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Offshore Conidae from Marquesas, French Polynesia: Revision of the material collected during the expedition "PAKAHI I TE MOANA"* (2012)

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* «Respect for the Ocean»

Abstract:

We identified twenty-five different species among the material collected during the **PAKAHI I TE MOANA** expedition in 2012, twenty-two of which were sequenced for the *cox-1* barcode fragment. We compared the material collected with those from previous expeditions, mainly **PELE** (1969), **MUSORSTOM 9** (1997) and **CONPOL** (2007). This study completes the biological inventories carried out during previous expeditions with the sequencing of a large number of species, some of them sequenced for the first time. This study also fills a gap in the representation of types for three species endemic to the Marquesan archipelago, whose holotypes have been lost or destroyed, and for which neotypes are proposed: *Conus encaustus* Kiener, 1845, *Conus marchionatus* Hinds, 1843 and *Conus vautieri* Kiener, 1847.

Introduction:

The **PAKAHI I TE MOANA (PITM)** expedition, conducted by the Agence des Aires Marines Protégées **(AAMP)**, aimed to spatially document the biodiversity of an understudied region, the Marquesas Islands, by representing the major benthic groups in a selection of sites that reflect the different configurations of the Marquesan coasts. Other objectives included establishing a typology of habitats and compiling associated biological inventories for conservation purposes. This campaign was intended to complement previous biological inventories conducted on mobile fauna **(MUSORSTOM 9 campaign, 1996),** sponges and ascidians **(ALIS/IRD campaign on Biodiversity and Marine Substances BSM-PF1, 2009)**, and to study neglected groups. (1)

The Marquesas archipelago includes ten high islands and about ten submerged banks. Nine high islands were surveyed during the **PITM** expedition, six islands of the North group (Eiao, Hatutaa, Nuku Hiva, Ua Huka, Ua Pou, Fatu Huku) and three of the South group (Hiva Oa, Tahuata and Fatu Hiva).
The surveys were carried out by SCUBA and on foot on some tide pools and basalt pavements. The dives included two groups of six and four divers and were carried out mainly between 0 and 30 meters for 65 to 80 minutes, twice a day (7:30 and 13:30). The typical dive profile allowed on average to search and sample five types of habitats. Four night dives were scheduled to complete the inventory of mobile fauna. Bulk collections (brushing and vacuuming) also took place. Incidentally, some specimens were collected with the **COMEX** ROV (Remotely Operated Vehicle), an underwater robot capable of reaching great depths.

Sixty-four different habitats were studied, such as sedimentary plains (10 and 40 meters), heterogeneous sedimentary plains (10 and 30 meters), scree (intertidal to 30 meters), wave-beaten intertidal zones (0 to 3 meters), coral habitats (3 to 15 meters), caves and overhangs with a sandy bottom, seaweed beds (3 to 20 meters) as well as drop-offs, walls and escarpments (3 to 30 meters).

Regarding molluscs, all collected batches were preserved to ensure at least one specimen was kept in 95% alcohol for molecular studies, while the rest were preserved in 80% ethanol. This exploration resulted in the collection of 492 specimens from 42 surveyed stations, representing more than 200 species of molluscs. Upon return from the campaign, all specimen lists and photographs were handed over to **AAMP**. Unfortunately, very few photographs of live molluscs were taken.

The goal of this study was to revise the cone snail fauna of the Marquesas Islands, by identifying all the collected material. Each species is compared with closely related species, and its validity is discussed using morphological and molecular characters.

The list of stations can be consulted in the appendix 1.
Each sample was given a code composed as follows:
Date, MQ1-GR-PC1.
In which:
MQ1: Site N°1 of Marquesas Leg3, Ekamako
GR: Prélèvement à vue en GRotte (sight sampling in cave)
PC 1: sample n°1 processed by Pierre Chevaldonné

Sampling type codes:

GR Prélèvement à vue en GRotte (sight sampling in cave)
GR-S Suçage en GRotte (sucking in the cave)
GR-B Brossage en GRotte (brushing in the cave)
R prélèvement à vue hors grotte, sur Roche (sampling on sight outside the cave, on rock)
S Suçage hors grotte (sucking out of cave)
B Brossage hors grotte (brushing out of cave)
ACH Prélèvement au ROV ACHille (sampling with ROV ACHille)
M prélèvement à pied à la Marée (sampling on foot at the tide)
Processing operator codes:
TP Thierry Pérez
PC Pierre Chevaldonné
LC Laure Corbari
MARQ John Starmer
JP Joseph Poupin
BC specimen BarCoding, Barbara Buge & Virginie Héros
LOT Mélange d'individus (batch, mix of specimens)

Abbreviations:

MNHN: Muséum National d'Histoire Naturelle (Paris, France)
PITM: PAKAHI I TE MOANA
DNA: DeoxyriboNucleic Acid
Spm(s): specimen(s)
Stn: station
m: meter(s)
pl.: plate
fig.: figure
coll.: collection
P: periostracum
N.P: Nicolas Puillandre
M: Marquesas; **SOC**: Society Islands; **TUA**: Tuamotu;
NH: Nuku Hiva; **UP**: Ua Pou; **UH:** Ua Huka; **HO**: Hiva Oa;
T: Tahuata; **FH:** Fatu Hiva; **E**: Eiao; **HI**: Hatu Hiti.

Keywords: PAKAHI I TE MOANA, Neogastropoda, Conidae, *Conus*, coastal benthic fauna, Marquesas Archipelago, French Polynesia, Pacific Ocean, DNA, endemism, neotype.

Concerning the bibliographic references, which dealt with the species presented in this work, we chose as a reference point the work **Marine Mollusks of French Polynesia** (Boutet Gourget & Letourneux, 2020).

Plates 1 to 4: all shells have been photographed by A. Lardeur (**MNHN**) with the periostracum.

Molecular analyses:

Sequenced specimens were collected during the **PAKAHI I TE MOANA** expedition. After sampling, they were placed into a microwave oven to remove them from their shells (Galindo *et al.* 2014). Specimens are registered in the **MNHN** collection and sequences were deposited in BOLD (Barcode of Life Datasystem) and GenBank (appendix 3). DNA was extracted from a piece of foot tissue, using the Epmotion 5075 robot (Eppendorf), following the manufacturers' recommendations. The barcode fragment of the *cox-1* gene was sequenced following the protocol described in Puillandre *et al.* (2017).
The dataset was complemented with sequences available in GenBank or unpublished sequences, corresponding to the same species as the Marquesas specimens, or to closely related species, for comparison purposes. A sequence of *Californiconus californicus* was used as an outgroup. A Bayesian analysis was performed to reconstruct a phylogenetic tree, using Mr.Bayes 3.2.6 (Huelsenbeck, Ronquist & Hall, 2001), with two runs consisting each of four Markov chains and 10 000 000 generations, two swaps at each generation, a sampling frequency of one tree each 10 000 generations and a chain temperature set at 0.02. Convergence of each run was evaluated using TRACER 1.6 (Rambaut & Drummond, 2014) to check that all effective sample size values exceeded 200. Consensus trees were calculated after omitting the first 25% trees as burn-in. A GTR + I + G substitution model was used, and the *cox-1* gene was divided into three partitions corresponding to the three codon positions.

The results of the phylogenetic analysis are presented in Appendix 2, and are commented on for each species in the following section. All the species discussed below and for which at least two sequences are available correspond to highly supported (posterior probabilities > 0.98), except *Conus encaustus*, *Conus nanus* and *Conus sponsalis* (see below for more details).

The Braveheart in "La baie des vierges", Fatu Hiva.
Photo: Joseph Poupin

Analysis of samples on board the Braveheart, Tahuata.
Photo: Barbara Buge

Family CONIDAE Fleming, 1822
Genus ***Conus*** Linné, 1758

***Conus adamsonii* Broderip, 1836**

Boutet *et al.*, 2020: 429; Tröndlé *et al.*, 2020: 94; Richard & Rabiller, 2021: 34; Touitou & Balleton, 2022: 166.

Sequenced material:
Ua Pou: Stn MQ24-R (6-12 m) 1 spm (44.8 mm) MNHN-IM-2013-40001.
Ua Huka: Stn MQ11-II-17 (17-22 m) 1 spm (38.8 mm) MNHN-IM-2013-40073.

Biogeography and comments:
The **CONPOL** expedition (2007) collected one live specimen at 20 meters in Nuku Hiva (Moolenbeek *et al.*, 2008). In 2012, two specimens were collected live between 6 and 22 meters and sequenced. The two sequences are nearly identical, clustered together in a clade, sister to *Conus bullatus*. *Conus bullatus* from the Marqusas Islands has been described last year as *Conus minamiae* (Lum, 2023). The nature of the diet of *C. adamsonii* in the Marquesas is confirmed by two photos, taken by Paul Kanner and Drew Strickland, showing the regurgitation of prey (Touitou & Balleton, 2022). The depth of the habitat of *C. adamsonii* is given as "Intertidal to 60 m" (Röckel & al., 1995), "Intertidal at 60 m" (Balleton & Marti, 2017), "1-60 m" (Monnier *et al.*, 2018) and "0-30 m" (Boutet *et al.*, 2020). In the other archipelagos, *Conus adamsonii* is light pink. In the Marquesas it is much darker in color, although some specimens have a light color, as evidenced by specimen MNHN-IM-2013-40073.

***Conus canonicus* Hwass in Bruguière, 1792**

Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 133; Touitou & Balleton, 2022: 200.

Sequenced material:
Nuku Hiva: Stn MQ1-R (8-10 m) 1 spm (23.2 mm) MNHN-IM-2013-40021.

Other material examined:
Nuku Hiva: Stn MQ11-II-01 (38 m) 1 spm (9.7 mm) MNHN-IM-2016-7927. - Stn MQ11-II-04 (28 m) 1 spm (27.5 mm) MNHN-IM-2016-7934. - Stn MQ11-II-02 (25 m) 1 spm (30.9 mm) MNHN-IM-2016-7935. - Stn MQ11-II-03 (10 m) 2 spms (35.3 mm) MNHN-IM-2016-7939; (28.6 mm) MNHN-IM-2016-7940. - Stn MQ11-II-10 (24 m) 1 spm (24.2 mm) MNHN-IM-2016-7938. -Stn MQ11-II-11 (20 m) 1 spm (23.7 mm) MNHN-IM-2016-7937. - Stn MQ11-II-12 (14 m) 1 spm (32.2 mm) MNHN-IM-2016-7936. - Stn MQ11-II-13 (36 m) 2 spms (28.8 mm) MNHN-IM-2016-7941; (10.7 mm) juv. MNHN-IM-2016-7942. - Stn MQ1-R (8-10 m) 1 spm (39.9 mm) MNHN-IM-2013-40017.
Ua pou: Stn MQ21-R 1 (6-10 m) 1 spm (24 mm) MNHN-IM-2013-40022.
Hiva Oa: Stn MQ19-R (10-25 m) 2 spms (51.2 mm) MNHN-IM-2013-40023; (39.5 mm) MNHN-IM-2013-40024.
Ua Huka: Stn MQ11-II-17 (17-22 m) 1 spm (44.0 mm) MNHN-IM-2013-40091.

Biogeography and comments:
Conus textilinus Kiener, 1845 has undergone taxonomic instability (Touitou & Balleton, 2022), with some authors classifying specimens from the Marquesas as *Conus textilinus*, while others identify them as *Conus canonicus*. *Conus canonicus* is recorded in the Marquesas, the Tuamotu, and the Society Islands. Some specimens collected around the island of Tahiti, as well as in the Indian Ocean, closely resemble those from the Marquesas (Touitou & Balleton, 2022), contributing to ongoing confusion. The validity of the taxon *Conus textilinus* remains controversial and may represent a geographical or ecological variation of *Conus canonicus*. The only *Conus textilinus* specimen from the Marquesas that has been sequenced to date is a 23.2 mm juvenile collected during the PITM expedition. A morphological study of this specimen does not allow for a definitive determination of whether it corresponds to *Conus textilinus* or *Conus canonicus*. Until larger specimens (at least 60 mm) with morphology clearly matching the species described by Kiener are sequenced and compared with genetic material from *Conus canonicus*, we consider *Conus textilinus,* as a precautionary measure, to be a synonym of *Conus canonicus*.

***Conus catus* Hwass in Bruguière, 1792**

Boutet *et al.*, 2020: 428; Richard & Rabiller, 2021: 50; Touitou & Balleton, 2022: 216

Sequenced material:
Fatu Hiva: Stn MQ16-M (0-1 m) 3 spms (32.1 mm) MNHN-IM-2013-40046; (23.5 mm) MNHN-IM-2013-40047; (22.6 mm) MNHN-IM-2013-40048.
Nuku Hiva: Stn MQ7-M (0-1 m) 2 spms (29.8 mm) MNHN-IM-2013-40054; (38.9 mm) MNHN-IM-2013-40096. - Stn MQ25-M (0-1 m) 1 spm (41.1 mm) MNHN-IM-2013-40095. - Stn MQ1-R (8-10 m) 1 spm (39.6 mm) MNHN-IM-2013-40055.
Fatu Hiva: Stn MQ16-M (0-1 m) 2 spms (25.3 mm) MNHN-IM-2013-40052; (20.7 mm) MNHN-IM-2013-40053
Hiva Oa: Stn MQ19-R (10-25 m) 1 spm (30.2 mm) MNHN-IM-2013-40056.
Eiao: Stn MQ11-II-10 (24 m) 1 spm (34.8 mm) MNHN-IM-2013-40094.

Other material examined:
Hiva Oa: Stn MQ19-R (10-25 m) 1 spm (35.0 mm) MNHN-IM-2016-7996; Stn MQ11-II-39 (30 m) 1 spm (31.7 mm) MNHN-IM-2016-7948.
Hatutaa: Stn MQ11-II-08 (38 m) 1 spm (31.4 mm) MNHN-IM-2016-7946.
Nuku Hiva: Stn MQ11-II-03 (10 m) 3 spms (21.9 mm) MNHN-IM-2016-7959; (29.5 mm) MNHN-IM-2016-7989; (23.1 mm) MNHN-IM-2016-7990.
Ua Pou: Stn MQ11-II-41 (30 m) 2 spms (28.7 mm) MNHN-IM-2016-7976; (22.1 mm) MNHN-IM-2016-7977.
Ua Huka: Stn MQ11-II-19 (20 m) 2 spms (36.5 mm) MNHN-IM-2016-7995; (32.8 mm) MNHN-IM-2016-7996

Biogeography and comments:
Nineteen specimens were collected between 0 and 18 meters during the 1969 **PELE** expedition (Touitou & Balleton, 2022). Moolenbeek *et al.*, in 2008, studied seventeen live specimens collected between 0 and 30 meters (most of which were between 0 and 3 meters). During **PITM**, twenty-one specimens

were collected between 0 and 38 meters, eight of which were sequenced. Molecular analysis suggests a specific rank for the taxon, clearly separated from the most closely related species (*Conus aurisiacus* Linnaeus, 1758, *Conus gauguini* and *Conus circumcisus,* Born, 1778). Within *Conus catus*, the Marquesas specimens form a subgroup, with low genetic distances with the specimens from other localities, clearly linked to the geographical distances (Touitou & Balleton, 2022). Note that no specimens from the Indian Ocean have been sequenced. Since the *fuscoolivaceu*s varition is now attributed to dark specimens from Indonesia (Monnier *et al.*, 2018), it is appropriate to treat the Marquesas specimens as a Marquesan variation. A specimen with the morphological characters of the species *Conus easoni* Petuch & Berschauer, 2018 is included in the same clade as the *Conus catus* specimens from the Marquesas islands, and Touitou & Balleton (2022) have chosen to treat the taxon *easoni* as a synonym of *Conus catus*. In addition, it would be interesting to sequence specimens from other archipelagos to verify if they cluster with the Marquesan group, thus forming a Polynesian (and not specifically Marquesan) variation.
The nature of the species' diet in the Marquesas Islands is confirmed by photos taken by Camille Gache (**CRIOBE**), in an aquarium, and illustrated by Touitou & Balleton (2022). The depth of the habitat of *Conus catus* is given as "Intertidal to about 20 m" (Röckel & al., 1995), "0-30 m" (Monnier *et al*., 2018) and "0-20 m" (Boutet *et al.*, 2020). While in most other localities in the Indo-Pacific area (including the neighboring archipelagos of Polynesia), *C. catus* seems to live mainly between 0 and 5 meters, in the Marquesas Islands *C. catus* has colonized deeper habitats, living beyond 30 meters. A specimen was collected alive at 38 meters during the 2012 expedition, this constitutes an extension of the bathymetry of this species.

Conus conco Puillandre, Stöcklin, Favreau, Bianchi, Perret, Rivasseau, Limpalaër, Monnier & Bouchet, 2015

Boutet *et al.*, 2020: 434. Tröndlé *et al.*, 2020: 94; Richard & Rabiller, 2021: 55; Touitou & Balleton, 2022: 230

Sequenced material:
Hiva Oa: Stn MQ19-R (10-25 m) 1 spm (58.5 mm) MNHN-IM-2013-40036.
Nuka Hiva: Stn MQ2-GR (20-23 m) 2 spms (33.8 mm) MNHN-IM-2013-40009; (43.6 mm) MNHN-IM-2013-40038.

Other material examined:
Nuku Hiva: Stn MQ11-II-03 (10 m) 5 spms (18.5 mm) MNHN-IM-2016-5144; (27.3 mm) MNHN-IM-2016-5146; (29.1 mm) MNHN-IM-2016-5147; (31.4 mm) MNHN-IM-2016-5148; (30.2 mm) MNHN-IM-2016-5149. - Stn MQ11-II-04 (28 m) 1 spm (31.9 mm) MNHN-IM-2016-5145. - Stn MQ11-II-12 (14 m) 1 spm (50.2 mm) MNHN-IM-2016-7914.

Biogeography and comments:
Until 2015, the Marquesas specimens were considered a geographical variation of *Conus lividus* Hwass in Bruguière, 1792. However, molecular data revealed that the Marquesas population represents a distinct species, leading to the description of *Conus conco* as a new species. The last molecular analysis suggests that it is separate from its sister species, *Conus lividus. Conus conco* is a vermivorous species endemic to the Marquesas Islands that lives between 5 and 30 meters (Monnier *et al.*, 2018), 2 and 30 meters (Boutet *et al.*, 2020). Itlives in sympatry with *Conus lividus*, a rarer species in the Marquesas Islands, although there is no sequence available for Marquesas specimens of *Conus lividus*. During the **CONPOL** expedition (2007), three specimens were collected alive (Moolenbeek *et al*., 2008). The PITM expedition yielded ten specimens between 10 and 28 meters, three of which were sequenced.

Conus encaustus Kiener, 1845

Boutet *et al.*, 2020: 436; Tröndlé *et al.*, 2020: 94; Richard & Rabiller, 2021: 67; Touitou & Balleton, 2022: 245

Sequenced material:
Fatu Hiva: Stn MQ16-M (0-1 m) 4 spms (20.9 mm) MNHN-IM-2013-40010; (21.8 mm) MNHN-IM-2013-40011; (19.4 mm) MNHN-IM-2013-40014, (20.7 mm) MNHN-IM-2013-40015.
Tahuata: Stn MQ11-GR (6-12 m) 1 spm (22.2 mm) MNHN-IM-2013-40016.
Ua Pou: Stn MQ22-R (6 m) 1 spm (17.2 mm) MNHN-IM-2013-40019.

Other material examined:
Nuku Hiva: Stn MQ11-II-02 (25 m) 4 spms (21.2 mm) MNHN-IM-2016-7980; (18.2 mm) MNHN-IM-2016-7981; (15.7 mm) MNHN-IM-2016-7982; (7.5 mm) juv. MNHN-IM-2016-7983. - Stn MQ11-II-03 (10 m) 3 spms (23.9) MNHN-IM-2016-7930; (25.0 mm) MNHN-IM-2016-7991; (24.3 mm) MNHN-IM-2016-7992. - Stn MQ11-II-05 (4 m) 2 spms (28.1 mm) MNHN-IM-2016-7978; (20.2 mm) MNHN-IM-2016-7979. - Stn MQ11-II-12 (14 m) 2 spms (21.8 mm) MNHN-IM-2016-7931; (7.6 mm) juv. MNHN-IM-2016-7933. - Stn MQ11-II-12 (38 m) 2 spms (17.7 mm) MNHN-IM-2016-5138; (16.8 mm) MNHN-IM-2016-5139.
Fatu Hiva: Stn MQ16-M (0-1 m) 4 spms (17.9 mm) MNHN-IM-2016-7932; (7.2 mm) juv. MNHN-IM-2016-7929; (17.2 mm) MNHN-IM-2013-40012; (24.3 mm) MNHN-IM-2013-40013. - Stn MQ11-II-22 (25 m) 1 spm (30.2 mm) MNHN-IM-2016-7971. - Stn MQ11-II-25 (25 m) 1 spm (19.4 mm) MNHN-IM-2016-5141.
Hatutaa: Stn MQ11-II-08 (38 m) 3 spm (21.8 mm) MNHN-IM-2016-5129; (16.4 mm) MNHN-IM-2016-5130; (15.0 mm) MNHN-IM-2016-5131.

Biogeography and comments:
A vermivorous species endemic to the Marquesas, *Conus encaustu*s is morphologically close to *Conus miliaris*, Hwass, 1792, a species present in other Polynesian archipelagos but absent from the Marquesas. Several publications treat *Conus encaustus* as a species (Kohn *et al.*, 1995; Tucker & Tenonio, 2013; Monnier *et al.*, 2018). Molecular analysis of specimens collected and sequenced during the **PITM** expedition leads to considering *C. encaustus* as a geographical variation of *C. miliaris*, since *C. miliaris* is not monophyletic and includes specimens of *C. encaustus*. This would suggest that these two species are synonyms, a hypothesis that must be tested with other genes. It can be noted that the number of nodules that adorn the spire is however different for the two species (Touitou & Balleton, 2022). The taxonomic status of Conus encaustus remains unchanged while awaiting further studies.

Fifteen specimens were collected between 1 and 79 meters during the 1969 **PELE** expedition. Forty-eight specimens were collected alive between 0 and 30 meters during the

MUSORSTOM 9 (1997) and **CONPOL** (2007) expeditions. During the **PITM** expedition, twenty-eight specimens were collected between 0 and 38 meters, six of which were sequenced. The species is given to live "0.5-6 m" (Röckel *et al.*, 1995), "at depths till 30 m" (Moolenbeek *et al.*, 2008), "0-30 m" (Monnier & al., 2018), "2-5 m" (Boutet *et al.*, 2020). We do not know if the two specimens (USNM lot 794397) collected in 1969 between 68 and 79 meters were alive, and the other specimens were collected between 1 and 18 meters. During the **PITM** expedition, three live specimens were collected at the Stn MQ11-II-08 at 38 meters, representing a slight extension of its bathymetrical range.

The holotype has been lost: "Holotype was in collection H.A. Prevost, sold to G.B. Sowerby III and dispersed, present whereabouts unknown" (Filmer, 2012). We therefore designate the sequenced specimen MNHN-IM-2013-40015, 20.7 mm [French Polynesia, Marquesas Islands: Fatu Hiva, 10°27,84'S 138°39,97'W, 17-18/12/2011, PITM Stn MQ16-M] as the neotype of *Conus encaustus*. This specimen corresponds to the accepted taxonomic morphological variation of this species, with the tawny or reddish color of the test, the brown lines, the white spots and the brown maculations, as described by Kiener. In addition, the size of the designated specimen is relatively close to that of the holotype (26 mm).

Conus gauguini Richard & Salvat, 1973

Boutet *et al.*, 2020: 428; Tröndlé *et al.*, 2020: 94; Richard & Rabiller, 2021: 74; Touitou & Balleton, 2022: 258

Sequenced material:
Hiva Oa: Stn MQ19-R (10-25 m) 1 spm (76.5 mm) MNHN-IM-2013-40076.

Other material examined:
Nuku Hiva: Stn MQ11-II-02 (25 m) 1 spm juv. (16.8 mm) MNHN-IM-2016-7918. - Stn MQ11-II-13 (36 m) 2 spms (68.5 mm) MNHN-IM-2016-7912; (70.7 mm) MNHN-IM-2016-7953. **Tahuata:** Stn MQ11-II-33 (40 m) 2 spms (72.6 mm) MNHN-IM-2016-7957; (64.2 mm) MNHN-IM-2016-7958.

Biogeography and comments:
Conus gauguini was first collected during the **PELE** expedition in 1969, and the authors related the specimens to the well-known species *Conus barthelemyi* Bernardi, 1861 (Richard, Pers. Comm., 2021). Only four years later it was described as a new species, *Conus gauguini*, and since the 1970s, countless specimens have been collected. Some specimens have a different shape, widened at the shoulder, almost devoid of patterns, with very light color or with a higher and more stepped spire, this last variation being also collected in Hawaii at significant depths, 100 to 200 meters (Touitou & Balleton, 2022). This calls into question the endemic nature of *Conus gauguini* or might suggest the presence of an undescribed pseudo-cryptic species.

At least three specimens were collected during the **PELE** expedition (1969) between 3 and 117 meters. Two dead specimens, including a juvenile, were collected during **MUSORSTOM 9** (1997). Four live specimens were collected between 5 and 30 meters during the **CONPOL** expedition (2007). Seven specimens were collected between 10 and 40 meters during the **PITM** expedition, two of which were sequenced. Molecular analysis of these two specimens initially labeled *Conus gauguini* suggests that they are two genetically different species. Thus, the specimen MNHN-IM-2013-40002 was re-identified as *Conus sp.* (Touitou & Balleton, 2022), while the specimen IM-2013-40076 (fig.1,pl.7;fig.1,pl.8) cluster with another *Conus gauguini* from GENBANK. Since *Conus boutetorum* Richard & Rabiller, 2013 has not yet been sequenced in Polynesia, the comparison of its genetic material with *Conus gauguini* and *Conus sp.* remains to be done.

The species is given to live "20-50 m" (Röckel & al., 1995), (Monnier & al., 2018), "20-40 m" (Boutet *et al.*, 2020). We estimate that the presence of *Conus gauguini* beyond 50 meters is likely because this species has been mainly collected by divers, who rarely venture beyond 40 to 50 meters in the Marquesas.

Conus imperialis Linnaeus, 1758

Boutet *et al.*, 2020: 430; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 81; Touitou & Balleton, 2022: 274

Sequenced material:
Hatu Iti: Stn MQ27-GR (5-22 m) 2 spms (69.4 mm) MNHN-IM-2013-40077; (51.9 mm) MNHN-IM-2013-40089.

Other material examined:
Hiva Oa: Stn Stn MQ11-II-23 (30 m) 1 spm (58.1 mm) MNHN-IM-2016-7952.
Ua Pou: Stn MQ11-II-41 (30 m) 1 spm (67.7 mm) MNHN-IM-2016-7954.
Hatu iti: Stn MQ27-GR (5-22 m) 1 spm MNHN-IM-2013-40077.
Nuku Hiva: Stn MQ11-II-13 (36 m) 1 spm (33.2 mm) MNHN-IM-2016-5137.

Biogeography and comments:
Conus imperialis is a vermivorous species. Many specimens (fifty-five) were collected between 1 and 82 meters during the 1967 **PELE** expedition, among which are probably specimens belonging to a species that will be described forty years later: *Conus pseudimperialis* Moolenbeek, Zandbergen & Bouchet, 2008. Moolenbeek *et al.* studied twelve specimens and defined the species as littoral (0-20 m). During the 2012 expedition, six specimens were collected between 5 and 36 meters, of which one has been sequenced. Its sequence is slightly divergent from the other available ones from Rapa, Papua New Guinea and Vanuatu, but pending for more data, we consider all of them as a single species, with genetic diversity linked to geography. The data collected during the 1967 expedition could extend the bathymetric data but, to our knowledge, no study has been carried out to date.

Conus litoglyphus Hwass in Bruguière, 1792

Boutet *et al.*, 2020: 429; Richard & Rabiller, 2021: 89; Touitou & Balleton, 2022: 280

Other material examined:
Hiva Oa: Stn MQ11-II-24 (37 m) 1 spm juv. (13.4 mm) MNHN-IM-2016-7925.

Biogeography and comments:
Four live specimens of this vermivorous species were collected between 5 and 30 meters during the **CONPOL** expedition (Moolenbeek *et al.*, 2008). A juvenile specimen was collected dead at 37 meters during the **PITM** expedition. Molecular analysis (Touitou & Balleton, 2022) suggests that *Conus litoglyphus* is a complex of two cryptic species, both present in sympatry in the Indian Ocean and the Pacific Ocean.

Conus magnificus Reeve , 1843

Boutet *et al.*, 2020: 426; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 93; Touitou & Balleton, 2022: 284

Sequenced material:
Fatu Hiva: Stn MQ11-II-29 (30 m) 1 spm (40.9 mm) MNHN-IM-2013-52135.

Other material examined:
Nuku Hiva: Stn MQ11-II-14 (36 m) 1 spm (39.8 mm) MNHN-IM-2013-52136.

Biogeography and comments:
A specimen of this malacophagous species was collected between 2 and 18 meters during the **PELE** expedition (1967). Five live specimens were collected between 5 and 30 meters during the 2007 **CONPOL** expedition (Moolenbeek *et al.*, 2008) and two specimens were found alive between 30 and 36 meters during the **PITM** expedition, one of which was sequenced. Despite a different appearance in the Marquesas, the sequences of the Marquesas and Vanuatu specimens are nearly identical.

Conus marchionatus Hinds, 1843

Boutet *et al.*, 2020: 426; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 95; Touitou & Balleton, 2022: 290

Sequenced material:
Nuku Hiva: Stn MQ6-ACH (60-76 m) 1 spm (30.9 mm) MNHN-IM-2013-40037.

Other material examined:
Tahuata: Stn MQ13-GR (27-35 m) 1 spm (25.1 mm) MNHN-IM-2013-40084.

Biogeography and comments:
This species was collected in large numbers during the 1967 **PELE** expedition, with seventy-five specimens found between 1 and 82 meters. More than a hundred specimens were collected alive between 5 and 285 meters during the **MUSORSTOM 9** and **CONPOL** expeditions. Moolenbeek *et al.* specified in 2008 that this endemic species is rather common between 25 and 180 meters and that its paucispiral protoconch is to be linked to its limited distribution. Only two specimens were collected, between 27 and 76 meters, during the 2012 expedition and one specimen was sequenced, which constitutes a separate lineage that clearly corresponds to a separate species. No specimen has been observed outside the Marquesas archipelago, the species is therefore considered endemic.

The holotype was lost: "Holotype was in collection Sir E. Belcher, present whereabouts unknown" (Filmer, 2012). We therefore designate the sequenced specimen MNHN-IM-2013-40037, 30.9 mm [French Polynesia, Marquesas Islands: Nuku Hiva, 08°56.01'S 140°01.7'W, 13/01/2012, PITM stn MQ6-ACH] as the neotype of *Conus marchionatus*. This specimen corresponds to the accepted morphological variation of this species, with a white shell, angularly reticulate with brown, depressed spiral as described by Hinds but without illustration. Furthermore, the designated specimen is close in size to the holotype (34 mm), comes from Nuku Hiva Island, which represents the type locality "Port Anna Maria, Nukuhiva" and was collected at a comparable depth (20 -25 m) ("7 - 10 fths", approximately 13 - 18 m).

Conus moreleti Crosse, 1858

Boutet *et al.*, 2020: 435; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 102; Touitou & Balleton, 2022: 302

Sequenced material:
Nuku Hiva: Stn MQ3-GR (20-25 m) 1 spm (46.2 mm) MNHN-IM-2013-40045.
Eiao: Stn MQ11-II-07BIS (25 m) 1 spm (55.0 mm) MNHN-IM-2013-52139.

Other material examined:
Ua Pou: Stn MQ11-II-41 (30 m) 1 spm (40.4 mm) MNHN-IM-2016-7913.
Nuku Hiva: Stn MQ11-II-01 (38 m) 1 spm (44.8 mm) MNHN-IM-2016-7949. - Stn MQ11-II-02 (25 m) 3 spms (38.4 mm) MNHN-IM-2016-7984; (36.6 mm) MNHN-IM-2016-7985; (32.6 mm) MNHN-IM-2016-7986.

Biogeography and comments:
n the Marquesas, this vermivorous species has a shell whose color sometimes differs from the traditionally observed olive green in other archipelagos; it can be yellow or orange. During the MUSORSTOM 9 and **CONPOL** expeditions, ten living specimens were collected at depths ranging from 5 to 30 meters. In 2012, seven additional specimens were collected between 20 and 38 meters, two of which were sequenced. The genetic analysis revealed that these specimens clustered with others from Rapa and the Society Islands, showing short genetic distances but no correlation with shell color patterns.

Conus nanus G. B. Sowerby I, 1833

Boutet *et al.*, 2020: 436; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 103; Touitou & Balleton, 2022: 306

Matériel examiné:
Ua Uka: Stn (20 m) 1 spm (7.6 mm) MNHN-IM-2016-7928.
Hatu Iti: Stn MQ27-GR (5-22 m) 1 spm (11.5 mm) MNHN-IM-2013-40003.
Hiva Oa: Stn MQ11-II-24 (37 m) 1 spm (12.2 mm) MNHN-IM-2016-5143.

Biogeography and comments:
Conus nanus is a vermivorous species. One specimen was collected between 0 and 1 meter during the 1967 **PELE** expedition. Three specimens were recorded between 5 and 37 meters during the **PITM** expedition. The species seems uncommon in the Marquesas. Similar to the results found

by Duda *et al.* (2008) with a larger dataset, *Conus nanus* is mixed together with the morphologically similar species *Conus musicus* Hwass, 1792, *Conus mcbridei* Lorenz, 2005, *Conus nux* Broderip, 1833, *Conus sponsalis* Hwass in Bruguière, 1792 and *Conus parvatus* Walls, 1979, and its specific status cannot be confirmed.

Conus obscurus G. B. Sowerby I, 1833

Boutet *et al.*, 2020: 427; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 106; Touitou & Balleton, 2022: 310

Sequenced material:
Hiva Oa: Stn MQ19-R (10-25 m) 1 spm (22.0 mm) MNHN-IM-2013-40035.
Fatu Hiva: Stn MQ16-M (0-1 m) 1 spm (28.6 mm) MNHN-IM-2013-40032.
Ua Pou: Stn MQ24-R (6-12 m) 1 spm (22.2 mm) MNHN-IM-2013-40033.
Nuku Hiva: Stn MQ1-R (8-10 m) 1 spm (26.0 mm) MNHN-IM-2013-40025.

Other material examined:
Hiva Oa: Stn MQ11-II-23 (30 m) 1 spm juv. (10.1 mm) MNHN-IM-2016-7926.
Nuku Hiva: Stn MQ11-II-15 (36 m) 1 spm (33.7 mm) MNHN-IM-2016-7950.
Hatutaa: Stn MQ11-II-08 (38 m) 2 spm (29.7 mm) MNHN-IM-2016-7974; (29.1 mm) MNHN-IM-2016-7975. - Stn MQ32-GR (17-22 m) 4 spms (26.3 mm) MNHN-IM-2013-40026; (26.3 mm) MNHN-IM-2013-40027; (26.2 mm) MNHN-IM-2013-40028; (25.4 mm) MNHN-IM-2013-40029
Eiao: Stn MQ11-II-10 (24 m) 3 spms (27.2 mm) MNHN-IM-2016-7997; (29.1 mm) MNHN-IM-2016-7998; (25.6 mm) MNHN-IM-2016-7999.
Ua Uka: Stn MQ11-II-19 (20 m) 2 spms (24.5 mm) MNHN-IM-2016-7988; (21.2 mm) MNHN-IM-2016-8000. - Stn MQ11-II-21 () 2 spms (25.0 mm) MNHN-IM-2016-5132; (25.3 mm) MNHN-IM-2016-5133.
Fatu Hiva: Stn MQ16-M (0-1 m) 2 spms (30.4 mm) MNHN-IM-2013-40030; (25.2 mm) MNHN-IM-2013-40031.
Tahuata: Stn MQ11-II-31 (25 m) 3 spms (25.4 mm) MNHN-IM-2016-5134; (23.3 mm) MNHN-IM-2016-5135; (22.4 mm) MNHN-IM-2016-5136.
Ua Pou: Stn MQ11-II-41 (30 m) 1 spm (21.5 mm) MNHN-IM-2016-5140.

Biogeography and comments:
Two specimens were collected, between 3 and 18 meters, during the **PELE** expedition (1967). During the **MUSORSTOM 9** (1997) and **CONPOL** (2007) expeditions, twelve specimens were collected between 0.5 and 30 meters. Twenty-five specimens were collected during the 2012 expedition between 0 and 38 meters, four of which were subsequently sequenced: their sequences are nearly identical to a sequence obtained from a specimen from Guam. This piscivorous species is quite rare in neighboring archipelagos while it is quite common in the Marquesas.

Conus pseudimperialis Moolenbeek, Zandbergen & Bouchet, 2008

Boutet *et al.*, 2020: 430; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 115; Touitou & Balleton, 2022: 314

Sequenced material:
Nuku Hiva: Stn MQ6-ACH (60-76 m) 1 spm (39.8 mm) MNHN-IM-2013-40042.
Fatu Hiva: Stn MQ15-GR (0-28 m) 1 spm (44.9 mm) MNHN-IM-2013-40041.

Other material examined:
Ua Huka: Stn MQ11-II-21 (20 m) 1 spm (34.6 mm) MNHN-IM-2016-7911.

Biogeography and comments:
This vermivorous species was described based on specimens collected during the **MUSORSTOM 9** expedition (1997). Around thirty specimens were collected between 10 and 252 meters, twenty of which were alive. Three-quarters of the specimens were collected at less than 110 meters. Three specimens were collected in 2012 between 0 and 76 meters, two of which were subsequently sequenced: they constitute a separate lineage in the tree, well differentiated from *Conus fuscatus* Born, 1778 and *Conus imperialis*, justifying its specific status. The species was probably also collected during the **PELE** expedition (1967) because fifty-five specimens of the species *Conus imperialis* were collected between 1 and 82 meters, but *Conus pseudimperialis* had not yet been described; thus specimens labelled *Conus imperialis* are probably *Conus pseudimperialis*. The species seems more common below around thirty meters.

Conus quercinus [Lightfoot], 1786

Boutet *et al.*, 2020: 435; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 117; Touitou & Balleton, 2022: 320

Sequenced material:
Ua Huka: Stn MQ11-II-21 (20 m) 2 spms (69.1 mm) MNHN-IM-2013-52137; (60.6 mm) MNHN-IM-2013-52138.
No data: Stn "no data" (label lost) 1 spm (64.8 mm) MNHN-IM-2013-40079.

Other material examined:
Nuku Hiva: Stn MQ11-II-02 (25 m) 1 spm (30.5 mm) MNHN-IM-2016-7966. - Stn MQ11-II-12 (14 m) 1 spm (38.2 mm) MNHN-IM-2016-7947.
Eiao: Stn MQ11-II-07BIS (25 m) 6 spms (53.8 mm) MNHN-IM-2016-7960; (46.3 mm) MNHN-IM-2016-7961; (48.5 mm) MNHN-IM-2016-7962; (44.7 mm) MNHN-IM-2016-7963; (38.4 mm) MNHN-IM-2016-7964; (35.9 mm) MNHN-IM-2016-7965.

Biogeography and comments:
This is a vermivorous species common to the Marquesas Islands. The **PELE** expedition (1967) collected seventy-two specimens between 20 and 117 meters and the **MUSORSTOM 9** (1997) and **CONPOL** (2007) expeditions were able to collect dozens of specimens between 5 and 155 meters. However, the majority of the cones collected come from stations whose depth is less than 100 meters. Of the eleven specimens collected between 20 and 25 meters in 2012, three were subsequently sequenced. Molecular analysis suggests that the taxon *C. quercinus* actually includes two species, one of which would represent a new species. These two species cannot be separated on a geographical basis because specimens from

localities in the Indian Ocean and the Pacific Ocean, including the Marquesas Islands, are present in both groups.

***Conus retifer* Menke, 1829**

Boutet *et al.*, 2020: 425; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 120; Touitou & Balleton, 2022: 322

Sequenced material:
Fatu Hiva: Stn MQ11-II-19 (28 m) 1 spm (32.2 mm) MNHN-IM-2013-40090.

Biogeography and comments:
Five specimens were collected during the 1967 **PELE** expedition between 0 and 12 meters. The **MUSORSTOM 9** (1997) and **CONPOL** (2007) expeditions collected two live specimens, one between 5 and 30 meters. During the 2012 expedition, a specimen was collected at 28 meters and then sequenced. The shell of this malacophagous species has a very dark coloration in the Marquesas Islands, contrasting with the lighter color of specimens from other archipelagos. This very dark coloration is also found in the Indian Ocean. The molecular analysis includes both a dark specimen (Marquesas Islands) and a light specimen (Tuamotu), together with a third specimen from Christmas Islands, and they all form a homogenous group, likely representing a single species. The different color patterns are thus more likely linked to geographical or ecological variation.

***Conus sanguinolentus* Quoy & Gaimard, 1834**

Boutet *et al.*, 2020: 434; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 123; Touitou & Balleton, 2022: 330

Sequenced material:
Fatu Hiva: Stn MQ16-M (0-1 m) 5 spms (24.2 mm) MNHN-IM-2013-40005; (25.4 mm) MNHN-IM-2013-40006; (25.2 mm) MNHN-IM-2013-40007; (25.7 mm) MNHN-IM-2013-40008; (22.2 mm) MNHN-IM-2013-40044.
Ua Pou: Stn MQ21-R (6-10 m) 1 spm (43.6 mm) MNHN-IM-2013-40018.

Other material examined:
Tahuata: Stn MQ11-II-30 (36 m) 1 spm (46.9 mm) MNHN-IM-2016-7915.
Nuku Hiva: Stn MQ11-II-02 (25 m) 1 spm (35.3 mm) MNHN-IM-2016-7916. - Stn MQ11-II-04 (28 m) 1 spm (36.4 mm) MNHN-IM-2016-7987.
Motane: Stn MQ17-R (35-40 m) 1 spm (24.6 mm) MNHN-IM-2016-7955.

Biogeography and comments:
More than fifty specimens, collected during the **MUSORSTOM 9** (1997) and **CONPOL** (2007) expeditions, were studied by Moolenbeek *et al.* (2008). Most of them come from depths between 0 and 3 meters but live specimens have been collected up to 30 meters. The 2012 expedition collected ten specimens between 10 and 40 meters, six of which were then sequenced: they all form a single homogenous clade together with a sequence from Rapa.

***Conus sponsalis* Hwass in Bruguière, 1792**

Boutet *et al.*, 2020: 437; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 124; Touitou & Balleton, 2022: 332

Sequenced material:
Fatu Hiva: Stn MQ16-M (0-1 m) 2 spms (12.4 mm) MNHN-IM-2013-40086; (10.9 mm) MNHN-IM-2013-40087.

Other material examined:
Fatu Hiva: Stn MQ16-M (0-1 m) 10 spms (11.3 mm) MNHN-IM-2016-7923; (11.1 mm) MNHN-IM-2016-7921; (9.7 mm) MNHN-IM-2016-7924; (11.2 mm) MNHN-IM-2016-7920; (19.0 mm) MNHN-IM-2016-7919; (12.0 mm) MNHN-IM-2016-7922; (10.2 mm) MNHN-IM-2016-7972; (9.4 mm) MNHN-IM-2016-7973; (10.2 mm) MNHN-IM-2013-40085; (11.5 mm) MNHN-IM-2013-40088.
Nuku Hiva: Stn MQ7-M (0-1 m) 1 spm (9.5 mm) MNHN-IM-2013-40020.

Biogeography and comments:
Six specimens of this vermivorous species were collected during the **PELE** expedition (1967) between 1 and 18 meters. During the research of R. Von Cosel, J. Tröendlé and J. Tardy (1997), C. Bryce and K. L. Kaiser (1999) and during **MUSORSTOM 9** (1997) more than sixty specimens were collected between 0.5 and 17 meters, the majority of which were collected between 0 and 0.5 meters. Thirteen specimens were collected in 2012 between 0 and 1 meter, two of which were subsequently sequenced. As previously indicated, *Conus sponsalis* cannot be distinguished from the other species of the *Harmoniconus* group.

***Conus taitensis* Hwass in Bruguière, 1792**

Boutet *et al.*, 2020: 432; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 128; Touitou & Balleton, 2022: 334

Sequenced material:
Fatu Hiva: Stn MQ16-M (0-1 m) 1 spm (32.9 mm) MNHN-IM-2013-40043.
Tahuata: Stn MQ12-M (0-1 m) 2 spms (33.4 mm) MNHN-IM-2013-40049; (37.0 mm) MNHN-IM-2013-40050.

Other material examined:
Nuku Hiva: Stn MQ11-II-01 (38 m) 1 spm (43.2 mm) MNHN-IM-2016-7956. - Stn MQ11-II-03 (10 m) 3 spms (29.3 mm) MNHN-IM-2016-7993; (16.8 mm) MNHN-IM-2016-7994; (29.3 mm) MNHN-IM-2016-5150.
Tahuata: Stn MQ12-M (0-1 m) 1 spm (25.3 mm) MNHN-IM-2013-40051.
Fatu Hiva: Stn MQ11-II-25 (25 m) 1 spm (21.0 mm) MNHN-IM-2016-5142.
Biogeography and comments:
Nine specimens were collected during the **PELE** expedition (1967) between 0 and 59 meters. Moolenbeck *et al.* (2008) studied twenty-six specimens collected live between 0.5 and 3 meters. The authors specify that the species can be collected up to 100 meters and give the form name *taitensis* to the Marquesas specimens. Nine specimens were collected, between 0 and 38 meters, during the 2012 expedition, three of which were subsequently sequenced. Our phylogenetic tree confirms that *C. taitensis*, represented by samples from the Marquesas Islands, Guam and Rapa, and *C. rattus* are two different species.

***Conus terebra* Born, 1778**

Boutet *et al.*, 2020: 435; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 130; Touitou & Balleton, 2022: 342

Matériel examiné:

Nuku Hiva: Stn MQ11-II-04 (28 m) 1 spm (70.0 mm) MNHN-IM-2016-7910

Tahuata: Stn MQ11-II-35 (10 m) 1 spm (45.9 mm) MNHN-IM-2016-7951; Stn MQ11-II-36 (20 m) 1 spm (73.4 mm) MNHN-IM-2016-7909.

Biogeography and comments:

This vermivorous species is uncommon in the Marquesas: it was not collected during the 1967 and 1997 expeditions. Three specimens were collected in 2012 between 10 and 28 meters but none were sequenced. Note that specimens from the Marquesas are usually much more colorful than those from other archipelagos.

Conus aff. tessulatus

Boutet *et al.*, 2020: 433; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 131; Touitou & Balleton, 2022: 344

Sequenced material:

Tahuata: Stn MQ13-GR (27-35 m) 1 spm (27.8 mm) MNHN-IM-2013-40092.

Other material examined:

Nuku Hiva: Stn MQ11-II-04 (28 m) 1 spm (28.4 mm) MNHN-IM-2016-7968. - Stn MQ11-II-13 (36 m) 2 spms (29.9 mm) MNHN-IM-2016-7969; (26.5 mm) MNHN-IM-2016-7970.

Biogeography and comments:

This vermivorous species appears to be common, with one hundred and fifty-seven specimens collected during the **PELE** expedition in 1967, between 2 and 82 meters, and more than one hundred specimens collected alive during the 1997, 1999 and 2007 expeditions. Most specimens were collected at less than 30 meters. During the 2012 **PITM** expedition, four specimens were collected between 27 and 36 meters, one of which was subsequently sequenced. Molecular analysis suggests that the specimens from the Pacific and Indian Oceans belong to different species. We applied the name *Conus aff. tessulatus* for the Marquesas population (and that of the Pacific Ocean) because the holotype of *Conus tessulatus,* Born, 1178 comes from the Indian Ocean, following the opinion of Monnier *et al.* (2018).

***Conus troendlei* Moolenbeek, Zandbergen & Bouchet, 2008**

Boutet *et al.*, 2020: 431; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 136; Touitou & Balleton, 2022: 348

Sequenced material:

Fatu Hiva: Stn MQ14-ACH (130-500 m) 1 spm (15.8 mm) MNHN-IM-2013-40004.

Biogeography and comments:

Twenty-three specimens were collected during the **MUSORSTOM 9** expedition (1997) between 50 and 110 meters. During the 2012 expedition, a live specimen was collected between 130 and 500 meters, then sequenced. In the phylogenetic tree, it is sister to *Conus sazanka* Shikama, 1970, represented by two specimens from Vanuatu and Mozambique. To date, the species has not been collected in another archipelago of French Polynesia, and thus represents a species endemic to the Marquesas Islands. The 2012 expedition shows that the species can live at greater depths (130 m and more) than those found during the 1997 expedition (50 to 110 m).

***Conus vautieri* Kiener, 1847**

Boutet *et al.*, 2020: 433; Tröndlé *et al.*, 2020: 95; Richard & Rabiller, 2021: 139; Touitou & Balleton, 2022: 350

Sequenced material:

Ua pou: Stn MQ24-R (6-12 m) 2 spms (24.5 mm) MNHN-IM-2013-40034; (17.7 mm) MNHN-IM-2013-40039; Stn MQ3-GR (20-25 m) 1 spm (34.6mm) MNHN-IM-2013-40040.

Other material examined:

Nuku Hiva: Stn MQ11-II-02 (25 m) 1 spm (21.8 mm) MNHN-IM-2016-7967. - Stn MQ11-II-03 (10 m) 1 spm (26.2 mm) MNHN-IM-2016-7943.

Fatu Hiva: Stn MQ11-II-22 (25 m) 1 spm (42.2 mm) MNHN-IM-2016-7944. - Eiao: Stn MQ11-II-07BIS (25 m) 1 spm (38.9 mm) MNHN-IM-2016-7945.

Ua Huka: Stn MQ11-II-19 (20 m) 1 spm (32.5 mm) MNHN-IM-2013-40093.

Biogeography and comments:

Conus vautieri is a fairly common vermivorous species. During the 1967 expedition, thirty specimens were collected between 1 and 82 meters. The 1997 and 2007 expeditions collected thirty-seven specimens between 5 and 55 meters, most of which were brought up from a depth of less than 30 meters. In 2012, eight specimens were collected between 6 and 25 meters, three of which were sequenced. Molecular analysis suggests a specific rank, with the clade including the *Conus vautieri* specimens well differentiated from *Conus bizona* Coomans, Moolenbeek & Wils, 1981 and the *Conus pulicarius* Hwass, 1792/*Conus arenatus* Hwass in Bruguière, 1792 complex. To date, the species has not been collected in another archipelago of French Polynesia. According to current knowledge, it is an endemic species of the Marquesas Islands.

The holotype was destroyed: "Holotype was in collection A.C. Bernardi acquired by M. Gubba then in **MHNH,** destroyed in World War 2" (Filmer, 2012). We therefore designate the sequenced specimen MNHN-IM-2013-40040, 34.6 mm [French Polynesia, Marquesas Islands: Ua Pou, 08°55.97'S 140°13.57'W, 08/01/2012, PITM Stn MQ3-GR] as the neotype of *Conus vautieri*. This specimen fits within the morphological variation of this species, with a whitish shell, clouded with pink and brown with a large number of brown or blackish dots, and a crowned spire, as described by Kiener. In addition, the size of the designated specimen is close to that of the holotype (32 mm).

***Conus vexillum* Gmelin, 1791**

Boutet *et al.*, 2020: 429; Tröndlé *et al.,* 2020: 95; Richard & Rabiller, 2021: 140; Touitou & Balleton, 2022: 358

Sequenced material:
Nuku Hiva: Stn MQ1-GR (8-10 m) 1 spm (86.2 mm) MNHN-IM-2013-40078.

Biogeography and comments:
This vermivorous species was represented by one specimen in the material of the 1967 expedition, collected between 53 and 73 meters. Moolenbeck *et al.* (2008) studied six specimens collected between 0 and 3 meters, and described the species as littoral and common. A single specimen was collected in 2012 between 8 and 10 meters and then sequenced: it clusters in a well differentiated lineage, together with specimens from Vanuatu and Tuamotu.

Conus sp.

Sequenced material:
Motane: stn MQ17-R (35-40 m) 1 spm (42.0 mm) MNHN-IM-2013-40002.

Other material examined:
Fatu Hiva: Stn MQ11-II-29 (30 m) 1 spm juv. (19.7 mm) MNHN-IM-2016-7917.

Biogeography and comments:
Seven specimens identified as *Conus gauguini* were collected between 10 and 40 meters during the **PITM** expedition (2012), two of which were sequenced. Molecular analysis of these two specimens initially labeled *Conus gauguini* suggests that they are two genetically different species. Thus, the specimen MNHN-IM-2013-40002 was identified as *Conus sp.* (Touitou & balleton, 2022; Touitou, 2024); since *Conus boutetorum* has not yet been sequenced in Polynesia, the comparison of its genetic material with that of *Conus gauguini* and *Conus sp.* remains to be done. *Conus sp.* is represented by two specimens, one of which is a juvenile. The shell has a morphology and color close to *C. gauguini*, making this potential new species and *Conus gauguini* almost cryptic for the moment (Touitou, 2024). The sequenced specimen is of modest size and its lip is thin. It is necessary to collect other specimens, of larger sizes in order to be able to determine the morphological characters that eventually distinguish it from *C. gauguini.* It can be noted that the juvenile specimens of *C. gauguini, C. boutetorum* and *Conus sp*. are morphologically different (see plate n°6).
In addition, it has been established that a variation of *C. gauguini* from the Marquesas Islands - a pale pink shell, sometimes without pattern, with a broad shoulder and a very stepped spire - is also present in the Hawaiian archipelago where it lives in sympatry with *Conus boutetorum* Richard & Rabiller, 2013 (Touitou & Balleton, 2022; Touitou, 2024). Whether this variation belongs to the same species as the sequenced specimen or not remains to be tested by sequencing adult specimens from both groups.

CONCLUSION

The **PAKAHI I TE MOANA** expedition of 2012 completed the biological inventories carried out during previous expeditions in the Marquesas Islands. The sequencing of twenty-two species of Conidae helped to clarify the phylogenetic relationships of the Marquesas species with their relatives in other Archipelagos from the Pacific, as well as in clarifying some species boundaries.. This material also gave us the opportunity to designate neotypes, chosen among the sequenced material, to replace lost or destroyed holotypes of three endemic *Conus* species.
However, some questions still remain open: does the taxon *Conus textilinus* deserve a specific rank as Kiener assumed? Does the *Conus sp.* discovered during the molecular study corresponds to the variation of *Conus gauguini* also present in Hawaii? Additional sampling in the Marquesas Islands and surrounding localities will be necessary to complete our taxonomic knowledge of the cone snail fauna in the area.

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APPENDIX 1: List of stations.

INVMAR.CAMPAGNE.NOM	INVMAR.STATION.NUM_STATION	INVMAR.STATION.LAT_TEXT	INVMAR.STATION.LONG_TEXT	INVMAR.STATION.PROFONDEUR_1	INVMAR.STATION.PROFONDEUR_2	INVMAR.STATION.DATE_TEXT
PAKAIHI I TE MOANA	MQ1-GR	08°56,21'S	140°05,45'W	8	10	07,28JANV2012
PAKAIHI I TE MOANA	MQ2-GR	08°56,23'S	140°07,24'W	20	23	07,11-13,29JANV2012
PAKAIHI I TE MOANA	MQ3-GR	08°55,97'S	140°13,57'W	20	25	08-janv-12
PAKAIHI I TE MOANA	MQ4-GR	08°56,27'S	140°07,52'W	10	19	08,24JAN2012
PAKAIHI I TE MOANA	MQ5-M	08°55,27'S	140°06,37'W	0	1	12-janv-12
PAKAIHI I TE MOANA	MQ6-ACH	08°56,01'S	140°01,7'W	60	76	13-janv-12
PAKAIHI I TE MOANA	MQ7-M	08°53,92'S	140°02,92'W	0	1	13-janv-12
PAKAIHI I TE MOANA	MQ8-ACH1	09°58,99'S	139°07,89'W	50	60	14-15JAN2012
PAKAIHI I TE MOANA	MQ9-ACH1	09°59'S	139°08'W	125	240	14-janv-12
PAKAIHI I TE MOANA	MQ9-ACH2	09°58'S	139°09'W	300	300	16-janv-12
PAKAIHI I TE MOANA	MQ10-M	09°48,09'S	139°01,78'W	0	1	14-janv-12
PAKAIHI I TE MOANA	MQ10-R	09°48,09'S	139°01,78'W	1	10	14-janv-12
PAKAIHI I TE MOANA	MQ11-GR	10°00,84'S	139°07,35'W	6	12	15-janv-12
PAKAIHI I TE MOANA	MQ12-M	09°58,22'S	139°07,55'W	0	1	15-janv-12
PAKAIHI I TE MOANA	MQ13-GR	09°59,98'S	139°07,83'W	27	35	15-16JAN2012
PAKAIHI I TE MOANA	MQ14-ACH	10°28'S	138°41'W	130	500	17-18JAN2012
PAKAIHI I TE MOANA	MQ15-GR	10°28,31'S	138°40,68'W	0	28	17-18JAN2012
PAKAIHI I TE MOANA	MQ16-M	10°27,84'S	138°39,97'W	0	1	17-18JAN2012
PAKAIHI I TE MOANA	MQ17-ACH1	10°00'S	138°11'W	40	250	19-janv-12
PAKAIHI I TE MOANA	MQ17-ACH2	10°00'S	138°11'W	400	500	19-janv-12
PAKAIHI I TE MOANA	MQ17-R	09°59,84'S	138°10,72'W	35	40	19-janv-12
PAKAIHI I TE MOANA	MQ18-M	09°46,24'S	138°50,78'W	0	1	21-janv-12
PAKAIHI I TE MOANA	MQ19-R	09°45,67'S	138°50,69'W	10	25	21-janv-12
PAKAIHI I TE MOANA	MQ19-B	09°45,67'S	138°50,69'W	10	25	21-janv-12
PAKAIHI I TE MOANA	MQ20-ACH1	09°48'S	139°38'W	315	340	22-janv-12
PAKAIHI I TE MOANA	MQ20-ACH2	09°49'S	139°39'W	550	550	22-janv-12
PAKAIHI I TE MOANA	MQ20-ACH3	09°49'S	139°39'W	430	450	22-janv-12
PAKAIHI I TE MOANA	MQ21-GR	09°22,12'S	140°06,81'W	6	10	23-janv-12
PAKAIHI I TE MOANA	MQ21-R	09°22,12'S	140°06,81'W	6	10	23-janv-12
PAKAIHI I TE MOANA	MQ22-R	09°20,52'S	140°03,98'W	6	6	23-janv-12
PAKAIHI I TE MOANA	MQ23-M	09°21,45'S	140°06,15'W	0	1	23-janv-12
PAKAIHI I TE MOANA	MQ24-GR	09°23,71'S	140°07,76'W	6	12	23-janv-12
PAKAIHI I TE MOANA	MQ24-R	09°23,71'S	140°07,76'W	6	12	23-janv-12
PAKAIHI I TE MOANA	MQ25-M	08°56,53'S	140°09,69'W	0	1	24-janv-12
PAKAIHI I TE MOANA	MQ26-ACH1	08°54'S	140°15'W	300	400	24-janv-12
PAKAIHI I TE MOANA	MQ27-GR	09°23,714'S	140°07,759'W	5	22	25-janv-12
PAKAIHI I TE MOANA	MQ27-R	09°23,714'S	140°07,759'W	5	22	25-janv-12
PAKAIHI I TE MOANA	MQ27-M	09°23,714'S	140°07,759'W	0	1	25-janv-12
PAKAIHI I TE MOANA	MQ28-ACH1	08°42'S	140°39'W	100	350	25-janv-12
PAKAIHI I TE MOANA	MQ29-M	07°59,61'S	140°42,47'W	0	1	26-janv-12
PAKAIHI I TE MOANA	MQ30-ACH1	08°00'S	140°45'W	120	300	26-janv-12
PAKAIHI I TE MOANA	MQ31-ACH1	07°56'S	140°59'W	120	300	27-janv-12
PAKAIHI I TE MOANA	MQ32-GR	07°54,39'S	140°33,97'W	17	22	27-janv-12
PAKAIHI I TE MOANA	MQ33-M	08°56,1'S	140°10,1'W	0	1	28-janv-12
PAKAIHI I TE MOANA	MQ33(riviere)	08°56,1'S	140°10,1'W			28-janv-12
PAKAIHI I TE MOANA	no data					janv-12
PAKAIHI I TE MOANA	MQ11-II-01	08°55,8'S	140°13,6'W	38		21-nov-11
PAKAIHI I TE MOANA	MQ11-II-02	08°49,2'S	140°15,1'W	25		22-nov-11
PAKAIHI I TE MOANA	MQ11-II-03	08°49,2'S	140°14,9'W	10		22-nov-11
PAKAIHI I TE MOANA	MQ11-II-04	08°48,2'S	140°03,1'W	28		23-nov-11
PAKAIHI I TE MOANA	MQ11-II-05	08°49,5'S	140°03,2'W	4		23-nov-11
PAKAIHI I TE MOANA	MQ11-II-06	07°59,3'S	140°42,7'W	37		24-nov-11
PAKAIHI I TE MOANA	MQ11-II-07BIS	07°58,8'S	140°42,7'W	25		24-nov-11
PAKAIHI I TE MOANA	MQ11-II-07	07°58,8'S	140°42,7'W	25		24-nov-11
PAKAIHI I TE MOANA	MQ11-II-08	07°53,8'S	140°33,7'W	38		25-nov-11
PAKAIHI I TE MOANA	MQ11-II-09	07°54,3'S	140°34,1'W	28		25-nov-11
PAKAIHI I TE MOANA	MQ11-II-10	07°57,3'S	140°39,7'W	24		26-nov-11
PAKAIHI I TE MOANA	MQ11-II-11	07°57,8'S	140°39,8'W	20		26-nov-11
PAKAIHI I TE MOANA	MQ11-II-12	08°48,5'S	140°02,9'W	14		27-nov-11
PAKAIHI I TE MOANA	MQ11-II-13	08°55,4'S	140°01,2'W	36		27-nov-11
PAKAIHI I TE MOANA	MQ11-II-14	08°56,3'S	140°05,8'W	36		28-nov-11
PAKAIHI I TE MOANA	MQ11-II-15	08°55,9'S	140°05,9'W	36		28-nov-11
PAKAIHI I TE MOANA	MQ11-II-16	08°51,8'S	139°35,6'W	45		29-nov-11
PAKAIHI I TE MOANA	MQ11-II-17	08°57,4'S	139°36'W	22		29-nov-11
PAKAIHI I TE MOANA	MQ11-II-18	08°56,5'S	139°36,1'W	24		29-nov-11
PAKAIHI I TE MOANA	MQ11-II-19	08°57,3'S	139°35,7'W	20		30-nov-11
PAKAIHI I TE MOANA	MQ11-II-20	08°56,2'S	139°33,3'W	3		30-nov-11
PAKAIHI I TE MOANA	MQ11-II-21	08°56,4'S	139°33,3'W	20		30-nov-11
PAKAIHI I TE MOANA	MQ11-II-22	09°26,3'S	138°56,2'W	25		01DEC2011
PAKAIHI I TE MOANA	MQ11-II-23	09°44,4'S	138°48,5'W	30		01DEC2011
PAKAIHI I TE MOANA	MQ11-II-24	09°44,7'S	138°48,7'W	37		02DEC2011
PAKAIHI I TE MOANA	MQ11-II-25	10°32'S	138°41,1'W	25		03DEC2011
PAKAIHI I TE MOANA	MQ11-II-26	10°29,8'S	138°40,7'W	35		03DEC2011
PAKAIHI I TE MOANA	MQ11-II-27	10°27,7'S	138°40,2'W	23		03DEC2011
PAKAIHI I TE MOANA	MQ11-II-28	10°28,3'S	138°40,7'W	40		04DEC2011
PAKAIHI I TE MOANA	MQ11-II-29	10°27,5'S	138°40,3'W	30		04DEC2011
PAKAIHI I TE MOANA	MQ11-II-30	09°58,7'S	139°07,9'W	36		05DEC2011
PAKAIHI I TE MOANA	MQ11-II-31	09°59'S	139°07,8'W	25		05DEC2011
PAKAIHI I TE MOANA	MQ11-II-32	09°58,8'S	139°07,8'W	18		05DEC2011
PAKAIHI I TE MOANA	MQ11-II-33	09°53,3'S	139°04,7'W	40		06DEC2011
PAKAIHI I TE MOANA	MQ11-II-34	09°53,5'S	139°05,1'W	1		06DEC2011
PAKAIHI I TE MOANA	MQ11-II-35	09°53,4'S	139°04,5'W	10		06DEC2011
PAKAIHI I TE MOANA	MQ11-II-36	09°53,5'S	139°05,1'W	20		06DEC2011
PAKAIHI I TE MOANA	MQ11-II-37	09°51,1'S	139°05,2'W	30		07DEC2011
PAKAIHI I TE MOANA	MQ11-II-38	09°50,2'S	139°07,1'W	30		08DEC2011
PAKAIHI I TE MOANA	MQ11-II-39	09°47,4'S	139°09,5'W	30		08DEC2011
PAKAIHI I TE MOANA	MQ11-II-40	09°28,1'S	140°04,4'W	42		09DEC2011
PAKAIHI I TE MOANA	MQ11-II-41	09°27,2'S	140°05,3'W	30		09DEC2011
PAKAIHI I TE MOANA	MQ11-II-42	09°20,5'S	140°05,5'W	20		10DEC2011
PAKAIHI I TE MOANA	MQ11-II-43	09°20,6'S	140°05,8'W	22		10DEC2011
PAKAIHI I TE MOANA	hors station 1					02DEC2011
PAKAIHI I TE MOANA	hors station 2			0	1	02DEC2011
PAKAIHI I TE MOANA	hors station 3					04DEC2011
PAKAIHI I TE MOANA	hors station 4					04DEC2011
PAKAIHI I TE MOANA	no data2					
PAKAIHI I TE MOANA	MQ1-R	08°56,21'S	140°05,45'W	8	10	07,28JANV2012

APPENDIX 2: Bayesian phylogenetic tree, with posterior probabilities (>0.95) shown for each node.

APPENDIX 3: Table of sequenced specimens (used to build the Bayesian phylogenetic tree)

MNHN #	BOLD	Country (expedition)	Identification	GenBank COI
IM-2007-17758	CONO1724-14	Vanuatu (SANTO 2006)	*Conus miles*	KJ550379
IM-2007-17937	CONO505-08	Vanuatu (SANTO 2006)	*Conus circumcisus*	EU015749
IM-2007-30086	CONO1375-14	Philippines (PANGLAO 2004)	*Conus circumcisus*	KJ550173
IM-2007-30644	CONO998-10	Vanuatu (SANTO 2006)	*Conus quercinus*	KJ550433
IM-2007-30654	CONO1005-10	Vanuatu (SANTO 2006)	*Conus imperialis*	KJ550308
IM-2007-30684	CONO1013-10	Vanuatu (SANTO 2006)	*Conus tessulatus*	KJ550492
IM-2007-30695	CONO1372-14	Vanuatu ()	*Conus bullatus*	KJ550157
IM-2007-30699	CONO1447-14	Vanuatu (SANTO 2006)	*Conus magnificus*	KJ550235
IM-2007-30712	CONO1398-14	Philippines (PANGLAO 2004)	*Conus arenatus*	KJ550126
IM-2007-30723	CONO1466-14	Philippines (PANGLAO 2004)	*Conus tessulatus*	KJ550493
IM-2007-30749	CONO1383-14	Vanuatu (SANTO 2006)	*Conus vexillum*	KJ550520
IM-2007-30763	CONO1028-10	Vanuatu (SANTO 2006)	*Conus quercinus*	KJ550434
IM-2007-30786	CONO1386-14	Vanuatu (SANTO 2006)	*Conus pulicarius*	KJ550430
IM-2007-30787	CONO1037-10	Vanuatu (SANTO 2006)	*Conus vexillum*	KJ550521
IM-2007-30793	CONO1042-10	Vanuatu (SANTO 2006)	*Conus rattus*	KJ550438
IM-2007-30794	CONO1043-10	Vanuatu (SANTO 2006)	*Conus catus*	KJ550165
IM-2007-30891	CONO1076-10	Vanuatu (SANTO 2006)	*Conus lividus*	KJ550340
IM-2007-30900	CONO1078-10	Vanuatu (SANTO 2006)	*Conus textile*	KJ550497
IM-2007-30903	CONO1387-14	Vanuatu (SANTO 2006)	*Conus arenatus*	KJ550127
IM-2007-38080	CONO1729-14	Madagascar (MIRIKY)	*Conus quercinus*	KJ550436
IM-2009-15553	CONO1994-17	Madagascar (ATIMO VATAE)	*Conus lividus*	MG786087
IM-2009-15634	CONO1691-14	Madagascar (ATIMO VATAE)	*Conus miliaris*	KJ550380
IM-2009-15656	CONO1999-17	Madagascar (ATIMO VATAE)	*Conus quercinus*	MG786097
IM-2009-15676	CONO1684-14	Madagascar (ATIMO VATAE)	*Conus parvatus*	KJ550407
IM-2009-15684	CONO1611-14	Madagascar (ATIMO VATAE)	*Conus fuscatus*	KJ550309
IM-2009-15688	CONO1690-14	Madagascar (ATIMO VATAE)	*Conus miliaris*	KJ550381
IM-2009-15690	CONO1683-14	Madagascar (ATIMO VATAE)	*Conus parvatus*	KJ550408
IM-2009-18249	CONO1489-14	Vanuatu (TERRASSES)	*Conus sazanka*	KJ550444
IM-2009-18296	CONO1704-14	Djibouti ()	*Conus rattus*	KJ550439
IM-2009-29413	CONO2001-17	Mozambique (INHACA 2011)	*Conus sponsalis*	MG786099
IM-2009-29437	CONO2005-17	Mozambique (INHACA 2011)	*Conus tessulatus*	MG786108
IM-2009-31298	CONO2011-17	Madagascar (ATIMO VATAE)	*Conus sponsalis*	MG786100
IM-2009-31343	CONO2019-17	Mozambique (INHACA 2011)	*Conus parvatus*	MG786093
IM-2009-6486	CONO3239-22	Mozambique ()	*Conus sazanka*	ON687964
IM-2013-40001	CONO5619-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus adamsonii*	PV057245
IM-2013-40002	CONO5620-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sp.*	PV057229
IM-2013-40004	CONO5621-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus troendlei*	PV057262
IM-2013-40005	CONO5650-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sanguinolentus*	PV057214
IM-2013-40006	CONO5622-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sanguinolentus*	PV057259
IM-2013-40007	CONO5623-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sanguinolentus*	PV057208
IM-2013-40008	CONO5651-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sanguinolentus*	PV057237
IM-2013-40009	CONO5624-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus conco*	PV057215
IM-2013-40010	CONO5625-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus encaustus*	PV057249
IM-2013-40011	CONO5626-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus encaustus*	PV057258
IM-2013-40014	CONO5627-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus encaustus*	PV057226
IM-2013-40015	CONO5628-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus encaustus*	PV057246
IM-2013-40016	CONO5629-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus encaustus*	PV057222
IM-2013-40018	CONO5630-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sanguinolentus*	PV057219
IM-2013-40019	CONO5631-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus encaustus*	PV057236
IM-2013-40021	CONO5632-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus canonicus_f._textilinus*	PV057235
IM-2013-40025	CONO5633-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus obscurus*	PV057225
IM-2013-40032	CONO5634-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus obscurus*	PV057216
IM-2013-40033	CONO5635-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus obscurus*	PV057248
IM-2013-40034	CONO5652-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus vautieri*	PV057256
IM-2013-40035	CONO5636-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus obscurus*	PV057254
IM-2013-40036	CONO5637-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus conco*	PV057267
IM-2013-40037	CONO5653-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus marchionatus*	PV057218
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IM-2013-40039	CONO5639-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus vautieri*	PV057233
IM-2013-40040	CONO5654-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus vautieri*	PV057223
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IM-2013-40043	CONO5655-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus taitensis*	PV057232
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IM-2013-40048	CONO5657-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus catus*	PV057244
IM-2013-40049	CONO5643-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus taitensis*	PV057261
IM-2013-40050	CONO5644-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus taitensis*	PV057260
IM-2013-40054	CONO5658-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus catus*	PV057213
IM-2013-40056	CONO5645-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus catus*	PV057224

MNHN #	BOLD	Country (expedition)	Identification	GenBank COI
IM-2013-40073	CONO5646-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus adamsonii*	PV057212
IM-2013-40076	CONO5647-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus gauguini*	PV057220
IM-2013-40078	CONO5659-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus vexillum*	PV057221
IM-2013-40079	CONO5648-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus quercinus*	PV057247
IM-2013-40086	CONO5649-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sponsalis*	PV057252
IM-2013-40087	CONO5660-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus sponsalis*	PV057263
IM-2013-40089	CONO2008-17	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus imperialis*	MG786085
IM-2013-40090	CONO5615-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus retifer*	PV057242
IM-2013-40092	CONO2009-17	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus tessulatus*	MG786104
IM-2013-40094	CONO5616-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus catus*	PV057255
IM-2013-40095	CONO5617-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus catus*	PV057228
IM-2013-40096	CONO5618-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus catus*	PV057265
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IM-2013-47267	CONO2033-17	Papua New Guinea (KAVIENG)	*Conus sponsalis*	MG786098
IM-2013-47747	CONO5673-25	Papua New Guinea (KAVIENG)	*Conus canonicus*	PV057253
IM-2013-50726	CONO5674-25	Papua New Guinea (KAVIENG)	*Conus canonicus*	PV057268
IM-2013-50732	CONO5675-25	Papua New Guinea (KAVIENG)	*Conus canonicus*	PV057211
IM-2013-50735	CONO2044-17	Papua New Guinea (KAVIENG)	*Conus imperialis*	MG786081
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IM-2013-50783	CONO5677-25	Papua New Guinea (KAVIENG)	*Conus canonicus*	PV057217
IM-2013-50809	CONO5678-25	Papua New Guinea (KAVIENG)	*Conus bullatus*	PV057230
IM-2013-51224	CONO2048-17	Papua New Guinea (KAVIENG)	*Conus tessulatus*	MG786109
IM-2013-51250	CONO2050-17	Papua New Guinea (KAVIENG)	*Conus textile*	MG786119
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IM-2013-52135	CONO2022-17	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus magnificus*	MG786089
IM-2013-52137	CONO5661-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus quercinus*	PV057250
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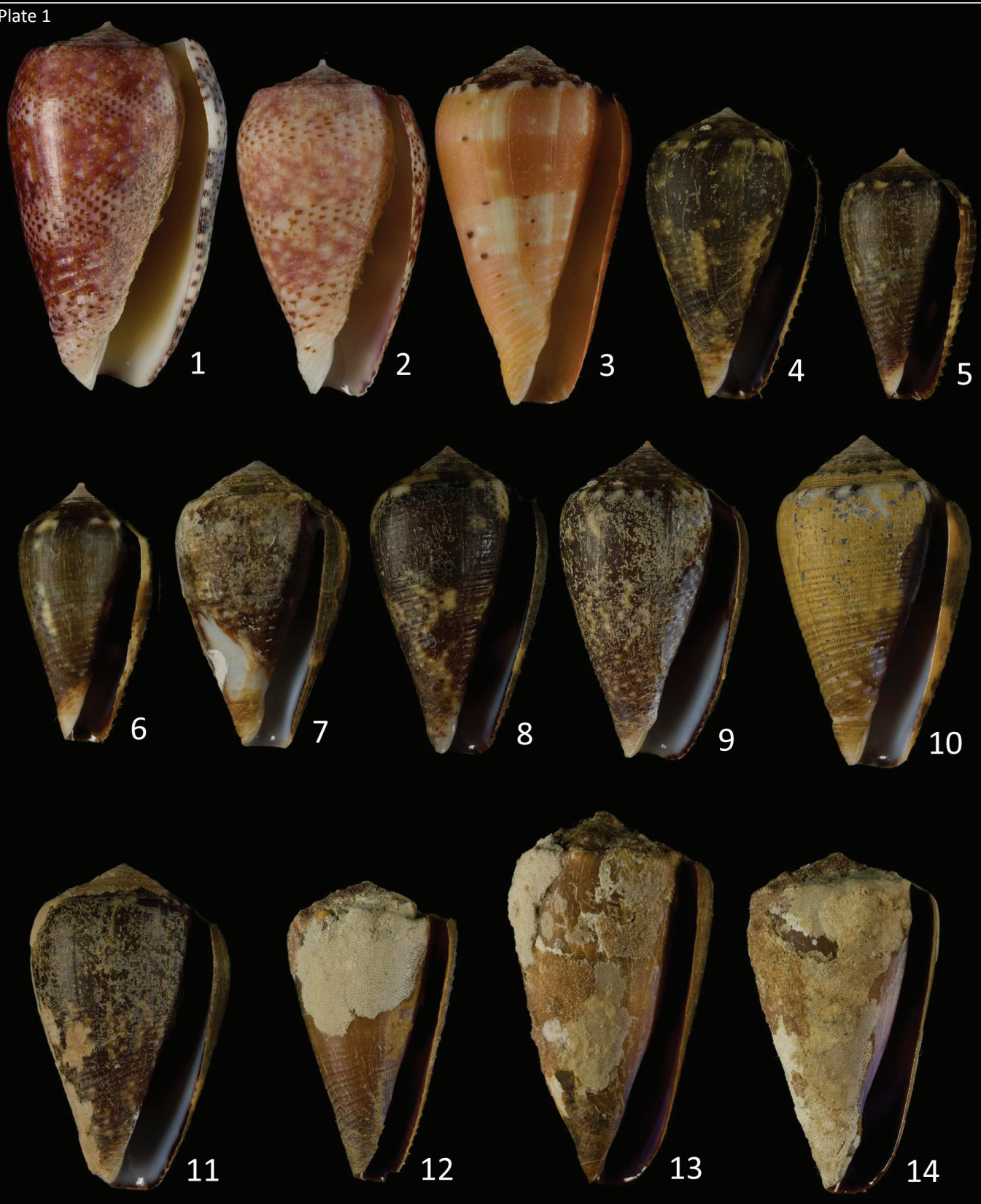
IM-2013-52139	CONO5662-25	Marquesas Islands (PAKAIHI I TE MOANA)	*Conus moreleti*	PV057205
IM-2013-52140	CONO5663-25	Rapa (Tuhaa Pae 2013)	*Conus moreleti*	PV057206
IM-2013-52141	CONO5664-25	Rapa (Tuhaa Pae 2013)	*Conus sanguinolentus*	PV057269
IM-2013-52145	CONO2024-17	Rapa (Tuhaa Pae 2013)	*Conus imperialis*	MG786084
IM-2013-52146	CONO5665-25	Rapa (Tuhaa Pae 2013)	*Conus taitensis*	PV057209
IM-2013-52147	CONO5666-25	Rapa (Tuhaa Pae 2013)	*Conus sponsalis*	PV057257
IM-2013-52150	CONO5216-23	Rapa (Tuhaa Pae 2013)	*Conus miliaris*	PP047731
IM-2013-52153	CONO5667-25	Rapa (Tuhaa Pae 2013)	*Conus leopardus*	PV057227
IM-2013-52155	CONO2026-17	Rapa (Tuhaa Pae 2013)	*Conus textile*	MG786123
IM-2013-52157	CONO5668-25	Rapa (Tuhaa Pae 2013)	*Conus leopardus*	PV057266
IM-2013-52158	CONO2027-17	Rapa (Tuhaa Pae 2013)	*Conus tessulatus*	MG786103
IM-2013-52160	CONO5669-25	Rapa (Tuhaa Pae 2013)	*Conus mcbridei*	PV057210
IM-2013-52161	CONO5670-25	Rapa (Tuhaa Pae 2013)	*Conus mcbridei*	PV057251
IM-2013-52165	CONO5671-25	Rapa (Tuhaa Pae 2013)	*Conus taitensis*	PV057234
IM-2013-52166	CONO2029-17	Rapa (Tuhaa Pae 2013)	*Conus miliaris*	MG786091
IM-2013-52167	CONO5672-25	Rapa (Tuhaa Pae 2013)	*Conus flavidus*	PV057240
Touitou-20	CONO5679-25	Nuku-Hiva	*Conus catus_f._easoni*	PV057243
(GenBank)		Heron Islands Australia	*Conus miles*	AY296840
(GenBank)		Tuvalu	*Conus catus*	AY588163
(GenBank)		California	*Conus californicus*	DQ885848
(GenBank)		Thailande	*Conus musicus*	EU423417
(GenBank)		Society Islands	*Conus nanus*	EU423424
(GenBank)		Oman	*Conus nanus*	EU423427
(GenBank)		Panama	*Conus nux*	EU423428
(GenBank)		Philippines	*Conus aurisiacus*	FJ868111
(GenBank)		Philippines	*Conus catus*	FJ868113
(GenBank)			*Conus gauguini*	FJ868117
(GenBank)		Philippines	*Conus pulicarius*	GU134375
(GenBank)		Hawaii	*Conus quercinus*	JN831246
(GenBank)		Tuamotu	*Conus canonicus*	KJ549880
(GenBank)		Tuvalu	*Conus catus*	KJ549884
(GenBank)		Papua New Guinea	*Conus circumcisus*	KJ549888
(GenBank)		Tuamotu	*Conus flavidus*	KJ549909
(GenBank)		Vanuatu	*Conus leopardus*	KJ549937
(GenBank)		Society Islands	*Conus moreleti*	KJ549960
(GenBank)		Guam	*Conus obscurus*	KJ549967
(GenBank)		Fidji	*Conus quercinus*	KJ549982
(GenBank)		Guam	*Conus taitensis*	KJ549983
(GenBank)		Tuamotu	*Conus rattus*	KJ549984
(GenBank)		Tuamotu	*Conus retifer*	KJ549986
(GenBank)		Christmas Islands	*Conus retifer*	KJ549987
(GenBank)		Oman	*Conus tessulatus*	KJ550000
(GenBank)		Tuamotu	*Conus vexillum*	KJ550007
(GenBank)		Marquesas Islands	*Conus conco*	KJ550025
(GenBank)		Taiwan	*Conus quercinus*	MH400188
(GenBank)		Hainan island China	*Conus miles*	MN389187
(GenBank)		Hainan island China	*Conus quercinus*	MN389188

Plate 1



1. *Conus adamsonii* 44.9 mm [UP,M] IM-2013-40001
2. *Conus adamsonii* 39.0 mm [UH,M] IM-2013-40073
3. *Conus sp.* 42.0 mm [Motane,M] IM-2013-40002
4. *Conus catus* 32.1 mm [FH,M] IM-2013-40046
5. *Conus catus* 23.7 mm [FH,M] IM-2013-40047
6. *Conus catus* 22.9 mm [FH,M] IM-2013-40048
7. *Conus catus* 29.9 mm mm [NH,M] IM-2013-40054
8. *Conus catus* 35.2 mm [HO,M] IM-2013-40056
9. *Conus catus* 35.0 mm [E,M] IM-2013-40094
10. *Conus catus* 41.2 mm [NH,M] IM-2013-40095
11. *Conus catus* 39.2 mm [NH,M] IM-2013-40096
12. *Conus conco* 33.9 mm [NH,M] IM-2013-40009
13. *Conus conco* 58.6 mm [HO,M] IM-2013-40036
14. *Conus conco* 43.6 mm [NH,M] IM-2013-4003

Plate 2

1. *Conus encaustus* 21.1 mm [FH,M] IM-2013-40010
2. *Conus encaustus* 21.9 mm [FH,M] IM-2013-40011
3. *Conus encaustus* 19.3 mm [FH,M] IM-2013-40014
4. *Conus encaustus* 20.7 mm [FH,M] IM-2013-40015
5. *Conus encaustus* 22.2 mm [T,M] IM-2013-40016
6. *Conus encaustus* 17.3 mm [UP,M] IM-2013-40019
7. *Conus gauguini* 76.5 mm [HO,M] IM-2013-40076
8. *Conus imperialis* 51.8 mm [HI,M] IM-2013-40089
9. *Conus magnificus* 41.0 mm [FH,M] IM-2013-52135
10. *Conus marchionatus* 30.8 mm [NH,M] IM-2013-40037
11. *Conus moreleti* 46.3 mm [NH,M] IM-2013-40045
12. *Conus moreleti* 55.1 mm mm [E,M] IM-2013-52139
13. *Conus obscurus* 26.0 mm [NH,M] IM-2013-40025
14. *Conus obscurus* 28.7 [FH,M] IM-2013-40032
15. *Conus obscurus* 22.3 mm [UP,M] IM-2013-40033
16. *Conus obscurus* 21.9 mm [HO,M] IM-2013-40035

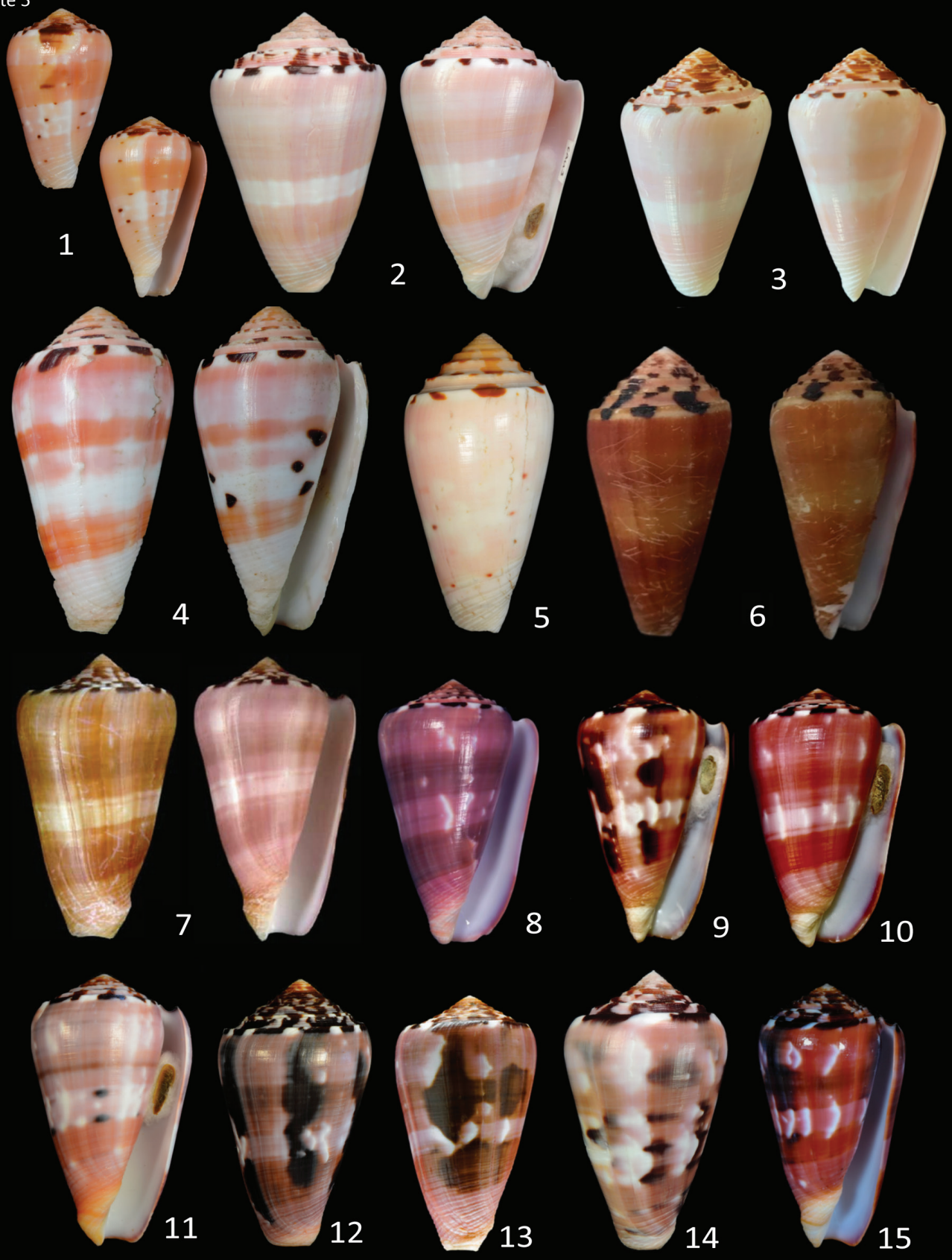
Plate 3

1. *Conus pseudimperialis* 44.9 mm [FH,M] IM-2013-40041
2. *Conus pseudimperialis* 39.8 mm [NH,M] IM-2013-40042
3. *Conus vautieri* 24.3 mm [UP,M] IM-2013-40034
4. *Conus vautieri* 17.8 mm [UP,M] IM-2013-40039
5. *Conus vautieri* 34.5 mm [NH,M] IM-2013-40040
6. *Conus quercinus* 64.9 mm [?,M] IM-2013-40079
7. *Conus quercinus* 69.1 mm [UH,M] IM-2013-52137
8. *Conus quercinus* 60.7 mm [UH,M] IM-2013-52138
9. *Conus retifer* 32.4 mm [FH,M] IM-2013-40090
10. *Conus sanguinolentus* 24.4 mm [FH,M] IM-2013-40005
11. *Conus sanguinolentus* 25.5 mm [FH,M] IM-2013-40006

Plate 4

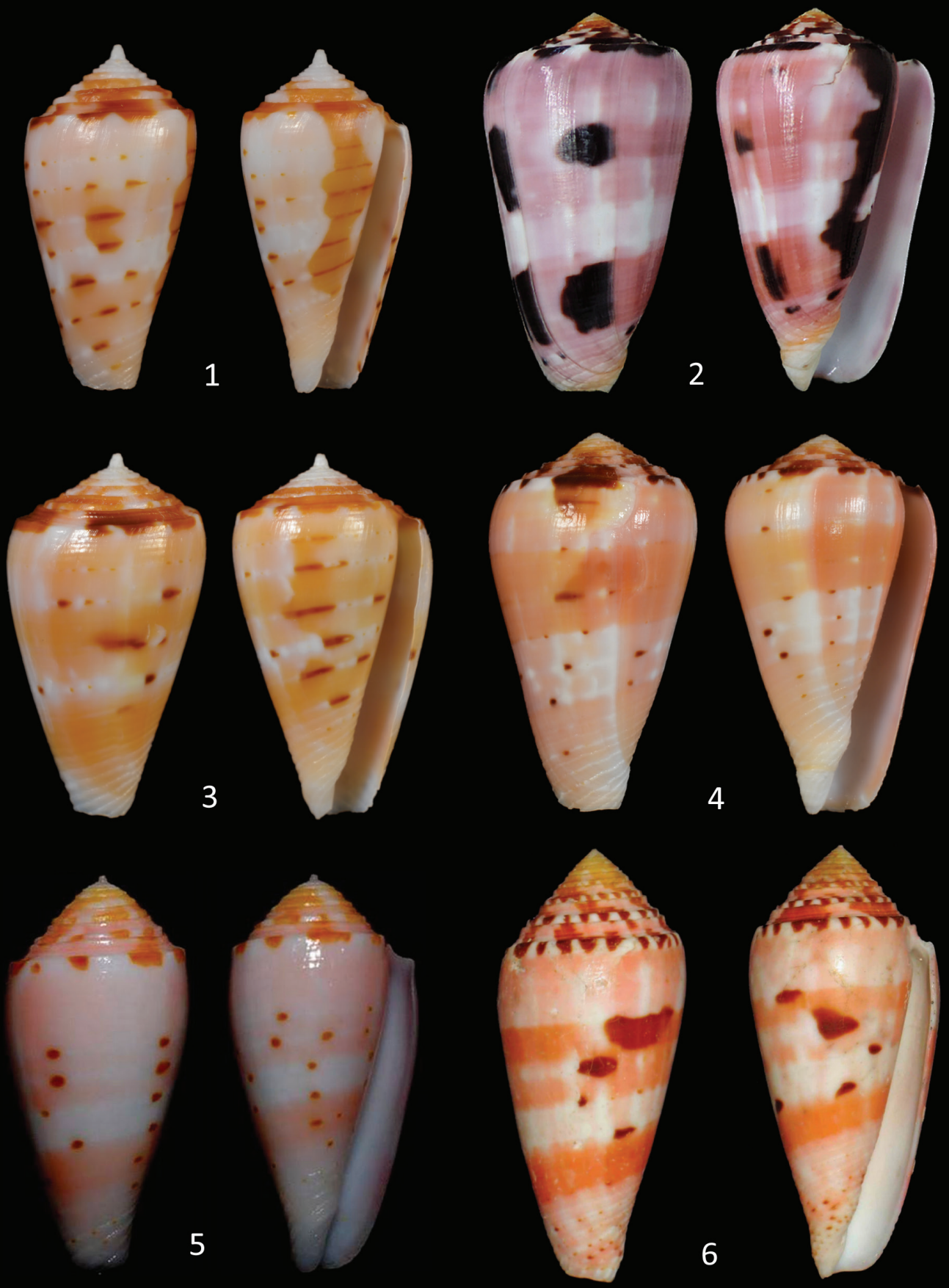
1. *Conus sanguinolentus* 25.3 mm [FH,M[] IM-2013-40007
2. *Conus sanguinolentus* 25.6 mm [FH,M] IM-2013-40008
3. *Conus sanguinolentus* 43.7 mm [UP,M] IM-2013-40018
4. *Conus sanguinolentus* 22.3 mm [FH,M] IM-2013-40044
5. *Conus sponsalis* 12.5 mm mm [FH,M] IM-2013-40086
6. *Conus sponsalis* 10.9 mm [FH,M] IM-2013-40087
7. *Conus taitensis* 32.7 mm [FH,M] IM-2013-40043
8. *Conus taitensis* 33.5 mm [T,M] IM-2013-40049
9. *Conus taitensis* 37.1 mm [T,M] IM-2013-40050
10. *Conus aff. tessulatus* 27.7 mm [T,M] IM-2013-40092
11. *Conus canonicus f. textilinus* 23.4 mm [NH,M] IM-2013-40021
12. *Conus troendlei* 15.8 mm [FH,M] IM-2013-40004
13. *Conus vexillum* 86.8 mm [NH,M] IM-2013-40078

Plate 5



1. *Conus sp.* 42.0 mm [Motane,M] MNHN-IM-2013-40002
2. *Conus aff. gauguini* 67.7 mm [NH,M], coll. M. Small
3. *Conus aff. gauguini* 59.0 mm [Hawaii], coll. H. Lynch
4. *Conus boutetorum* 82 mm [Tahiti], coll. L. Poroi
5. *Conus boutetorum* 67.7 mm [M], coll. T. Joly
6. *Conus boutetorum* 60.3 mm [Hawaii], coll. M. Pang [with P]
7. *Conus gauguini* 87 mm [M], MNHN-IM-2000-2557, Photo: C. Reyens
8. *Conus gauguini* 81.9 mm [NH,M], coll. D. Lum
9. *Conus gauguini* 72.5 mm [NH,M], coll. P. Kanner
10. *Conus gauguini* 70.4 mm [NH,M], coll. P. Kanner
11. *Conus gauguini* 70.5 mm [M], coll. T. Joly
12. *Conus gauguini* 67.4 mm [M], coll. T. Joly
13. *Conus gauguini* 65.2 mm [NH,M], coll. M. Balleton
14. *Conus gauguini* 74.0 mm [UP,M], coll. M. Small
15. *Conus gauguini* 62.8 mm [NH,M], coll. G. Hamann

Plate 6



1. *Conus gauquini* 16.8 mm juvenile [NH,M], MNHN-IM-2016-7918
2. *Conus gauguini* 71.0 mm [NH,M], coll. L. Poroi
3. *Conus sp.* 19.7 mm [FH,M], MNHN-IM-2016-7917
4. *Conus sp.* 42.0 mm [Motane,M] MNHN-IM-2013-40002
5. *Conus boutetorum* 37.9 mm young [Tuamotu], coll. T. Joly
6. *Conus boutetorum* 60.2 mm [Tahiti, S], coll. B. Fenzan

Plate 7

1. *Conus gauguini* 76.5 mm [HO,M] MNHN-IM-2013-40076 [with P]
2. *Conus vautieri* 34.6 mm [NH,M] MNHN-IM-2013-40040 Neotype [with P]
3. *Conus marchionatus* 30.9 mm [NH,M] MNHN-IM-2013-40037 Neotype [with P]
4. *Conus encaustus* 20.7 mm [FH,M] MNHN-IM-2013-40015 Néotype [with P]

Plate 8

1. *Conus gauguini* 76.5 mm [HO,M] MNHN-IM-2013-40076
2. *Conus vautieri* 34.6 mm [NH,M] MNHN-IM-2013-40040 Neotype
3. *Conus marchionatus* 30.9 mm [NH,M] MNHN-IM-2013-40037 Neotype
4. *Conus encaustus* 20.7 mm [FH,M] MNHN-IM-2013-40015 Neotype

PLate 9 Living specimens from the Marquesas.

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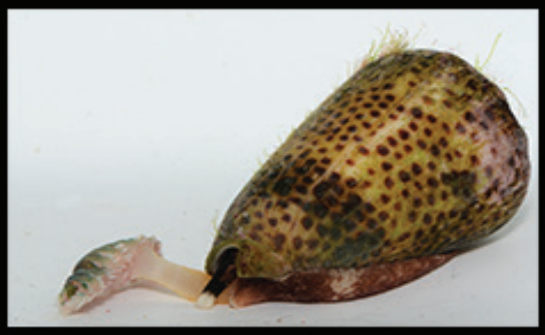

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1. *Conus catus*, photo Camille Gache.
2. *Conus imperialis*, photo Camille Gache.
3. *Conus pseudimperialis*, photo Patrick Marti.
4. *Conus vautieri,* photo Camille Gache.
5. *Conus marchionatus,* photo Xavier Curvat.
6. *Conus adamsonii,* photo Xavier Curvat.
7. *Conus adamsonii,* photo Paul Kanner.

PLate 10 Living specimens from the Marquesas and Tahiti (specimen 5).

1

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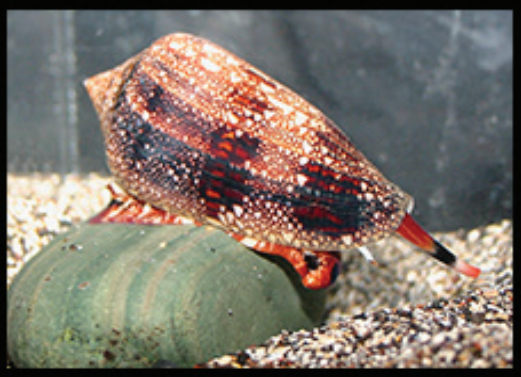

3

4

5

6

1. *Conus magnificus*, photo Paul Kanner.
2. *Conus canonicus,* photo Xavier Curvat.
3. *Conus canonicus,* photo Camille Gache.
4. *Conus minamiae,* Photo : M. Balleton & J. Orempuller.
5. *Conus boutetorum,* photo Patrick Vappereau.
6. *Conus gauguini,* photo Xavier Curvat.