

Collecting Freshwater Molluscs from the Vicinity of Arawa, Bougainville Is., Papua New Guinea

by Pete Cresswell - Photos by Dee Cresswell

Bougainville Island, politically in Papua New Guinea, but physically and ethnically aligned to the Solomon Islands, lies between 5°30' and 6°90'S and 154°.40' and 156°E. It is a mountainous, densely wooded, well watered island with two active volcanoes and many, many earthquakes – mostly quite small.

For the decade ending 1997, a civil war raged and much of the infrastructure was destroyed. Even now some roads are barred to free travel and areas once free to foreign visitors are now “no-go” zones. Collecting freshwater mollusks is, therefore, confined to the eastern edge and some of the immediate, more physically accessible, hinterland. Even so, over the past 18 months, my wife and I have been able to get a pretty fair idea of what is in the rivers and streams. The few lakes are, as yet, out of our reach.

Most of the freshwater species are small and usually coated with a black fungus-like growth. They are easily overlooked living on or under boulders, but quite visible on sand, where their trails readily give them away. Neritidae and Thiariidae are the dominant families. Species differ markedly between those which inhabit estuarine brackish water, those found within a few hundred meters of the sea and those from the more elevated, inland habitats.



Rorovana Lagoon is 15 kilometers north of Arawa. The lagoon empties to extensive sand/mud flats and shallow streams at low tide. That is the author checking out the molluscan potential.

and rivers within a few kilometers of Arawa, is *Septaria porcellana* (Linné, 1758). This attaches itself to stones in any part of the river or stream and, during flooding, moves to the underside of boulders. Its suction ability can be extremely strong. Invariably found with this species is *Neritina asperculata* Recluz, 1843, which is very sensitive to an approaching hand and will fall off a stone well before being touched.

In the smaller, stony streams there are three other species. *Clithon corona* (Linné, 1758), with its characteristic long, delicately curved spines, can be found on stones, sunken wood or the undersides of large leaves. The thiarids, *Thiara cancellata* (Röding, 1794) and *Melanoides plicaria* (Born, 1778), dominate the molluscan fauna of sand and fine gravels. The latter is quite extraordinary in its ability to repopulate a creek section. After a heavy flood, none can be found – all, presumably, having been washed out to sea. Within a month, tens of thousands of immature specimens swarm over and in the sand; within 2-3 months a high proportion of these have reached a respectable adult size, upwards of 15-20 mm. They can reach 40-45 mm.



The Baroka Stream is about 4 kilometers south of Arawa. The photo was taken in early June and shows a section of the stream 30-40 meters up from its mouth. The trees fell into the water some months ago.

The first locality harbors such species as *Clithon oualaniensis* (Lesson, 1831), *Clithon faba* (Sowerby, 1836), *Sermyla riqueti* (Grateloup, 1840), *Faunus ater* (Linné, 1758) and the pyramidellid, *Puposyrnola basistiata* Robba et. al., 2003, dominating the molluscan fauna. Of course there are others. Members of the Ostreidae, Naticidae and Psammobiidae families are really marine, but intrude into the estuarine area, which is well infused with fresh water. Most of these species are small and most live amongst the coarse sand and gravels, with a few extending to rocks and sunken wood.

Further upstream, not far from the saltwater influence, are found a range of new species – all of which are nerites and thiarids. The most widespread, found in just about all of the dozen or so streams



Another surprising re-colonizer is *Septaria lineata* (Lamarck, 1816), a limpet-like member of the Neritidae, which, in two months, populated partially submerged timber from trees, which collapsed into the Baroka Stream. Some of the specimens collected had reached an astonishing 24mm.

Well away from any saltwater influence and extending up over 600m in elevation, the highest collected at, another range of nerites dominates. *Septaria sanguinsuga* (Reeve, 1856) was found adhering to smooth boulders in fast flowing streams. Also on large boulders, but in deep pools, is *Nerita porcata* Gould, 1847. In finer gravels, *Clithon olivaceus* (Recluz, 1843) can be abundant.

These listed species and these environments are by no means exhaustive, there being many more collected and awaiting determination. From a swamp some 15 km north of Arawa comes a bizarre thiarid, likely to be undescribed. The problem in searching here is that it is also home to some rather mean crocodiles – which can be discouraging to bare-footed, bare-legged collectors.