NUMBER 146, 38 pages 15 June 2022

BISHOP MUSEUM
OCCASIONAL PAPERS

NEW RECORDS AND TAXONOMIC REVIEW OF TRIPHORIDAE (MOLLUSCA: GASTROPODA) FROM THE SAMOAN ISLANDS

DAN A. POLHEMUS AND PIET A. J. (HANNCO) BAKKER

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Cover photo: *Iniforis fusiformis* (Kosuge, 1961), Pago Pago (see p. 10)

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eISSN 2376-3191

BERNICE PAUAHI BISHOP MUSEUM
The State Museum of Natural and Cultural History
1525 Bernice Street
Honolulu, Hawai'i 96817-2704, USA

Published online: 15 June 2022

Polhemus, D.A. & Bakker, P.A.J. New records and taxonomic review of Triphoridae (Mollusca: Gastropoda) from the Samoan Islands. *Bishop Museum Occasional Papers* 146: 1–38 (2022).

ISSN (online) 2376-3191

lsid:zoobank.org:pub:1955CF9D-A9CC-4BBE-B02B-9C60B4B2B2A5

New Records and Taxonomic Review of Triphoridae (Mollusca: Gastropoda) from the Samoan Islands[1]

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Abstract. The extant Triphoridae of the Samoan archipelago are reviewed, and 21 new Samoan records are discussed and illustrated based on recent collections from the island of Tutuila, American Samoa. Confident identifications are provided for the following 9 species: *Bouchetriphora pallida* (Pease, 1871); *Coriophora cnodax* (Jousseaume, 1884); *Coriophora fusca* (Dunker, 1860); *Costatotriphora iniqua* (Jousseaume, 1898); *Iniforis fusiformis* (Kosuge, 1961); *Mastonia iris* Laseron, 1958; *Nanaphora triticea* (Pease, 1861); *Triphora collaris* Hinds, 1843; and *Triphora taeniolata* Hervier, 1898. Provisional records are provided for 7 species: *Inella* cf. *numerosa* Jousseaume, 1898; *Iniforis* cf. *douvillei* Jousseaume, 1884; *Mastoniaeforis* cf. *chaperi* Jousseaume, 1884; *Nanaphora* cf. *tricolor* Laseron, 1958; *Opimaphora* cf. *coralina* Laseron, 1958; *Triphora* cf. *fulvescens* Hervier, 1898; and *Metaxia* cf. *brunnicephala* Kay, 1979. A further 5 species are recorded from Samoa that cannot be definitively assigned to currently described taxa and may represent undescribed species: *Monophorus* aff. *strictus* (Laserson, 1958); *Nanaphora* aff. *triticea* (Pease, 1861); *Obesula* aff. *pantherina* Jousseaume, 1898; *Opimaphora* aff. *coralina* Laseron, 1958; and *Triphora* aff. *laddi* Kay, 1979. Two species previously recorded from Samoa based on tentatively identified fossil material are now validated as currently present: *Iniforis albogranosa* (Kosuge, 1961) and and *Viriola pagoda* (Hinds, 1843). Of the 13 other species previously recorded from Samoa, 2 are currently considered synonyms; 4 are questionable records not based on any specimens that can be located; 2 are questionable names that may represent synonyms; 1 is a likely misidentification; and 4 are valid records of which one, *Mastonia* cf. *rubra* (Hinds, 1843), was recollected. Based on this analysis, the currently documented triphorid fauna of Samoa consists of 33 species, although additional species are undoubtedly present. The current total is also subject to change as taxonomic and nomenclatural problems are resolved.

INTRODUCTION

The family Triphoridae has been undersampled in the Samoan archipelago, referred to herein simply as "Samoa." Fifteen species have previously been recorded from these islands in the scientific literature (Schmeltz, 1874; Paetel, 1888; Baker & Spicer, 1935; Kay, 1965, 1979; Ladd, 1972; Cernohorsky, 1977; Brown, 2011). Of these, two species tentatively based on provisionally identified fossil material (Ladd, 1972) are now validated as currently present: *Iniforis albogranosa* (Kosuge, 1961a) and and *Viriola pagoda* (Hinds, 1843a). Of the 13 other species previously recorded from Samoa, 2 are currently considered synonyms; 4 are questionable records not based on any specimens that can be located; 2 are questionable names that may represent synonyms; 1 is a likely misidentification; and 4 we consider

1. Contribution No. 2022-003 to the Pacific Biological Survey.

valid records (see Appendix). The most recent marine gastropod checklist for American Samoa (Brown, 2011) lists only a single triphorid species, but this study was based only on specimens which that author had personally examined, and did not include many micromollusk species, nor any figures by which to assess the identifications provided.

In the current paper we provide 21 new species species records for Samoa, resulting from recent collections made by the lead author in Pago Pago Harbor, on the island of Tutuila. Confident identifications are provided for the following 9 species: *Bouchetriphora pallida* (Pease, 1871); *Coriophora cnodax* (Jousseaume, 1884); *Coriophora fusca* (Dunker, 1860); *Costatotriphora iniqua* (Jousseaume, 1898); *Iniforis fusiformis* (Kosuge, 1961); *Mastonia iris* Laseron, 1958; *Nanaphora triticea* (Pease, 1861); *Triphora collaris* Hinds, 1843; and *Triphora taeniolata* Hervier, 1898. Provisional records are provided for 7 species: *Inella* cf. *numerosa* Jousseaume, 1898; *Iniforis* cf. *douvillei* Jousseaume, 1884; *Mastoniaeforis* cf. *chaperi* Jousseaume, 1884; *Nanaphora* cf. *tricolor* Laseron, 1958; *Opimaphora* cf. *coralina* Laseron, 1958; *Triphora* cf. *fulvescens* Hervier, 1898; and *Metaxia* cf. *brunnicephala* Kay, 1979. A further 5 species are recorded from Samoa that cannot be definitively assigned to currently described taxa and may represent undescribed species: *Monophorus* aff. *strictus* (Laserson, 1958); *Nanaphora* aff. *triticea* (Pease, 1861); *Obesula* aff. *pantherina* Jousseaume, 1898; *Opimaphora* aff. *coralina* Laseron, 1958; and *Triphora* aff. *laddi* Kay, 1979 (see Appendix).

Based on this analysis, the triphorid fauna of the Samoan Islands is now documented to contain 33 extant species, more than doubling the previously known total. This species number may be compared with the totals of currently identified species from other Pacific island groups, such as the 43 species from Hawai‘i (Kay 1979), and the 83 species now recorded from French Polynesia (Boutet *et al.* 2020), an area of much greater geographic extent. Even so, we consider our current total to be a clear underestimate of the true triphorid species richness present in the Samoan Islands, since nearly all the taxa we report have come from a single site in the easily accessed euphotic depth zone of the islands' marine waters. Additional sampling at other euphotic sites, or at mesophotic depths or deeper, will undoubtedly produce additional species.

MATERIAL AND METHODS

The new species records for the Samoan Islands are based on a set of samples taken from a small cave-like recess in the wall of the nearshore reef platform opening out into the main channel of Pago Pago Harbor, offshore of Utulei. This cavity extended back into the reef platform for at least 2 m and was floored with carbonate sands, with the cave mouth lying 1.5–2.5 m below the sea surface, depending on the tide stage. The ceiling had an extensive covering of pale maroon sponge, while the reef platform wall flanking the opening supported coral colonies of *Porites rus, Pavona frondifera*, and *Acropora hyacinthus*, with *Acropora pulchra* also common in the general area. A successive set of sand samples was taken from this cave by periodic snorkel diving over 4 days in mid-August 2018, producing a rich assemblage of shells representing Triphoridae and many other marine micromollusks.

The full data for the Pago Pago Harbor sampling site is is as follows:

> USA, American Samoa, Tutuila, Pago Pago Harbor, cave in reef wall offshore of Utulei, 2 m depth, -14.278664, -170.681226, 12–15 Aug 2018, D.A. Polhemus coll.

For the sake of brevity in the following Material Examined sections and figure captions this full information is not repeated under each species, but is instead abbreviated as PPHU (for Pago Pago Harbor, Utulei).

Due to the large number of described species, recent type revisions (e.g. Albano & Bakker, 2016; Albano *et al.*, 2019), and the evolving taxonomy of Triphoridae, there is a degree of uncertainty associated with some of the identifications provided here. Where an identification is provisional, the abbreviation "cf." (from the Latin *confer*, compare) is utilized. In cases where a taxon appears to be a potential new species, but seems clearly related to a described species, the abbreviation "aff." (affiliated with) is employed. Although not all of our identifications are definitive, we feel that providing this information, accompanied by good photographs of the species involved, is still of use in clarifying our current state of knowledge in regard to the taxonomic composition of the Samoan triphorid biota. Descriptions of any new species will need to await further type revisions and type comparisons, and requires a thorough study of more closely related species from a broader range of geographic localities, as well as SEM imaging of protoconchs and other structural details.

Our treatment of species and synonymy follows that of Bakker & Albano (2022), with only the citations for the original combination and the combination used here, if different, listed under each species, as well as any other combinations pertaining specifically to Samoan material.

The specimens treated below are currently held in the D.A. Polhemus collection, Kailua, Hawai'i (DAPC) with associated collection lot numbers given (bearing an "-L" suffix), but will eventually be transferred to the Bishop Museum, Honolulu, Hawai'i, USA (BPBM). Specimens with collection numbers cited lacking a "-L" suffix, as in the figures, represent individual specimens from particular specimen lots.

SPECIES NEWLY RECORDED FROM THE SAMOAN ARCHIPELAGO

Family Triphoridae Gray, 1847

Subfamily Triphorinae Gray, 1847

Genus ***Bouchetriphora*** Marshall, 1983

Bouchetriphora pallida (Pease, 1871)
(Fig. 1)

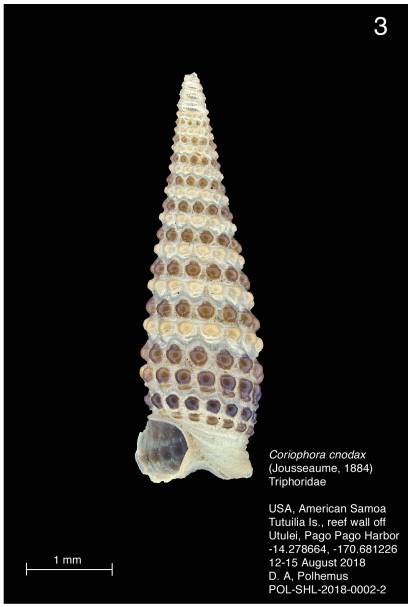
Triphoris pallidus Pease, 1871: 774.
Bouchetriphora pallida (Pease): Marshall, 1983: 61 fig. 3, 7c, 26a–g.

Comments: Marshall (1983) analyzed and discussed shell size variation in this species across its broad geographic range.

Distribution: A very widespread species, originally described from Hawai'i (Pease, 1871), and subsequently recorded from many locations across an enormous range spanning the Indian and Pacific oceans, from the Mozambique Channel to as far north as Japan, as far south as New Zealand, and as far east as Hawai'i (Kay, 1979; Marshall, 1983; Higo *et al.*, 1999; Tröndle & Boutet, 2009; Bakker & Albano, 2022). Scanning electron micrographs of the shell structure, aperture, and protoconch were provided by Marshall (1983).

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 12 specimens, 3.1–6.0 mm, POL-SHL-2018-0001-L (DAPC).

Fig. 1. Specimen of *Bouchetriphora pallida* (Pease, 1871) taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0001-1, length 5.6 mm.



Figs. 2–3. Specimens of *Coriophora cnodax* (Jousseaume, 1884) taken from American Samoa, Tutuila I., PPHU. **2**. Specimen showing alternating rows of brown and pale whitish gemmules; DAPC Cat. No. POL-SHL-2018-0002-1, length 4.7 mm. **3**. Specimen showing alternating rows of brown and tan gemmules; DAPC Cat. No. POL-SHL-2018-0002-1), length 5.3 mm.

Genus ***Coriophora*** Laseron, 1958

Coriophora cnodax (Jousseaume, 1884)
(Figs. 2, 3)

Mastonia cnodax Jousseaume, 1884: 260, pl. 4, fig. 14.
Coriophora cnodax (Jousseaume): Özdikmen, 2013: 254.

Comments: Our Samoan material appears to represent *Coriophora cnodax* (Jousseaume, 1884), based on the protoconch bearing a single keel with axial riblets. We are aware of another similar but undescribed species which has two keels and axial riblets on the protoconch. Two color forms are present in our material, one with alternating rows of dark brown and tan gemmules, the other with alternating dark brown and white gemmules (Figs. 2–3).

Distribution: Originally described from New Caledonia (Jousseaume, 1884), and subsequently recorded from Australia (Nützel, 1997), Hawai‘i (Severns, 2011), Japan (Higo *et al*. 1999); the Marshall Islands (Kay & Johnson, 1987), the Philippines (Poppe, 2008) and Thailand (Gemert, 2003).
Material examined: AMERICAN SAMOA, Tutuila, PPHU: 100 specimens, 3.5–6.2 mm, POL-SHL-2018-0002-L (DAPC).

Coriophora fusca (Dunker, 1860)
(Figs. 4, 5)

Triforis fusca Dunker, 1860: 237.
Coriophora fusca (Dunker): Özdikmen, 2013: 254.

Comments: The types of *Triforis fusca* are in the Museum für Naturkunde in Berlin, and were illustrated by Albano & Bakker (2016), who also designated a lectotype. Scanning electron micrographs of the shell structure, aperture, and protoconch were provided by Marshall (1983).

Distribution: Originally described from Japan (Dunker, 1860), with subsequent records from various localities in the Western Pacific Ocean as far south as Australia (Bakker & Albano, 2022). This species is apparently absent in the Eastern Pacific Ocean (Marshall, 1983).

Material examined: AMERICAN SAMOA, Tutuila, PPHU: 22 specimens, 3.5–5.1 mm, POL-SHL-2018-0003-L (DAPC).

Genus ***Costatotriphora*** Marshall, 1994

Costatotriphora iniqua (Jousseaume, 1898)
(Fig. 6)

Mastonia iniqua Jousseaume, 1898: 75.
Costatotriphora iniqua (Jousseaume): Stephens, 2017: 1, pl. 1, fig. d.

Comments: Our Samoan specimen seems to represent a small form of *Costatophora iniqua*, or perhaps a young adult. The line is broader on the first spiral thread in the type specimens, but both forms can be found together in various locations.

Distribution: Although originally described from material stated to have been taken from Djibouti and New Caledonia (Jousseaume, 1898), the lectotype specimen bears a label indicating it came from latter island. *Costatotriphora iniqua* occurs from the Red Sea through the Indian Ocean to the Western Pacific, but is apparently absent in the Eastern Pacific Ocean (Bakker & Albano, 2022). It is found as far north as Japan and as far south as Australia (Marshall, 1983).

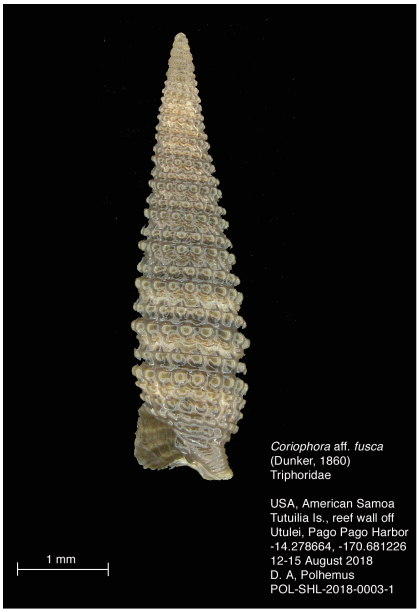
Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 2.6 mm, POL-SHL-2018-0004 (DAPC).

Genus ***Inella*** Bayle, 1879

Inella cf. ***numerosa*** Jousseaume, 1898
(Fig. 7)

Inella numerosa Jousseaume, 1898: 72.

Comments: Jousseaume (1898) notes that this species is uniformly testaceous in coloration, as is the case in our specimen from Samoa, and gives the length including protoconch as 3.5 mm, with our specimen being slightly larger than this. The shape and pattern of gemmule rows in our Samoan example is also a good match for the online image of a syntype held in the Muséum National d'Histoire Naturelle in Paris. *Inella numerosa* has



Figs. 4–5. Specimens of *Coriophora fusca* (Dunker, 1860) taken from American Samoa, Tutuila I., PPHU. **4**. Specimen with sutures slightly darkened; DAPC Cat. No. POL-SHL-2018-0003-1; 5.5 mm. **5**. Specimen with uniform reddish brown coloration more similar to holotype; DAPC Cat. No. POL-SHL-2018-0003-2; 4.6 mm.

a unicarinate multispiral protoconch, but unfortunately the protoconch is missing in our single Samoan specimen, so we must treat the identification as provisional, despite the otherwise good similarities to the type material noted above.

Distribution: This species was described by Jousseaume (1898) based on 12 specimens taken in the Red Sea at Jeddah, and the Gulf of Aden at Djibouti, Perim Island and Aden. We currently have only a single specimen from American Samoa, which if confirmed represents a considerable eastward range extension.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 4.0 mm without protoconch, POL-SHL-2018-0027 (DAPC).

Genus ***Iniforis*** Jousseaume, 1884

Iniforis albogranosa (Kosuge, 1961)
(Figs. 8, 9)

Triphora (*Iniforis*) *albogranosa* Kosuge, 1961a: 313, pl. 19, fig. 7, text figs. 5, 7.
Iniforis albogranosa (Kosuge): Kosuge, 1966: 309, pl. 1, fig. 6, text figs. 21a, b, c.

Comments: This species was previously recorded from the Samoan Islands by Ladd (1972: 47, pl. 12, Figs. 3–5), however his figure represents a fossil *Mastoniaeforis* species, so this previous record was actually a misidentification. The specimens listed here are thus the first accurately confirmed record for this species in Samoa. Although we

Fig. 6. Specimen of *Costatotriphora iniqua* (Jousseaume, 1898) taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0004; length 2.6 mm.

Fig. 7. Specimen of *Inella* cf. *numerosa* Jousseaume, 1898, taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0027, length 4.0 mm.

Figs. 8–**9**. Specimens of *Iniforis albogranosa* (Kosuge, 1961) taken from American Samoa, Tutuila I., PPHU. **8**. DAPC Cat. No. POL-SHL-2018-0005-1; length 7.0 mm. **9**. DAPC Cat. No. POL-SHL-2018-0005-2; length 7.0 mm.

have not examined the holotype, the figure provided by Kosuge (1961a) closely matches the recent specimens from Tutuila.

Distribution: Originally described from the Amami Islands (Kosuge, 1961a), with subsequent records from various locations in the western and central Pacific (Bakker & Albano, 2022). Also recorded by Ladd (1972) from Fiji and the Marshall Islands, but these were misidentifications.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 33 specimens, 6.0–9.5 mm, POL-SHL-2018-00005-L (DAPC).

Iniforis fusiformis (Kosuge, 1961)
(Fig. 10)

Triphora (*Iniforis*) *fusiformis* Kosuge, 1961a: 314, pl. 19, fig. 4, text fig, 1, 4.
Iniforis fusiformis (Kosuge): Feng, 1996: 136, pl. 26, fig. 13, 14.

Comments: We consider our Samoan specimens to represent *Iniforis fusiformis* (Kosuge, 1961a), based on the presence of a posterior sinus which resembles a hole. In addition, the similar *Mastonia rubra* has two spiral keels and axial riblets on the protoconch, whereas *I. fusiformis* has only one spiral keel plus axial riblets on the protoconch.

Distribution: Originally described from the Amami Islands (Kosuge, 1961a), with subsequent records from, Taiwan (Chen *et al.*, 2012), Korea (Lee & Min, 2002), the Similan

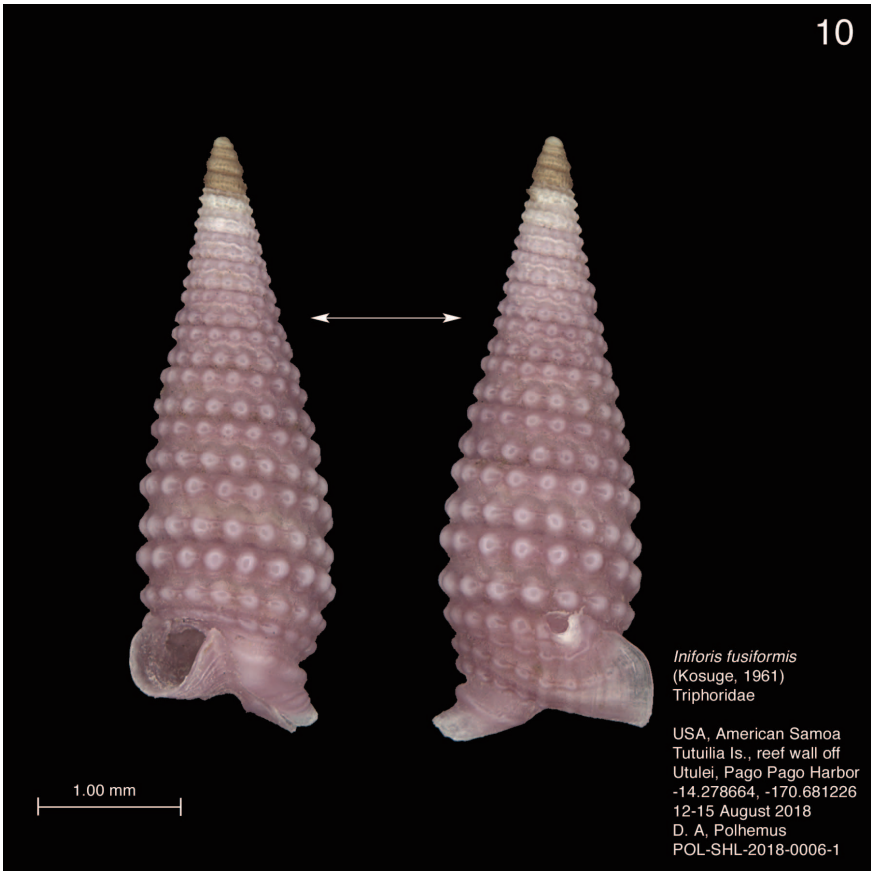


Fig. 10. Specimen of *Iniforis fusiformis* (Kosuge, 1961) taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0006-1; length 5.6 mm.

Islands off Thailand (Dumrongrojwattana *et al.*, 2016),and the South China Sea (Feng, 1996). This species is a common component of our recent Samoan samples.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 100 specimens, 3.5–5.6 mm, POL-SHL-2018-00006-L (DAPC).

Iniforis cf. ***douvillei*** Jousseaume, 1884
(Fig, 11)

Iniforis douvillei Jousseaume, 1884: 241, pl. 4, fig. 3.

Comments: This Samoan taxon seems to represent a member of the genus *Iniforis*, although the precise species is not determined with certainty yet. It is close to *Iniforis douvillei* Jousseaume, 1884, which has a hole in the peristome that is not further developed as a tube, and a paucispiral protoconch that is relatively similar to our Samoan specimens.

However, given that *I. douvillei* was described from Mauritius, we have elected to treat this taxon as *Iniforis* cf. *douvillei* for the present, pending examination of types and firm confirmation that the species actually occurs in the Pacific.

Distribution: As noted above, *I. douvillei* Jousseaume, 1884 was originally described from Mauritius, and was subsequently listed from New Caledonia by Hervier (1899), although this latter record has not been subsequently reconfirmed.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 2 specimens, 4.6–4.8 mm, POL-SHL-2018-0007-L (DAPC).

Genus ***Mastonia*** Hinds, 1843

Mastonia cf. ***rubra*** (Hinds, 1843)
(Fig. 12)

Triphoris (*Mastonia*) *ruber* Hinds, 1843b: 19.
Mastonia rubra (Hinds): Hervier, 1899: 310.

Comments: Our Samoan specimens resemble *Mastonia rubra* (Hinds, 1843) in form and sculpture, but have a clearly different coloration, which instead matches *Mastonia ducosensis* Jousseaume, 1884. Unfortunately, the type specimens of *M. ducosensis* lack their protoconchs, and also have less rounded bases in comparison to our Samoan specimen figured (Fig. 12). As such, although the Samoan records of *M. rubra* by Schmeltz (1874) and Paetel (1888), as well as a more recent listing (Brown, 2011) may be correct determinations, we treat our identification as provisional for the present until the species concept of *M. ducosensis* can be further clarified.

Distribution: *Mastonia rubra* was originally described from material taken in the Straits of Malacca, off peninsular Malaysia, and on New Ireland (now in Papua New Guinea) by Hinds (1843b), and subsequently recorded from Japan (Higo *et al.* 1999), the Philippines (Poppe, 2008), the Nansha Islands off China (Liu, 2008), Cocos-Keeling and Christmas Islands (Tan & Low, 2014), and Kwajalein Atoll (Johnson & Johnson, 2021).

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 33 specimens, 4.8–7.4 mm, POL-SHL-2018-0009-L (DAPC).

Mastonia iris Laseron, 1958
(Fig. 13)

Mastonia iris Laseron, 1958: 590, fig. 37–39.

Comments: One of us (DAP) initially identified this species as *Iniforis formosula*, originally described from the Loyalty Islands (Hervier, 1898: 251), a mistake that has been made by many workers over the past 100 years. Examination of a syntype by the second author (PB), coupled with the original figure provided by Hervier, demonstrate that our Samoan specimens in fact represent a completely different *Iniforis* species, which appears to be *Mastonia iris,* described 60 years later by C.F. Laseron.

Distribution: This species was originally described from the Great Barrier Reef off Cairns, Australia, and subsequently recorded from French Polynesia (Tröndle & Boutet, 2009). Based on specimens examined by the second author (PB), *M. iris* occurs widely

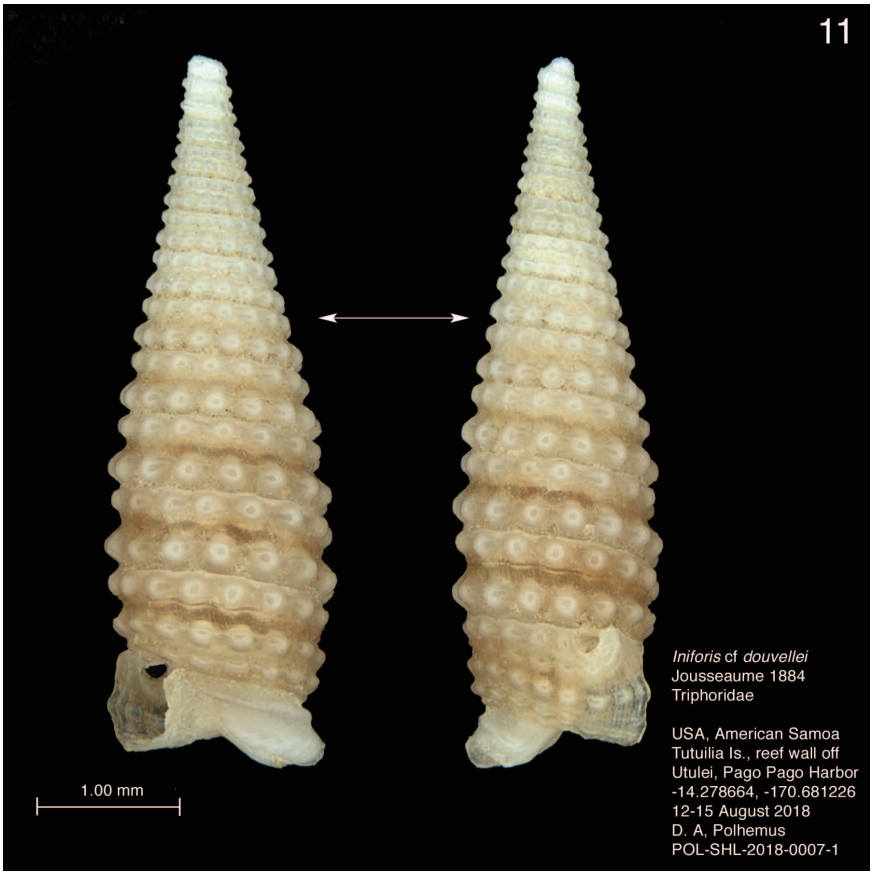


Fig. 11. Specimen of *Iniforis* cf. *douvillei* Jousseaume, 1884 taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0007-1; length 4.8 mm.

throughout the Central Pacific, so its true range is under-documented. This is the first record for Samoa, where it was relatively common in recent euphotic zone samples.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 55 specimens, 4.5–5.8 mm, POL-SHL-2018-0008-L (DAPC).

Genus ***Mastoniaeforis*** Jousseaume, 1884

Mastoniaeforis cf. ***chaperi*** Jousseaume, 1884
(Fig. 14)

Mastoniaeforis chaperi Jousseaume, 1884: 243, pl. 4, fig. 4–5.

Comments: We suspect that the white *Iniforis/Mastoniaeforis* species from Samoa with a single keel on the protoconch, described by Baker & Spicer (1935) as *Triphora harrisi*, is a junior synonym of *M. chaperi* Jousseaume, 1884, but a comparison of both holotypes is needed to

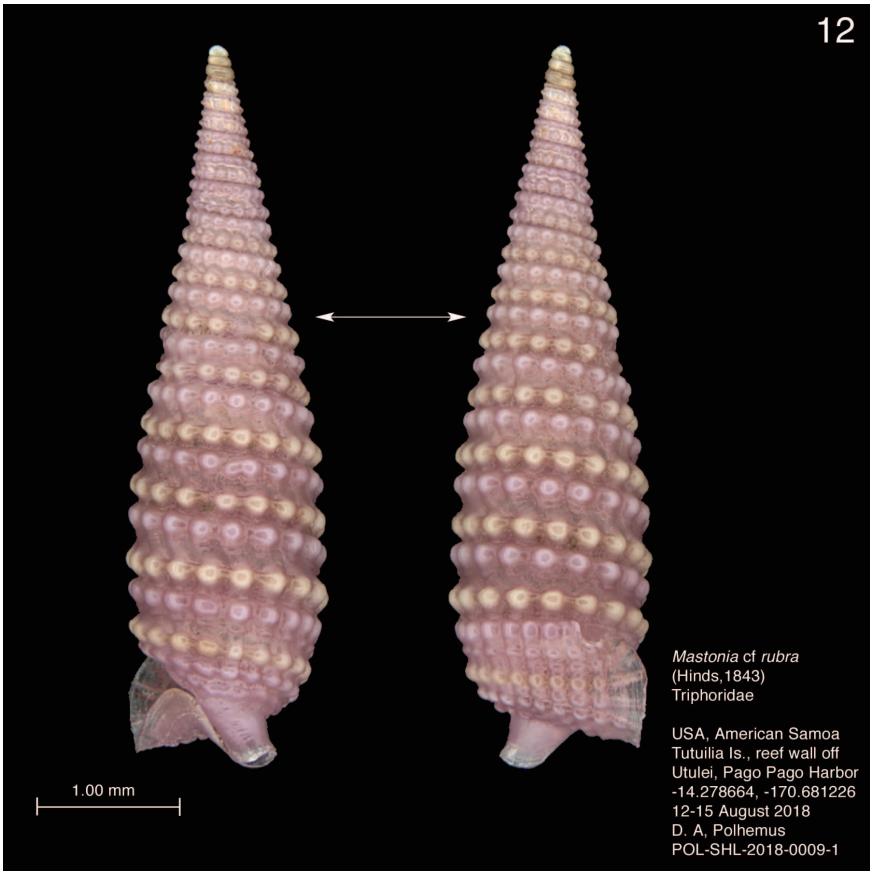


Fig. 12. Specimen of *Mastonia* cf. *rubra* (Hinds,1843) taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0009-1; length 6.8 mm.

confirm this hypothesis. This is complicated by the fact that the holotype of *M. chaperi* is lacking its protoconch. Therefore, we treat our determination as provisional for now, although our material is a good match for topotypic specimens from Reunion figured by Jay (2007).

Similarly, Baker & Spicer (1935) described *Triphora ofuensis* from American Samoa, with their figure showing it to be an *Iniforis/Mastoniaeforis* species. The description states that the protoconch possesses a single keel, but otherwise does not add any information on color or other useful characters. We suspect that this may be yet another junior synonym of *Mastoniaeforis chaperi*, but once again an examination of type material is necessary to confirm this.

Distribution: Originally described from Reunion (Jousseaume, 1884), and subsequently recorded from Australia (Marshall, 1983), the Gulf of Aqaba (Blatterer, 2019), Mauritius (Viader, 1937), the Kermadec Islands (Brook, 1998), Red Sea (Jousseaume, 1898), and the Society, Marquesas and Tuamotu islands of French Polynesia (Tröndle & Boutet, 2009).

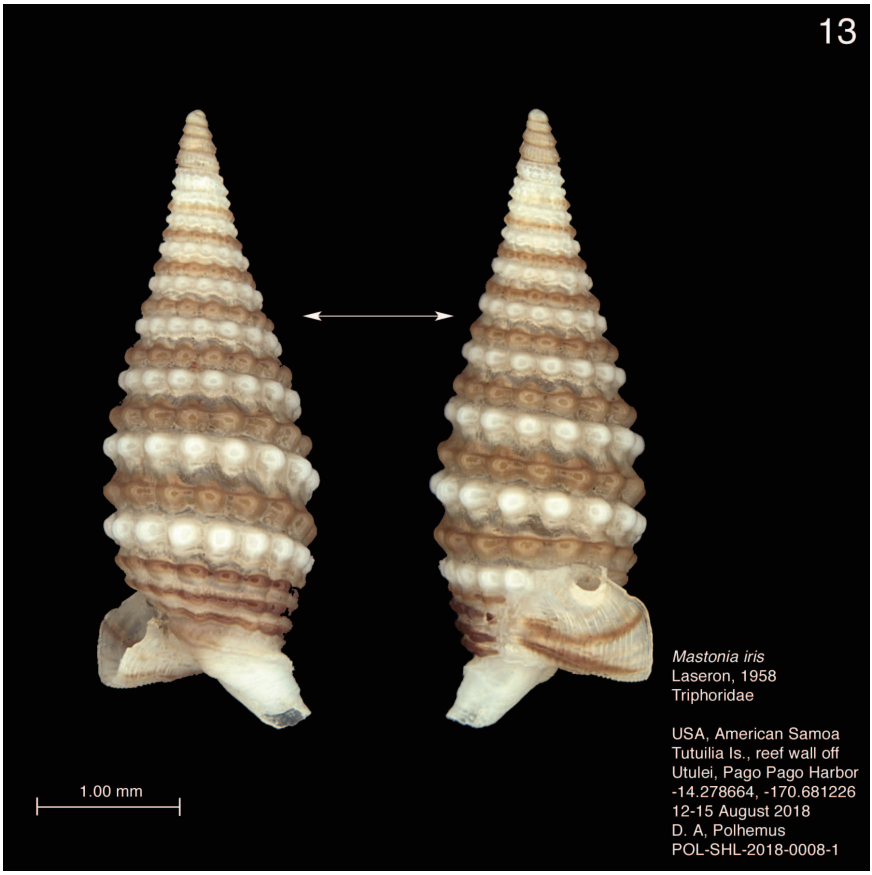


Fig. 13. Specimen of *Mastonia iris* Laseron, 1958, taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0008-1; length 5.7 mm.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 2 specimens, 4.6–5.2 mm, POL-SHL-2018-0010 (DAPC).

Genus ***Monophorus*** Granata Grillo, 1877

Monophorus aff. ***strictus*** (Laseron, 1958)
(Figs. 15,16)

Notosinister stricta Laseron, 1958: 633, fig. 202-203.

Comments: We have tentatively identified our Samoan specimens as *Monophorus strictus* (Laseron, 1958), but they are possibly a distinct species as they seems to be larger, with more whorls, a closed siphonal canal, and more cords on the base. *Notosinister* is now considered a synonym of *Monophorus* Granata Grillo, 1877 (Marshall, 1983) and therefore, since *Monophorus* is a masculine genus, the name should properly be *Monophorus strictus* (Laseron, 1958).

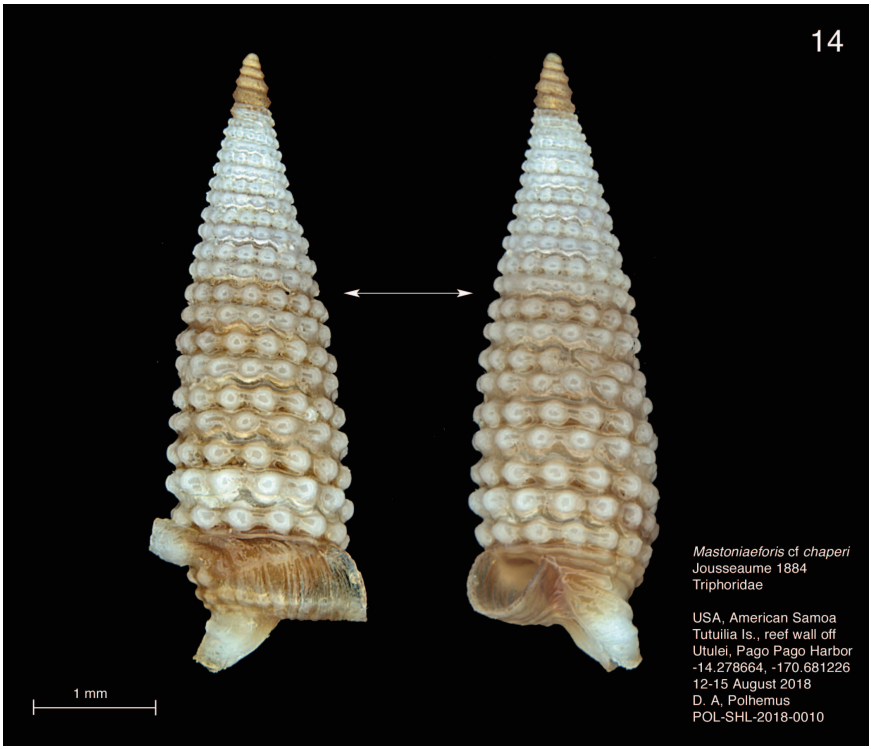


Fig. 14. Specimen of *Mastoniaeforis* cf. *chaperi* Jousseaume, 1884 taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0010; length 4.6 mm.

Distribution: *Monophorus strictus* is thus far only known from the type locality at Mornington Island, Australia. Our putatively allied taxon was relatively uncommon in recent Samoan samples.

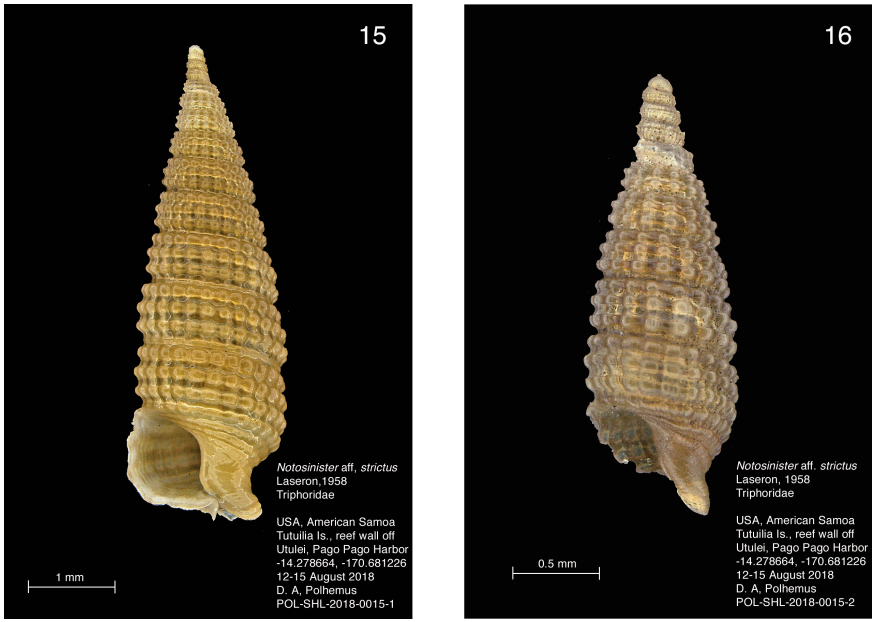
Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 4 specimens, 2.8–6.1 mm, POL-SHL-2018-0015-L (DAPC).

Genus *Nanaphora* Laseron, 1958

Nanaphora cf. ***tricolor*** Laseron, 1958
(Fig. 17)

Nanaphora tricolor Laseron, 1958: 618, fig. 151–152.

Comments: This species has often been confused with *Mastonia cingulifera* (Pease 1861), the type of which is in The Natural History Museum, London but lacks its protoconch, precluding comparison on the basis of that character system. Even so, *N. tricolor* can be easily separated from *M. cingulifera* by its differing coloration, with the latter species having a bicolored shell in which the shell base and the first and second spiral cords are yellowish brown, while the third and first basal cords are dark reddish brown



Figs. 15–16. Specimens of *Monophorus* aff. *strictus* (Laseron, 1958) taken from American Samoa, Tutuila I., PPHU. **15**. Adult, DAPC Cat. No. POL-SHL-2018-0015-1; length 6.1 mm. **16**. Immature, DAPC Cat. No. POL-SHL-2018-0015-2; length 2.8 mm.

(see fig. 74 in Albano *et al.*, 2019). By contrast, the shell of *N. tricolor* clearly displays three different colors, as implied by its name, with alternating cords bearing dark brown or white gemmules on a yellowish brown ground color (Fig. 17). This coloration is also somewhat similar to that seen in *Cautor minimus* (Pease 1871), but in that species the pale gemmules are set within a dark, reddish brown cord, rather than within a yellowish brown cord as seen in *N. tricolor*.

Laseron's original description states: "...apex mucronate, white, remainder with upper row of gemmules white, lower deep chocolate, the intermediate groove or median row of gemmules and base yellow." This matches the current specimen except for "...apex mucronate, white..." However, Marshall's (1983) redescription of this species indicates that it possesses a brown, bicarinate protoconch without a white apex. The second author (PB) has examined several examples of this species from Papua New Guinea, New Caledonia and the Philippines which possess a bicarinate protoconch, and we consider our Samoan specimen to belong to the same taxon as these specimens. Marshall (1983) notes the presence of fine spiral microsculpture between the rows of tubercles, which is visible in the Philippine specimens, and our Samoan specimen possesses this character state as well. We therefore follow Marshall's (1983) interpretation of this species, which included scanning electron micrographs of the shell structure, aperture, and protoconch. However, the protoconch structure of Laseron's type series must still be checked to be fully confident that he and Marshall were referring to the same taxon.

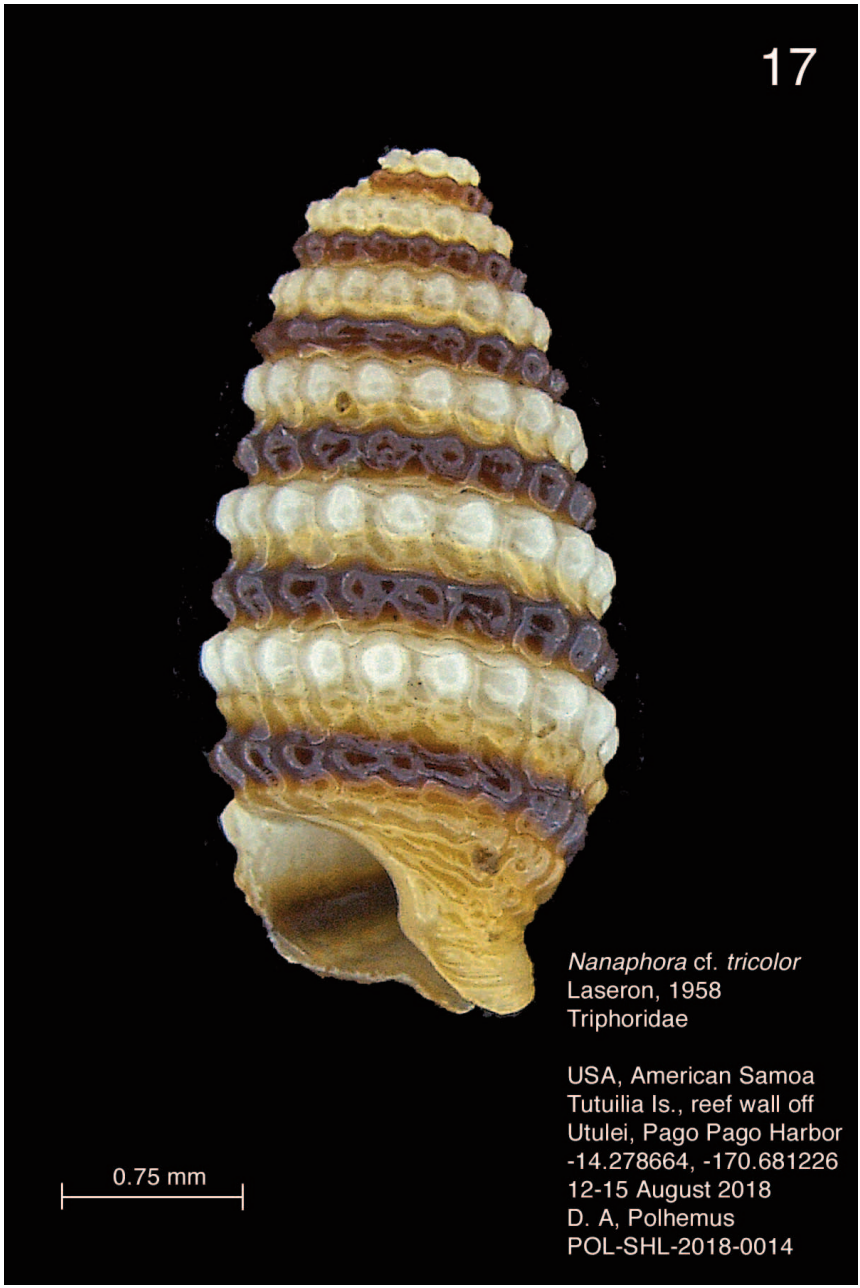


Fig. 17. Specimen of *Nanaphora* cf. *tricolor* Laseron, 1958 taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0014; length 3.0 mm.

Distribution: Originally described from Australia (Laseron, 1958), *N. tricolor* has also been recorded from Japan (Okutani, 2000), Taiwan (Chang & Wu, 2005), French Polynesia (Tröndle & Boutet, 2009) and the Similan Islands off Thailand (Dumrongwajwattana *et al*., 2016). Specimens from these latter locations need to be rechecked, however, to confirm the distribution, given the considerations discussed above.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen lacking protoconch, 3.3 mm, POL-SHL-2018-0014 (DAPC).

Nanaphora triticea (Pease, 1861)
(Fig. 18)

Triphoris triticea Pease, 1861: 433.
Nanaphora triticea (Pease): Kay & Johnson, 1987: 115.

Comments: This is a small-sized, widespread taxon with a distinctive appearance. However, there are a large number of other 'pupoid' species that are likely closely related and undescribed. Our *Nanaphora* aff. *triticea* specimen is one of these (see below). The combination *Opimaphora tritiacea* is a misspelling in Higo (*et al.*, 1999).

Distribution: Originally described from Hawai'i (Pease, 1861), with subsequent records from various locations in the Pacific Ocean, including the colder waters of the East Pacific Ocean at Easter Island and the Galapagos Islands (Bakker & Albano, 2022).

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 3.5 mm, POL-SHL-2018-0012 (DAPC).

Nanaphora aff. ***triticea*** (Pease, 1861)
(Fig. 19)

Comments: This Samoan specimen does not seem to be conspecific with *N. triticea* (Pease, 1861), being far more slender and having an aperture of slightly different form. Although the two taxa are nearly always found together, *N. triticea* is far more common. By contrast, we consider the taxon illustrated here with a more slender shell to be potentially undescribed, but treat it for the present as *Nanaphora* aff. *triticea.*

Distribution: The second author (PB) has seen specimens of this apparently undescribed species from the Philippines, New Caledonia and Papua New Guinea and now Samoa. It likely has an even wider distribution across the southwest Pacific.

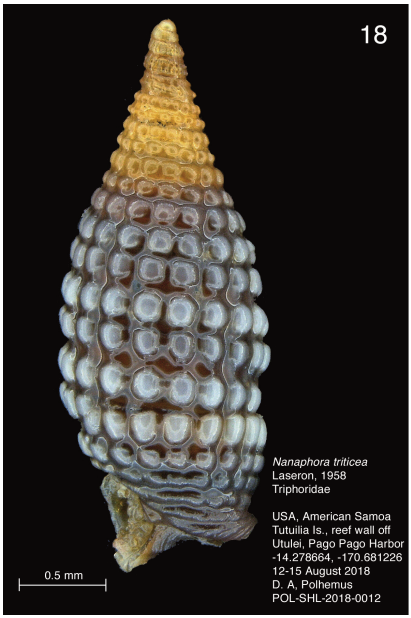
Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 3.9 mm, POL-SHL-2018-0013 (DAPC).

Genus ***Obesula*** Jousseaume, 1897

Obesula aff. ***pantherina*** Jousseaume, 1898
(Fig. 20)

Obesula pantherina Jousseaume, 1898: 76.

Comments: The syntype specimen held in the Muséum National d'Histoire Naturelle in Paris is similar in size and general coloration to our Samoan specimen, but there are differences in the structure of the protoconch, and in the less tessellate color pattern, with the reddish brown coloration concentrated within the adapical row of gemmules.



Figs. 18–19. Specimens of *Nanaphora* taken from American Samoa, Tutuila I., PPHU. **18**. *Nanaphora triticea* (Pease); DAPC Cat. No. POL-SHL-2018-0012; length 3.5 mm. **19**. *Nanaphora* aff. *triticea* (Pease); DAPC Cat. No. POL-SHL-2018-0013; length 3.9 mm.

Distribution: *Obesula pantherina* was described by Jousseaume (1898) based on specimens taken in the Gulf of Aden at Aden, Djibouti, and Périm (Perim Island, in the Strait of Mandeb), so its presence in Samoa would represent a significant range extension.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 2.5 mm, POL-SHL-2018-0024 (DAPC).

Genus ***Opimaphora*** Laseron, 1958

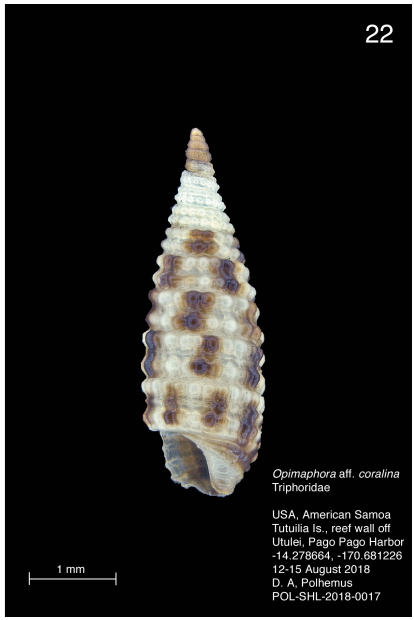
Opimaphora cf. ***coralina*** Laseron, 1958
(Fig. 21)

Opimaphora coralina Laseron, 1958: 641, fig. 239–240.

Comments: Our Samoan specimens match the description of *O. coralina* in Laseron (1958), however there are numerous small, superficially similar tesselate triphorid species present in the tropical Pacific, therefore we have treated this taxon as *Opimaphora* cf. *coralina* for now, in order to err on the side of caution. This entire group of taxa is complex and in need of careful revision.

Distribution: *Opimaphora coralina* was originally described from Christmas Island in the Indian Ocean (Laseron, 1958), and subsequently recorded from Hawai‘i (Kay, 1979), Japan (Kosuge, 1962b), the Red Sea (Dekker & Orlin, 2000), Thailand (Dumrongrojwattana & Tanamai, 2020) and Kwajalein Atoll in the Marshall Islands (Johnson &

Fig. 20. Specimen of *Obesula* aff. *pantherina* Jousseaume, 1898 taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0024; length 2.5 mm.



Figs. 21–22. Specimens of *Opimaphora* taken from American Samoa, Tutuila I., PPHU. **21**. *Opimaphora* cf. *coralina* Laseron; DAPC Cat. No. POL-SHL-2018-0016; length 4.1 mm. **22**. *Opimaphora* aff. *coralina* Laseron; DAPC Cat. No. POL-SHL-2018-0017; length 4.3 mm.

Johnson, 2021). These literature and online records should be carefully re-checked, since many likely refer to other species. In particular, we consider it unlikely that the Hawaiian specimens truly represent this species.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 4.1 mm, POL-SHL-2018-0016 (DAPC).

Opimaphora aff. ***coralina*** Laseron, 1958
(Fig. 22)

Comments: This is a species similar to *Opimaphora coralina* Laseron, 1958, but distinct. It may potentially represent *O. sarcira* Laseron, 1958, but this latter species has a single keel and axial riblets on the protoconch, whereas our specimen in hand has two keels.

Distribution: As noted previously, *O. coralina* was originally described from Christmas Island in the Indian Ocean. Although our specimen in hand is the only example of this affiliated and possibly undescribed taxon that we have currently seen, and could be endemic to Samoa, it needs to be comparatively checked against material from other Western Pacific localities before this possibility can be accepted.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 4.3 mm, POL-SHL-2018-0017 (DAPC).

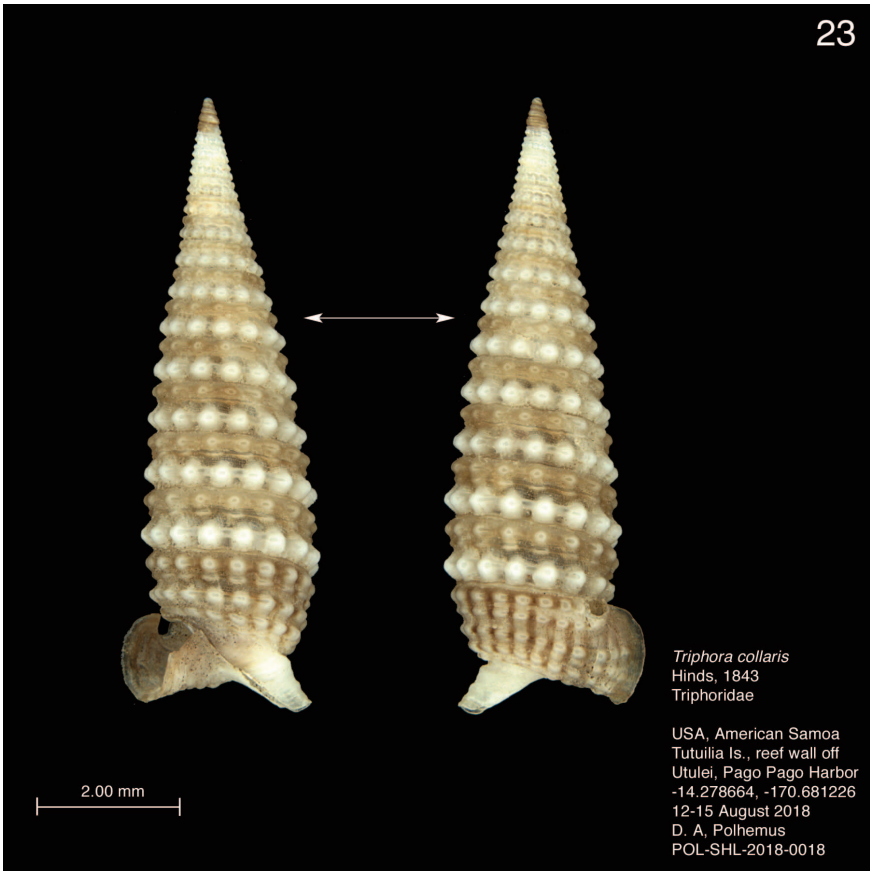


Fig. 23. Specimen of *Triphora collaris* Hinds taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0018; length 8.7 mm.

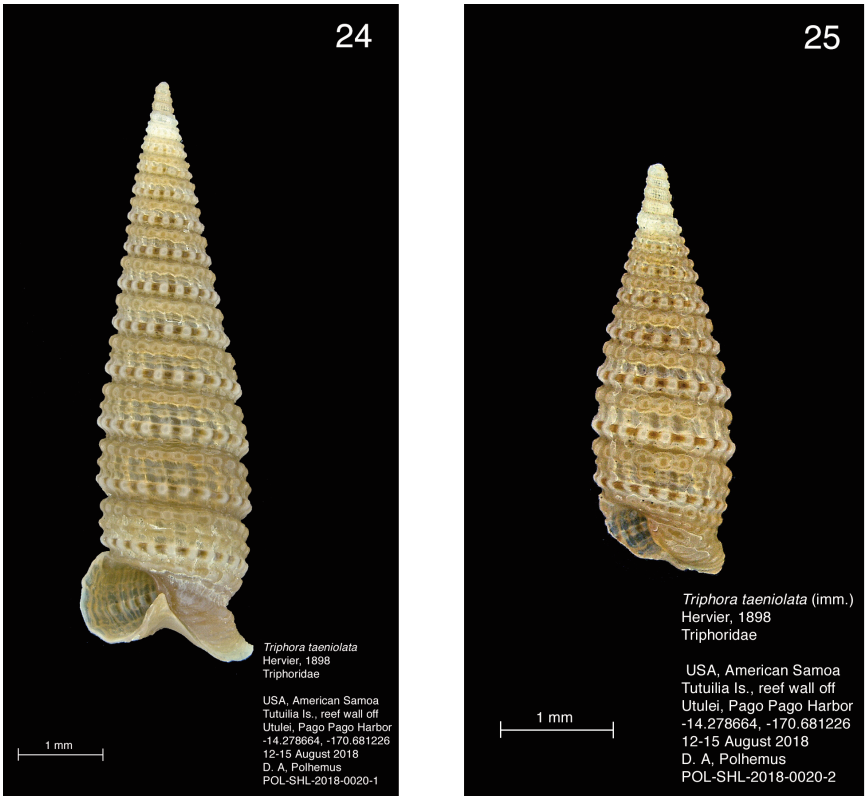
Genus ***Triphora*** Blainville, 1828

Triphora collaris Hinds, 1843
(Fig. 23)

Triphoris (*Mastonia*) *collaris* Hinds 1843a: 23.
Triforis collaris Hinds: Tryon, 1887: 191.

Comments: Albano *et al.* (2019) illustrated the type specimen held in the Natural History Museum, London. Based on similarities among the type specimens, we suspect that *Mastonia peanites* Jousseaume, 1898 and *Mastonia squamosa* Kosuge, 1962 are junior synonyms of this species, but this needs to be confirmed. In addition, *T. collaris* itself should probably be transferred to *Mastonia*, but such an action would be premature at this time until generic concepts in Triphoridae can be better clarified using molecular techniques.

Distribution: Originally described from the Philippines (Hinds, 1843a), and subsequently recorded from Yemen (Shopland, 1902) and the Marshall Islands (Kosuge, 1990).



Figs. 24, 25. Specimens of *Triphora taeniolata* Hervier taken from American Samoa, Tutuila I., PPHU. **25**. Adult, DAPC Cat. No. POL-SHL-2018-0020-1; length 7.6 mm. **26**. Immature, DAPC Cat. No. POL-SHL-2018-0020-2; length 4.0 mm.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 8.7 mm, POL-SHL-2018-0018 (DAPC).

Triphora taeniolata Hervier, 1898
(Figs. 24, 25

Triforis (*Mastonia*) *taeniolata* Hervier, 1898: 258.
Triphora taeniolata Hervier, 1898: Marshall, 1983: fig. 28h–j.

Comments: It is possible that several species may be held under this name as currently interpreted, but resolving this question must await future analysis, possibly using molecular characters. The most significant differences observed are in regard to size; nonetheless specimens of both small and large forms have a similar protoconch structure.

Distribution: This is a widespread Western Pacific species, originally described from the Loyalty Islands off New Caledonia (Hervier, 1898) and occurring from Southeast Asia to French Polynesia (Heros *et al.*, 2007; Poppe, 2017; Dumrongrojwattana & Tanamai,

2020; Bakker & Albano, 2022). It is a moderately common component of our recent Samoan samples. Scanning electron micrographs of the shell structure, aperture, protoconch and radula were provided by Marshall (1983).

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 32 specimens, 3.8–7.8 mm, POL-SHL-2018-0020-L (DAPC).

Triphora cf. ***fulvescens*** Hervier, 1898
(Fig. 26)

Triphora fulvescens Hervier, 1898: 258.

Comments: Our Samoan specimen closely resembles *Triphora fulvescens* Hervier, 1898, however the type specimens lack their protoconchs and are larger, so the identification is not definitive. In addition, our Samoan specimen has a damaged aperture, further hindering comparison, therefore we list this species as "*Triphora* cf. *fulvescens*" for now.

Distribution: Originally described from Lifou in the Loyalty Islands (Hervier, 1898) and subsequently recorded as "cf." from the Gulf of Aqaba (Blatterer, 2019).

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 3.9 mm, POL-SHL-2018-0019 (DAPC).

Triphora aff. ***laddi*** Kay, 1979
(Fig. 27)

Triphora laddi Kay, 1979: 147, fig. 51d, i.

Comments: Although similar to *T. laddi* Kay 1979, which was described from Hawai'i, our Samoan specimens seem to represent a different taxon allied to that species (compare Figs. 27, 28), with the gemmules arranged in a somewhat different configuration. The Samoan specimens are also smaller than those from Hawai'i, with a length including protoconch of 3.0 mm, whereas intact Hawaiian specimens have lengths ranging from 3.5–4.2 mm. It is also possible that *T. laddi* itself may be a synonym of *Inella perimensis* Jousseaume, 1898, described from Djibouti in the Gulf of Aden, but this has not yet been verified. Based on discussions with staff at the Bishop Museum, it appears that the holotype specimen of *T. laddi* may be lost, further hindering comparison.

Distribution: We have so far seen examples of this form only from American Samoa.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 3 specimens, 3.0 mm complete, 2.3–3.0 mm without protoconch, POL-SHL-2018-0021-L (DAPC).

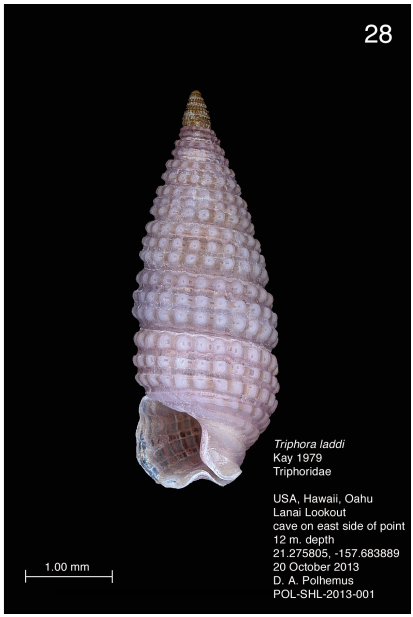
Genus ***Viriola*** Jousseaume, 1884

Viriola pagoda (Hinds, 1843)
(Fig. 29)

Triphoris (*Ino*) *pagodus* Hinds 1843a: 22.
Viriola (*Viriola*) *pagoda* (Hinds): Kosuge, 1961b: 413, pl. 22, fig. 2.

Comments: This species was previously recorded from the Samoan Islands by Ladd (1972). Although the fossil specimen upon which he based this record shows only a few whorls, the identification seems plausible. We have subsequently collected recent specimens from Tutuila, confirming the current presence of this species in Samoa.

Fig. 26. Specimen of *Triphora* cf. *fulvescens* Hervier taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0019; length 3.9 mm.



Figs. 27–28. Specimens of *Triphora* from Samoa and Hawai'i. **27**. *Triphora* aff. *laddi* Kay, taken at Pago Pago Harbor, American Samoa, DAPC Cat. No. POL-SHL-2018-0021-1; length 3.0 mm. **28**. *Triphora laddi* Kay, taken at Lanai Lookout, O'ahu, DAPC Cat. No. POL-SHL-2013-0001; length 4.2 mm.

Distribution: Originally described from the island of Bohol, in the Philippines (Hinds, 1843a), and subsequently recorded from various locations in the Central Pacific (Bakker & Albano, 2022), including the Marshall Islands (Ladd, 1972), Kwajalein Atoll (Johnson & Johnson, 2021) and "Samoa" (Ladd, 1972).

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 3 specimens, 10.0–15.9 mm, POL-SHL-2018-0022-L (DAPC).

Subfamily Metaxiinae Marshall, 1977

Genus ***Metaxia*** Monterosato, 1884

Metaxia cf. ***brunnicephala*** Kay, 1979
(Fig. 30)

Metaxia brunnicephala Kay, 1979: 132.

Comments: Although *Metaxia brunnicephala* Kay, 1979 is generally considered to be a white species, the holotype in London has small yellow spots between the tubercles, similar to our Samoan specimen. Overall, identification of *Metaxia* species is extremely difficult and requires SEM micrography and future molecular analysis, when possible, to be absolutely certain regarding species determinations. Despite the similarities in coloration noted above, in comparison to our Samoan specimen the protoconch in the Hawaiian

Fig. 29. Specimen of *Viriola pagoda* (Hinds, 1843) taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0022L; length 12.0 mm.

holotype of *M. brunnicephala* has an additional whorl and is darker in color. The overall pattern of sculpture, however, is rather similar, although the protoconch in the holotype appears to be a bit broader.

Distribution: This species was originally described from Hawai'i (Kay, 1979), and has subsequently been reported from many widely separated localities including Japan (Higo *et al.* 1999), the Red Sea (Dekker & Orlin, 2000), the Society and Tuamotu islands of French Polynesia (Tröndle & Boutet, 2009) and Costa Rica (Shasky, 1984). As noted above, the validity of these records from outside Hawai'i needs to be carefully re-evaluated.

Material examined: USA, AMERICAN SAMOA, Tutuila, PPHU: 1 specimen, 3.9 mm, POL-SHL-2018-0011 (DAPC).

OTHER SPECIES WITH CONFIDENT PREVIOUS RECORDS FROM THE SAMOAN ARCHIPELAGO

Genus ***Euthymella*** Thiele, 1929

Euthymella elegans (Hinds, 1843)

Triphoris (*Ino*) *elegans* Hinds, 1843b: 18.
Triphora granti F. Baker & Spicer, 1935: 40, pl. 5, fig. 5. Syn. by Marshall, 1983: 51.
Euthymella elegans (Hinds): Marshall 1983: 51, fig. 21g–i.

Comments: We concur with the determination by Marshall (1983) that *Triphora granti*, described from the island of Ofu in American Samoa by Baker & Spicer (1935), is a synonym of *Euthymella elegans* (Hinds, 1843). Therefore, *E. elegans* occurs in Samoa. *Euthymella elegans* was again recorded (as *Viriola elegans*) from an unspecified locality in the Samoan Islands by Ladd (1972) based on a fossil specimen, however his figure in fact represents a different species, *Euthymella* cf. *regalis* (Jousseaume, 1884), so his record is not considered valid. Albano *et al*. (2019) illustrated the type specimen of *E. elegans* held in the Natural History Museum, London.

Distribution: This species was originally described from the Straits of Malacca (Hinds, 1843b), with subsequent records from Australia, New Caledonia, the Solomon Islands, and the Society Islands (Marshall, 1983); Taiwan and the South China Sea (Liu, 2008); the Similan Islands off Thailand (Dumrongrojwattana *et. al*., 2016); and Kwajalein Atoll (Johnson & Johnson, 2021).

Genus ***Triphora*** Blainville, 1828

Triphora peleae F. Baker & Spicer, 1935

Triphora peleae F. Baker & Spicer, 1935: 40, pl. 5, fig. 6.

Comments: This species was originally described from specimens taken on the island of Ofu, in American Samoa. The paucispiral protoconch indicates that it should be transferred to the genus *Iniforis*, as suggested by Kay (1979), but the type series needs to be checked to verify its other characters. This species was not recovered in our recent samples taken on Tutuila.

Distribution: Described from American Samoa, and later recorded from the Hawaiian Islands by Kay (1979), although it is not clear if the latter author examined the holotype before making this identification.

Fig. 30. Specimen of *Metaxia* cf. *brunnicephala* Kay, 1979 taken from American Samoa, Tutuila I., PPHU. DAPC Cat. No. POL-SHL-2018-0011; length 3.9 mm.

Genus ***Viriola*** Jousseaume, 1884

Viriola abbotti (F. Baker & Spicer, 1935)

Triphora abbotti F. Baker & Spicer, 1935: 39, pl. 5, fig. 4.
Viriola samoana Cernohorsky, 1977: 130, figs. 21–26. Synonymized by Marshall 1983: 48.
Viriola abbotti (F. Baker & Spicer): Kay 1979: 139, Fig. 50e.

Comments: *Viriola abbotti* (Baker & Spicer) is a distinctive species, originally described from the island of Ofu in American Samoa. Polhemus (2020) noted that in Hawai‘i this species seems to be more common at mesophotic depths, which might also explain its absence in our recent euphotic zone samples from American Samoa.

Distribution: Originally described from American Samoa, and subsequently recorded from a wide range of other localities in the Indo-Pacific, from the Gulf of Aqaba through Australia and the South China Sea to the Marshall Islands (Bakker & Albano, 2022) and Hawai‘i (Kay, 1979).

Viriola flammulata (Pease, 1861)

Triforis flammulata Pease, 1861: 434.
Viriola flammulata (Pease): Kosuge 1962b: 86.

Comments: This species was recorded from an unspecified locality in the Samoan Islands by Kay (1965), and we consider this plausible. By contrast, a subsequent record by Kay (1979) represents *Euthymella elegans* (Hinds, 1843); see above.

Distribution: This species was originally described from the Hawaiian Islands (Pease, 1861), and subsequently reported from a broad range of other Indo-Pacific localities, from Mauritius eastward through Australia to Japan and the Philippines (Bakker & Albano, 2022). Albano *et al*. (2019) illustrated the lectotype specimen held in the Natural History Museum, London.

SPECIES WITH QUESTIONABLE PREVIOUS RECORDS FROM THE SAMOAN ARCHIPELAGO

Iniforis aemulans (Hinds, 1843)

Triphora aemulans Hinds, 1843b: 20.
Iniforis aemulans: Kay, 1979: 133, figs. 48b–c.

Comments: The holotype of this species was apparently sold at auction in the 19th century (Albano *et al*. 2019) and has not been relocated. The type-locality is also vague, being given merely as the “Pacific Ocean?” As a result, it is not clear on what type material Kay (1979) based her species concept when assigning this species to *Iniforis* and illustrating specimens from Hawai‘i. Consequently, the basis for the Samoan record of this species listed by Kay (1979) is also uncertain, since it cannot be matched to any taxon currently verified from the Samoan Islands.

Iniforis violacea (Quoy & Gaimard, 1834)

Cerithium violaceum Quoy & Gaimard, 1834: 134, pl. 55, fig. 22–23.
Iniforis violaceus (Quoy & Gaimard): Laseron 1958: 579, fig. 1–5.

Comments: This record dates back to Schmeltz (1874), but lacks any accompanying figure. We have not located the material on which it was based, and consider the identification questionable.

Mastonia squamosa Kosuge, 1962

Mastonia squamosa Kosuge, 1962a: 125, pl. 8, fig. 15, text fig. 10–11.

Comments: This species was recorded from an unspecified locality in "Samoa" by Ladd (1972), based on a fossil specimen. This specimen is in poor condition, such that it is not possible to identify the taxon involved to beyond the level of an indeterminate *Mastonia* species. In addition, it is possible that *M. squamosa* is a synonym of *Triphora collaris* Hinds, 1843, a species present in our recent samples from Tutuila – see previous discussion under that species.

Viriola incisa (Pease, 1861)

Triphoris incisa Pease, 1861: 434.
Viriola incisa (Pease): Kosuge 1962b: 86.

Comments: This species was recorded from an unspecified locality in "Samoa" by Ladd (1972), based on a fossil specimen. Given the figure he provides in his work, it is not possible to identify this specimen to a level beyond *Viriola* species undetermined. Therefore, this record cannot currently be validated.

SPECIES OF QUESTIONABLE VALIDITY PREVIOUSLY RECORDED FROM THE SAMOAN ARCHIPELAGO

Triphora harrisi F. Baker & Spicer, 1935

Triphora harrisi F. Baker & Spicer, 1935: 37, pl. 5, figs. 1–2.

Comments: This species was described from Samoa by Baker & Spicer (1935), but appears to be a possible synonym of *Mastoniaeforis chaperi* Jousseaume, 1884; see previous discussion under that species. A comparison of type material for both species will be required to resolve this question.

Triphora ofuensis F. Baker & Spicer, 1935

Triphora ofuensis F. Baker & Spicer, 1935: 38, pl. 5, fig. 3.
Triphora (*Iniforis*) *ofuensis* F. Baker & Spicer: Ladd 1972: 47, pl. 12, fig. 8–12.

Comments: This species was described from Samoa by Baker & Spicer (1935), but appears to be a possible synonym of *Mastoniaeforis chaperi* Jousseaume, 1884; see previous discussion under that species.

SYNONYMIZED SPECIES PREVIOUSLY RECORDED FROM THE SAMOAN ARCHIPELAGO

Triphora granti F. Baker & Spicer, 1935

Triphora granti F. Baker & Spicer, 1935: 40, pl. 5, fig. 5.
Euthymella elegans (Hinds): Marshall, 1983: 51 (*T. granti* as synonym).

Comments: This species, described from Ofu in American Samoa, is a synonym of *Euthymella elegans* (Hinds, 1843); see previous discussion under that species.

Viriola samoana Cernohorsky, 1977

Viriola samoana Cernohorsky, 1977: 130, figs. 21–26.
Viriola abbotti (F. Baker & Spicer): Marshall 1983: 48 (*V. samoana* as synonym)..

Comments: This species was described from the Upolu in western Samoa, but has proven to be a synonym of *Viriola abbotti* (F. Baker & Spicer, 1935); see previous discussion under that species.

ACKNOWLEDGMENTS

The senior author thanks Neal Evenhuis and Allen Allison of the Department of Natural Sciences, Bishop Museum, Honolulu for access to the computerized microscope and integrated digital imaging system used to produce the images presented in this work. Henk Dekker and Neal Evenhuis provided detailed review comments that greatly improved the final paper.

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Appendix. **Annotated checklist of Triphoridae recorded from the Samoan Islands**.

Name	Previously recorded	Recorded here as
Bouchetriphora pallida	No	New record
Coriophora cnodax	No	New record
Coriophora fusca	No	New record
Costatophora iniqua	No	New record
Euthymella elegans	Ladd (1972) based on a fossil; Possible misidentification of *Euthymella regalis*	Previously recorded
Inella cf. *numerosa*	No	New record
Iniforis aemulans	Paetel (1888) and Kay (1979); these records cannot be verified	Questionable record
Iniforis albogranosa	Ladd (1972) based on a fossil misidentified as a *Mastoniaeforis* species; now validated by recent collections	Validated record
Iniforis cf. *douvillei*	No	New record
Iniforis fusiformis	No	New record
Iniforis violaceus	Schmeltz (1874); this record cannot be verified	Questionable record
Mastonia iris	No	New record
Mastonia cf. *rubra*	Schmeltz (1874), Paetel (1888) and Brown (2011)	Previously recorded
Mastonia squamosa	Ladd (1972); this fossil record cannot be verified	Questionable record
Mastoniaeforis cf. *chaperi*	No	New record
Metaxia cf. *brunnicephala*	No	New record
Monophorus aff. *strictus*	No	New record
Nanaphora triticea	No	New record
Nanaphora aff. *triticea*	No	New record
Nanaphora cf. *tricolor*	No	New record
Obesula aff. *pantherina*	No	New record
Opimaphora cf. *coralina*	No	New record
Opimaphora aff. *coralina*	No	New record
Triphora aff. *laddi*	No	New record
Triphora cf. *fulvescens*	No	New record
Triphora collaris	No	New record
Triphora granti	Baker & Spicer (1935), type-locality	Questionable name
Triphora harrisi	Baker & Spicer (1935), type-locality	Questionable name
Triphora ofuensis	Baker & Spicer (1935), type-locality	Questionable name
Triphora peleae	Baker & Spicer (1935), type-locality	Previously recorded

Appendix (**continued**).

Name	Previously recorded	Recorded here as
Triphora taeniolata	No	New record
Viriola abbotti	Baker & Spicer (1935), type-locality; Cheng & Wu (2005).	Previously recorded
Viriola flammulata	Kosuge (1965); Kay (1979)	Previously recorded
Viriola incisa	Ladd (1972); this fossil specimen cannot be identified with certainty	Questionable record
Viriola pagoda	Ladd (1972) based on a partial fossil; now re-validated by recent collections	Validated record
Viriola samoana	Cernohorsky (1977), type-locality Synonym of *Viriola abbotti*	Synonym