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## Record of point endemic *Balanocarpus kitulgallensis* Kosterm and its morphological affinities with related species

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### Abstract

*Balanocarpus kitulgallensis* Kosterm. (Family Dipterocarpaceae) is a point endemic, critically endangered tree species first recorded from the type locality Kithulgala, Sri Lanka in 1992 by Kostermans. However, since its discovery this species has not been observed at the recorded locality and considered to be an extinct species or misidentified with another Dipterocarp. The type specimen or any collections of *B. kitulgallensis* are not available at the National Herbarium Peradeniya at present. Taxonomy of this species also has been contradictory. This study focused on the confirmation of the record and the taxonomic status of *B. kitulgallensis* and assessing its morphological characters with closely related coexisting species.

Field sampling was conducted mainly in the Kithulgala, Sinharaja, Dolukanda and Kanneliya Forest Reserves during January to May 2009. A detailed morphological analysis was performed using *B. kitulgallensis* and several other closely related species; *Balanocarpus brevipetiolaris*, *Hopea jucunda* and *Hopea modesta*. Most distinct vegetative and reproductive characters were recorded and scored. Cluster analysis and principal component analysis was carried out using PC-ORD v 4.0.

A viable population of *B. kitulgallensis* was observed at the same previously recorded location, near 'Makulu Ella' across the Kelaniya river opposite to the Kithulgala Resthouse (6.988895°N, 80.401873°E). Recorded population consists of over 150 individuals and most of the individuals were in the seedling and sapling stage. Only a few mature individuals were observed in fruiting stage. Vegetative and reproductive characters of the recorded specimens confirmed the present taxonomic status of *B. kitulgallensis* and rejected its placement in the genus *Hopea* of Dipterocarpaceae. Analysis revealed the high vegetative morphological similarity between *B. kitulgallensis* and *Hopea modesta*, a Dipterocarp species that coexists at the same locality. However, fruit characters of these two species are very important for accurate identification of these species in the field. Results of the study also provide evidence that vegetative characters can mislead accurate species identification of the Dipterocarp species in Sri Lanka.

**Key words:** *Balanocarpus kitulgallensis*, *Hopea*, Dipterocarpaceae, Sri Lanka