

Redescription and lectotypification of *Biophytum insigne* (Oxalidaceae), an endangered, endemic species of India

Sivadasan M. & A.E. Shanavas Khan



How to cite:

Sivadasan M. & A.E. Shanavas Khan 1994. Redescription and lectotypification of *Biophytum insigne* (Oxalidaceae), an endangered, endemic species of India. *Rheedea* 4(1): 65–69.

https://dx.doi.org/10.22244/rheedea.1994.04.01.13

Published in print: 30.06.1994

Published Online: 01.01.2022

(Rheedea

Redescription and lectotypification of *Biophytum insigne* (Oxalidaceae), an endangered, endemic species of India

M. Sivadasan

Department of Botany, University of Calicut, Calicut University P. O. - 673 635, Kerala, India and

A. E. Shanavas Khan

Tropical Botanic Garden & Research Institute, Palode P. O. Trivandrum - 695562, Kerala, India

Abstract

Biophytum insigne Gamble (Oxalidaceae), has been collected more than sixty five years after its first collection. Detailed description with illustrations, and lectotypification of this rare, endangered and endemic species with notes on an unusual mode of proliferation are provided.

The genus *Biophytum* DC. is a pantropical one in which species delimitation is rather difficult. Consequently, the number of species recognised ranges from 50 (Mabberley, 1987) to around 70 (Veldkamp, 1971, 1989). In India, it is reported to have 15 species and 2 varieties of which *B. insigne* is a rare taxon, endemic to southern Western Ghats.

B. insigne was originally described by Gamble (1921) based on collections made during 1917-1921 from 'Tinnevelly' Hills in Tamilnadu. The latest known collection of this species was made by Barnes in 1933 from the same area. Consequently, we have little idea about this species, except what has been given in the protologue. Knuth (1930) in his revision of the family has not even included it.

During our exploration of the Western Ghats in Kerala, however, we rediscovered it in 1984 from Kulathupuzha forests of Quilon District, where it was found growing on moist rocks along the sides of a stream in evergreen forest. Collected after a lapse of more than 60 years, this is the first ever record of this species outside the type locality. This rare population was discovered in the catchment area of the proposed Thenmala Dam and since then we have not been able to collect it from elsewhere. Now that the Dam has come up and the

M. Sivadasan and A. E. Shanavas Khan

area submerged, it is feared that this taxon might have also vanished for good Because this is a little known taxon, an elaborate redescription and illustrations are provided here.

Biophytum insigne Gamble, Kew Bull. 1921: 216. 1921; Fischer in Gamble, Fl. Pres. Madras 1868. 1935, ("insignis"); Vajravelu in Nair & Henry, Fl. Tamilnadu Ser. 1, 1: 50. 1983. (Fig. 1)

Erect woody perennials; stem short, stout, branched at base, ca. 4-8 cm long. Leaves paripinnate, apparently tufted towards the tip of branches; rachis 8-16 cm long, pulvinate, mucronate beyond the end pair of leaflets, tomentose; leaflets 5-8 pairs, $1-2.5 \text{ cm} \times 6-7.5 \text{ mm}$; lowest pair at about one-third above the base of the rachis, opposite, subsessile, ovate-oblong, base oblique, apex mucronate; the end-pair with acroscopical half cuneate at base, the basiscopical half rounded; tomentose when young, glabrous at maturity except the veins on the dorsal side; stipules setaceous, ca. 5 mm long, hairy.

Pseudo-umbels with 8–12 flowers; peduncles 12–18 cm long, strigose; torus in fruits cylindric, upto 12 by 3.5 mm. Bracts ovate-lanceolate, to *ca*. 3 mm long; pedicels *ca*. 6 mm long, srigose, non-articulated at base. Flowers *ca*. 6–10 mm in diam. Sepals ovate lanceolate, *ca*. 3–5 mm long, acuminate, strigose. Corolla companulate, petals yellow, coherent just above the clawed base, free above, each *ca*. 1.2 cm long and *ca*. 4 mm broad at tip, apex emarginate, 5-veined, central one prominent. Stamens 10, 5 long and 5 short, filaments of the longer stamens *ca*. 3–4 mm long with a slight bend and a projection at the middle, tomentose only on the upper half, sparse on the inner side; filaments *ca*. 2–2.5 mm long, glabrous. Carpels with style less than 1 mm long; stigma bifid; ovules 1–2 (usually 2) with beaked micropylar end, axile, superposed in alternate positions. Seed 1 per carpel, 1 mm long and 0.7 mm diam., subspirally tubercled.

Biophytum insigne is quite distinct from all other Indian species in having large leaflets and elongated 'torus'. In some specimens, the long-peduncled bracteate pseudo-umbels develop into a vegetative shoct after flowering. The transformed shoot serves as propagule which develop into new plant and continue to grow either remaining on the mother plant or on the soil after it gets detached. Such an unique phenomenon of proliferation is unknown for the genus.

Specimens examined: Tamilnadu State, Tirunelveli ('Tinnevelly') Kodamadi, Shola forests, Mar. 15, 1917, Rangachari s n. Madras Herbarium 14618 (MH, K*); *ibid.*, Feb. 6, 1921, Jacob s.n. Madras Herbarium 14618 (MH, K*); 'Tinnevelly Hills', Feb. 6, 1921, Cherian Jacob s. n.,

66





Fig. 1, a-g *Biophytum insigne* Gamble. a. Habit; b. A. portion of leaf with two leaflets-dorsat side; c. Inflorescence, d. Single flower, e. Sepal-dorsal side; f. L. S. of flower with petals removed; g. Seed.

M, Sivadasan and A. E. Shanavas Khan

Acc. no. 16780 (18 Sheets (MH); 'Tinnevelly', Near Kodamadi, Jan. 3, 1933, *Barnes 133* (MH); 'Tinnevelly' Feb. 6, 1921, *Anonymous* (Presumably C. Jacob) *s n*, Acc. No. 58701 (MH); Kerala State, Quilon Dist., Kulathupuzha, Mamoodu, 390 m, Jun., 1984, *Shanavas Khan & Mathew 2596* (TBGT, L). (*Examined only the Cibachrome photographs of the specimens).

LECTOTYPIFICATION

Gamble (1921) did not designate a type, but simply mentioned specimens bearing Madras Herbarium No. 14618 which as stated, belong to two different and independent collections, one by Rangachari on March 15, 1917, the other by K. Cherian Jacob ('C. C. Jacob') on February 6, 1921. From these a lectotype must be chosen.

Four specimens are available at Kew, all bearing Madras Herbarium No. 14618. Of these, one specimen was collected by Rangachari on 15 March, 1917 and bears the label 'SYNTYPE'. This label seems to have been added at a later date, obviously not by Gamble. Two other specimens were collected by 'C. Jacob' (K. Cherian Jacob) on Feb. 6, 1921. The fourth specimen dose not bear the name of the collector, but is dated "Feb. 6, 1921", and hence it also is pre-sumed to have been collected by Jacob.

In the Madras Herbarium (MH) at Coimbatore (India) there are four specimens labelled 'TYPE'. Three with the accession numbers 7269, 7280 and 7281 were collected by 'C Jacob' on 6th Feb., 1921. They all have the collection number 'Madras Herbarium 14618'. The fourth specimen with accession number 58701 is also labelled as a 'type' but does not bear the name of a collector. But as it was collected on 6th Feb., 1921 presumbly this was also collected by C. Jacob. In addition to the above four specimens there are 19 more herbarium specimens bearing number 16780, also collected by K. Cherian Jacob on 6th Feb., 1921. In view of date, collector and locality, they obviously come from the same population. The numbering might have been done when the specimens were mounted, or inserted. Only those with the number 14618 qualify for lectotypification. We hereby select one of C. Jacob's specimen which fully agree with the description given in the protologue as the lectotype of *Biophytum insigne* Gamble. The details of the specimen are given below.

Tamilnadu State, Tirunelveli ('Tinnavelly') Dist., Kodamady, Shola forests, Feb. 6, 1921, C. Jacob s. n. MH 14618 (Acc. No. 7269) (MH).

Acknowledgements

We wish to thank Dr. P. Pushpangadan, Director, Tropical Botanic

Rheedea 4 (1): 1994

Redescription and lectotypification of Biophytum insigne

Garden & Research Institute, Trivandrum for encouragements, Dr. J. F. Veldkamp, Rijsherbarium, Leiden, for prompting us to prepare this article in view of the limited knowledge of the species and for detailed critical review of the MS. Sincere thanks are also due to Dr. Dan H. Nicolson, Department of Botany Smithsonian Institution, Washington D. C., U. S. A. for review of the MS, Drs⁴ Simon J. Mayo and Peter Boyce, Royal Botanic Gardens, Kew, for sending us cibachrome photographs of specimens available at K, and to Mr. K. P. Pradeep Kumar for illustartions.

Literature cited

Gamble, J. S. 1921. Biophytum insigne. Kew Bull. 1921: 216.

Knuth, R. 1930. Oxalidaceae. In: A. Engler & K. Prantl (Eds), Das Pflanzenreich. Berlin. IV, 130: 392-397.

Mabberley, D. J. 1987. The Plant-Book. Cambridge.

Veldkamp, J. F. 1971. Oxalidaceae In: C. G. G. van Steenis (Ed.) Flora Malesiana, Leiden. Ser. 1, 7(1): 151-178.

Veldkamp, J. F. 1989. Notes on Biophytum (Oxalidaceae) of the Old World. Taxon 38: 110-116.