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Notes on Fijian Land Snails

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The present paper is based, for the most part, on specimens which have come to Bernice P. Bishop Museum recently. In addition, one of Garrett's unfigured species is illustrated from his type material.

Although only dead specimens of *Placostylus graeffei* were taken by the Henry G. Lapham Expedition to Fiji, it seems important to record the locality of this rare species.

Ouagapia ratusukuni, new species (fig. 1).

Shell discoidal, umbilicus shallow and very wide, epidermis very thin, glossy, somewhat deciduous, olive buff in color, marked with widely separated narrow, indistinct, brownish bands. Surface (except on smooth embryonic whorls) is marked with very fine, sharp, close striae and is spirally sculptured with rather widely spaced, very fine incised lines. Spire flat. Whorls 4.66, the embryonic increasing rapidly, the rest slowly and regularly, convex, separated by a rather deep suture. The last whorl not descending, well-rounded at periphery. Aperture scarcely oblique, truncate-oval. Peristome very thin, sharp.

Height 4, diam. 11.0; apert. vertical 3.8, horizontal 3.1 mm.

Fiji: Viti Levu, Nandarivatu, 3,000 to 3,600 ft. alt., damp hillside, on and under dead logs, Y. Kondo, Henry G. Lapham Exped., Sept. 2, 1938. Type BBM. 10035, paratypes BBM. 178846-178850.

Specimens of *O. ratusukuni* were collected by the expedition in nine additional colonies. Most of these lots consisted of "dead" shells from colonies at 2,000 to 3,000 feet altitude. One lot came from near the lumber camp at Navai about 5 miles southeast of Nandarivatu, at 2,500 feet altitude. The species is undoubtedly distributed on the highlands of the mountain range of northern Viti Levu, but the limited number collected in most colonies indicates its scarcity.

The species nearest to *O. ratusukuni* is *O. gradata,* of which Bishop Museum has examples from Tongatabu, Vavau, and Eua in

the Tongan islands, and from Tau, Ofu, Tutuila, Upolu, and Savaii in the Samoan islands. Undoubtedly, *O. gradata* was widely distributed by the Polynesians in these two island groups. Examples from Tonga and Samoa show no consistent difference except a slight variation in size.

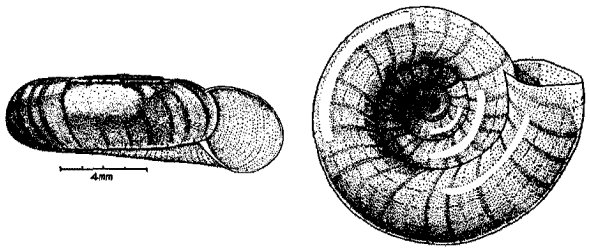

FIGURE 1.—*Ouagapia ratusukuni.*

O. ratusukuni differs from *O. gradata* in its larger size, lower spire, less convex whorls, proportionately much wider umbilicus, weaker and more widely spaced striae, glossier surface, and its thinner and more deciduous epidermis.

This species is named for Ratu Sukuna, District Commissioner of the Lau Group. The success of the Henry G. Lapham Expedition on several of the islands of Lau is due, for the most part, to his interest and generous assistance.

Placostylus (Euplacostylus) seemanni mbengensis, new subspecies (fig. 2, *a, b*).

Shell smaller than typical examples of *seemanni;* outlines of spire slightly more convex. Whorls 5-5.5 (in *seemanni* 5.5-5.75). The incised spiral lines are slightly coarser and more constantly present. In adult specimens the outer peristome is less developed with very slight indentation.

Length, 64.5, diam. 24.0, axis of apert. 35.4 mm., 5.5 whorls.

Type BBM. 10032, paratypes BBM. 183847. Smallest paratype: length, 59.0, diam. 21.7, axis of apert. 34.1 mm., whorls 5.5.

Fiji: Mbenga Island, "near village of Naceva, at sea level, on shrubs and trees" (L. Verrier).

A series of 32 specimens, of which 20 are immature, was collected by Dr. Lindsay Verrier of the Laboratory and Research Division, Medical Department, Suva, Fiji. The specimens were received by Bishop Museum on February 17, 1940. All contained their animals. Four dead specimens from the southwest corner of Mbenga Island were received from G. T. Barker of the Fiji Museum, in 1938. During

the summer of 1940 D. Thaanum collected a large series of *mbengensis* on the same island and gave a series to Bishop Museum and a series to the Museum of Comparative Zoology at Harvard University.

Among Dr. Verrier's specimens of *mbengensis* were five specimens (BBM. 189001) which differ slightly from the typical form. One of these is illustrated in figure 2, *b*. They have a proportionately shorter spire with more convex outlines, and the last whorl is more distinctly marked with spiral wrinkles. Further accurate collecting on Mbenga will be necessary to determine whether these specimens represent a colonial variation or a genetic form which occurs with the more abundant species. The figured specimen (fig. 2, *b*), with five whorls, measures: length 61.0, diam. 24.5, axis of apert. 37.8 mm. (BBM. 10033). Thaanum's series of *mbengensis* may have been collected in a different locality than those of Verrier as it contains no specimens of this form.

Placostylus (Callistocharis) gracilis verrieri, new subspecies (fig. 2, *c*).

Differing from specimens from Viti Levu and Ovalau which I have referred to *gracilis,* in its narrower form, narrower and more acuminate spire, and its narrower aperture with outer margin indistinctly flattened. The aperture is sayal brown, much darker than in any specimen of *gracilis* I have examined, and the lip is distinctly tinged with brown.

Length 48.2, diam. 20.1, axis of apert. 27.5 mm. Type BBM. 10034. Length 43.5, diam. 19.0, axis of apert. 25.4 mm. BBM. 184054 (smallest specimen).

Fiji: Mbenga Island, near Dakuibequa village. Dead shells inhabited by hermit crabs (L. Verrier, January 1940).

This subspecies is based on only four dead specimens. Their surface texture is in perfect condition, but their columellas are much abraded. One example retains part of the columellar fold which, in fresh specimens, should be nearly as strong as in *P. gracilis*. *P. fulguratus* (= *gracilis*) was reported by Crosse (Jour. de Conchyl., 18, 1875) from Mbenga. Undoubtedly his specimens belong to this subspecies.

Placostylus (Callistocharis) gracilis vitiensis Garrett (fig. 2, *d*).

Placostylus vitiensis Garrett, Zool. Soc. London, Proc., 184, 1887.
Pilsbry, Manual of Conch. **13**: 110, 1900.

This subspecies is unfigured. It was known to Pilsbry only by description when he published his monograph of the genus in the Manual of Conchology. It is not mentioned by Kobelt. Bishop Museum has three specimens from the Garrett collection, one of which

has been selected to represent this subspecies. From a comparison of Garrett's specimens with examples from several localities on Viti Levu, I feel that this form should not be considered as of higher than subspecific rank. It probably represents a geographic race. It is slightly shorter than many specimens of *gracilis* though longer than others. Garrett's specimens (BBM.2555) measure 41.5 to 43.0 mm. in length. The spire has less conical outlines with slightly flatter whorls, the aperture is wider, and the peristome thinner.

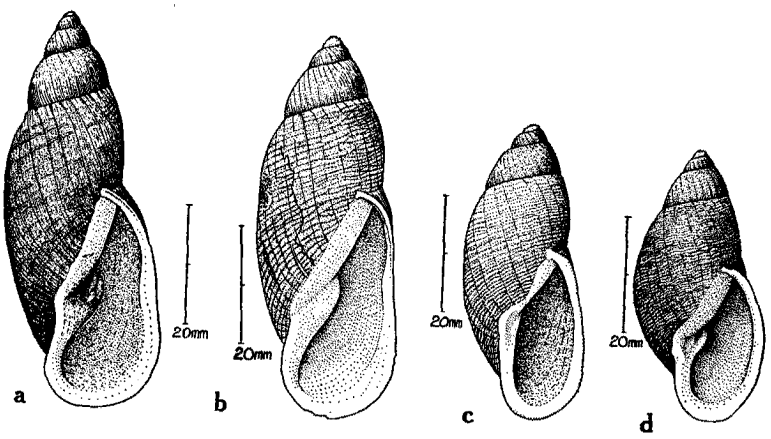

FIGURE 2.—**a-b,** *Placostylus (Euplacostylus) seemanni mbengensis;* **c,** *Placostylus (Callistocharis) gracilis verrieri;* **d,** *Placostylus (Callistocharis) gracilis viticnsis.*

Placostylus (Callistocharis) graeffei (Crosse).

Bulimus (Placostylus) Graeffei Crosse, Jour. de Conchyl., 13, 1875.

Placostylus graeffei Garrett, Zool. Soc. London, Proc., 184, 1887.

The Bishop Museum collection contains the two specimens of this species mentioned by Garrett (Zool. Soc. London, Proc., 184, 1887) which he received from Graeffe. The most typical, a bleached dead shell, agrees fairly well with Crosse's figured specimen which, however, has somewhat less convex whorls. The second, not typical, may have been collected alive. Crosse gives the locality as Vuni Vatu, near the center of Viti Levu. I am unable to find this name on any map; the most similar place name is a mountain named Muanivatu.

The Lapham Expedition to Fiji was fortunate in finding eight whole dead specimens and a number of fragments of this large *Placostylus* at Nandarivatu, at 4,000 feet altitude. Three weeks were spent

in this region and continued search was made for live specimens in every conceivable habitat, but none were found. The individuals differ greatly in size, but all agree with Garrett's typical specimen in that all the whorls of the spire are decidedly convex, slightly more so than in Crosse's figure. Graeffe passed through Nandarivatu on his trip across the island in 1865, and as the Lapham Expedition specimens collected there are very similar to Graeffe's specimen in the Garrett collection, I have little hesitancy in identifying them as *P. graeffei.*

Three of these specimens have the following measurements:

Length	Diam.	Axis of apert.	Whorls	
70.0	33.5	36.6 mm.	6	BBM. 178899
57.6	26.7	33.7 mm.	5.75	BBM. 178899
65.5	33.2	41.0 mm.	5.75	BBM. 179171

Garrett's paratype specimen:

Length	Diam.	Axis of apert.	Whorls	
67.0	29.7	35.2 mm.	6	BBM. 2551

The author is responsible for all statements in this paper.