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URARIOPSIS REDUCED TO URARIA (LEGUMINOSAE-PAPILIONOIDEAE)

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SUMMARY

The monotypic genus *Urariopsis*, based on *Uraria cordifolia* Wall., has been compared with several S.E. Asiatic species of *Uraria*. The species *Uraria prunellaefolia*, *U. collettii*, and *U. barbata* are considered to be most closely related to *U. cordifolia*. The pods of *U. cordifolia* and *U. collettii* consist of longitudinally flattened, peltate loments, those of *U. prunellaefolia* consist of laterally flattened, longitudinally arranged loments; in the other species the loments are laterally flattened and zig-zag folded. No correlating characters were found, and the differences in shape of the pods are not considered sufficient ground to distinguish groups on generic level. Notes on morphology, nomenclature, and geographic distribution are presented.

ACKNOWLEDGEMENTS

This study is an addition to the precursory treatment by van Meeuwen (1961), and was carried out to gain more detailed information of the generic boundaries of *Uraria* and *Urariopsis* for a second version of the key to the genera published by Geesink (1978). Thanks are due to Prof. Dr. C. Kalkman and Dr. W. Vink for their remarks on various points.

Besides the material present in the collections of the Rijksherbarium, type material of some species was borrowed from the Herbarium of the Royal Botanic Gardens, Kew. We feel indebted to Dr. R. M. Polhill who drew our attention to the nomenclatural confusion around *Uraria latifolia*, and we are thankful for his interest.

INTRODUCTION

Schindler (1916) described the monotypic genus *Urariopsis*, based upon *Uraria cordifolia* Wall., probably mainly because of the peculiar shape of the pod. This view has been followed by Gagnepain (1920), van Meeuwen (1961), and Backer & Bakhuizen van den Brink (1963). Craib (1928) listed the species under the name *Uraria latifolia* Prain, which is here considered a synonym of *U. cordifolia* Wall., and he referred under this species to Schindler's taxonomic view. Geesink (1978) did not include the genus *Urariopsis* in his key to the genera of S. E. Asiatic *Leguminosae-Faboideae*, pending the results of the present study.

THE POD IN URARIA

As far as we have observed, the bulk of the species in *Uraria* share a peculiar character of the pod, viz. the arrangement of the loments in a zig-zag pattern (fig. 1a). This arrangement occurs also in the closely related genus *Christia*. Three

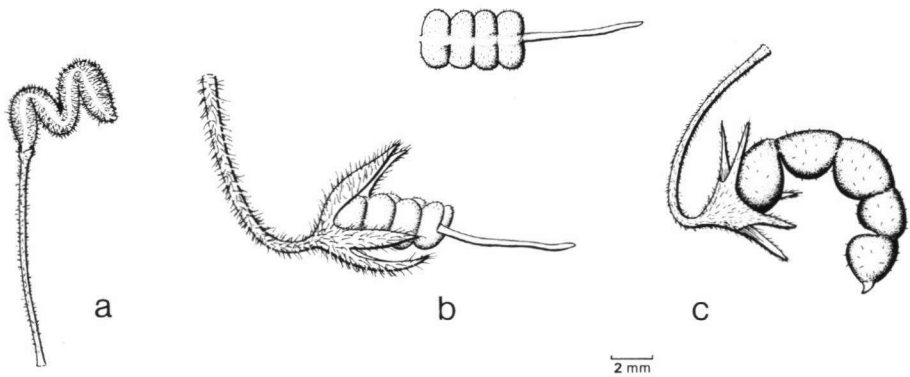

Fig. 1. Pods in *Uraria*. – a. *U. barbata* Lace, dorsal view. (*Meebold 7579*); b. *U. cordifolia* Wall., lateral and dorsal view (*Geesink c.s. 5847*); c. *U. prunellaefolia* [Wall. *ex*] Baker, lateral view (*C. B. Clarke 26521*).

species, however, have a different pod shape: 1). *U. prunellaefolia* has a straight pod (fig. 1c), of about the same shape as in several species of *Desmodium*, and this species may form a link with with the latter genus; 2). *U. collettii* and 3). *U. cordifolia* with the same deviating shape of pod. Here the loments are longitudinally flattened and connected centrally on the facing flat sides (like a pile of coins, which are connected by their central points, fig. 1b). In these two species the arrangement of the seeds is equal to the normal pattern in *Uraria*, the subsequent micropylar sides being alternately directed to left and right, and we consider the longitudinally compressed pod a variant of the usual zig-zag pattern. This peculiar shape of the pod is unique within the genus *Uraria*, but the taxonomic interpretation of such deviating features remains rather a matter of taste. If considered a sound base for distinction of genera, then *U. prunellaefolia* consequently deserves also different generic status, and *U. collettii* needs then to be included in *Urariopsis*. Schindler (1925) reduced the latter species to a variety of *U. cordifolia*, an opinion which we do not support.

METHODS AND DISCUSSION

The characters of *U. cordifolia* were compared with those of selected species which from descriptions showed at least some resemblance with *U. cordifolia*. A thorough study of all known species of *Uraria* was not performed. From these selected species herbarium material was analysed, and characters were tabulated. An abridged version of the table is depicted as table 1, containing selected characters which seemed promising for generic distinction or infrageneric subdivision. From the table it is apparent that with this selection of species and characters no subdivisions can be made on the basis of sets of correlating characters. The absence

Table 1. *Uraria cordifolia* compared with some selected species of *Uraria* on account of selected characters. Pod type 1: loments longitudinally flattened, peltately connected. Pod type 2: loments laterally flattened and longitudinally arranged. Pod type 3: loments laterally flattened and zig-zag folded.

	Number of leaflets	Lamina shape	Number lateral nerves of leaf(lets)	Hooked hairs on undersurface of leaf(lets)	Inflorescence	Calyx, dorsal lobe	Calyx, lateral lobe	Calyx, ventral lobe	Number ovules	Pod type
U. cordifolia	1	broadly elliptic	8-9	0	raceme	narrowly triangular	narrowly triangular	narrowly triangular	3-4	1
U. collettii	1	elliptic acuminate	8-10	0	panicle	triangular	triangular	triangular	4	1
U. prumellaefolia	1	broadly elliptic	7-9	+	raceme	triangular	triangular	narrowly triangular	3-4	2
U. barbata	1(-3)	broadly elliptic	11-12	+	raceme	narrowly triangular	narrowly triangular	narrowly triangular	7	3
U. acaulis	1	about orbicular	10-12	+	dense raceme	shortly triangular two-tipped	linear	linear	1	?
U. acuminata	(7-)9-11	narrowly elliptic	9-10	?	dense raceme	acuminate	acuminate	acuminate	4	3
U. candida	3-5	elliptic to oblong	7-11(-13)	+	dense raceme	triangular	narrowly triangular	narrowly triangular	7	3
U. clarkei	3	obovate	12-15	?	compound panicle	?	triangular	triangular	6-8	3
U. crinita	5-7(-9)	narrowly elliptic	7-10	+	dense raceme	narrowly elliptic	narrowly triangular	narrowly triangular	7	3
U. lagopodoides	1-3	elliptic	6-7	+	dense raceme	?	linear	linear	2	3
U. macrostachya	6-9	elliptic to narrowly ovate	7-8	+	raceme	triangular	narrowly triangular	narrowly triangular	?	3
U. picta	3-7(-9)	linear	9-11	+	dense raceme	?	?	?	5	3
U. rufescens	3	elliptic to narrowly elliptic	9-16	0	panicle	narrowly triangular	narrowly triangular	narrowly triangular	7	3

or presence of the hook-tipped hairs on the undersurface of the leaf(lets) is not correlated with the number of leaflets or with the pod type.

The genera most closely related to *Uraria* are probably *Dendrolobium* (*Desmodium* sect. *Dendrolobium*) and *Christia*. Both genera share with *Uraria* a relatively simple inflorescence, a panicle or a terminal and/or axillary raceme. *Dendrolobium* has a straight pod (as *U. prunellaefolia*) with constrictions between each pair of seeds, but the loments are thick and corky (thin membranous in *Uraria*). In *Dendrolobium* the raceme is lax (usually dense in *Uraria*), the pedicels straight (in *Uraria* usually curved in fruit), and the calyx is not accrescent. *Christia* has a zig-zag folded pod (as in most species of *Uraria*). The raceme is terminal and lax, and the pedicels straight. The calyx is accrescent. *Uraria* differs thus only from *Christia* in the latter character.

In our opinion, foundation of genera exclusively upon one character is undesirable and leads to inflation of taxa. If somebody nevertheless feels inclined to do so, *U. collettii* needs to be included in *Urariopsis* and *U. prunellaefolia* deserves either generic status of its own, or inclusion in *Dendrolobium* could be considered, with the eventual disadvantage that *Dendrolobium* is extended with the typical inflorescence of *Uraria*. Then the basis of generic distinction becomes very weak.

Possibly phylogenetic weighting of characters can be of use in this complex group of genera, but then all genera of the *Desmodieae* need to be studied, which is beyond the scope of the present study. For the same reason we refrain from suggesting an infrageneric subdivision of *Uraria*, as a full monographic study of this genus and surrounding genera is needed for this purpose.

GEOGRAPHICAL DISTRIBUTION

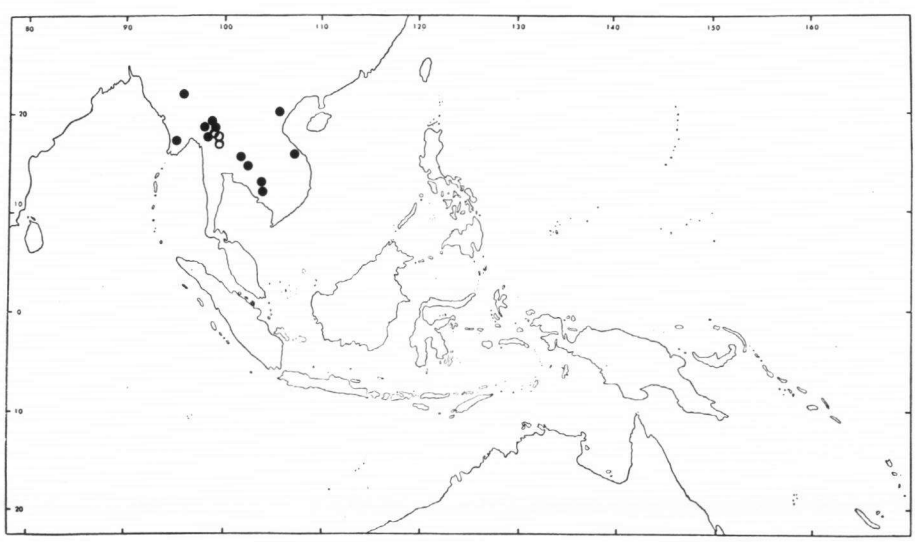

Fig. 2. Distribution of *Uraria cordifolia* Wall. – ● = localities from observed herbarium material; o = localities from reliable literature.

Uraria cordifolia occurs in Burma, Thailand, Laos, Cambodia, and Vietnam. (fig. 2). The species was also recorded from Madura by Backer & Bakh. *f.* (1963), but the material appeared to be wrongly identified. It belongs most probably to *U. candida* Backer, known from the Kangean Archipel and from Wetar. The material from Madura has unifoliolate leaves, whereas the material from Kangean Archipel and Wetar is 3 – 5-foliolate. The indument, inflorescence, and nervature are distinctly similar, and in our opinion the extension of the description of *U. candida* with unifoliolate leaves and of its geographical distribution does not essentially change its circumscription.

NOMENCLATURAL NOTE

Uraria cordifolia is described (and depicted) by Wallich (1830). The protologue, however, is heterogeneous. The syntypes, in the original description only indirectly referred to by their localities, are: *Wall. Cat. 5679 A* from Irrawaddi (called '*U. cordata*' in the Catalogue), in fruit; *5679 B* from Taong Dong, in flower; and *5679 C*, cultivated material from the Botanical Gardens Calcutta derived from collection *5679 B*.

In the Catalogue the latter 2 collections are listed under '*Uraria cordata* var. *barbata*'. In the description Wallich (1830) doubted whether he should regard these collections as a variety or as a distinct species without mentioning the epithet '*barbata*'. The Catalogue numbers are not referred to either, but we consider the mentioned localities indirect references to them. In this situation it is evident that *5679 A* is the holotype of the species *U. cordifolia.*

Plate 37 in Wallich (1830) is a mixture of these two or three collections; the inflorescence is from *5679 B*, and the separately inserted infrutescence is from *5679 A*. The vegetative part is not identifiable with certainty, but possibly from either *5679 B* or *C*.

Prain (1897) described *Uraria latifolia*, based upon later collected material (*King's Collector s.n.*, Fort Stedman, Burma, K!) and he noted that the plant resembles *U. cordifolia* very much, but that the inflorescences are different. He was unaware of the heterogeneity of the basis of Wallich's description and compared his newly described species only with *Wall. Cat. 5679 B* and *C*, which are indeed the most dominant parts of Wallich's plate. The type specimen is without doubt conspecific with *Wall. Cat. 5679 A* and consequently *U. latifolia* must be considered a heterotypic synonym of *U. cordifolia* Wall.

Lace (1915) described *Uraria barbata* based upon *Wall. Cat. 5679 B* and *C*, and clearly indicated the differences between this species and *U. cordifolia. Wall. Cat. 5679 B* is presently chosen as the lectotype. On variety-level no valid publication has been found by us.

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