

# Partulid snails, their collectors, and a prodigious dynasty of French naturalists

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## The Acquisition Phase; the “Adanson Family Collection”

The peripatetic Alain Allary, noted French shell-dealer and frequent participant in COA Convention bourses, and I go back quite some time. I recall getting some very interesting, both biologically and historically, shells from him as far back as the Panama City (1993) event, but our conversations and transactions have unfortunately been relatively few and far-between. Consequently I was pleasantly surprised at the recent Port Canaveral bourse when he showed me a sizable sample of curatorially time-worn tropical land snails. Alain informed me that they were from a collection belonging to the extended family of pioneer malacologist Michel Adanson. He went on to say the shells began to accumulate in the Eighteenth Century and increased in number through the efforts of certain members of later generations. Fascinated as much by the fame and antiquity of the material as my need to know more about *Partula* snails, obviously the dominant group in the assortment, I happily purchased the entirety of his offering.

The state of conservation of this little collection certainly warrants more than passing comment. Firstly, Alain found this material in a somewhat less well-curated condition than I did. He had labored to place what seemed to be all the constituents of each lot in a Ziploc®-style plastic bag. I found one to eight specimens constituting each lot. The shells were, or had been, glued to the outside of the bottom of mostly uniform cardboard trays (75X60X10 mm); a neatly handwritten, uniformly-formatted, label with the scientific name, author, and a brief indication of the locality was glued next to them. On the inside of the tray were glued one to three labels with less disciplined handwriting - often clearly that of more than a singular scribe, and usually containing more information as to provenance [Fig. 1]. The vagaries of time and neglect were quite apparent, and no shell or label escaped them. Dust, detachment of shells and labels from the glue, insect and rodent depredations on the labels, foxing of all the trays and labels, and (rarely) a missing label or shell had to be dealt with. Then there came the task of freeing the majority of labels and specimens from their holdfasts. Actually the process of rehabilitation went well, but it was quite tedious and time-consuming, lasting several days. An added dimension of complexity in the (re)curation effort was the inaccuracy of some labels (over 20% misidentifications, sometimes wanton, as well as incorrect locality, e.g., the extensive use of the designation “Îles Sandwich,” then exclusively applied to the Hawaiian Islands, an ipso facto inaccuracy. All this notwithstanding, the results were gratifying. The shells for the most part had escaped permanent damage from Byne’s Disease and other threats, loose specimens



**Fig. 1** The original display with the shells glued to the top of the box and the labels attached inside. The label under the shell provides the name and locality while the additional label(s) inside the box expand the information.

and labels matched up eventually, and ultimately the labels were almost all decipherable [Figs. 2, 3]. I had before me a total of 183 specimens in 58 lots, all seeming of a single vintage, the mid-Nineteenth Century. Of the total, 175 specimens in 54 lots are partulids. Of these partulids, 166 specimens in 52 lots were collected in French Polynesia and are comprised of 31 species [Plate 2]. Most of the remaining 21 lots are taxa subordinate to the 31 species, and a few are duplicate lots. The other partulid material, two lots, two species, originated in Micronesia (Guam and Ponape). The remainder, eight non-partulid specimens comprising four lots, are phylogenetically and zoogeographically diverse land snails (*Macroceramus*, *Cerastoides*, *Orobaphana*, *Tropidophora*). This acquisition and the process of its (re)curation taught me more than I ever expected to learn about *Partula* and Partulidae.

### Taxonomy and other aspects of the natural history of the Partulidae

The family Partulidae Pilsbry, 1900, is deployed throughout the high islands of south and western Oceania as well as New Guinea. Its metropolis is in French Polynesia, particularly the Society Islands. Here the nominotypical subgenus of *Partula* Férussac, 1819, is limited to the Society and Hervey Is. (Pilsbry, 1909). It has more than 76 species, with several subspecies in addition (Brewer, Czekanski-Moir, and Rundell, 2007). Most *P.*



Fig. 2 (above) and Fig. 3 (below) show details of the original display and labels as well as the authors new labels. The shells are obviously in excellent condition.

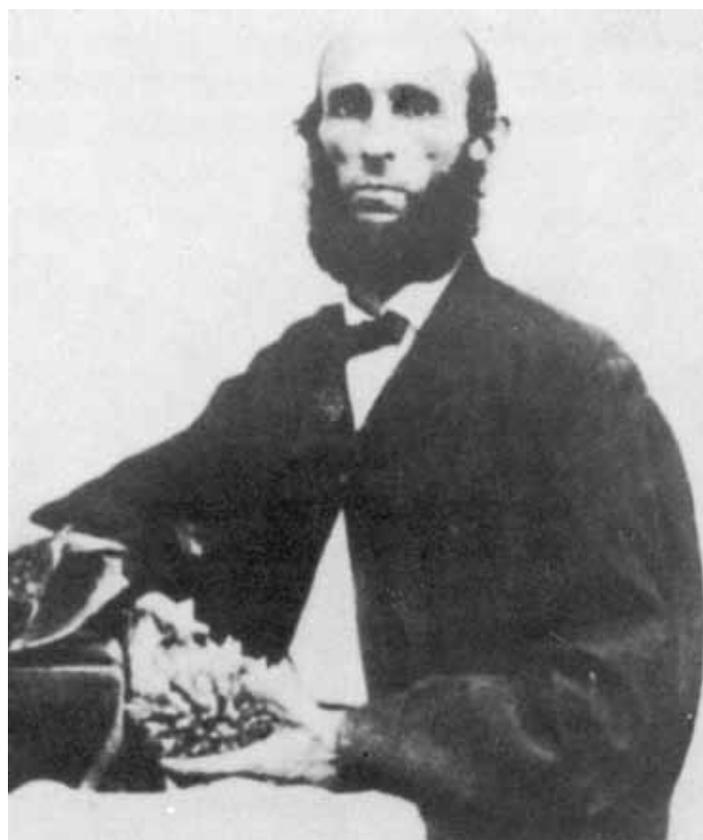
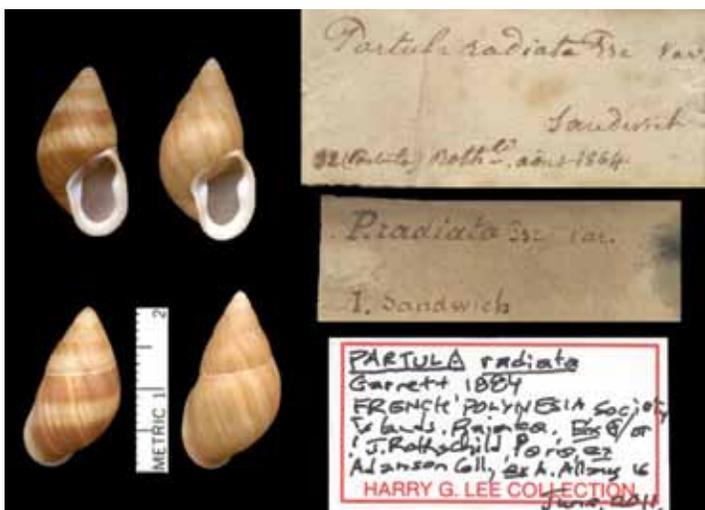


Fig. 4 William Harper Pease (1824-1871) who, along with Andrew Garrett (1823-1887), spent numerous years exploring and collecting in the tropical Pacific. In all, Pease named 31 partulids while Garret named 11.

(*Partula*) species are limited to a single island even though several inter-island distances are rather small (Pilsbry, 1909). Although predominantly arboreal, there are several terrestrial species (Pilsbry, 1909). Among the four genera (eleven subgenera) in the family (Schileyko, 1999), many taxa in this subgenus distinguish themselves with a variety of color patterns, more conspicuous in the tree-dwelling species. Most islands have more than a single species and ecological as well as geographical forces seem to have driven their evolution. The steep terrain isolates many deep valleys, in which the snails prosper. Besides allowing divergence of species, such topographic barriers have allowed infraspecific variation (forms and subspecies) to evolve within taxa distributed over relatively wide areas with varying landscape. Examples of this include *P. (P.) otaheitana* (Bruguière, 1792) [Plate 2, figs. 22-27] on Tahiti and *P. (P.) rosea* [Plate 2, figs. 31-32] on Huahine.

The type, and first-named, species of *Partula* is [*Limax faba* Martyn, 1784 (2: pl. 67), described from shells brought home to England under the command of Captain James Cook (1728-1779), who visited Raiatea, Society Is., aboard HMS *Endeavour* in July 1769 on the first of his three voyages. Because the *Universal Conchologist* of Thomas Martyn (1735-1825) (see Dall, 1906, 1908) was not a consistently binominal work, the International Commission for Zoological Nomenclature exercised its plenary powers (ICZN, 1957) to declare most of its names unavailable for the purposes of taxonomic nomenclature.\* Fortunately Gmelin (1791: 3623) had already validated the name, as *Helix faba* [Plate 1; Plate 2, fig. 10], which, albeit mislocalized in Tahiti, nonetheless limited nomenclatorial confusion. By the next year, Cook material somehow reached the French malacologist Jean Guillaume Bruguière (1749-1798), who named *Bulinus otaheitanus*, which he believed to be an inhabitant of fresh waters.

\* Nine well-known New Zealand marine gastropod species, also the product of Cook's explorations, were spared suppression by the ICZN: (1) [*Patella*] *denticulata*, now *Cellana denticulata* (Martyn, 1784) [Patellidae]; (2) [*Trochus*] *granosus*, now *Turbo (Modelia) granosus* (Martyn, 1784) [Turbinidae]; (3) *Trochus heliotropium*, now *Astraea heliotropium* (Martyn, 1784) (Turbinidae); (3) *Buccin[um] linea*, now *Buccinulum linea linea* (Martyn, 1784) [Buccinidae]; (5) *Buccin[um] maculosum*, now *Cominella maculosa* (Martyn, 1784) [Buccinidae]; (6) [*Limax*] *opalus*, now *Cantharidus opalus opalus* (Martyn, 1784) [Trochidae]; (7) *Buccin[um] papulosum*, now *Struthiolaria (Struthiolaria) papulosa* (Martyn, 1784) [Struthiolariidae]; (8) [*Trochus*] *punctulatus*, now *Maurea punctulata* (Martyn, 1784) [Calliostomatidae]; and (9) *Buccin[um] vermis*; now *Struthiolaria (Pelicularia) vermis* (Martyn, 1784) [Struthiolariidae].



**Fig. 5** (left to right) compares (1) *Samoana attenuata*; (2) a mirror-image of the no. 3 shell, a possible hybrid; (3) the shell found with a group of *Partula otaheitana* that is obviously not that species; and a typical *P. otaheitana* lot-mate of the no. 3 shell. I'll let the reader decide if this constitutes a reasonable case for hybridization.

The next century saw more intensive exploration of Oceania by the leading seafaring nations. Dr. René Primevère Lesson (1794-1849), having served as naturalist aboard the French Corvette *La Coquille*,\*\* returned in March 1825 from its three-year-long circumnavigation. He accumulated a rich booty of novel natural history objects including Birds-of-Paradise and an ample helping of *Partula* species collected in Tahiti, Bora Bora, the Carolines, and New Guinea. He described a handful of the latter years later (Lesson, 1831). *Partula* were also among the myriad treasures brought home by pioneering conchologist Hugh Cuming (1791-1865). Known to many as “The Prince of Shell Collectors” (Dance, 1986), he, in the tradition of countryman Cook, visited French Polynesia in 1827-1828 on the first of his three voyages of exploration in the Pacific. Cuming’s *Partula* species were named by Englishmen William John Broderip and Lovell Reeve as well as Ludwig (Louis) Pfeiffer in Germany. **Plate 1** features figures of *Partula* appearing in three of the six aforementioned authors’ works.

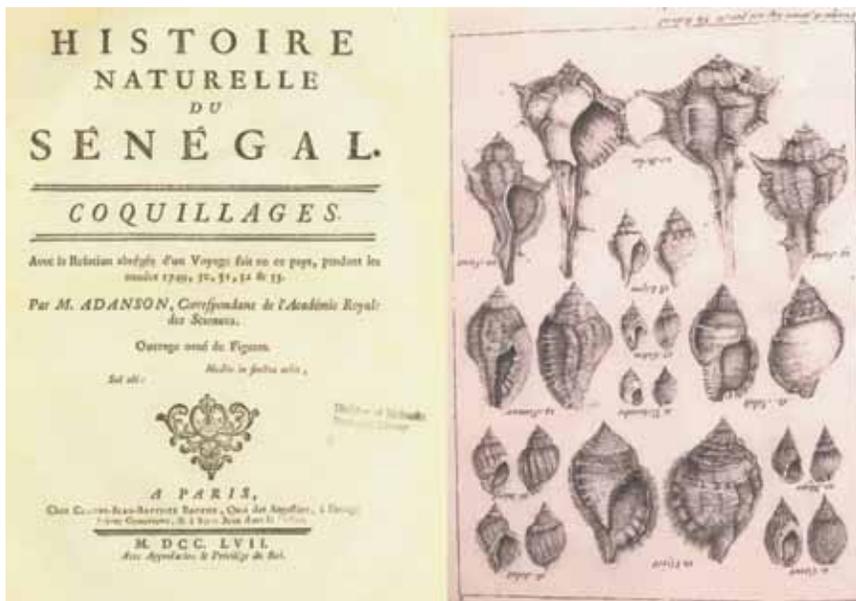
Three decades would pass before the Society Islands became the scene of the great epiphany in *Partula* discovery and understanding. This enlightenment wasn’t wrought by the French or English but through the labors of Andrew Garrett (1823-1887) and William Harper Pease (1824-1871) [Fig. 4; note the “cadaverous” countenance (Thomas, 1954)], expatriate Americans who spent most of their lives on tropical Pacific Islands. These halcyon years of discovery, and dissemination of knowledge of *Partula*, seem to have been coeval with the collection Alain provided. Pease and Garrett were friends and worked closely together from 1857 until 1863, when Garrett left Hawaii for the final time. From then until Pease’s death in 1871, they maintained an extensive correspondence. Although of two different dispositions and backgrounds, their collaboration was quite fruitful. Garrett was the intrepid traveler, collector, and (well) self-taught field naturalist; Pease, although not neglectful of fieldwork, was more



**Fig. 6** Michel Adanson (1727-1806) produced the *Histoire naturelle du Sénégal* in 1757 (see Fig 7). Published a year before the Tenth Edition of the *Systema Naturae* (Linnaeus, 1758), it is not considered available for nomenclatorial purposes (excluded by Article 3.1 of the Code (ICZN, 1999), but is still of import for its contribution to malacology. Adanson is the beginning of the paper trail of these shells.

the armchair collector, articulate writer, tutor, and sometimes sponsor (Thomas, 1979; Kay, 1975; Johnson, 2002). Garrett visited the Society Islands briefly in 1856-1857, and he returned there in 1860 for a more extensive stay. Commenting on the work of his scientific predecessors (notably Cook and crew, Lesson, and Cuming), he wrote: “During the years 1860-1863 I made a much more thorough exploration than any of my predecessors, and, by searching in nearly every valley of the group, discovered 50 new species...” (Thomas, 1979). In 1863 Garrett returned to Hawaii and shortly quit those islands for the Central Pacific, where he spent the next seven years traveling to the islands of Tuamotus, Marquesas, Samoa, and Fiji groups. All the while he sent shells to Pease, who named them promptly. Although usually published, many such nomina, noticeably among the *Partula*, existed in manuscript only (Clench, 1975; Crosse and Fischer, 1873). Shells bearing such names, e.g., *Partula radiata* “Pse.” [Fig. 3], were

\*\* Within a year of her return to France, *La Coquille* was refit, re-christened *l’Astrolabe*, and launched on another three-year circumnavigation of geographic and scientific exploration (1826-1829). Jean René Constant Quoy (1790 - 1869) and Joseph Paul Gaimard (1796-1858) succeeded Dr. Lesson in the role of expedition naturalists. Their report on the Mollusca (Quoy and Gaimard, 1832-1835) contained a great many new species, including two Melanesian partulids, and some of the finest illustrations ever drawn (Dance, 1986).



**Fig. 7** Michel Adanson's *Histoire naturelle du Sénégal* (1757) was richly illustrated and dealt exclusively with the mollusks of Senegal.

widely but illicitly in use on labels in contemporary collections such as the one on which this report is based. During his final 17 years, which he spent on Huahine, and only after Pease's demise, did Garrett produce significant scientific papers. Although mostly short communications describing new marine shells, one was a sentinel work indeed, the pages of which often contain extensive descriptions of the ecology, habits, and zoogeography of virtually all the *Partula* known from the Society Islands (Garrett, 1884). Alongside the over 10,000 specimens, not among the great many lost in two devastating shipwrecks, successfully reaching his many correspondents, e.g., Pease and Newcomb in HI, Hartman in NH (Smith, 1901), Anthony in Cincinnati, L. Agassiz at Harvard, and Godeffroy in Hamburg, and his extensive collection of 8,000 species and 30,000 specimens (Spoehr, 1963), now at the Bishop Museum, Honolulu (Clench, 1979; Johnson, 1994), this contribution stands as his most treasured legacy to malacology, evolutionary genetics, and terrestrial ecology. Fortunately for taxonomists, he also synonymized or validated [as demonstrated in **Fig. 3**] all of his mentor's extensively-circulated manuscript *Partula* nomina. In all, Pease named 31 valid partulid species-level taxa, the lion's share from the Society Islands, and virtually all supplied by Garrett, who added eleven of his own, nine of which were based on Pease manuscript names. That his contributions were not limited to malacology is perhaps most notably exemplified by a work based on some 470 of his high quality paintings of the fishes of Oceania (Günther, 1873, 1873-5, 1909 *vide* Spoehr, 1963: 101).

#### Variability and genetics in *Partula*

Reference to **Plate 2: figs. 31, 32** and to **Figs. 2 and 3** will give the reader a hint of the variation in color and pattern expressed in about half the species of *Partula* (*Partula*). These characters vary within as well as between colonies. Other plastic characters include shell-size and direction of coil (mutation to sinistrality). I make no secret of being fascinated by the latter phenomenon and admit the passion fed my impulse to get involved with the

"Adanson Family Collection" in the first place. All told, there are about a half dozen exclusively sinistral and about that number of enantiomorphic (relatively frequent occurrences of both left- and right-coiling shells) species in *Partula* (Crampton, 1916, 1932). In the Partulidae, reversal of coil is seen in only two other instances: within certain colonies of *Marianella gibba* (Férussac, 1821) in the Marianas (dextral specimens were in the purchased assortment), and characteristically in the small, obscure genus *Draparnaudia* Montrouzier, 1859, centered in New Caledonia. With easy access to large numbers of the protean snails, it's not surprising that geneticists enthusiastically (and successfully) adapted *Partula* snails to their labs.

Indeed, in the tradition of Gregor Mendel's iconic pea plant, a century of research on the inheritance of these traits has earned *Partula* poster-child status of "model organism." All the aforementioned characters are for the most part genetically determined and generations of laboratory and field workers (not to mention dozens of generations of snails) have devoted valuable time and energy to the elucidation of these processes (e.g., Crampton, 1916, 1924, 1932; Murray and Clarke, 1968, 1976a, 1976b).

#### Hybridization in *Partula*

With relatively penetrable ecological and geographic boundaries between species of *Partula* cohabiting an island in the Society group, it comes as no surprise that inter-species hybrids occasionally crop up under certain conditions. Garrett (1884) recorded such cross-breeding not uncommonly between *Partula elongata* and *P. taeniata*, *P. garretti* and *P. thalia*, *P. faba* and *P. virginea*, *P. faba* and *P. radiata* (arboreal and terrestrial respectively), *P. faba* and *P. fusca*, *P. fusca* and *P. navigatoria*, as well as the latter and *P. faba* [the parent species are figured on **Plate 2**]. All these hybrids were observed on Moorea or Raiatea; Garrett made a point of reporting that none was seen on Tahiti or Huahine.

Among the shells obtained, one specimen in a suite of seven sinistral *Partula otaheitana*, a Tahiti endemic, has a very different look to it - more elongate and gracile, with a narrower aperture, more flared labrum, straighter columella with a longer fold at its apical aspect, and a more extensive parietal reflection than its lot-mates. These characters all tend toward *Samoana attenuata*, with which it occurs on Tahiti. **Fig. 5** shows a comparison of four shells, L to R: *S. attenuata*; an artificial mirror-image of the shell under discussion; the shell under discussion; and a typical *P. otaheitana* lot-mate of it. I'll let the reader decide if this constitutes a reasonable case for hybridization. *S. attenuata* lives high in the canopy, and *P. otaheitana*, while arboreal, is found much closer to the ground (Garrett, 1884). It appears that their isolation is more ecological than geographic, but what of the remote taxonomic relationship between the two putative parents? Based on the "genetic distance" between the two taxa, partulid expert Dr. Diarmaid Ó Foighil (personal communication 13 December 2011; Lee et al., 2009) is skeptical of my hypothesis. Such discord typifies the chinks in our knowledge of this wondrous group of snails.



**Fig. 8** *Le Château de Balaine* (sometimes rendered *Baleine*), home to the Adanson family, was completed in 1850 and now serves as an upscale country inn within a 20-hectare botanical garden in France.

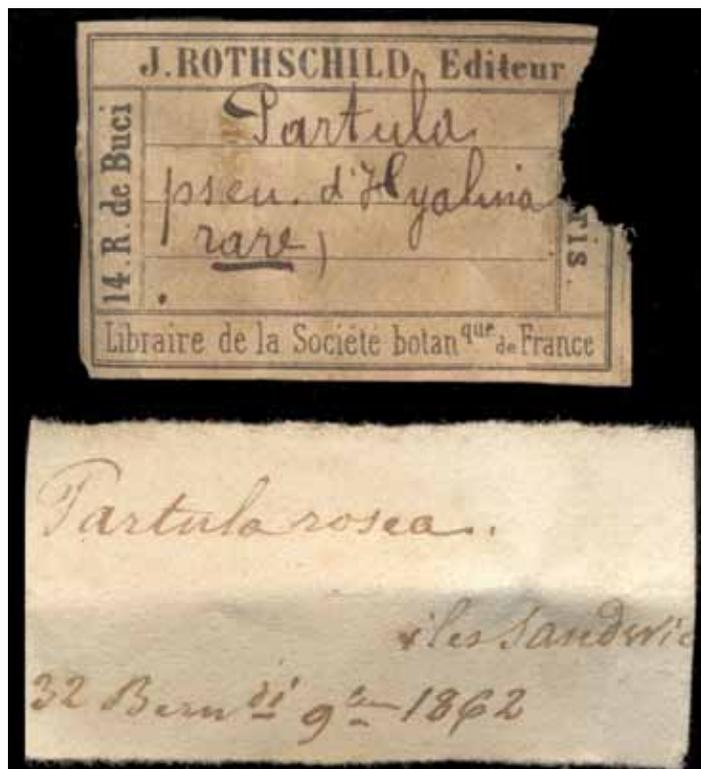
#### Man meddles with nature; Paradise Lost?

Readers are likely familiar with the far-flung introductions of the giant African snail, *Lissachatina fulica* (Bowditch, 1822), and the fragile nature of oceanic island ecosystems. The Society Islands fell prey to the invasion in the Twentieth Century and the adverse impact, most noticeably to agriculture, led to the deliberate introduction of the carnivorous rosy wolfsnail, *Euglandina rosea* (Férussac, 1821), on Tahiti in 1974, Moorea in 1977, and on other Society Islands in the 1980s and 1990s (Coote, 2007). While having little impact on the target giant African snail, this nonselective predator produced mass extirpations of partulids and the rapid extinction (in the wild) of the large majority of the 61 described endemic Society Islands partulid tree snails (4 *Samoana* and 57 *Partula* species). The impact is best documented on the island of Moorea (Clarke et al., 1984; Murray et al., 1988), where, within a decade of the arrival of *Euglandina*, all the once abundant partulids, 7 *Partula* and 2 *Samoana* species, were deemed extirpated (Murray et al., 1988; Lee et al., 2009).

There is some room for optimism, however: (1) Intensive on-going field surveys have detected scattered relict populations, seven (of the original nine) on Moorea, and several on a number of other islands (Lee et al., 2009; J. Slapcinsky, personal communication September 2011). (2) Perhaps in anticipation of the calamity, and certainly abetted by of the interest of laboratory geneticists as noted above, a number of Society Island partulids have been captive bred for decades (Coote and Loève, 2003). Attempts at reintroduction have thus far been unsuccessful, but the possibility looms on the horizon (Ó Foighil, 2009). Despite the carelessness of humanity, perhaps partulids will someday reach the level of prosperity to which Andrew Garrett and others bore historic witness.

#### The Adanson Dynasty; their scientific activities and the “Adanson Family Collection”

The primogenitor and most famous member of a noble succession of naturalists, collectors, and horticulturalists was



**Fig. 9** *Partula* data labels showing that Major Emile Doumet received these shells from J. Rothschild, Éditeur du Libraire de la Société Botanique de France, Paris, in 1862. The Rothschild source was indicated on most of the labels.

**Michel Adanson** (1727-1806) [Fig. 6]. From 1749 to 1753 “Le Savant,” as he came to be known, endured the rigors of life in Senegal, then a French colony. His charge was to observe, and gather specimens of, the biota of this wild tropical west African region. Adanson’s intention was to publish several accounts of all elements of the flora and fauna that came under his notice (Dance, 1986), but only one major iconography [Fig. 7] was produced. Fortunately for malacology, it dealt exclusively with the mollusks (Adanson, 1757). Besides being a lavishly illustrated and logically-organized iconography greatly superior to anything of its ilk that appeared earlier, it contained a novel system of classification based on the animals’ soft anatomy. Adanson also employed a system of nearly consistent binominal nomenclature using Latin and Senegalese epithets. Readers may note that the date of publication (1757) anticipated that of the Tenth Edition of the *Systema Naturae* (Linnaeus, 1758) by one year. Apparently there was considerable debate about the acceptance of Adanson’s names, the French School retaining them for some decades. Nonetheless, this work precedes the (admittedly arbitrary) beginning of zoological nomenclature (ICZN Art. 3.1), so Adanson’s names are not available, except as validated by later authors. The mild controversy notwithstanding, Adanson’s taxonomic system was a sentinel contribution to malacology, and posterity has exalted him into the pantheon of malacological Masters.

In ca. 1760 Adanson gave what was thought to be his most important shells to King Louis XV along with plants and other natural history objects collected in Senegal in return for a life annuity. It appears that the politics of the First Republic interfered with delivery of this largesse inasmuch as Michel Adanson spent



Plate 1. Classical original figures of French Polynesian *Partula* species.

L to R: [*Limax*] *faba* from Thomas Martyn (1784: pl. 67, middle two figures, of four, edited just for juxtaposition); *Partula inflata* and *P. rubescens* from Lovell Augustus Reeve (1850: pl. 1, fig. 3a; pl. 3, fig. 12 respectively); *P. stenostoma* and *P. suturalis* from Ludwig (Louis) Pfeiffer (1856: pl. 17, figs. 17, 18 respectively).

much of his later life in abject penury (M. Adanson website, 2011). It also appears this royal shell collection has been lost (Lamy, 1929). Once again fortunately for malacology, Adanson (and his heirs) actually retained the most important of the Senegal shells, including virtually all those figured in his magnum opus. These specimens were discovered in 1939 and given by Adanson's great-great-great grandson, Hugues Marie Auguste Michel de Rocquigny-Adanson (see below), to the Muséum National d'Histoire Naturelle (MNHN), Paris (Fischer-Piette et al., 1942). Also included in the donation was material gathered by Michel in various parts of France and from the West Indies, likely brought to him in Senegal by slavers. Likely his brother, **Jean-Baptiste Adanson** (1732-1804), a professional interpreter to royalty and amateur archaeologist living for a half century in Syria, Egypt, and Tunisia, accounted for the portion of material collected on those shores (Lamy, 1929; Fischer-Piette, 1942). Here follows a climb down the Adanson family tree with attention to family members sharing their antecedents' taste and talent for natural science, especially malacology.

#### Michel Adanson was:

Father of **Aglaré-Catherine Adanson Doûmet** (1775-1852), his only daughter, who in 1804 began creation of an arboretum in an area with optimal climate, soil, and terrain in the countryside 18 km from Moulins, in the Département of Allier. In 1812, at age 30, and in the wake of a divorce, she retired to the premises and began construction of a grand residence, Le Château de Balaine (sometimes rendered Baleine), completed in 1850, but with some elements said to date to the Fourteenth Century. The edifice is now an elegant country inn [Fig. 8]. The arboretum, perhaps better termed a botanical park, presently covers 20 hectares and is the largest privately-owned botanical garden in France. Continuously maintained for over 200 years, it contains 2,500 varieties of plants, including many installed by Aglaé herself. Glowing testimonials to its excellence (e.g., Anon., 1902) are many and continue to the present.

Uncle to an as yet anonymous man whom J.C.H. Crosse (1826-1898) credited with sparking his interest in shells when the latter was fifteen years of age (Poyard, 1899). All efforts by me and my

referee, Dr. D. Callen, failed to clarify this genealogical connection.

Grandfather of **Paul-Anacharsis Doûmet** (1801-1880), brother of Emile, horticulturist and botanist who directed the Arboretum at Balaine created by his mother, Aglaé.

Grandfather of **Major Emile Doûmet** (1796-1869), son of Aglaé and an accomplished conchologist and prodigious general collector, he lived and collected in Cette (rendered "Sete" after 1827), in the south of France, for much of his life and eventually accumulated collections of "all sorts" over a span of "sixty years" (Crosse and Fischer, 1870; Lamy, 1929: 316). After his death, his son, Paul-Napoléon Doûmet-Adanson, created "Le Musée" on the grounds of the Château de Balaine in 1879-1880 (Lamy, 1929: 316; Fischer-Piette et al., 1942: 109-113; Anon., 1902). The Musée was an extensive and eclectic museum containing fine and spectacular paintings, statuary, porcelains, archaeological and ethnological artifacts, Napoleon Bonaparte memorabilia, and other compelling pieces among some 200,000 objects in all, mostly accumulated by the Major (Anon., 1902).

This *Partula* assortment I received from Alain was certainly assembled by Major Emile Doûmet. It was part of a shell collection once containing over 100,000 specimens of 10,000 species already suffering from curatorial neglect a century ago (Anon., 1902). The Major almost certainly assembled this *Partula* collection in great part through purchase from, and/or exchange with, contemporaries A.C. Bernardi (d. 1863; Crosse and Fischer, 1864) and J. Rothschild, Éditeur du Libraire de la Société Botanique de France, Paris [see Fig. 9], the latter source being indicated on most of the labels [see Figs. 1, 2, 3]. These collectors apparently provided material to Emile in July 1856, Sept. 1862, and August 1864. During those times, opportunities for travel to *Partula* country were limited for a variety of reasons, there were very few field collectors, and none is thus identified on Emile's labels. Some of the Cook, Cuming, and Lesson material was probably still circulating, but clearly much newer material was flowing into the collection. Andrew Garrett hadn't seen Tahiti until several months after the first date, but he was well-traveled in the Society Islands and certainly sent much material to Pease by the two later dates. Since Pease had extensive correspondence with European

collectors (Clench, 1979), it seems the two Americans were the first links in the chain of ownership and that the bulk of material Emile was receiving had been “freshly-picked.” In further support of this scenario are the several attributions of unpublished names to Pease years before validation (Garrett, 1884) [see Fig. 3]. As for the two lots accompanying the July 1856/Bernardi provenance, if Pease wasn’t involved, perhaps they had a much earlier origin.

Great grandfather of **Paul-Napoléon Doûmet-Adanson** (1834-1897), who added to, and cared for, the collections of his father, Emile. Apparently unsuccessful at convincing the municipalities of Sete and Moulins to adopt these extensive holdings, he moved them from Sete and installed them at Balaine. At his death he left (to his family, it seems) a fine shell collection and library (Crosse, 1898). I found no evidence of any later member of the Adanson dynasty showing a particular interest in shells. Father of Marie.

Great-great grandfather of **Marie Cécile Louise Doûmet-Adanson** (1863-1892). Proprietor of the Château, Musée, and Arboretum de Balaine. Her husband, Guillaume Charles de Rocquigny (1852-1905) later added Adanson to his name. He was a well-respected botanist, horticulturist, lepidopterist, and mathematician. Father of Hugues. Host to annual meetings of the Société Scientifique de Bourbonnais.

Great-great-great grandfather of **Hugues Marie Auguste Michel de Rocquigny-Adanson** (1888-1959), son of Marie and Guillaume. In 1939, he played host to MNHN malacologist Edouard Fischer-Piette at Château de Balaine. At that time Fischer-Piette discovered Michel Adanson’s Senegal collection. Hugues released this valuable material to the Paris Museum shortly afterward (see above). At the time Hugues was placed among the accomplished naturalists descendant from Michel (Fischer-Piette *et al.*, 1942: 110). *Natica rocquignyi* Fischer-Piette, 1942, was named in his honor, probably in consideration of unselfish service to the MNHN and posterity. Hugues had four children, the two youngest of whom, François (b. 1921) and Catherine, are still living. All were at the Château when the Michel Adanson Senegal Collection was released (Fischer-Piette *et al.*, 1942).

Great-great-great-great grandfather of **Guillaume de Rocquigny** (1919-1973), second son of Hugues. Guillaume served as Proprietor of the Château, Musée, and Arboretum de Balaine and restored part of the château, and arboretum during his tenure.

Great-great-great-great-great grandfather of **Louise Courteix-Adanson**, who is serving her 39<sup>th</sup> year as Proprietor of l’ Arboretum de Balaine, having assumed that position at the time of her father’s death.

Thus, although there appears to be a prodigious shell collection at Château de Balaine, it is unlikely that any specimens that were in the hands of “Le Savant” remain. This material derives from the labors of his grandson, Major Emile Doûmet and great grandson Paul-Napoléon Doûmet-Adanson. These remnants, although vastly larger than Michel Adanson’s material in terms of diversity and any other numerical metric, are of a lesser scientific value than that which was surgically excised and placed in Paris by Fischer-Piette seventy years ago. Nonetheless, this resource at Balaine may legitimately be characterized as the “Adanson Family Collection,” a vibrant cultural asset that has survived successive monarchies, empires, and republics, and a measure of neglect hopefully to illuminate and entertain future generations.

**Plate 2 (facing page).** French Polynesian Partulidae, principally of the Society Islands. Two genera, 31 species, plus forms and subspecies arranged alphabetically: locality by island. Note \* and † below.

**Row one:** 1. *Samoana attenuata* (Pease, 1864): \*Raiatea; 2. †*Partula auriculata* Broderip, 1832: Raiatea; 3. †*P. bilineata* Pease, 1866: Tahaa; 4. †*P. callifera* L. Pfeiffer, 1856: Raiatea; 5. †*P. citrina* Pease 1866: Raiatea; 6. †*P. crassilabris* Pease, 1866: Raiatea.

**Row two:** 7. †*P. dentifera* L. Pfeiffer, 1852: Raiatea; 8. *P. dubia* Garrett, 1884: Tahiti; 9. *P. elongata* Pease, 1864: Moorea; 10. †*P. faba* (Gmelin, 1791): Raiatea; 11. †*P. fusca* Pease, 1866: Raiatea; 12. †*P. garretti* Pease, 1871: Raiatea.

**Row three:** 13. †*P. hebe* (L. Pfeiffer, 1846): Raiatea; 14. *P. hyalina* Broderip, 1832: \*Tahiti; 15. †*P. imperforata* Broderip, 1832: Raiatea; 16. *Samoana (Marquesana) inflata* (Reeve, 1842): Nuka Hiva, Marquesas; 17. †*P. lugubris* Pease, 1864: Raiatea; 18. †*P. lutea* Lesson, 1831: Bora Bora.

**Row four:** 19. †*P. navigatoria* (L. Pfeiffer, 1846): Raiatea; 20. †*P. nodosa* L. Pfeiffer, 1851: Tahiti; 21. *P. nucleola* Garrett, 1884: Moorea; 22. *P. otaheitana otaheitana* (Bruguière, 1892): Tahiti; 23. *P. o. affinis* Pease, 1867: Tahiti; 24. *P. o. lignaria* Pease, 1864, solid brown: Tahiti; 25. *P. o. lignaria* Pease, 1864, banded: Tahiti.

**Row five:** 26. *P. o. rubescens* Reeve, 1850: Tahiti; 27. *P. o. sinistrorsa* Garrett, 1884: Tahiti; 28. †*P. planilabrum* Pease, 1864: Tahaa; 29. †*P. radiata* Garrett, 1884: Raiatea; 30. †*P. rosea* Broderip, 1832, f. *zonata* Pilsbry, 1909: Huahine; 31. †*P. rosea* Broderip, 1832, f. *cognata* Garrett, 1884: Huahine.

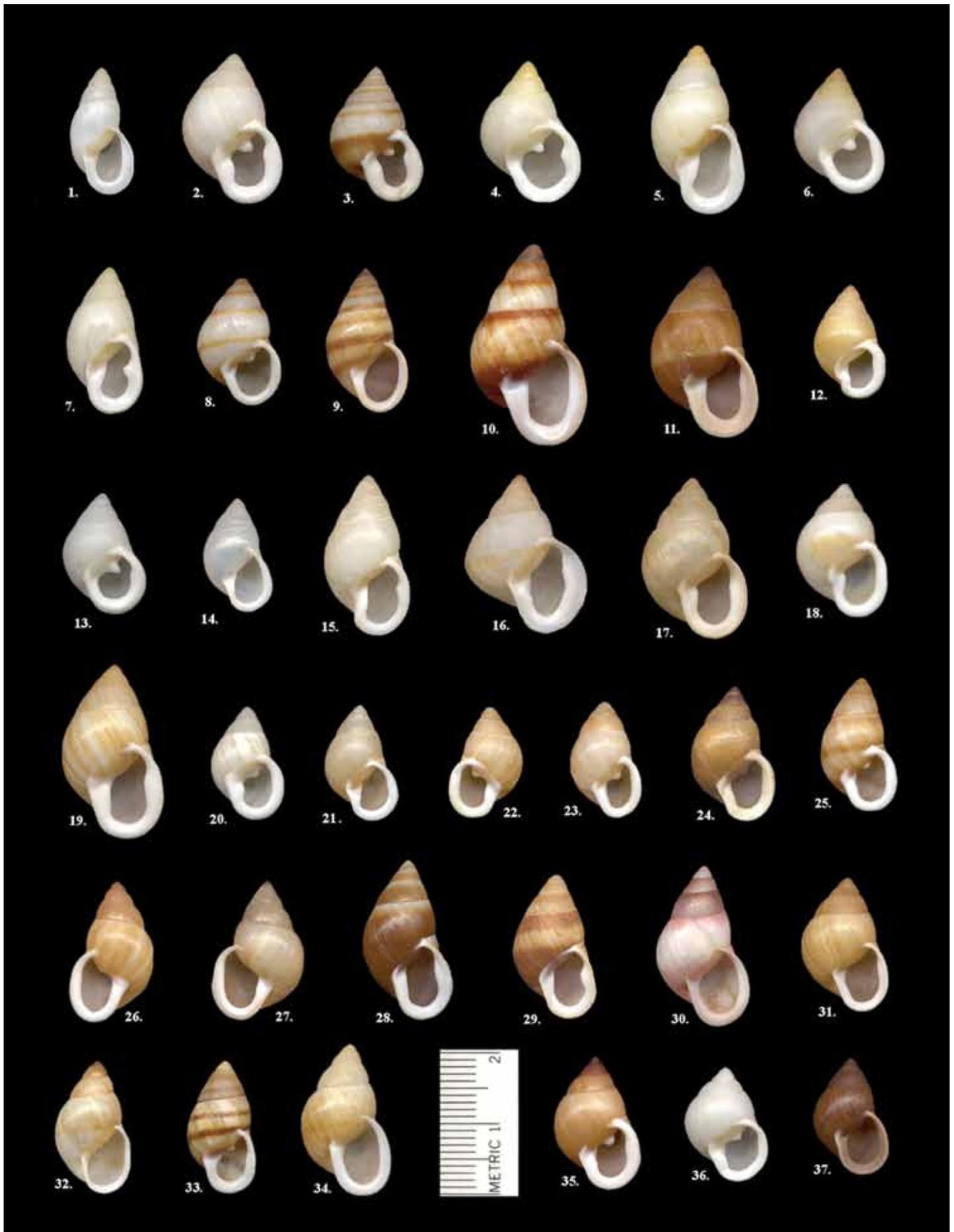
**Row six:** 32. *P. simplaria* Morelet, 1853: Huahine; 33. †*P. suturalis* L. Pfeiffer, 1855: Moorea; 34. *P. taeniata* Mørch, 1850: Moorea; 35. †*P. thalia* Garrett, 1884: Raiatea; 36. †*P. umbilicata* Pease, 1866: Tahaa; 37. †*P. varia* Broderip, 1832: Huahine.

\* indicates occurrence on at least one other island.

† indicates extinct in nature. Of the 22 species-level taxa thus indicated, four (nos. 10, 13, 30-31, and 33) survive in zoos or labs (IUCN, 2011).

### Summary and Conclusions

The acquisition of a small collection of pretty shells from far-away and long ago has compelled me to place these objects in an historical and biological context to better understand the manifold levels in which people and mollusks interact. Conchology may be a “light form of study” (Eliot, 1872: 113) to some, yet a contemporary of equal literary renown and, like Garrett before him, interred in *Partula* country, held that this form of study reaps greater rewards than those conferred by vast pecuniary riches (Stevenson, 1911: 45). The players and their works revealed in this *Partula* chronicle certainly conform far better to the latter perception.



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## SHELLS IN THE NEWS

From Josy Wiener of Boynton Beach, Florida, comes news of a display at the Ft. Lauderdale Museum of Art, titled "Journey Through Faith and Art." One of the displays is a model of a church in Amman, Jordan that is made of white marble with inlaid polished sea shells around the windows and doors. The model is made of inlaid shell pieces. The shells are *Haliotis iris* Gmelin, 1791, also called the paua or blackfoot paua, a New Zealand endemic renowned for its blue and silver nacre and often used for jewelry. (Photo credit unknown.)



From Ed Sossen of Hollywood, Florida, as printed in the Broward Shell Club newsletter, *The Busycon*, comes this, "Ed was recently at an antique show in Miami where he noticed a tiger cowrie - a common \$1.00 "bin shell" on a dealer's table with a price tag of \$200! When Ed asked

why the high price the dealer replied... 'Well, just look at the quality, they don't make them like that anymore.' Buyer beware." (Photo from Wikipedia.com.)

The July 2011 issue of *Scientific American* reported snails being sold in Paris, in which a land snail shell is purchased from "dustmen and ragpickers" and then stuffed with "lights



or cats' meat," cut into a corkscrew form to fit the shell. The fake escargot is sealed with fat and sold to unsuspecting consumers. On Conch-L, David Campbell pointed out that "cats' meat" is actually meat intended for cats, rather than the meat of cats. Dick Petit then added that "lights" are lungs. As a closing comment, David Campbell stated the basic principle that, "...anything with enough garlic butter will taste like garlic butter sauce." (Photo from Wikipedia.com.)