

University of the South Pacific

# Marine Studies

TECHNICAL REPORT

**AN ANNOTATED CHECKLIST OF THE  
LIVING AND FOSSIL COWRIES  
(GASTROPODA: CYPRAEIDAE) OF FIJI**

by

**Johnson Seeto**



M A R I N E S T U D I E S P R O G R A M M E



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(Gastropoda: Cypraeidae) of Fiji**

**by  
Johnson Seeto  
Marine Studies Programme  
The University of the South Pacific  
Suva, Fiji**

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## Introduction

The true cowries (Cypraeidae) of Fiji have been studied by Schilder and Schilder (1939); by Steadman and Cotton (1943); and by Cernohorsky (1964, 1967 and 1978). Iredale (1935) discussed the cowries of the Pacific including those found in Fiji. Ditlev Thaaanum made a collection of Fiji shells including cowries (Burgess, 1985). Ladd (1934) discussed some fossil cowries of Fiji.

Schilder and Schilder (1939) listed 49 species of cowries from the Samoa-Fiji region. Steadman and Cotton (1943) listed 61 species from Fiji and re-described many cowries from Fiji giving them Fijian subspecies names. Burgess (1985) has accepted only one of the names that Steadman and Cotton had proposed i.e. *Cypraea yaloka* ("yaloka" is the Fijian word for egg). However, this author does not agree and feels that *Cypraea humphreysii* should be reinstated because of the latter's earlier description date. Cernohorsky (1964) listed 57 species of cowries from Fiji. He has collected extensively in the Group and perhaps is the most knowledgeable person about Fijian marine mollusca.

Parkinson (1982) conducted a shell survey for the Pacific Community (South Pacific Commission) and the Government of Fiji. Parkinson (1987a) said that there are only 60 species of cowries in Papua New Guinea and reached only 40 in number in Fiji. This contradicted his earlier survey in 1982 when he found 52 species from Fiji. Koven (1992, 1997) surveyed the molluscs of The Great Astrolabe Reef and found a few new cowrie records. Lorenz and Hubert (1993) reviewed the cowries of the world and show distribution maps for each species.

Burgess (1985) cited Steadman and Cotton's (1943) Fijianized cowrie names but did not include Fiji in the range of some of those cowries that the latter authors found e.g. *Cypraea subviridis* and *Cypraea cylindrica*.

This author (Seeto) had found numerous semi-fossiled cowrie specimens in dredged material from Suva Harbour and Laucala Bay preserved in soft mud. Deepening of the wharf area at Narain's Jetty (Walu Bay, Suva) and the Fiji Institute of Technology's School of Maritime Studies (Laucala Bay, Suva) required dredging. The material was thrown up onto dry land around Suva. These shells still have their sheen intact but their colours have altered. There has not been any deep-water sampling for cowries in Fiji using the correct gear and therefore more new species/records may yet exist. The Institut de Recherche Pour Le Développement (IRD) Expedition from France/Noumea found some new cone species as well as new records during their bottom trawling surveys in Fiji in 1999. However, they did not find any deep water cowries.

To date, this author lists 75 confirmed species of cowries from Fiji with 18 other species possibly in or mistakenly identified from Fiji. The exact count is still debatable especially with regard to the *listeri-felina* complex, the *bouteti-propinqua-carneola-leviathan* complex, the *cicercula* and *margarita* debate as well as the *humphreysii-lutea-yaloka* debate. The *teres-alisonae-pallidula* complex has been resolved to some extent by Lorenz and Hubert (1993) whereby *Cypraea alisonae* is

made of a junior synonym of *Cypraea teres pellucens* (Melvill, 1888). Many of the Fiji fossil cowries are yet to be identified to species level. The annotated checklist below is drawn up alphabetically.

With an influx of specimen shells from Philippines, many shell dealers in Fiji will insist that their shells were locally collected to facilitate the sale and make the product more attractive to tourists. A *Cypraea spadicea* was offered to the author, by a local woman, in the Suva Main Market and she said the cowrie was from Beqa. This geographical locality would be incorrect unless the shell was thrown overboard by a yachts- person. but no one would throw away a very good shell without a probable cause. *Cypraea spadicea* is only found around California.

The designation of rare, uncommon, occasional or common is a relative scale based on the author's personal observations and from his shell collection. Certain cowries that are common in the Indo-Pacific are uncommon in Fiji; for example *Cypraea chinensis* and *Cypraea eglantina*. It must be noted that many cowries hide amongst the coral heads in the day and only come out at night. This is apparent on night walks on the reef with a lantern. Cyclones also kill many cowries and these are revealed in the rubble beds that build up after cyclones.

The author based many observations in this paper on his own shell collection from Fiji, although he did not have the opportunity to examine the late Dr. Ken Gilchrist's collection in Fiji before it was donated to the Smithsonian Museum. Ms. Raye Germon of the Smithsonian Institute, National Museum of Natural History, Washington was kind enough to send the author a list of Gilchrist's cowries and cone shells from Fiji. The author had examined the R. W. Brown Fiji Shell Collection at the Fiji Museum and found that the uncatalogued collection had some first records of Fijian cowries (see Brown, 1968). The author also examined Ken Gilchrist's fossil shell collection, which is housed at the School of Pure and Applied Sciences at USP. The Marine Studies Programme cowrie collection covered 12 species only and the author intends to add to it once time permits. The USP notation in this paper refers to the cowries' catalogue numbers and these are stored in the USP Marine Reference Collection.

Those species denoted with an asterik \* signify that the author have never seen the species from Fiji. Those with a double asterik \*\* denote fossil species specimens. Of all the Fijian cowries listed, only four of these fossil species *Cypraea agassizi*, *Cypraea mbalavuensis*, *Cypraea* sp. 1 (Kohn, 1982) and (*Cypraea* sp 2. (close to *C. punctata*) are no longer found in present day Fiji.

*Cypraea summersi* is only found in Fiji and Tonga. As a result, the Department of Environment of Fiji intends to put this species on the endangered list and it will be protected under CITES.

This report is a part of the effort of the Marine Studies Programme (USP) to increase the knowledge of Marine Biodiversity in the tropical region.

## The Confirmed Species

1. \*\**Cypraea agassizi* Ladd, 1934\*
- Ladd, 1934, p. 219 (as *Cypraea (Erosaria) agassizi* Ladd, 1934)

This fossil cowrie is no longer found living in modern Fiji.

2. *Cypraea annulus* (Linnaeus, 1758)
- \*\*Ladd, 1934, p. 220 (as *Cypraea (Monetaria) annulus sosokoana* Ladd, 1934 as a new subspecies) who also notes that recent species are found on Viti Levu reefs; Schilder and Schilder, 1939, p. 216 (as *Monetaria annulus nouméensis* Marie, 1869). Probably named after Noumea; Steadman and Cotton, 1943, p. 308, 316 (as *Monetaria annulus dranga* Steadman and Cotton, 1943). Probably named after T. Dranga who collected shells in Beqa in 1938; Steadman and Cotton, 1943, p. 316 (as *Monetaria annulus nouméensis* Marie, 1869); Brown, 1968, p. 1; Burgess, 1970, p. 342; Cernohorsky, 1978b, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, pp. 38, 41; Parkinson, 1982, p. 44; Burgess, 1985, p. 227; Koven, 1991, p. 102; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 204 (as *Erosaria annulus*); Koven, 1997, p. 7; Ryan, 2000, p. 54;

USP 1860 examined. A very common, tropical cowrie in Fiji. This shell is used to make necklaces for tourists.

3. *Cypraea arabica* (Linnaeus, 1758)
- Schilder and Schilder, 1939, p. 216 (as *Mauritia arabica niger* Schilder and Schilder, 1939); Steadman and Cotton, 1943, p. 328 (as *Arabica intermedia* Gray, 1824). They said this species was similar to *eglantina momokiti*); Cernohorsky, 1964, p. 182; Burgess, 1970, p. 215; Brown, 1968, p. 1; Cernohorsky, 1978b, p. 44; Gilchrist, 1979, p. 4; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 44 (as *C. arabica arabica*); Weingarten, 1982, p. 37; Burgess, 1985, p. 66; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 58 (as *Mauritia arabica arabica*); Koven, 1997, p. 7

One of the most common cowries found in Fiji.

4. *Cypraea argus* (Linnaeus, 1758)
- Schilder and Schilder, 1939, p. 216 (as *Talparia (Arestoides) argus ventricosa* Gray, 1824); Steadman and Cotton, 1943, p. 326 (as *Arestorides argus ventricosa*); Steadman and Cotton, 1946, p. 514 (as *Arestorides argus ventricosa*); Allan, 1956, p. 36 (as *Arestorides argus ventricosa* Gray, 1824); Cernohorsky, 1964, p. 184; Brown, 1968, p. 1; Burgess, 1970, pp. 220, 253; Eisenberg, 1981, p. 60; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 44; Weingarten, 1982, pp. 37, 38; Burgess, 1985, p. 89; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 77 (as *Lyncina argus argus*); Koven, 1997, p. 7; Ryan, 2000, p. 55

Occasionally found in Fiji. Quite a few were washed up on Makeluva Reef after Cyclone Kina in January, 1993.

5. *Cypraea asellus* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Palmadusta asellus bitaeniata* Geret, 1903); Steadman and Cotton, 1943, p. 320 (as *Evanaria asellus kawakawa* subsp. nov.); “Kawakawa” is a bridge in Fiji; Steadman and Cotton, 1946, p. 519 (as *Palmadusta asellus kawakawa* and *P. asellus vitiensis*); Allan, 1956, p. 72 (as *Evenaria asellus kawakawa*, Steadman and Cotton, 1943); Brown, 1968, p. 1; Burgess, 1970, p. 118; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 44; Weingarten, 1982, p. 38; Burgess, 1985, p. 127; Koven, 1992, p. 107; Ken Gilchrist Collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 155 (as *Palmadusta asellus*); Koven, 1997, p. 7; \*\*Ken Gilchrist’s fossil collection (as *Cypraea ?asellus*);

Occasionally seen dead on the Fiji reefs after heavy storms.

6. *Cypraea aurantium* (Gmelin, 1791)

Ladd, 1934, p. 218 (as *C. aurantia*); Schilder and Schilder, 1939, p. 216 (as *Callistocypraea aurantium*); Steadman and Cotton, 1943 (as *Callistocypraea aurantium turanga* subsp. nov.) “Turanga” is the chief “and it was the prerogative of Fijian chiefs to wear this shell as an ornament tied on the neck”; Steadman and Cotton, 1946, p. 524 (as *Callistocypraea aurantium turanga*); Burrows, 1948-50. p. 57; Platt (1949) reported that “The export of the Golden Cowry *Cypraea aurantium* one of the most sought after and valuable rare shells, is forbidden from Fiji”; Allan, 1956, p. 111 (as *Callistocypraea aurantium turanga* Steadman and Cotton, 1943); Cernohorsky, 1964, p. 184; Brown, 1968, p. 1; Burgess, 1970, pp. 197, 242; Kirkpatrick, 1981, pp. 42, 43; Parkinson, 1982, p. 44; Parkinson, 1987, pp. 2, 5; Lorenz and Hubert, 1993, pp. 76, 278 (as *Lyncina aurantium*); Gosliner, Behrens and Williams, 1996, p. 131; Fiji Philatelic Bureau, Fiji Stamp; Ryan, 2000, pp. 55, 56

Occasionally reported from Makeluva Island, Lau, the Coral Coast or northern Vanua Levu. Prized culturally and by shell collectors. Usually found after heavy storms and hurricanes. Several live specimens were collected by local women foraging for food on the reef off the Warwick Hotel, Coral Coast, Fiji after the storm surge hit the area as Cyclone Paula passed on March 2<sup>nd</sup>, 2001. These species often have crack lines because of their preferred habitat i.e. windward outer reef edges. Algae may also penetrate the nacre and callous growth can occur on the base. This species is only uncommon in the Solomon Islands.

7. *Cypraea beckii* Gaskoin, 1836\*

Kirkpatrick, 1981, p. 43; Parkinson, 1982, p. 44; Burgess, 1985, p. 119; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 209 (as *Erosaria beckii*); Koven, 1997, p. 7; \*\*Ken Gilchrist’s fossil collection (as *C. beckii* or *C. martini*)

A very rare species found from Fiji.

8. *Cypraea bistrinotata* Schilder and Schilder, 1937

Schilder and Schilder, 1939, pp. 126, 216 (as *Pustularia bistrinotata sublaevis* Schilder & Schilder, 1938); Steadman and Cotton, 1943, p. 311 (as *Pustularia bistrinotata sublaevis*); Allan, 1956, p. 17 (referring to *Pustularia bistrinotata*

*sublaevis*); Brown, 1968, p. 1; Burgess, 1970, p. 271; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 44; Weingarten, 1982, p. 38; Burgess, 1985, p. 177; Koven, 1991, p. 107; Ken Gilchrist Collection; Lorenz and Hubert, 1993, p. 219 (as *Pustularia bistrinotata sublaevis* Schilder & Schilder, 1938); Koven, 1997, p. 7

Occasionally found on Fiji reefs after a storm but common in dredged material from Suva Harbour.

9. *Cypraea bregeriana* (Crosse, 1868)\*

Cernohorsky, 1967, p. 86 (as *Erronea bregeriana*); Burgess, 1970, p. 74; Hinton, 1972, p. 26; Walls, 1975, p. 248; Eisenberg, 1981, p. 73 (as *C. walkeri bregeriana* Crosse, 1868); Kirkpatrick, 1981, p. 42; Parkinson, 1982, p. 45; Burgess, 1985, p. 116; Abbott and Dance, 1990, p. 89; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 129 (as *Erronea bregeriana*); Koven, 1997, p. 7

Looks like *C. walkeri* and common in New Caledonia. Found from Western Fiji Group. *Cypraea walkeri* is considered by Burgess (1985) and Lorenz & Hubert (1993) to be a separate valid species from *Cypraea bregeriana* because it lacks the white speckles of the latter.

10. *Cypraea caputserpentis* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Erosaria caputserpentis argentata* Dautzenberg & Bouge, 1933); Steadman and Cotton, 1943, p. 313 (as *Erosaria caputserpentis argentata*); Brown, 1968, p. 1; Burgess, 1970, p. 178; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, pp. 37, 38 (as *C. caputserpentis*); Burgess, 1985, p. 205; Koven, 1991, p. 107; Ken Gilchrist Collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 207 (as *Erosaria caputserpentis*); Koven, 1997, p. 7; Ryan, 2000, p. 55

USP2251 examined. A very Fiji common species at the windward reef edge hidden in cracks or wedged in.

11. *Cypraea carneola* (Linnaeus, 1758)

\*\*Ladd and Hoffmeister, 1945, p. 362 (as *Cypraea (Lycina) carneola lakemba*) - a new fossil subspecies and they also reports recent species from Fiji; Brown, 1968, p. 1; Burgess, 1970, p. 201; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; \*\*Gilchrist, 1984, p. 21; Burgess, 1985, p. 80; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 69 (as *Lyncina carneola*); Koven, 1997, p. 7

USP1846 and USP1847 examined. Burgess (1985) separates *C. carneola* into three species (*carneola-bouteti-propinqua*) and this author agrees. Lorenz and Hubert (1993) put *propinqua* as a subspecies of *carneola* and *bouteti* as a subspecies of *leviathan*. A very common species but the complex with *bouteti* and *propinqua* makes identification tricky.

12. *Cypraea caurica* (Linnaeus, 1758)



Schilder and Schilder, 1939, p. 216 (as *Erronea caurica obscura* Crosse, 1869); Steadman and Cotton, 1943, p. 325 (as *Erronea caurica thema* Iredale, 1939); Burgess, 1970, p. 297; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; \*\*Gilchrist, 1984, p. 22; Burgess, 1985, p. 161; Koven, 1991, p. 107; Ken Gilchrist collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 137 (as *Erronea caurica caurica*); Koven, 1997, p. 7 (includes the form *elongata* Perry, 1811); \*\*Ken Gilchrist's fossil collection (as *Cypraea ?caurica elongata* Perry)

Commonly found in the dredge material from Suva Harbour. Otherwise occasionally found in Fiji.

13. *Cypraea childreni* (Gray, 1825)\*

Schilder and Schilder, 1939, p. 216 (as *Pustularia childreni childreni*); \*\*Ladd and Hoffmeister, 1945, p. 366 (as *Cypraea (Ipsa) childreni*) who also reported recent specimens from Fiji; Brown, 1968, p. 1; Burgess, 1970, p. 262; Kirkpatrick, 1981, p. 42; Parkinson, 1982, p. 45; Burgess, 1985, p. 237; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 223 (as *Ipsa childreni*); Koven, 1997, p. 7

Rare in Fiji but beach specimens are common in Vanuatu and the Solomons.

14. *Cypraea chinensis* (Gmelin, 1791)

Steadman and Cotton, 1943, p. 325 (as *Ovatipsa chinensis*); Brown, 1968, p. 1; Burgess, 1970, p. 79; Kirkpatrick, 1981, pp. 39, 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 117; Parkinson, 1987, p. 2; Ken Gilchrist Collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 141 (as *Erronea chinensis amiges* Melvill & Standen, 1904)

Is rather rare in Fiji. The late Dr. John Gibbons from USP was always looking out for this shell in Fiji.

15. *Cypraea cicercula* (Linnaeus, 1758)

Steadman and Cotton, 1943, p. 311 (as *Pustularia tricornis vulavula* subsp. nov.) "Vulavula" is the Fijian word for white; Steadman and Cotton, 1943, p. 310 (as *Pustularia cicercula jennisoni* subsp. nov.) Jennison was a missionary who collected shells in Taveuni.; Steadman and Cotton, 1946, p. 511 (as *Pustularia cicercula jennisoni*); Allan, 1956 referred to Steadman and Cotton's naming of this shell; Brown, 1968, p. 1; Burgess, 1970, p. 266; Kirkpatrick, 1981, p. 42; Parkinson, 1982, p. 45 (as *C. cicurcula*); Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 220 (as *Pustularia cicercula*); Koven, 1997, p. 7

Commonly found in the dredged material from Suva Harbour. Burgess (1985) and Koven (1991, 1997) consider *Cypraea margarita* to be this species but the author has separated them.

16. *Cypraea clandestina* (Linnaeus, 1767)

Schilder and Schilder, 1938, p. 216 (as *Palmadusta clandestina candida* Pease, 1865); Steadman and Cotton, 1943, p. 321 (as *Palmadusta clandestina candida*); Brown, 1968, p. 1; Burgess, 1970, p. 93; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 125; Lorenz and Hubert, 1993, p. 152 (as *Palmadusta clandestina candida* Pease, 1865)

Common in the dredge material from Suva Harbour but occasional seen alive in Fiji.

17. *Cypraea contaminata* (Sowerby, 1832)

Kirkpatrick, 1981, p. 43; Burgess, 1985, p. 130; Lorenz and Hubert, 1993, p. 156 (as *Palmadusta contaminata*)

The author collected a single dead specimen on Makeluva Reef, Suva, Fiji after Cyclone Kina in January 1993). Is very rare in Fiji.

18. *Cypraea cribraria* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Cribraria cribraria melwardi* Iredale, 1930); Schilder and Schilder, 1939 (as *Cribraria melwardi* Iredale, 1930); Steadman and Cotton, 1943 p. 318 (as *Cribraria cribraria northi* subsp. nov.). Named after Reverend North, a missionary in Fiji who collected shells in Nadroga; Steadman and Cotton, 1946, p. 517 (as *Cribraria cribraria northi* Steadman and Cotton, 1943); Allan, 1956, p. 63 (as *Cribraria cribraria northi* Steadman and Cotton, 1943); Brown, 1968, p. 1; Burgess, 1970, p. 190; Walls, 1975, p. 262 (aka *C. northi*); Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 238; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 176 (as *Cribrarula cribraria cribraria*); Gosliner, Behrens and Williams, 1996, p. 131; Koven, 1997, p. 7; Ryan, 2000, p. 55

Occasionally found in Fiji but common in dredged material from Suva Harbour. May be confused with *Cypraea catholicorum*, a species that is probably not found in Fiji (see *C. catholicorum* below).

19. *Cypraea cylindrica* (Born, 1778)

Steadman and Cotton, 1943, p. 323-324 (as *Palangerosa cylindrica wangga* subsp. nov.) “Waga” is a boat in Fijian; Steadman and Cotton, 1946, p. 514 (as *Palangerosa cylindrica wangga*); Allan, 1956, p. 44 (as *Palangerosa cylindrica wangga*); Lorenz and Hubert, 1993, p. 133 (as *Erronea cylindrica lenella* Iredale, 1939). They did not show this species on the distribution map but included it in the text; Ken Gilchrist’s fossil collection

Burgess (1970 and 1985) does not list this species from Fiji but only as far east as New Caledonia and Vanuatu. Kirkpatrick (1981) says this is possibly found in Fiji. Occasionally the author has seen this species on shell stalls along the Coral Coast of Viti Levu

20. *Cypraea depressa* (Gray, 1824)

Schilder and Schilder, 1939, pp. 184, 216 (as *Maritia (Arabica) depressa depressa*); Steadman and Cotton, 1943, p. 328 (as *Arabica depressa*). Said by Steadman and

Cotton, 1943, to be found in the northern islands of Fiji but not in the central or west; Steadman and Cotton, 1946, p. 503 (as *Arabica depressa* Gray, 1824); Allan, 1956, p. 83 (as *Arabica depressa depressa*); Brown, 1968, p. 1; Cernohorsky, 1964, p. 182; Burgess, 1970, p. 217; Kirkpatrick, 1981, p. 42; Parkinson, 1982, p. 45; Weingarten, 1982, p. 37; Burgess, 1985, p. 68; Koven, 1991, p. 107; Ken Gilchrist's collection; Lorenz and Hubert, 1993, p. 61 (as *Mauritia depressa*)

Occasionally seen from the Yasawas Islands and the Coral Coast.

21. *Cypraea dillwyni* (Schilder, 1922)\*

Steadman and Cotton, 1943, p. 310 (as *Pustularia margarita theeva* subsp. nov.) "Theeva" or "civa" is the Fijian name for pearl shell; Allan, 1956, p. 18 and Plate 3 (as *Annepona theeva*, S & C, 1943) which she says is the same as *Annepona (Paulonaria) dillwyni* Schilder, 1922 but she adds that "it may be found that the Fijian form (*theeva*) is distinct from *A. dillwyni* (= *margarita* Gray, 1828) as Schilder and Schilder (1952) point out that Dautzeukeig's shells from Western localities (Melanesia to Fiji) generally show larger and closer spots than those from Samoa to Tuamotu"; Cernohorsky, 1967, p. 80 (as *Erosaria dillwyni*); Burgess, 1970, p. 273; Kirkpatrick, 1981, p. 43; Burgess, 1985, p. 123; Abbott and Dance, 1990 (3rd edition) p. 85.

Probably very rare in Fiji. Lorenz and Hubert (1993) say this species is not found in Fiji but they use the synonym *theeva* Steadman and Cotton, 1943 which is derived from Fijian specimens.

22. *Cypraea eburnea* (Barnes, 1824)

Schilder and Schilder, 1939, p. 216 (as *Erosaria miliaris eburnea*); Steadman and Cotton, 1943, p. 315 (as *Erosaria eburnea*); \*\*Ladd and Hoffmeister, 1945, p. 364 (as *Cypraea (Erosaria) cf eburnea*) who also reported that recent species are found in Fiji too; Steadman and Cotton, 1946, p. 517 (as *Albacypraea eburnea eburnea* Barnes, 1828); Burrows, 1948-50, p. 60; Allan, 1956, p. 62 (as *Albacypraea eburnea eburnea* Barnes, 1828 whose type locality was Fiji) and Plate 10; Cernohorsky, 1967, p. 80 (as *Erosaria eburnea*); Brown, 1968, p. 1; Burgess, 1970, p. 163; Hinton, 1972, p. 22; Kirkpatrick, 1981, pp. 41, 43; Parkinson, 1982, p. 45; Burgess 1985, p. 221; Lorenz and Hubert, 1993, p. 190 (as *Erosaria eburnea*); Koven, 1997, p. 7

Occasionally, the author have found this species on Saweni Beach, Lautoka. Burgess (1985) reports that this species was common in polluted areas near the Bay of Islands, near Suva. Burgess (1985) suspects *Cypraea miliaris*, *lamarckii* and *Cypraea eburnea* should be consolidated into one species. The latter two congeneric species are sold in Fiji but not collected here. Kirkpatrick, 1981, p. 43 says *Cypraea miliaris* may be found in Fiji.

23. *Cypraea eglantina* Duclos, 1833

Schilder and Schilder, 1939, p. 216 (as *Mauritia eglantina eglantina*); Schilder and Schilder, 1939 (as *M. eglantina eglantina*); Steadman and Cotton, 1943, p. 327 (as *Cypraea eglantina momokiti* subsp. nov.) "Momokiti" is the Fijian word for rounded; Steadman and Cotton, 1946, p. 520 (as *M. eglantina momokiti*); Allan, 1956, p. 84 (as

*Arabica eglantina momokiti*, Steadman and Cotton, 1943); Cernohorsky, 1964, p. 183; Schilder and Schilder, 1964, p. 221 (as *Mauritia eglantina*); Brown, 1968, p. 1; Burgess, 1970, p. 218; Cernohorsky, 1978b, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 44 (as *C. arabica eglantina*); Burgess, 1985, p. 69; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 60 (as *Mauritia eglantina*); Koven, 1997, p. 7

USP1854 and USP1855 examined. Is rather uncommon in Fiji and often mistakenly identified as *C. arabica*.

24. *Cypraea erosa* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Erosaria erosa chlorizans* Melvill, 1888); Steadman and Cotton, 1943, p. 314 (as *Erosaria erosa chlorizans*); Brown, 1968, p. 2; Burgess, 1970, p. 175; Cernohorsky, 1978, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 37; Burgess, 1985, p. 202; Koven, 1991, p. 107; Koven, 1991, p. 107 (as *Cypraea erosa*, form *lactescens* Dautzenberg-Bauge, 1933); Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 189 (as *Erosaria erosa*); Koven, 1997, p. 7 (including the form *lactescens* Dautzenberg-Bauge, 1933); Kohn and Arua, 1999, p. 107\*\*

Commonly found in Fiji's estuarine mud flat areas and also on reefs.

25. *Cypraea erronea* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Erronea erronea coerulescens* Schöter, 1804). The spelling of *caurulescens* is incorrect); Steadman and Cotton, 1943, p. 324 (as *Erronea nimisserans vivili* subsp. nov.) "vivili" is shellfish in Fijian; Steadman and Cotton, 1943, p. 324 (as *Erronea nimiserrans kalavo* subsp. nov.) "kalavo" is a mouse in Fijian; Steadman and Cotton, 1946, p. 514 (as *Erronea nimisserans kalavo*); Steadman and Cotton, 1946, p. 514 (as *Erronea nimisserans vivili*); Allan, 1956, p. 43 (as *Erronea nimisserans kalavo*, Steadman and Cotton, 1943); Allan, 1956, p. 43 (as *Erronea nimisserans vivili* Steadman and Cotton, 1943); Brown, 1968, p. 2; Burgess, 1970, p. 339; Cernohorsky, 1978b, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 248; Koven, 1991, p. 107; Ken Gilchrist Collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 122 (as *Erronea erronea caerulescens* Schröter, 1804); Koven, 1997, p. 7

USP2515 and USP2297 examined. Commonly found on mudflats and the reefs of Fiji. Very similar to *C. ovum* which is not found in Fiji.

26. *Cypraea felina* Gmelin, 1791

Schilder and Schilder, 1939, p. 216 (as *Palmadusta felina melvilli* Hidalgo, 1906); Steadman and Cotton, 1943, p. 322 (as *Melicerona melvilli vatu* subsp. nov.) "Vatu" is the word for stone; Steadman and Cotton, 1946, p. 520 (as *Palmadusta felina vatu*); Allan, 1956, p. 78 (as *Melicerona felina vatu* Steadman and Cotton, 1943); Cernohorsky (1964) lists this from Fiji; Brown, 1968, p. 2 (as *Cypraea listeri*); Cernohorsky, 1978b, p. 44; Eisenberg, 1981, p. 63 (as *C. felina fabula* Kiener, 1843); Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Koven,

1991, p. 107; Lorenz and Hubert, 1993, p. 131 (as *Erronea listeri* Gray, 1824); Koven, 1997, p. 7

Can be found with its characteristic red mantle under the concrete slabs on the fringing reef of Makeluva Island (eastern side). Occasional. Burgess (1985) does not list this species from Fiji but puts *Cypraea listeri* (Gray, 1824) in the synonymy of this species. Lorenz and Hubert (1993) say *C. felina* is not found in Fiji but *C. listeri* is. The author has put them together as 1 species in this paper.

27. *Cypraea fimbriata* (Gmelin, 1791)

Brown, 1968 (specimen missing), p. 2; Burgess, 1970, p. 139; Kirkpatrick, 1981, p. 42; Burgess, 1985, p. 132; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 143 (as *Purpuradusta fimbriata unifasciata* Mighels, 1845)

Occasionally found in Fiji. Steadman and Cotton (1943) used the name *Paulonaria fimbriata suvanensis* for this species but it is a subspecies of *Cypraea minoridens*.

28. *Cypraea flaveola* Linnaeus, 1758

Steadman and Cotton, 1943 p. 315 (as *Erosaria helenae nasese* subsp. nov.) Nasese being a suburb of Suva; Steadman and Cotton, 1946, p. 522 (as *Ravitrona labrolineata nasese*); Allan, 1956, p. 93 (as *Ravitrona labrolineata nasese* Steadman and Cotton, 1943); Burgess, 1970, p. 143 (as *Cypraea labrolineata* Gaskoin, 1849); Kirkpatrick, 1981, p. 41 (as *Cypraea labrolineata*); Parkinson, 1982, p. 45 (as *Cypraea labrolineata*); Burgess, 1985, p. 223 (as *Cypraea labrolineata*); Koven, 1991, p. 107 (as *Cypraea labrolineata*); Lorenz and Hubert, 1993, p. 194 (as *Erosaria labrolineata*); Koven, 1997, p. 7 (as *Cypraea labrolineata*); \*\*Ken Gilchrist's fossil collection

Occasionally found in Fiji among the coral heads. Wilson (1993) say *C. flaveola* (Linnaeus, 1758) is the valid name for this species because it precedes *C. labrolineata* Gaskoin, 1849.

29. *Cypraea gaskoini* Reeve, 1846\*

Cernohorsky, 1967 (as *Cribaria gaskoini fischeri* Vayssière, 1910); Burgess, 1979, pp. 21, 188 (citing Ditlev Thaanum's original record); Eisenberg, 1981, p. 64; Kirkpatrick, 1981, p. 42; Abbott and Dance, 1990, p. 93; Lorenz and Hubert, 1993, p. 179 (as *Cribrarula gaskoinii "taitae"* Burgess, 1983)

*Cypraea fischeri* is shown on a New Hebrides stamp! Burgess examined *C. fischeri* and found it to be a dwarf *Cypraea gaskoini*. Burgess (1985) says *Cypraea gaskoini* is not found outside Hawaii. Presumably very rare if found in Fiji. The author thinks the plethora of records of *C. gaskoini* from Fiji all originated from Thaanum's original record which Burgess (1985) say is a *Cypraea astaryi*.

30. *Cypraea globulus* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Pustularia globulus sphaeridium* Schilder & Schilder, 1943); Steadman and Cotton, 1943, p. 311 (as *Pustularia globulus sphaeridium*); Steadman and Cotton, 1946, p. 511 (as *P. globulus vulavula*); Allan,

1956, p. 18 (as *Pustularia globulus vulavula* Steadman and Cotton, 1943). There may be some confusion here because Steadman and Cotton (1943) used the *vulavula* sub-species name to refer to *Cypraea circercula*); Brown, 1968, p. 2; Burgess, 1970, p. 272; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 178; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 221 (as *Pustularia globulus "sphaeridium"* Schilder & Schilder, 1938); Koven, 1997, p. 7

Common in dredged material of Suva Harbour or otherwise occasionally found in Fiji.

31. *Cypraea goodallii* Sowerby, 1832\*  
Schilder and Schilder, 1939, pp. 168, 216 (as *Cribaria (Talostolida) goodallii fuscomaculata* Pease, 1865); Burgess, 1985, p. 158; Lorenz and Hubert, 1993, p. 166 (as *Blasicrura goodallii fuscomaculata* Pease, 1865)

Is very rare in Fiji.

32. *Cypraea gracilis* (Gaskoin, 1849)  
Cernohorsky, 1967, p. 95 (as *Purpuradusta gracilis*); Burgess, 1970, p. 141; Eisenberg, 1981 p. 64; Kirkpatrick, 1981, p. 43; Burgess, 1985, p. 138; Lorenz and Hubert, 1993, p. 146 (as *Purpuradusta gracilis macula* Angas, 1867)

Occasionally found from South and West Viti Levu.

33. *Cypraea helvola* Linnaeus, 1758  
Schilder and Schilder, 1939, p. 216 (as *Erosaria helvola callista* Shaw, 1909); Steadman and Cotton, 1943, p. 314 (as *Erosaria helvola callista*); Brown, 1968, p. 2; Burgess, 1970, p. 155; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 216; Parkinson, 1985, p. 2; Koven, 1982, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 201 (as *Erosaria helvola helvola*); Koven, 1997, p. 7; \*\*Ken Gilchrist's fossil collection (as *Cypraea ?helvola*)

Commonly found on Fiji reefs after hurricane. Shells tend to fade badly in light.

34. *Cypraea hirundo* (Linnaeus, 1758)  
Schilder and Schilder, 1939, p. 216 (as *Blasicrura hirundo rouxi* Ancey, 1882); Steadman and Cotton, 1943, p. 320 (as *Evenaria hirundo korolevu* subsp. nov.)  
Korolevu is a town in the south of Viti Levu; Steadman and Cotton, 1946, p. 519 (as *Evenaria hirundo korolevu*); Allan, 1956, p. 76 (as *Evenaria hirundo korolevu* Steadman and Cotton, 1943); Brown, 1968, p. 2; Burgess, 1970, p. 286; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 156; Ken Gilchrist's Collection; Kobluk and Lysenko, 1993, p. 805 (as *Cypraea cf. hirundo*); Lorenz and Hubert, 1993, p. 169 (as *Bistolida hirundo rouxi* Ancey, 1882); Koven, 1997, p. 7; \*\*Ken Gilchrist's fossil collection (as *Cypraea hirundo*);

Commonly found in dredge material of Suva Harbour. Is very similar to *C. kieneri* and *C. ursellus*.

35. *Cypraea humphreysii* (Gray, 1825)

Schilder and Schilder, 1939, p. 216 (as *Palmadusta lutea humphreysii*); Steadman and Cotton, 1943, p. 322 (as *Palmadusta lutea yaloka* subsp. nov.). "Yaloka" is egg in Fijian; Steadman and Cotton, 1946, p. 530 (as *Palmadusta lutea yaloka*); Allan, 1956, p. 55 (as *Palmadusta lutea yaloka* Steadman and Cotton, 1943); Brown, 1968, p. 2; Burgess, 1970, pp. 86, 91 (as *C. yaloka*); Hinton, 1972, p. 28; Walls, 1975, p. 92; Walls, 1975, p. 265 (as *C. yaloka*); Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 141 thinks *Cypraea yaloka* is valid but the author disagree; Abbott and Dance, 1990, p. 91; Lorenz and Hubert, 1993, pp. 156, 348 (as *Palmadusta humphreysii*); Koven, 1997, p. 8 (as *C. yaloka*); Koven, 1997, p. 7 (as *C. ?humphreysi*)

Burgess (1985) puts *C. humphreysii* as a synonym of *Cypraea lutea* Gmelin, 1791, which he does not list from Fiji. Occasionally found in Fiji. See *Cypraea lutea* below.

36. *Cypraea irrorata* Gray, 1828\*

Schilder and Schilder, 1939, p. 216 (as *Naria irrorata*); Cernohorsky, 1967, p. 83 (as *Naria irrorata*); Kirkpatrick, 1981 (possibly found in Fiji); Burgess, 1985, p. 143; Lorenz and Hubert, 1993, p. 224 (as *Naria irrorata*)

Commonly found in Vanuatu but is very rare in Fiji.

37. *Cypraea isabella* (Linnaeus, 1758)

\*\*Ladd, 1934, p. 218 (as *Cypraea (Talparia) isabella lekalekana* new subspecies); Schilder and Schilder, 1939, p. 216 (as *Luria isabella lekalekana*); Steadman and Cotton, 1943, p. 326 (as *Basilitronea isabella cavia* subsp. nov.) *Cavia* is the scientific genus for guinea-pig; \*\*Ladd and Hoffmeister, 1945, p. 363 (as *Cypraea (Talparia) isabella lekalekana* Ladd, 1934) and they also note that recent species are found in Fiji too; Steadman and Cotton, 1946, p. 513 (as *Basilitronea isabella cavia*); Allan, 1956, p. 36 (as *Basilitronea isabella cavia* Steadman and Cotton, 1943); Cernohorsky, 1964, p. 181; Brown, 1968, p. 2; Burgess, 1970, p. 42; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 184; Koven, 1991, p. 107; Ken Gilchrist collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 84 (as *Lurida isabella controversa* Gray, 1824); Koven, 1997, p. 7; \*\*Ken Gilchrist's fossil collection (as *Cypraea isabella lekalekana* Ladd)

USP1845 examined. Common on Fiji reefs with its characteristic black mantle.

38. *Cypraea kieneri* (Hildago, 1906)

Brown, 1968, p. 2; Burgess, 1970, p. 285; Kirkpatrick, 1981, p. 41; Burgess, 1985, p. 153; Koven, 1991, p. 107; Ken Gilchrist collection; Kobluk and Lysenko, 1993, p.

805; Lorenz and Hubert, 1993, p. 168 (as *Bistolida kieneri depriesteri* Schilder, 1933); Koven, 1997, p. 7

Commonly found in dredge material of Suva Harbour. Schilder and Schilder (1939) incorrectly assigned *Evenaria ursellus vitiensis* Steadman and Cotton, 1943 to this species.

39. *Cypraea leviathan* Schilder and Schilder, 1937\*

Schilder and Schilder, 1939, p. 216 (as *Cypraea (Lyncina) leviathan*); Lorenz and Hubert, 1993, p. 69 (as *Lyncina leviathan titan* Schilder and Schilder, 1962)

Steadman and Cotton (1943), p. 330 say that *C. leviathan* is a giant *C. carneola* and do not warrant two species. Burgess (1985) thinks it is a Hawaii endemic but variability in the *carneola-bouteti-propinqua-leviathan* complex makes this difficult. There is some dispute as to the range of this cowrie. The author has seen several large specimens, which are considered are by some people to be giant *C. carneola*. Schilder and Schilder (1939) lists Fiji: *Cypraea leviathan* from a footnote which says Scholvien: Hamburg.

40. *Cypraea limacina* (Lamarck, 1810)

Schilder and Schilder, 1939, p. 216 (as *Staphylaea limacina facifer* Iredale, 1935); Steadman and Cotton, 1943, p. 312 (as *Staphylea purperosa ruvaya* subsp. nov.) "Ruvay" is the anglicized pronunciation of "ruve"; the Fijian word for dove; Steadman and Cotton, 1946, p. 511 (as *Purperosa facifer ruyawa*); Allan, 1956, p. 21 (as *Purperosa facifer ruvaya* Steadman and Cotton, 1943); Brown, 1968, p. 2; Burgess, 1970, p. 260; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 233; Koven, 1991, p. 107; Ken Gilchrist Collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 212 (as *Staphylaea limacina facifer* Iredale, 1935); Gosliner, Behrens and Williams, 1996, p. 132; Koven, 1997, p. 7

Occasionally found in Fiji.

41. *Cypraea lynx* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Cypraea lynx caledonica* Crosse, 1869); Schilder and Schilder, 1939 (as *lynx caledonica*); Steadman and Cotton, 1943, p. 330 (as *Lyncina pacifica* subsp. nov); Steadman and Cotton, 1946, p. 523 (as *Lycina lynx pacifica*); Allan, 1956, p. 105 (as *Lyncina lynx pacifica* Steadman and Cotton, 1943); Brown, 1968, p. 2; Burgess, 1970, p. 241; Cernohorsky, 1978b, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 83; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 67 (as *Lyncina lynx*); Koven, 1997, p. 7;

USP1848 examined. Commonly found in Fiji.

42. *Cypraea maculifera* Schilder, 1932



Cernohorsky, 1964, p. 182; Burgess, 1970, p. 216; Kirkpatrick, 1981, pp. 40, 42; Weingarten, 1982, p. 37; Burgess, 1985, p. 67; Lorenz and Hubert, 1993, pp. 61, 252 (as *Mauritia maculifera*)

Rarely found in Fiji. Seen in the Yasawas.

43. *Cypraea mappa* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Mauritia mappa viridis* Kenyon, 1902); Steadman and Cotton, 1943 (as *Leporicypraea mappa rewa* subsp. nov.) Named after the district of Rewa in Fiji; Steadman and Cotton, 1946, p. 524 (as *Leporicypraea mappa rewa*); Allan, 1956, p. 109 (as *Leporicypraea mappa rewa* Steadman and Cotton, 1943); Cernohorsky, 1964, p. 183; Brown, 1968, p. 2; Burgess, 1970, p. 249; Walls, 1975, p. 267 (also known as *Cypraea rewa*); Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 37; Lorenz and Hubert, 1993, p. 63 (as *Leporicypraea mappa panerythra* Melvill, 1888) and p. 254 (as *Leporicypraea mappa panerythra* "rewa" Steadman and Cotton, 1943); Koven, 1997, p. 7; Ryan, 2000, p. 55; USP3573 examined.

This species may have a pink base but not seen in Fiji. This species may have algae growing on the dorsum which actually penetrates the shell and spoils the nacre. Occasionally found in Fiji.

44. *Cypraea margarita* (Dillwyn, 1817)

Schilder and Schilder, 1939, p. 216 (as *Pustularia cicercula margarita*); Steadman and Cotton, 1943, p. 310 (as *P. margarita theeva*); \*\*Ladd and Hoffmeister, 1945, p. 365 (as *Cypraea (Pustularia) margarita*); Steadman and Cotton, 1946 p. 511 (as *Pustularia margarita theeva* Steadman and Cotton, 1943); Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 43; Parkinson, 1982, p. 45; Koven, 1991, p. 107 (as *C. cicercula* form *margarita*); Lorenz and Hubert, 1993, p. 220 (as *Pustularia margarita*); Koven, 1997, p. 7 (as *C. cicercula* form *margarita* Dillwyn, 1817)

Burgess (1985) has combined this species with *Cypraea cicercula* due to intergrading features.

45. *Cypraea mariae* Schilder, 1927

Schilder and Schilder, 1939, p. 216 (as *Pustularia mariae*); Brown, 1968, p. 2; Burgess, 1970, p. 274; Kirkpatrick, 1981, p. 42; Parkinson, 1982, p. 45; Burgess, 1985, p. 179; Lorenz and Hubert, 1993, p. 222 (as *Annepona mariae*); Koven, 1997, p. 7

Collected in Ono-i-lau by USP staff member Mike Gawel during a Smithsonian fish collecting in 1993. This species is very rare in Fiji. Fresh dead specimens are common in Port Vila market and Honiara markets despite its very rare rating.

46. *Cypraea martini* Schepman, 1907

Parkinson, 1987b, p. 21; Lorenz and Hubert, 1993, p. 184 (as *Notadusta martini*); Koven, 1997, p. 7; Ken Gilchrist fossil collection (as *C. beckii* or *C. martini*) – the author cannot decide too because the specimen was too worn.

Two specimens found by the author in 1991 from dredged material from Suva's Narain jetty which, was dumped on the foreshore opposite the Stella Maris Primary School, Suva. These specimens are semi-fossil. Burgess (1985) lists this species from Vanuatu, New Caledonia, and Tonga but not from Fiji.

47. *Cypraea mauritania* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Mauritia mauritania calxequina* Melvill and Standen, 1899); Steadman and Cotton, 1943, p. 328 (as *Mauritia mauritiana calxequina*); Steadman and Cotton, 1946, p. 530 (as *Mauritia mauritiana calxequina* Melvill and Standen, 1899); Cernohorsky, 1964, p. 183; Brown, 1968, p. 3; Burgess, 1970, p. 247; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, pp. 40, 42; Parkinson, 1982, p. 45; Burgess, 1985, p. 73; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 55 (as *Mauritia mauritiana*); Koven, 1997, p. 7

USP1858 examined. Often seen on very rough reef edges, which account for the fact that many shells are cracked or scratched. Very common in areas not collected e.g. Yasawa Islands.

48. **\*\**Cypraea (Errones) mbalavuensis* Ladd and Hoffmeister, 1945\***

**\*\*Ladd and Hoffmeister, 1945, p. 364**

A fossil species that is closely related to *Cypraea felina*. Not found in modern Fiji.

49. *Cypraea microdon* Gray, 1828

Schilder and Schilder, 1939, pp. 163, 216 (as *Palmadusta (Melicerona) microdon granum* Schilder and Schilder, 1939); Steadman and Cotton, 1943, p. 320 (as *Paulonaria microdon granum*); Steadman and Cotton, 1946, p. 519 (as *Paulonaria microdon northi*); Allan, 1956, p. 69 (as *Paulonaria microdon granum* Schilder and Schilder, 1939); Brown, 1968, p. 3; Burgess, 1970, 131; Kirkpatrick, 1981, pp. 40, 41; Burgess, 1985, p. 134; Lorenz and Hubert, 1993, p. 149 (as *Purpuradusta microdon*)

Uncommon in Fiji probably due to its small size.

50. *Cypraea minoridens* (Melvill, 1901)

Schilder and Schilder, 1939, p. 216 (as *Palmadusta minoridens*); Steadman and Cotton, 1943, p. (as *Paulonaria fimbriata suvanensis* Steadman and Cotton, 1943); Steadman and Cotton, 1943 p. 319-320 (as *Paulonaria minoridens suvaensis* subsp. nov.) Subspecies is named after Suva; Steadman and Cotton, 1946, p. 519 (as *Paulonaria minoridens suvanensis*); Allan, 1956, p. 70 (as *Paulonaria fimbriata suvaensis* Steadman and Cotton, 1943); Brown, 1968, p. 3; Burgess, 1970, p. 132; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 135; Ken Gilchrist Collection; Lorenz and Hubert, 1993, pp. 148, 338 (as *Purpuradusta minoridens*); Koven, 1997, p. 7; **\*\*Ken Gilchrist's fossil collection**

The names used by previous authors cause some confusion with *Cypraea fimbriata* (above). Uncommon in Fiji probably due to its small size.

51. *Cypraea moneta* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Monetaria moneta barthelemyi* Bernardi, 1861); Schilder and Schilder (1939) (as *M. moneta barthelemyi*); Steadman and Cotton, 1943, p. 317 (as *Monetaria moneta endua* subsp. nov.); Steadman and Cotton, 1943, p. 317 (as *Monetaria moneta erua* subsp. nov.); Steadman and Cotton, 1943, p. 317 (as *Monetaria moneta etolu* subsp. nov.) The three subspecies refer to one, two and three respectively in Fijian; Steadman and Cotton, 1946, p. 522 (as *M. moneta endua*); Steadman and Cotton, 1946, p. 523 (as *M. moneta erua* and *M. moneta etolu*); Allan, 1956, p. 99 (as *Monetaria moneta edua* Steadman and Cotton, 1943); Allan, 1956, p. 100 (as *Monetaria moneta etolu* Steadman and Cotton, 1943); Allan, 1956, p. 100 (as *Monetaria monetoides* Iredale). *Monetaria moneta erua* Steadman and Cotton, 1943 is the junior synonym; Brown, 1968, p. 3; Burgess, 1970, p. 343; Cernohorsky, 1978b, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, pp. 38, 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985 p. 228; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 205 (as *Erosaria moneta*); Koven, 1997, p. 7

USP1865 examined. Very common in Fiji.

52. *Cypraea nucleus* (Linnaeus, 1758)

Schilder and Schilder, 1939, pp. 131, 216 (as *Staphylaea (Nuclearia) nucleus gemmosa* Perry, 1811); Steadman and Cotton, 1943, p. 313 (as *Nuclearia nucleus gemmosa*); \*\*Ladd and Hoffmeister, 1945, p. 366 (as *Cypraea (Pustularia) nucleus*); Steadman and Cotton, 1946, p. 512 (as *Nuclearis nucleus gemmosa*); Allan, 1956, p. 23 (as *Nuclearia nucleus gemmosa*); Brown, 1968, p. 3; Burgess, 1970, p. 261; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 235; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 216 (as *Staphylaea nucleus nucleus*); Koven, 1997, p. 7; \*\*Ken Gilchrist's fossil collection

Common among the dredge material from Suva Harbour. Otherwise occasionally found in Fiji.

53. *Cypraea onyx melanesiae* Schilder and Schilder, 1937\*

Cernohorsky, 1967 (p. 88) (as *Erronea onyx melanesiae*); Hinton, 1972, p. 26; Parkinson, 1982, p. 45

Burgess (1985) believes this species is actually *Cypraea succincta* Linnaeus, from Indonesia and northern Australia which is a synonym of *Cypraea onyx* Linnaeus, 1758. The shells shown in Figure 78 (Plate 15) on page 85 of Cernohorsky (1967) are *Cypraea onyx melanesiae*. Lorenz and Hubert (1993) say this is not found in Fiji.

54. *Cypraea pallidula* (Gaskoin, 1849)

Schilder and Schilder, 1939, p. 216 (as *Blasicrura pallidula rhinoceros* Souverbie, 1865); Steadman and Cotton, 1943 p. 323 (as *Blasicrura rhinoceros vivia* subsp. nov.) "Vivia" means rolled round or banded in Fijian; Allan, 1956, p. 49 (as *Blasicrura rhinoceros vivia* Steadman and Cotton, 1943); Steadman and Cotton,

1946, p. 515 (as *C. rhinoceros vivia*); Brown, 1968, p. 3; Burgess, 1970, p. 121; Hinton, 1972, p. 22; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 192; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 158 (as *Blasicrura pallidula pallidula*); Koven, 1997, p. 7

Can be confused with *C. summersi*. Occasionally found in Fiji.

55. *Cypraea poraria* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Erosaria poraria scarabaeus* Bory, 1827); Steadman and Cotton, 1943, p. 314 (as *Erosaria poraria scarabaeus*); Brown, 1968, p. 3; Burgess, 1970, p. 152; Cernohorsky, 1978b, p. 44; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 225; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 203 (as *Erosaria poraria*); Koven, 1997, p. 7; \*\*Ken Gilchrist's fossil collection

Occasionally found in Fiji. This species is liable to fade badly in light.

56. *Cypraea propinqua* Garrett, 1879

Schilder and Schilder, 1939, p. 216 (as *Cypraea (Lyncina) carneola propinqua*); Steadman and Cotton, 1943 (as *Ponda carneola propinqua*); Steadman and Cotton, 1943 p. 330 lists the species *Ponda carneola propinqua* which Steadman and Cotton, 1946 (as *Ponda carneola propinqua* Garrett, 1879); Burgess, 1985, p. 81; Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 69 (as *Lyncina carneola propinqua* Garrett, 1879); Koven, 1997, p. 7

Occasionally found in Fiji. Easily confused with *carneola-bouteti-leviathan* complex.

57. *Cypraea punctata* (Linnaeus, 1771)

Schilder and Schilder, 1939, p. 216 (as *Palmadusta punctata iredalei* Schilder & Schilder, 1938); Steadman and Cotton, 1943, p. 321 (as *Evanaria punctata trizonata* Sowerby, 1870); Brown, 1968, p. 3; Burgess, 1970, p. 104; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 201; Koven, 1991, p. 107; Ken Gilchrist Collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 184 (as *Notadusta punctata punctata* and *Notadusta punctata trizonata* Sowerby, 1870); Koven, 1997, p. 7; Ken Gilchrist's fossil collection

Commonly found in the dredge material of Suva Harbour. Otherwise uncommon elsewhere.

58. \*\**Cypraea aff. pyriformis* (Gray, 1824)\*

\*\*Ken Gilchrist's fossil collection

59. *Cypraea quadrimaculatus* Gray, 1824\*

Schilder and Schilder, 1939, pp. 164, 216 (as *Blasicrura (Blasicrura) quadrimaculata garretti* Schilder & Schilder, 1938); Steadman and Cotton, 1943, p. 323 (as *Blasicrura quadrimaculatus garretti*); Steadman and Cotton, 1946, p. 516 (as *C. quadrimaculatus garretti*); Allan, 1956, p. 50 (as *Blasicrura quadrimaculata garretti* Schilder and Schilder, 1938)

Burgess (1985) notes that this species is not found east of a line from northeast Australia and Chuuk (Micronesia). Lorenz and Hubert (1993) say this species is not found in Fiji. The author thinks it is found in Fiji. The earlier records are unlikely to be probable cases of mistaken identities but this may even be a case of recent extinction. This shell is, however, sold in some tourist shops in Fiji.

60. *Cypraea schilderorum* (Iredale, 1939)\*

Steadman and Cotton, 1943, p. 331 (as *Ponda schilderorum*) who said they are only found only in the north and northeast of Fiji but not in the southern or western parts. However, Lakemba (one of the collection sites) is in the south-east and Lomoloma (another site) is in the east; Burgess, 1970, p. 191; Kirkpatrick, 1981, p. 42; Burgess, 1985, p. 93; Lorenz and Hubert, 1993, p. 71 (as *Lyncina schilderorum*)

Probably quite rarely found in Fiji. *Cypraea arenosa* Gray, 1824 is an earlier description of this species.

61. *Cypraea scurra* (Gmelin., 1791)

Schilder and Schilder, 1939, p. 216 (as *Mauritria scurra retifera* Menke, 1829); Steadman and Cotton, 1943, p. 328 (as *Arabica scurra vono* subsp. nov.) “Vono” means “inlaid with pearl”; Steadman and Cotton, 1946, p. 520 (as *M. scurra vono*); Allan, 1956, p. 86 (as *Arabica scurra vono* Steadman and Cotton, 1943); Cernohorsky, 1964, p. 183; Brown, 1968, p. 3; Burgess, 1970, p. 225; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 72; Koven, 1991, p. 107; Ken Gilchrist collection; Lorenz and Hubert, 1993, p. 57 (as *Mauritia scurra indica* Gmelin, 1791); Koven, 1997, p. 7

Uncommon but found dead in large numbers at the Fiji reefs after hurricanes.

62. \*\**Cypraea (Cribaria)* species 1.\*

\*\*Ladd and Hoffmeister, 1945, p. 363

This fossil species closely resembles *Cypraea punctata*.

63. \*\**Cypraea* species 2.\*

Kohn, 1982a, p. 3; \*\*Ken Gilchrist’s fossil collection

Several unidentified fossil cowries from Ken Gilchrist’ collection.

64. *Cypraea staphylaea* (Linnaeus, 1758)

Schilder and Schilder, 1939, pp. 129, 216 (as *Staphylaea staphylaea consobrina* Garrett, 1879); Steadman and Cotton, 1943 p. 312 (as *Staphylea nukulau* sp. nov.). Named after the island of Nukulau; Steadman and Cotton, 1943 p. 312 (as *Staphylea consobrina* Garrett, 1879); Steadman and Cotton, 1946, p. 511 (as *S. descripta nukulau*); Allan, 1956, p. 20, 21 (as *Staphylaea descriptya nukulau*); Brown, 1968, p. 3; Burgess, 1970, p. 259; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 232; Koven, 1991, p. 107; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, pp. 213, 426 (as *Staphylaea staphylaea consobrina*); Koven, 1997, p. 8

Occasionally found in Fiji but common in dredge material from Suva Harbour.

65. *Cypraea stolid* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Blasicrura stolid* *crossei* Marie, 1869); Steadman and Cotton, 1943 p. 318 (as *Bistolida stolid* *thakau* subsp. nov.). "Thakau" is reef in Fijian; Steadman and Cotton, 1943, p. 318 (as *Bistolida fluctuans nandroga* Steadman and Cotton, 1943). Nadroga is a province on the south-west side of Viti Levu, Fiji; Steadman and Cotton, 1946, p. 516 (as *Bistolida stolid* *thakau*); Allan, 1956, p. 51 (as *Blasicrura stolid* *thakau* Steadman and Cotton, 1943); Brown, 1968, p. 3; Burgess, 1970, p. 290; Kirkpatrick, 1981, pp. 38, 41; Parkinson, 1982, p. 45; Parkinson, 1982, p. 45 (as *C. brevidentata*); Weingarten, 1982, p. 38; Burgess, 1985, p. 154; Koven, 1991, p. 107; Ken Gilchrist collection; Lorenz and Hubert, 1993, p. 173 (as *Bistolida stolid* *stolid*); Gosliner, Behrens and Williams, 1996, p. 133; Koven, 1997, p. 8

Uncommon in Fiji. The author has found many semi-fossil specimens of *C. stolid* (very common) in the mud from dredging near the Fiji Institute of Technology Maritime School (Suva) during their dredging and widening of the boat channel. This species is sometimes sub-divided to another species, *C. brevidentata*, by others but Burgess (1985) found inter-grading specimens between the two. Lorenz and Hubert (1993) say *C. brevidentata* is valid and found around Western, Northern and Eastern Australia. Lorenz and Hubert (1993) say *Bistolida stolid* *crossei* Marie, 1869 is not found in Fiji but list the synonyms as *Bistolida nandroga* and *B. thakau* Steadman & Cotton, 1943 - both are named as subspecies from Fiji by Steadman & Cotton, 1943.

66. *Cypraea subteres* Weinkauff, 1881\*

Steadman and Cotton, 1943, p. 319 (as *Talostolida subteres vava* subsp. nov.) "Vava" is the Fijian word for shoe; Allan, 1956, p. 48 (as *Talostolida subteres vava* Steadman and Cotton, 1943). She also notes that this species was once known as *Cypraea subfasciata* Link from Fiji. See *Cypraea teres* below; Lorenz and Hubert, 1993, pp. 166, 370 (as *Blasicrura subteres*)

Burgess (1985) notes that this species is found only in Polynesia, from the Cook Islands eastward.

67. *Cypraea subviridis* (Reeve, 1835)\*

Steadman and Cotton, 1943, p. 322 (as *Sovadusta subviridis kesata* subsp. nov.) "Kesata" means stained in Fijian; Steadman and Cotton, 1946, p. 517 (as *C. subviridis kesata*); Allan, 1956, p. 61 (as *Solvadusta subviridis kesata*); Burgess, 1970, p. 300; Eisenberg, 1981, p. 71; Kirkpatrick, 1981, p. 43; Abbott and Dance, 1990 (p 88); Lorenz and Hubert, 1993, p. 125 (as *Erronea subviridis subviridis*)

Burgess (1985) lists this species from Vanuatu, New Caledonia, Solomons, Australia, Indonesia and parts of Papua New Guinea only.

68. *Cypraea summersi* (Schilder, 1958)

Cernohorsky, 1967 (p. 99) (as *Blasicrura summersi*); Brown, 1968, p. 3; Burgess, 1970, p. 106; Walls, 1975, p. 95; Kirkpatrick, 1981, pp. 42, 43; Burgess, 1985, p. 193; Abbott and Dance, 1990, p. 92; Ken Gilchrist Collection; Lorenz and Hubert, 1993, pp. 159, 161 (as *Blasicrura summersi*)

Rare and is easily confused with *C. pallidula*. This is only found in Fiji and Tonga.

69. *Cypraea talpa* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Talparia talpa saturata* Dautzenberg, 1903); Steadman and Cotton, 1943, p. 325 (as *Talparia talpa saturata*); Steadman and Cotton, 1946, p. 530 (as *Talparia talpa saturata* Dautzenberg, 1903); Cernohorsky, 1964, p. 184; Brown, 1968, p. 3; Burgess, 1970, p. 200; Kirkpatrick, 1981, pp. 40, 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985 (p. 90); Koven, 1991, p. 107; Lorenz and Hubert, 1993, p. 78 (as *Talparia talpa*); Koven, 1997, p. 8; Ryan, 2000, p. 55

Uncommonly found in Fiji.

70. *Cypraea teres* (Gmelin, 1791)

Schilder and Schilder (1939) p. 216 (as *teres subfasciata* Link, 1807); Steadman and Cotton, 1943 (as *Cypraea vava*). This is confused with *C. subteres* (above) by Steadman and Cotton, 1943; Steadman and Cotton, 1946, p. 515 (as *C. teres vava*); Brown, 1968, p. 3; Burgess, 1970, p. 109; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Burgess, 1985, p. 146; Koven, 1991, p. 107; Koven, 1991, p. 107 (as *Cypraea alisonae* Burgess, 1983); Lorenz and Hubert, 1993, p. 162 (as *Blasicrura teres*) and p. 163 (as *Blasicrura teres pellucens* Melvill, 1888); Koven, 1997, p. 7 (as *Cypraea alisonae* Burgess, 1983); Koven, 1997, p. 8; \*\*Ken Gilchrist's fossil collection

Lorenz and Hubert (1993) say *Cypraea alisonae* is a synonym of *Cypraea teres pellucens* (Melvill, 1888). Burgess (1985) made a number of species from the *Cypraea teres* complex but this is just splitting a single species.

71. *Cypraea testudinaria* (Linnaeus, 1758)

Schilder and Schilder, 1939, p. 216 (as *Callistocypraea (Chelycypraea) testudinaria testudinosa* Perry, 1811); Steadman and Cotton, 1943, p. 326 (as *Chelycypraea testudinaria testudinosa*); Steadman and Cotton, 1946, p. 530 (as *Chelycypraea testudinaria testudinosa*); Cernohorsky, 1964, p. 181; Brown, 1968, p. 3; Burgess, 1970, p. 250; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 97; Lorenz and Hubert, 1993, p. 54 (as *Chelycypraea testudinaria*); Ryan, 2000, p. 55

USP3574 examined. Uncommonly found in Fiji. This shell can be covered with coralline algae, which penetrates the shiny nacre. This may be due to the fact that the mantle does not "wipe" up far enough. This condition is usually found on specimens living in the shallow on Makeluva Island Reef but however, Cyclone Kina which struck Fiji in January 1993 brought up numerous fresh dead *C. testudinaria* cowries onto Makeluva reef but these did not have algae growing on the shells. Cernohorsky

(1964) says that this species live in holes on the outer edge of reefs and come into the shallow only to breed.

72. *Cypraea tigris* Linnaeus, 1758

\*\*Ladd, 1934, p. 218 (who also said *C. tigris* is abundant on Viti Levu reefs); Schilder and Schilder, 1939, p. 216 (as *Cypraea tigris lyncichroa* Melvill, 1888); Steadman and Cotton, 1943, p. 332 (as *Cypraea tigris amboolee* subsp. nov). The sub species name is an anglicised version of the Fijian word *buli* (which is the local name for cowries); Steadman and Cotton, 1943, p. 332 (as *Cypraea tigris volai* subsp. nov.) “Volai” means spotted in Fijian; Steadman and Cotton, 1946, p. 523 (as *Cypraea tigris amboolee*); Steadman and Cotton, 1946., p. 523 (as *Cypraea tigris volai*); Allan, 1956, p. 103 (as *Cypraea tigris volai* Steadman and Cotton, 1943); Allan, 1956, p. 103 (as *Cypraea tigris amboolee* Steadman and Cotton, 1943); Cernohorsky, 1964, p. 185; Brown, 1968, p. 3; Burgess, 1970, p. 230; Walls, 1975, p. 272 (also know as *C. amboolee*); Cernohorsky, 1978b. p. 44; Kirkpatrick, 1981, pp. 41, 44; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 76; Koven, 1991, p. 107; Ken Gilchrist collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, pp. 65, 260; Koven, 1997, p. 8; Ryan, 2000, pp. 55, 56

USP1852 examined. Very common in Fiji e.g. cowries patch off Nasese (due west of Suva). The coloration of a tiger cowrie can be from a near white coloration to near black one.

73. *Cypraea ursellus* Gmelin, 1791

Steadman and Cotton, 1943, p. 321 (as *Evanaria ursellus vitiensis* subsp. nov.) “Vitiensis” refers to Fijians; Steadman and Cotton, 1946, p. 530 (as *Evanaria ursellus vitiensis*); Allan, 1956, p. 75 referred to Steadman and Cotton’s name (*Evanaria ursellus vitiensis*). She also said that “this is the Fijian (Viti) version of *E. ursellus* which is called *E. kieneri* by the Schilders”; Brown, 1968, p. 3; Burgess, 1970, p. 288; Kirkpatrick, 1981, p. 41; Weingarten, 1982, p. 38; Burgess, 1985, p. 157; Koven 1991, p. 107; Lorenz and Hubert, 1993, p. 171 (as *Bistolida ursellus*); Koven, 1997, p. 8

Uncommonly found in Fiji.

74. *Cypraea valentia* Perry, 1811 \*

Walls, 1975, p. 125; Cernohorsky 1978, p. 55; Kirkpatrick, 1981, p. 43; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 88; Parkinson, 1987, p. 5

This species is very rare in Fiji. The late Ken Gilchrist told me in 1985 that a friend of his collected one near Solo Lighthouse. Burgess (1985) says two specimens were found on Kadavu beach. Weingarten (1982) tells about a shell collector who “hesitated and was lost”. The collector wanted a lady vendor to lower the price of a *Cypraea valentia* together with a basket of other shells at the Suva market. Presently, a lady came along and bought the whole basket of shells for her kids to play with. Lorenz and Hubert (1993) say this species is not found in Fiji. This species is often sold in Fiji but specimens come from the Philippines.



75. *Cypraea ventriculus* (Lamarck, 1810)  
Schilder and Schilder, 1939, p. 216 (as *Cypraea (Lyncina) ventriculus*); Steadman and Cotton, 1943, p. 331 (as *Ponda ventriculus topee* subsp. nov.) Topee is the resemblance to the Indian topee or sunhat; Steadman and Cotton, 1946, p. 524 (as *Ponda ventriculus topee*); Allan, 1943, p. 112 (as *Ponda ventriculus topee* Steadman and Cotton, 1943); Brown, 1968, p. 3; Burgess, 1970, p. 199; Kirkpatrick, 1981, p. 42; Burgess, 1985, p. 92; Koven, 1991, p. 107; Ken Gilchrist Collection; Lorenz and Hubert, 1993, p. 76 (as *Lyncina ventriculus*); Koven, 1997, p. 8

The author has seen this very rare species from Savusavu Bay and Nadi.

76. *Cypraea vitellus* (Linnaeus, 1758)  
Schilder and Schilder, 1939, pp. 186, 216 (as *Cypraea Lyncina vitellus polynesiae* Schilder and Schilder, 1939); Steadman and Cotton, 1943, p. 331-332 (as *Mystaponda vitellus polynesiae*); Steadman and Cotton, 1946, p. 523 (as *Mystaponda vitellus polynesiae* Schilder and Schilder, 1939); Allan, 1956, p. 106 (as *Mystaponda vitellus polynesiae* Schilder and Schilder, 1939); Brown, 1968, p. 3; Burgess, 1970, p. 206; Cernohorsky, 1978b, p. 44; Gilchrist, 1980, p. 4; Kirkpatrick, 1981, p. 41; Parkinson, 1982, p. 45; Weingarten, 1982, pp. 37, 38; Burgess, 1985, p. 84; Koven, 1991, p. 107; Ken Gilchrist collection; Kobluk and Lysenko, 1993, p. 805; Lorenz and Hubert, 1993, p. 73 (as *Lyncina vitellus*); Koven, 1997, p. 8

This species is common in Fiji. This shell can have a pink base which fades rapidly soon after.

77. *Cypraea ziczac* (Linnaeus, 1758)  
Brown, 1968, p. 3; Burgess, 1970, p. 95; Kirkpatrick, 1981, p. 42; Parkinson, 1982, p. 45; Weingarten, 1982, p. 38; Burgess, 1985, p. 142; Ken Gilchrist Collection; Lorenz and Hubert, 1993, p. 153 (as *Palmadusta ziczac*)

Probably is very rare in Fiji. The author has only seen one specimen from Fiji.

## Possible or doubtful records

78. *Cypraea astaryi* Schilder, 1971\*  
Burgess, 1985, p. 250; Burgess, 1985 p. 239 says the “*gaskoini*” in the Thaanum collection from Fiji was actually *Cypraea astaryi*. Probably is very rare in Fiji. Burgess (1970) lists this as *C. gaskoini*. Lorenz and Hubert (1993) say *Cypraea cumingii astaryi* Schilder, 1971 is not found in Fiji but *Cypraea cumingii cumingii* Sowerby, 1832 is just at the limit of Fiji. The difference between *C. gaskoini* and *C. cumingii astaryi* as shown by Burgess (1985) and Lorenz and Hubert (1993) respectively are differences in geographical distribution.

79. *Cypraea bouteti* Burgess and Arnette, 1981\*  
Burgess 1985, p. 252 gives its distribution as being “possibly Fiji”. Lorenz and Hubert (1993) said *Lyncina leviathan bouteti* (Burgess and Arnette, 1981) is found in Polynesia but not found in Fiji.

80. \*\**Cypraea* sp. cf *boivini* (Kiener, 1843)\*  
\*\*Ken Gilchrist fossil collection. Unconfirmed species. The author examined the worn specimen and could not confirm its identity.

81. *Cypraea catholicorum* Schilder and Schilder, 1938\*  
Burgess (1985) reports this species from Papua New Guinea, Solomons, Vanuatu, and New Caledonia. It is possibly found in Fiji given its close resemblance to *C. cribaria*. The author has been told that this species has been collected in Fiji but he cannot confirm any records. Kirkpatrick, 1981 say that species is possibly found in Fiji. Lorenz and Hubert (1993) say this species is found near Fiji.

82. *Cypraea cernica* Sowerby, 1870\*  
Lorenz and Hubert, 1993, p. 194 (as *Erosaria cernica cernica*)

Burgess (1985) lists this species from Samoa, New Zealand, Lord Howe Island, New Caledonia, Vanuatu, and Solomons but not from Fiji. Kirkpatrick (1981) says that this species is possibly found in Fiji. This species needs confirmation from Fiji.

83. *Cypraea cumingii* Sowerby, 1832\*  
Lorenz and Hubert (1993) p. 179 show *Cribrarula cumingii cumingii* as being just within Fiji. See *C. astaryi* above.

84. *Cypraea hibernicus*\*  
Anon., 1984. Fiji Shell Club Annual 1984, p. 6.

This name is not listed anywhere and the author has called it a *nomen nudum*.

85. *Cypraea histrio* Gmelin, 1791\*  
Steadman and Cotton, 1946, p. 530 (as *Arabica arabica histrio*); Steadman and Cotton, 1943, p. 327 (as *Arabica arabica reticulata* Gmelin, 1791). They said *Aribica maculifera* was a direct synonym of *C. arabica*. Steadman and Cotton had some confusion about *arabica*, *histrio* and *maculifera*.

*Cypraea histrio* is not found in Fiji. Lorenz and Hubert (1993) say this species is only found in the Indian Ocean.

86. *Cypraea interrupta* Gray, 1824\*  
Koven, 1997, p. 7

According to Burgess (1985), this species is found from Ceylon to Southern Japan and Indonesia. Lorenz and Hubert (1993) say this species is not found in the Pacific. It looks very much like *C. pallidula*, *C. summersi* and *C. luchuana*; the former two are found in Fiji.

87. *Cypraea lutea* Gmelin, 1791\*  
Steadman and Cotton, 1943, p. 322 (as *Palmadusta lutea yaloka* subsp. Nov.); Steadman and Cotton, 1946, p. 515 (as *C. lutea yaloka*); Koven, 1991, p. 107; Koven, 1997, p. 7

According to Burgess (1985), this species is found within an area from West Australia, to the Marshall Islands, Japan and the Philippines. However, this shell is distinctive and is difficult to confuse with others. This name is often used to describe *C. humphreysii* also. See *Cypraea humphreysii* above. Lorenz and Hubert (1993) say this is not found in Fiji. This species is likely to be found in Fiji and specimens of this shell are sold in Fiji.

88. *Cypraea miliaris* Gmelin, 1791\*  
Kirkpatrick, 1981, p. 43 said this species may be found in Fiji.  
This is not found in Fiji. See *Cypraea eburnea* (above).

89. *Cypraea nebrites* Melvill, 1888\*  
Fiji Shell Club Annual Magazine 1984, p. 6

This species look like *C. erosa* and is a case of mistaken identity. Lorenz and Hubert (1993) say this species is only found in the Indian Ocean.

90. *Cypraea ovum* (Gmelin, 1791)\*  
Steadman and Cotton, (as *Cypraea barlettii* Steadman and Cotton, 1946); Burgess, 1970, p. 340; Kirkpatrick, 1981, p. 41; Lorenz and Hubert, 1993, p. 123 (as *Erronea ovum chrysostoma* Schilder, 1927); \*\* Ken Gilchrist's fossil collection (as *Cypraea ?ovum*);

Burgess (1985) does not include Fiji as being in the range of *Cypraea ovum* in his distribution map on p. 249 but mentions in the text on page 249 that it is found in Fiji. Cernohorsky (1964) also examine a *Cypraea ovum* allegedly collected from Suva Barrier Reef and thinks it is a locality error. The author does not think it is found in Fiji. This species is too close to *Cypraea erroneus* except for the orange teeth in *C. ovum*.

91. *Cypraea pulchella* Swainson, 1823\*  
Koven, 1991, p. 107; Koven, 1997, p. 7

Burgess (1985) says this species is found near the Red Sea and in Asia. However, this imported species is sold in great quantities in Nadi, Fiji. Lorenz and Hubert (1993) say this species is not found in Fiji. This Fiji records needs confirmation.

92. *Cypraea rabaulensis* Schilder, 1964\*  
Burgess (1985) reports it from Solomons and Tonga and is therefore remotely likely to be found in Fiji. Lorenz and Hubert (1993) say this species just reaches Fiji. Unconfirmed record.

93. *Cypraea rashleighana* Melvill, 1888\*  
Found in Vanuatu and Tonga so possibly found in Fiji. Lorenz and Hubert (1993) say this species is not found in Fiji but is in Hawai'i and New Caledonia. There is a need to re-examine the *teres-interrupta* complex together with this species.

94. *Cypraea saulae* Gaskoin, 1843\*

Lorenz and Hubert (1993) show that the eastern limit of its distribution is Fiji.

This vague record needs confirmation.

95. *Cypraea walkeri* Sowerby, 1832\*

Lorenz and Hubert, 1993, p. 129 (as *Erronea walkeri continens* Iredale, 1935)

This species has been recorded from Fiji by Eisenberg (1981) and it needs confirmation. See *Cypraea bregeriana*.

## Discussion

The cowries of Fiji are typically Indo-West Pacific with no endemic species. Of greatest interest is *Cypraea summersi*, which is found in Fiji and Tonga only. The most popular shell for collectors is still *Cypraea aurantium* or the Golden Cowrie. However, they are over-priced in Fiji and are only uncommon in the Solomons.

Out of the 95 or so species discussed in this paper the author has not personally seen 35 of them from Fiji. This is mainly due to their rarity, are only fossilized specimens or they are not found in Fiji. Following on from Burgess's treatment of the cowries, the author thinks that a closer look at the various cowrie complexes is required.

Generally, more cowrie species are reported from the Yasawas and Northwest Viti Levu than from Southeastern Fiji. This may be due to the fact that the northwestern Fiji is closer to the centre of distribution of marine organisms and that those areas are more accessible.

Lorenz and Hubert (1993) has treated some subspecies of cowries as not being from Fiji but include synonyms that have originally described from Fiji. These authors sometimes show the edge of distribution to be very near Fiji or overlap Fiji. Because the maps are so small, the distribution may or may not include Fiji.

Burgess's books (1970 and 1985) were consulted. It was noted that Burgess (1985) is an evolution of Burgess (1970) and not a later edition.

Fiji Shell Club Annual Magazines reveal a lot about shells in Fiji but misidentifications and the use of old names is common. *Cypraea hibernicus* (unassigned name) and *Cypraea nebrites* are 2 cowries listed from Fiji in the 1984 magazine on page 6 which are not found there. Shell Gossip, Tidal Tales from the Sea was a quarterly put out by the Fiji Shell Club which is a precursor to the Annual Fiji Shell Club Magazine and lists cowries from Fiji.

Deepsea surveys in Fiji will reveal more cowries. The French scientists from IRD (formerly ORSTOM) Noumea and France spent parts of 1999 trawling for deep-sea organisms in various parts of Fiji. They found several new records and a few new species of Conidae. They did not find any cowries because the author believed that

capturing deepsea cowries requires a tangle cowrie net and not a trawl net. There is potential to fish for these rare expensive cowries using tangle nets in Fiji.

Brian Parkinson is supposedly working on a shell book for Fiji since 1984 and the author eagerly awaits it. David Routledge, a historian, is also rumoured to be writing a book on the cowries of Fiji too.

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Those scientific names which recognised in this publication are emphasised by using bold face italics.

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