

Table 1. Discoveries of Islands in 1675.

Temporary Names [Proper Names]	Foreign Names	Foreign Discoveries
Iwa [Smith Island]	Smith Island	1851 by the British
Maru-shima [Tori-shima]	Ponafidin Island	1821 by the Russian
Iwa [Sofu-gan]	Lot's Wife	1788 by the British
Kaya-shima [Nishino-shima]	Rosario Island	1702 by the Spanish

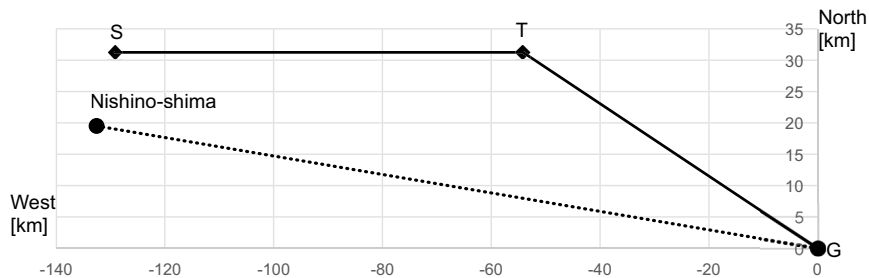


Fig. 4. Orientation towards Nishino-shima and the Expeditors' Route (S-T-G) from Chichi-jima (G).

The distance between Nishino-shima and the starting point S is about 12 [km]. At the elevation of 8 [m] over the sea level, the radius of the skyline exceeds 10 [km]. If the lookout is 20 [m] high, then the radius of the skyline is about 16 [km]. On the other hand, the elevation of Nishino-shima is 25 [m]. Therefore, sailors can observe Nishino-shima at the distance of 20–30 [km].

In conclusion, Nishino-shima is the round islet that the expeditors saw on the morning of 23 June. It is, however, the shame that they misplaced Nishino-shima upon the turning point T in their maps.

Positions are projected upon the tangent plane at G.

The last topic is the natural history. One purpose of the Shogunate expedition is the survey of natural resources in the Bonin Islands. The expeditors brought back the following samples to Edo: minerals, corals, woods, timbers as well as the living specimens of the flora and the fauna. In particular, Japanese scholars unanimously recognise birds and a bat species, as follows, presented at Shogun Ietsuna in Edo Castle on 12 August 1675 (Akioka, 1971): Brown Booby (rare in Japan proper), Rufous Night Heron (endemic subspecies, now extinct), Purple Swampen (now extinct), Ogasawara Island Honeyeater (endemic, the contemporary colour sketch of *these specimens* extant), Ogasawara Island Grosbeak (endemic, now extinct) and Bonin Flying Fox (endemic). This list reveals the fact that commanders are keen naturalists.

The most astonishing discovery is Purple Swampen as shown in Fig. 5, because this species cannot be found today in any parts of Japan. Purple Swampen is a cosmopolitan species found in Europe, Africa, Madagascar, Asia and Australasia. The nearest population exists in Palau (subspecies *Porphyrio porphyrio pelewensis* Hartlaub & Finsch, 1872). Description in the Togai's and other manuscripts is summarised as follows:

Looks like Moorhen with red beaks, black plumage as a whole, purple breast and flank, red legs.



Fig. 5. Purple Swampen.

Overall information pinpoints the species that is Purple Swampen. European naturalists, visited the Bonin Islands in early 19C, never reported any sign of this species, and hence this species must have disappeared during 18C.

4. Concluding Remarks

From Tenri Central Library I dug up the Togai codex that is the report of the Tokugawa-Shogunate expedition to the Bonin Islands in 1675.

This codex is the unique specimen having both two maps and a manuscript as a set.

Two maps are displayed for the first time in 333 years.

It is revealed to the world that the Shogunate expeditors discovered four islands on their way to the Bonin Islands. All the discoveries are the first historic records. Four islands are Smith Island, Tori-shima, Sofu-gan and Nishino-shima (rigorous proof provided).