smooth, shiny, marbled with reddish, tawny, and yellowish hues; the spire is elongated and precisely conical. There are seven barely convex whorls, separated by a slightly raised suture, the last one scarcely angulated, with a compressed, well-exposed umbilical region closely adjacent to the perforation. The aperture is almost vertical, acuminate-oval, with a non-expanded peristome and a slightly lipped interior.

Height 5.5 mm, width 3.20 mm.

19. *Omphalotropis ochthogyra* Q. et Mlldff.

The shell is narrowly perforated, slenderly conical-turreted, thin, somewhat translucent, smooth, with indistinct

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, pasi 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 Mliff.

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

microscopic spiral lines intersected by fine yellow-marbled patterns; it is brown-horn colored. The spire is turreted with a blunt apex. There are 8 slowly increasing whorls, separated by a slightly raised suture. The upper ones are somewhat convex, the following ones are somewhat flattened, and the last one is slightly more convex, with a blunt angle below the middle. It is encircled at the base by a strong, well-exposed ridge that is closely adjacent to the perforation. The aperture is almost vertical, acuminate-oval, with a non-expanded peristome and a slightly lipped interior. It is slightly effuse towards the ridge and moderately sinuous towards 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 Mliff.

The shell is extremely narrowly perforated, slenderly elongated-turreted, with fine transverse striations and densely crossed by distinct, slender but well-defined spiral lines. It is elegantly sculpted with broad, flat, and prominent white transverse ribs, alternately streaked with yellow and reddish hues. The spire is very slender and

medium subacute angulatus, basi laevigatus, crista sat distincta perforationi sat approximata cinctus. Apert. paullum obliqua, acuminato-ovalis, peristoma 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 solum, paullum expansum, externum pro genere late expansum, ad insertionem recedens, subalatum, basi ad cristam longiuscule effusum, auriculatum. Operculum normale.

elongated-conical, with a blunt apex. There are 8 1/2 somewhat convex whorls, with the last one subacutely angled below the middle, smooth at the base, and encircled by a moderately distinct ridge that is fairly close to the perforation. The aperture is slightly oblique, acuminate-oval, with a blunt and moderately expanded peristome, and a slightly lipped interior.

Height 5.75 mm, width 2.5 mm.

21. *Omphalotropis latilabris* Q. et Mlldff.

The shell is openly perforated, conical-ovate, somewhat solid, sculpted with relatively close, flexuous folds and slightly spaced elevated spiral lines. It is yellow, tawny-horn colored, or brown, sometimes with two bands. The spire is moderately elevated, conical in shape, with slightly convex sides and a sharp apex. There are 6 flattened whorls, encircled by a well-exposed keel, separated by a deeply grooved suture. The last whorl is large, nearly equaling the spire, with a compressed and somewhat crenulated ridge located some distance from the perforation. The aperture is slightly oblique, acuminate-oval, with a double peristome. The inner part is continuous, loosely attached at the upper part, slightly expanded, while the outer part is broadly expanded for the

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 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, ultimi [page 22] mus 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.

genus, receding at the insertion, somewhat winged, and extends moderately towards the base with an auriculate appearance.

Operculum ordinary [for the genus].

Height 7.5 mm, width 6.0 mm.

22. *Omphalotropis quadrasi* Mlldff.

The shell is moderately openly perforated, somewhat depressedly turbinate, somewhat solid, sculpted with transverse striations, closely spaced elevated spiral lines, and distant flexuous ribs that disappear underneath. It is horn-fulvous, brown, or yellow, sometimes marbled. The spire is nearly conical, with a blunt apex. There are 6 whorls, with the uppermost ones convex and the rest angled at the deeply grooved suture. They are mostly flattened, with the last whorl encircled by an acute, elegantly undulating keel towards the periphery. At the base, there is a highly elevated, compressed, and crenulated ridge that is well-removed from the perforation. The aperture is moderately oblique, acuminate-oval, with a double peristome. The inner part is continuous, pressed against at the upper part, moderately expanded, while the outer part is widely expanded, notched at the upper part, somewhat winged, attenuated towards the grooved keel, and narrowed towards the columella.

Alt. 6, diam. 5,75 mm.

23. *Omphalotropis elegans* Q. et Mlldff.

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 peripheram 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.

24. *Omphalotropis suturalis* Q. et Mlldff.

T. rimata, ovato-conica, solida, subtiliter striatula, flava; spira gradata, convexo-conoidea. Anfr. 6 ad suturam impressam albotraeniatus, 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.

Operculum ordinary [for the genus].

Height 6 mm, width 5.75 mm.

23. *Omphalotropis elegans* Q. et Mlldff.

The shell is narrowly perforated, highly turbinated, thin, somewhat translucent, sculpted with distant filiform costules, and pale horn-colored. The spire is precisely conical, with a sharp apex. There are 6 convex whorls, separated by a deep suture. The last whorl is encircled by a thin ridge near the periphery, which fades towards the aperture, and another strong basal ridge located quite far from the perforation. The aperture is slightly oblique, oval, moderately incised, with a straight and barely lipped peristome, and the columellar side is moderately sinuous.

Height 4.25 mm high, width 6.0 mm.

24. *Omphalotropis suturalis* Q. et Mlldff.

The shell is rimmed, ovate-conical, solid, finely striated, and yellow. The spire is graded, with a convex-conoidal shape. There are 6 whorls, marked with white bands near the impressed suture, paler at the base, and encircled by a slightly distinct ridge that is closest to the rim. The aperture is vertical, acuminate-oval, with a straight, obtuse peristome that is lipped on the inside. It is slightly effuse at the base and

sinuous towards the columella. The operculum is normal.

Height 5 mm, width 3.5 mm.

Alt. 5, diam. 3,5 mm.

[End Quadras and Möllendorff 1894a]

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

25. *Omphalotropis submaritima* Q. et Mlldff. 25. *Omphalotropis submaritima* Q. et Mlldff.
T. rimata, ovato-conica, solidula, subpellucida, The shell is rimmed, ovate-conical, solid, and
luteo-cornea, obaca, fere leavigata; spira translucent, with a yellowish-horn color. It
modice elevata, fere regulariter conica appears opaque and is almost smooth. The
apice obtuso. Anfr. fere 6, sat convexi, spire is moderately elevated and has a
sutura profunda, subanaliculata discreti, nearly regular conical shape with a blunt
ultimus ad peripheriam obtuse carinatus, apex. The shell consists of approximately 6
basi crista valida sed parum elevata, rimae whorls, which are moderately convex. The
valde approximata [page 34] cinctus. suture is deep and slightly channeled. The
Apertura verticalis, acuminato-ovata, last whorl of the shell is obtusely keeled at
peristoma obtusum, intus sublabiatum, basi the periphery, and at the base, there is a
et ad columellam expansiusculum. strong but slightly elevated ridge. The rim
Operculum normale. closely encircles the aperture, with the
aperture being vertical and acuminately
oval in shape. The peristome (lip) of the
aperture is obtuse and slightly thickened on
the inner side. The base and columella of
the shell are somewhat expanded. The shell
has a normal operculum.
Alt. 4, diam. 3 mm. Height 4 mm, width 3 mm.
26. *Omphalotropis (Solenomphala) conica* Q. 26. *Omphalotropis (Solenomphala) conica* Q.
et Mlldff. et Mlldff.
T. anguste perforata, elongate ovato-conica, The shell is narrowly perforated, elongate
tenuis, pellucida, laevigata, oleonitens, ovate-conical, thin, translucent, smooth, and
corneo-brunnea; spira fere exacte conica has an oily sheen. It has a horn-brown color.
apice obtusulo. Anfr. 6½ convexiusculi, The spire is nearly conical with a blunt apex.

sutura submarginata discreti, ultimus bene convexus, basi crista parum distincta rimae valde approximata cinctus. Apertura parum obliqua, acuminato-ovalis, peristoma rectum, obtusum, basi subeffusum, ad columellam reflexiusculum, profundiuscule sinuatum.

Alt. 4,75, diam. 3 mm.

Chalicopoma Mlldff. n. sect. Omphalotropis. Operculum corneum paucispirum extus, lamina tenui testacea vix spirali ad nucleum erosa obtectum.

Typ. *O. semicostulata* Q. et Mlldff.

27. *Omphalotropis (Chalicopoma) semicostulata* Q. et Mlldff.

T. angustissime perforata, globoso-conica, ad suturas costulis sat distantibus, firtibus, subtus evanescentibus sculpta, ceterum fere laevigata, nitens, lutea, brunneo- et albomarmorata; spira sat elevata lateribus vix convexiusculis, apice obtuso. Afr. 6 convexiusculi, sutura profunda, subdistincte marginata disjuncti, ultimus bene convexus, vix angulatus, basi carina parum distincta, perforationi valde

The shell consists of approximately 6.5 moderately convex whorls. The suture is slightly raised and distinct. The last whorl is well-rounded and has a slightly indistinct ridge at the base, closely encircling the aperture. The aperture is slightly oblique and acuminately oval in shape. The peristome (lip) is straight, blunt, and slightly expanded at the base. The columella is slightly reflected and has a moderately deep sinus.

Height 4.75 mm, width 3 mm.

Chalicopoma Mlldff., new section [= subgenus] of *Omphalotropis*. The operculum is made of a few whorls and is externally corneous. It covers the aperture with a thin, shell-like plate that is eroded and barely spiraled towards the nucleus.

Type *O. semicostulata* Q. et Mlldff.

27. *Omphalotropis (Chalicopoma) semicostulata* Q. et Mlldff.

Shell with a very narrow umbilical opening. It is globoso-conical in shape and is sculpted with costules that are moderately spaced, strong, and disappear towards the base. The rest of the shell is mostly smooth and glossy, with a yellow color and brown and white marbling. The spire is moderately elevated with slightly convex sides and a blunt apex. There are six slightly convex whorls, separated by a deep and somewhat distinct

approximata cinctus. Apertura vix obliqua, acuminato-ovalis, peristoma haud expansum, basi ad carinam paullum effusum, columella sat sinuata, superne dilatata, callo lato appressa. Operculum normale.

Alt. 6, diam. 4,5 mm.

[page 35]

28. *Omphalotropis (Chalicopoma) laevigata*
Q. et Mlldff.

T. rimata, oblongo-conica, solidula, subtilissime striatula, nitens, flava, pallide marmorata; spira sat elongata, exacte conica. Anfr. 6 convexiusculi, sutura sat impressa discreti, ultimus bene convexus, basi crista distincta rimae valde approximata cinctus. Apertura parum obliqua, acuminato-ovalis; peristoma exansiusculum, paullum labiatum, ad columellam sinuatum. Operculum normale.

Alt. 5, diam. diam. 3 mm.

29. *Omphalotropis (Scalinella) gracilis* Q. et
Mlldff.

T. anguste perforata, graciliter turrata, tenuis,

suture. The last whorl is well-rounded with a subtle angulation and a slightly defined carina at the base, close to the umbilicus. The aperture is slightly oblique and acuminato-oval in shape, with a non-expanded peristome. The base of the aperture extends slightly towards the carina, and the columella is moderately sinuated, widened at the top, and covered with a broad callosity that is pressed against it. The operculum is normal in appearance.

Height 6 mm, width 4.5 mm.

28. *Omphalotropis (Chalicopoma) laevigata*
Q. et Mlldff.

Shell oblong conical, solid, very finely striated, shiny, yellow, faintly marbled; spire moderately elongated, precisely conical. Whorls 6 slightly convex, suture moderately impressed, last one well rounded, with a distinct ridge near the base and very close to the aperture. Aperture slightly oblique, acuminately oval; peristome slightly expanded, slightly lobed, sinuous towards the columella. Normal operculum.

Height 5 mm, width 3 mm.

29. *Omphalotropis (Scalinella) gracilis* Q. et
Mlldff.

Shell narrowly perforated, gracefully turret-

costis validis, sat distantibus et in interstitiis ineolis spiralibus tenuissimis sculpta, corneo-brunnea; spira valde elongata, sensim attenuata, apice subacuto. Anfr. $7\frac{1}{2}$ lentissime accrescentes, perconvexi, sustura valde profunda discreti, ultimus penultimo vix altior, $\frac{1}{5}$ altitudinis adaequans, antice paullum ascendens, basi haud cristatus. Apert. fere verticalis, late ovais, sat excisa, peristoma simplex, rectum, marginibus callo tenui junctis, columellari paullum dilatato, patente.

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

30. *Omphalotropis (Scalinella) pilosa* Q. et
Mildff.

T. anguste perforata, sat elongate turrata, tenuis, subpellucida, sat confertim costulata, undique pilis brevibus tenuibus hirsuta, laete flava; spira elongata, exacte conica apice acutulo. Anfr. 7 convexi, lentissime accrescentes, sutura profunda discreti. Apertura modice obliqua, late acuminato-ovalis, peristoma rectum, obtusum, margine columellari subsinuato.

shaped, thin, sculpted with strong, moderately spaced ribs and very fine spiral grooves in between, horn-brown in color. The spire is highly elongated, gradually tapering, with a somewhat pointed apex. There are $7\frac{1}{2}$ whorls, very slowly increasing in size, strongly convex, with a deep suture. The last whorl is only slightly taller than the penultimate one, occupying about $\frac{1}{5}$ of the total height, and slightly ascending towards the front, without a distinct ridge at the base. The aperture is nearly vertical, broadly oval, moderately indented. The peristome is simple, straight, with thin connecting calluses along the margins, and the columellar lip is slightly widened and open.

Height 3.5 mm, width 1.5 mm.

27. *Omphalotropis (Scalinella) pilosa* Q. et
Mildff.

Shell narrowly perforated, moderately elongated and turret-shaped, thin, somewhat translucent, densely ribbed, and covered with short, thin hairs, bright yellow in color. The spire is elongated, precisely conical, with a slightly pointed apex. There are 7 convex whorls that increase very slowly, separated by a deep suture. The aperture is moderately oblique, broadly tapering oval in shape, with a straight, obtuse peristome, and a slightly

Alt. 3,5, diam. 1,5 mm.[page 36]

Var. pilosella. T. graciliter elongato-turrita, sat distanter costulato-striata, flava, strigis corneo-rufis ornata.

Heteropoma Mlldff. n. gen. Realiidarum. Testa umbilicata, turbinata, parva, varie sculpta, operculum subspirale anfr. 4, nucleo subexentrico, lamina interna tenuis cornea, externa testacea, haud sulco ab illa separata.

Typ. *H. quadrasi* Mlldff.

31. *Heteropoma 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

sinuous columellar margin.

Height 3.5 mm, width 1.5 mm.

Var. pilosella. The shell is slender and elongated-turreted, with moderately spaced ribbed striations. It is yellow in color and adorned with horned-red streaks.

Heteropoma Mlldff. n. gen. Realiidarum[?]. The shell is umbilicated, turbinated, and small, with various sculptural patterns. It has a subspiral operculum consisting of 4 whorls. The nucleus is slightly off-center, and there is a thin corneous inner layer and a testaceous outer layer, without a groove separating them.

Type species *H. quadrasi* Mlldff.

31. *Heteropoma quadrasi* Mlldff.

The shell is narrowly umbilicated, turbinate, somewhat solid, with fine transverse striations and densely crossed by small, closely spaced spiral lines, elegantly sculpted with distinct, sigmoidal, and spaced ribs. The spire is moderately elevated, conoidal, with slightly concave sides and a blunt apex. There are 5 convex whorls, deeply grooved and subcanaliculate at the suture, subangular, then somewhat flattened, with an obtuse ridge near the lower suture. The last whorl is encircled by a well-exposed, strong, obtuse, crenated

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. *Heteropoma pyramis* Q. et Mlldff.

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

ridge at the periphery, and another smaller ridge in the middle of the base, both extending up to the peristome. The aperture is nearly vertical, broadly elliptical, with a multiply thickened peristome that is not expanded. The outer lamina of the operculum is slightly concave and radially striated, while the inner lamina is barely concave.

Height 3.3 mm, width.2 mm.

32. *Heteropoma pyramis* Q. et Mlldff.

The shell is moderately openly umbilicated, pyramidal, somewhat solid, finely striated, and sculpted with thin, foliaceous and spaced costules. It is horn-brown in color. The spire is highly elevated, almost perfectly conical, with a somewhat blunt apex. There are 6 slowly increasing whorls, separated by a deeply grooved suture. They are convex but laterally compressed, with the last whorl encircled by two obtuse but well-exposed ridges at the periphery and middle base. The costules elongate into long wings along these ridges. The aperture is vertical and broadly elliptical, with a straight and blunt peristome. The outer lamina of the operculum is strongly concave, with moderately elevated margins.

Height 2.75 mm, width.2 mm.

33. *Heteropoma 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.

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

34. *Heteropoma 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,

33. *Heteropoma tuberculatum* Q. et Mlldff.

The shell is perforated, conical-turreted, solid, crossed by densely spaced spiral lines and sculpted with strongly distant, prominent, and somewhat flexuous transverse ribs. It is horn-fulvous in color. The spire is highly elevated, almost perfectly conical, with a blunt apex. There are 5 1/2 whorls, separated by a deep and slightly grooved suture. They are convex but laterally compressed. The last whorl is encircled by two obtuse but well-exposed ridges at the periphery and middle base, and the ribs are tuberculate along these ridges. The aperture is vertical, ellipsoid in shape, with a straight and blunt peristome. The upper margin recedes at the insertion, extends in the middle, and the columellar side is moderately sinuous. Operculum similar to that of [*H.*] *quadrasi*.

Height 3.1 mm, width 2.5 mm.

34. *Heteropoma turritum* Q. et Mlldff.

The shell is narrowly umbilicated, elongated conical-turreted, somewhat solid, crossed by densely spaced thin spiral lines and sculpted with thick, widely spaced ribs on the underside and finer ones. It is horn-brown in color. The spire is highly elevated, precisely conical, with a blunt apex. There are 6 slowly increasing whorls,

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.

[page 38]

35. *Heteropoma fulvum* Q. et Mlldff.

T. anguste umbilicata, turbinata, solidula, subtilissime stratula, costulis tenuibus foliaceis distantibus sculpa; 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 prefunde sinuatus. Operculum illi *H. quadrasi* simile.

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

separated by a deeply grooved suture. They are convex but laterally compressed. The last whorl is encircled by two rather thick, obtuse, and well-exposed ridges, densely tuberculate, and slightly detached at the front. The aperture is vertical, ellipsoid in shape, with a straight, blunt, multiply thickened and somewhat protruding peristome.

Height 3 mm, width 2 mm.

35. *Heteropoma fulvum* Q. et Mlldff.

The shell is narrowly umbilicated, turbinated, somewhat solid, finely striated, and sculpted with distant thin, foliaceous costules. The spire is moderately elevated with nearly straight sides and a blunt apex. There are 5 highly convex whorls, separated by a deep and slightly grooved suture. The last whorl is encircled by obtuse but well-exposed ridges at the periphery and middle base, and it is surrounded by slightly winged costules. The aperture is somewhat oblique, subcircular in shape, with a simple, blunt peristome. The upper margin recedes deeply at the insertion, forming a nearly excised shape, and it is moderately sinuous in the middle. The operculum like that of *H. quadrasi*.

Height 2.5 mm, width 2.75 mm.

36. *Heteropoma 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.

Quadrasiella Mlldff. n. gen.

Realiidarum. T. aperte umbilicata, depressa aut depresso-conica, varie sculpta, parva, operculum 2 laminis constitutum, interna tenuis, cornea, anfr. 3—4 nucleo subexcentrico, externa testacea aperturam superans, intus sulco ad recipiendum peristoma induta, spiralis, margine praecipue superne dilatato et revoluto.

Typ. *Q. mucronata* Mlldff.

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,

36. *Heteropoma glabratum* Q. et Mlldff.

The shell is perforated, turbinated, with barely noticeable striations, slightly shiny, and yellowish-horn in color. The spire is moderately elevated, almost perfectly conical, with a blunt apex. There are 5 convex whorls, separated by a deep suture. The aperture is nearly vertical, ovate-rounded in shape, with a simple, straight, and blunt peristome. Width 2.3 mm, height 2.3 mm.

Quadrasiella Mlldff. new genus.

Realiidarum[?]. Shell openly umbilicated, depressed or depressed-conical, variably sculpted, small, with a double-layered operculum, the inner layer thin and horn-like, with 3-4 whorls, the outer layer shell-like and surpassing the aperture, internally equipped with a groove to receive the peristome, spirally, with the margin especially enlarged and revolute at the upper part.

Type species *Q. mucronata* Mlldff.

37. *Quadrasiella mucronata* Mlldff.

The shell is broad and openly umbilicated, depressed, often nearly discoidal, thin, sculpted with densely spaced spiral lines and slightly distant, thin, foliaceous costules. It is horn-fulvous in color. The

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 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* Mildff.

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,

spire is more or less elevated, with concave sides, a mucronate and blunt, reddish apex. There are 5 convex whorls, which increase moderately quickly, separated by a deeply grooved suture. The last whorl is obtusely angled near the suture and encircled by obtuse but protruding ridges at and below the periphery. The costules are elongated along these ridges, while the areas between the ridges are flattened. The aperture is nearly vertical, subcircular in shape, with a straight and blunt peristome. The operculum is acuminate-ovate, with 4 transverse plicato-striate whorls. The last whorl is greatly expanded, covering the entire aperture and rolling around the peristome, with a wide opening at the top.

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* Mildff.

The shell is narrowly but openly umbilicated, depressingly conical, solid, lattice-like sculpted with elevated spiral lines and sharp, closely spaced costules. It is covered in short hairs all over and is horn-brown in color. The spire is moderately elevated with slightly concave sides and a sharp, reddish

ultimus paullum lateraliter compressus
haud carinatus. Apert. fere verticalis, late
ovlalis, 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.

39. *Truncatella mariannarum* Q. et Mlldff.

T. distincte rimata, subcylindrica, solida, costis
elevatis, obtusis, confertis, interstitia
subaequantibus, 33—35 in anfractu ultimo
sculpta, pallide lutea aut rubella; spira
sensim attenuata. Anfractus qui supersunt 5
[page 40] convexiusculi, ultimus basi
crista compressa obtusa usque ad peristoma
producta cinctus. Apert. verticalis, oblique
ovalis, peristoma modice expansum,
superne susolutum, basi ad cristam leviter
sinuatum. Operculum valde convexum,
radiatim plicatum.

Alt. 8,5, diam. 4 mm.

apex. There are 5 convex whorls, separated
by a deep suture. The last whorl is slightly
laterally compressed and lacks a keel. The
aperture is nearly vertical, broadly oval in
shape, with a straight and blunt peristome.
The outer side of the operculum is strongly
concave, with 4 whorls. The last whorl is
broad, plicato-striate, marginally crenulated
but not reflexed. The inner side of the
operculum is transversely costate with
lamellae.

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

39. *Truncatella mariannarum* Q. et Mlldff.

Shell distinctly rimmed, subcylindrical, solid,
with elevated, blunt, closely spaced ribs,
with interstices of similar width, sculpted
with 33-35 ribs on the last whorl, pale
yellow or reddish in color; gradually
tapering spire. The remaining whorls are
slightly convex, with the last one encircled
by a compressed, blunt ridge extending to
the aperture. The aperture is vertical,
obliquely oval, with a moderately
expanded peristome, slightly detached at
the upper part, and slightly sinuated at the
base towards the ridge. The operculum is
highly convex, radially folded.

Height 8.5 mm, width 4 mm.

40. *Truncatella subauriculata* Q. et Mildff.

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

T. vix rimata, turrita, solidula, subpellucida, costis validis substrictis interstitia aequantibus, ad suturas subtuberculatis - 31 in anfr. 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

40. *Truncatella subauriculata* Q. et Mildff.

The shell is rimmed, cylindrically-turreted, solid, and moderately distantly ribbed, with 23-25 ribs on the last whorl. It is yellowish-white in color. The spire gradually tapers. There are 5 convex whorls above, separated by a deep suture. The last whorl is encircled by a strong, compressed ridge that extends from the base to the peristome. The aperture is vertical, acuminately oval in shape, with a simple, continuous peristome. The upper part of the peristome is briefly attached, moderately expanded, and the base is slightly sinuous and briefly effused towards the ridge. The operculum is similar to the previous one.

Height 10 mm, maximum width 4 mm,

41. *Truncatella expansilabris* Q. et Mildff.

The shell is barely rimmed, turreted, solid, and somewhat translucent, sculpted with strong, narrow ribs that reach the interstices and are slightly tuberculate at the sutures - 31 ribs on the last whorl. It is yellowish-white in color. There are 5 remaining convex whorls, separated by a raised suture. The last whorl slightly ascends at the front and is encircled by a thick ridge that extends from the base to the peristome. The aperture is vertical, acuminately oval in

sat expansum, superne expansiusculum, breviter adnatum. Operculum extus valde convexum, radiatim plicatum.

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

[page 41]

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

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

shape. The outer side of the peristome is broadly expanded, moderately effused at the base, with a slightly deep sinus, and the inner side is moderately expanded at the columella, slightly more expanded at the upper part, and briefly attached. The outer side of the operculum is strongly convex and radially folded.

Height 10.5 mm, width 4.5 mm.

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

The shell is imperforate, nearly cylindrical, solid, and somewhat translucent, white in color. It is sculpted with strong, somewhat wide, and distant ribs - 13-14 on the last whorl. There are 4 slightly flattened whorls above, tabulated at a deep suture. The last whorl is encircled at the base by a well-exserted, crenulated ridge that ends in the outer lip. The aperture is vertical, obliquely oval in shape. The peristome is duplex, with an outer part that is moderately expanded and greatly thickened, joined at the base with the ridge, and an inner part that is greatly protruding, completely detached, and slightly more expanded all around.

Height 5.5 mm in, width 2.5 mm.

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

Mlldff.

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 Mlldff.

T. imperforata, elongate turrita, solidiuscula, lamellose costata, costis 22 in anfractu ultimo, albida; spira sensim attenuata, decollata. Anfr. qui supersunt 6 convexi, 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 carilagineum, extus convexum, costulis lamelliformibus radiatis ornatum.

[page 42]

Mlldff.

The shell is non-rimmed, subcylindrically-turreted, thin, sculpted with thin, sharp, and moderately elevated ribs that are spaced at a distance of 18 on the last whorl. There are 5 convex whorls above, slowly increasing in size, separated by a deep suture. The last whorl is encircled at the base by a strong, highly compressed ridge that is lamellately ribbed. The aperture is vertical, obliquely oval in shape. The peristome is simple, completely detached all around, moderately expanded, with the right margin moderately effused.

Height 7 mm, width 2.75 mm.

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

The shell is imperforate, elongately turreted, somewhat solid, lamellose ribbed, with 22 ribs on the last whorl. It is whitish in color. The spire gradually tapers and is decollate. There are 6 remaining convex whorls, separated by a deep suture. The last whorl is not crested at the base. The aperture is vertical, narrowly oval in shape. The peristome is duplex, with an inner part moderately expanded, somewhat protruding, and thickened, and an outer part widely expanded, sinuous, more dilated at the upper part, resembling wings and spreading outwards. The operculum is

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 flavescens. Anfr. 4 convexi, lateraliter compressi, supra et infra peripheriam obtuse angulati, in angulis alis brevibus curvatis ornati. Apertura valde obliqua,

cartilaginosa, externally convex, ornamented with lamelliform radial ribs.

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.

The shell is conically globose, somewhat solid, and has transverse striations. It is a horn-yellowish color. The spire is moderately elevated, with slightly convex sides and a smooth, pointed apex. There are 4 convex whorls that are slightly compressed in the middle. They are angled behind the suture and below the periphery, sculpted with curved wing-like ridges at the angles. The aperture is diagonal, truncate-oval in shape. The peristome is simple and obtuse, with a slightly inwardly curved inner lip and a reflexed columellar margin, adorned with a broader, pressed callus. Operculum typical.

Height 2.5 mm, width 2.5 mm.

46. *Georissa biangulata* Q. et Mlldff.

The shell is globose-conical, thin, and finely striated, sculpted with very delicate, membranous, and easily detachable ridges. It is horn-yellowish or yellowish in color. There are 4 convex whorls that are laterally compressed, with obtuse angles above and below the periphery. At the angles, there

late ovalis, truncata, peristoma rectum obtusum, margine columellari reflexo, appresso.

Alt. 1,75, diam. 1,5 –1,66 mm.

47. *Georissa laevigata* Q. et Mlldff.

T. ovato-conica, tenuis, subpellucida, vix striatula, nitidula, corneo-fulva; spira convexo-conoidea apice obtuso. Anfr. 4 convexi celeriter accrescentes, sutura valde impressa discreti, ultimus magnus, tumidulus. Aperture sat obliqua, tuncato-ovalis, peristoma simplex, acutum, margine columellari reflexo, callo late appresso.

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

[End Quadras and Moellendorff 1894b]

are short, curved wings as ornamentation. The aperture is highly oblique, wide-oval, and truncate. The peristome is straight and blunt, with a reflexed and pressed columellar margin.

Height 1.75 mm, width 1.5 to 1.66 mm.

47. *Georissa laevigata* Q. et Mlldff.

Shell ovate-conical, thin, somewhat translucent, barely striated, shiny, horn-yellow; spire convex-conical with a blunt apex. Whorls 4, convex, rapidly increasing in size, separated by a deeply impressed suture, the last one large and swollen. Aperture moderately oblique, truncate-oval, with a simple, sharp peristome, a reflexed columellar margin, and a broadly adherent callus.

Height barely 2 mm, width 1.5 mm.

From: Zilch, A. 1953. Die Typen und typoide des Natur-Museums Senckenberg, 9: Mollusca, Cyclophoridae, Diplommatininae. Archiv Für Molluskenkunde 82: 1-47.

[page 14]

- - *taeniolata apapaensis* n. subsp. Taf. 5 Fig. 67. [*Palaina (Palaina)*] *taeniolata apapaensis* new subspecies. Plate 5 Figure 67.

Marianen: Apapa bei Guam. QUADRAS d., Slg. MOELLENDORFF [Typus SMF 105115, Paratypoide SMF 105116/10].

Mariana Islands: Apapa[= Cabras Island] from Guam. QUADRAS detector, Collector MOELLENDORFF [Type SMF 105115, Paratype SMF 105116/10].

Diagnose : Die Serie von Apapa bei Guam zeichnet sich durch konstant kleineres und kugeliges Gehäuse aus. Die axialen Rippenstreifchen sind auf dem letzten Umgang enger gestellt als bei der typischen *taeniolata*. Die Mündung ist mehr gerundet.

Diagnosis: The series from Apapa near Guam is characterized by a consistently smaller and more spherical shell. The axial ribbing on the ultimate whorl is closer together compared to the typical *taeniolata*. The aperture is more rounded.

Maße: H. 1,9; D. 1,0 mm (*taeniolata taeniolata*: H. 2,5; D. 1,4 mm).

Size: Height 1.9 mm; Width 1.0 mm (*taeniolata taeniolata*: Height 2.5 mm; Width 1.4 mm).

[...][End Zilch 1953]

.

