The Fruits of Bakoa nakamotoi

by Peter C. Boyce and Wong Sin Yeng

ABSTRACT

The infructescences and fruits of Bakoa nakamotoi S.Y. Wong are described and illustrated for the first time. The fruits are shown to be dehiscent berries, the first such recorded example for the Araceae.

Bakoa nakamotoi S.Y. Wong is a recently described obligate rheophyte endemic to West Kalimantan, Indonesian Borneo. In habitat B. nakamotoi occurs on vertical shale waterfalls, where for much of the year it is in the water stream (Fig. 1). The species is well-adapted to this ecology, with very narrow, tough, leathery pendent leaf blades, and an extensive root system securing the plants. Unlike many rheophytic Schismatoglotideae, species of Bakoa lack the ability to disarticulate the leafy shoot from the roots at periods of high water spate and appear instead to rely on very strongly adhering root systems.

When B. nakamotoi was described the infructescence and fruits were unknown (Wong & Boyce, 2012). However, based on the morphology of the inflorescences it was speculated that these would closely resemble those of Bakoa lucens (Bogner) P.C. Boyce & S.Y. Wong (Boyce & Wong, 2008).

In the past few months several different clones of B. nakamotoi have flowered in cultivation (Figs. 2 & 2a) and been observed to have developing infructescences (Fig. 3). It was soon apparent that the developing infructescences differed from those of B. lucens by the spathe remaining white (the spathe of B. lucens turns green soon after successful pollination – Fig. 4), and by the slender shape. It was also noted that the peduncle remained declinate. Approximately four weeks after flowering several of the infructescences opened by reflexing of the adnate spadix, causing the spathe to split and reflex, effectively turning it inside-out to display the ripe fruits (Fig. 5). These movements are much in accordance with observations of B. lucens, but with two significant differences. First, the spathe of B. nakamotoi remained white even after opening, whereas as noted the spathe of B. lucens changes to green, and just prior to dehiscence turns brown (Fig. 6). Secondly, and remarkably, the berries of B. nakamotoi were observed to open from the base, with the pericarp of each berry tearing into several irregular segments that curl upwards to release the pericarp from the attachment point on the spadix. The shedding of the now star-shaped pericarp exposes the seeds attached to a basal annuliform placenta (Fig. 7). This is in marked contrast to the ripe fruits of B. lucens in which the pericarp dries onto the seeds, with each fruit functioning as a (potentially wind-dispersed) caryopsis. (Fig. 8.)
**Conclusions**

Bakoa, a genus of only three described species, provides two unique fruit morphologies for the Araceae. In *Bakoa lucens* ripe fruits are a caryopsis and there is the possibility of wind-dispersal; here newly recorded dehiscent berries of *B. nakamotoi* are recorded.

**Literature Cited**


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