Neoschumannia (including Swynnertonia), a primitive genus of the Asclepiadaceae-Stapelieae

U. Meve

Received December 12, 1994, in revised version January 19, 1995

Key words: Asclepiadaceae, Stapelieae, Ceropegiae, Brachystelma, Caralluma, Ceropegia, Neoschumannia, Swynnertonia. – Morphology, taxonomy. – Flora of East Africa, West Africa.

Abstract: A comparison of the West African Neoschumannia SchLTR. and the East African Swynnertonia S. Moore reveals that the two monotypic genera must be united. Swynnertonia is sunk into synonymy of Neoschumannia and the new combination Neoschumannia cardinea (S. Moore) Meve is made for the East African species. Neoschumannia is shown to belong to the tribe Stapelieae. The taxon exhibits a very unusual character combination: the growth form of a woody liana is combined with a tripartite corona unique within the Asclepiadaceae. The morphology of the corona suggests a position of Neoschumannia close to the base of the Stapelieae – Ceropegiae alliance.

In the description of the new genus Neoschumannia, Schlechter (1905) pointed out that he was dealing with one of the most curious members of the Asclepiadaceae he had ever investigated, because its unmistakable corona consisting of three distinct, alternating series. Nevertheless, Schlechter had no doubts that the affinities of his plant lay with the Stapelieae subtribus Ceropegiae of Schumann (1895).

Moore (1908), when describing the monotypic East African Swynnertonia, associated his new genus with the tribe Marsdenieae and, in doing so, produced a long-lasting misplacement of the genus. Later, at a rather hidden place (Rendle & al. 1911/12), Moore gave a more precise description of S. cardinea. He also noted strong similarities in habit between Swynnertonia and Schlechter’s Neoschumannia. Though, considering the corona of Swynnertonia being just double instead of triple, Moore came to the conclusion that they could not be congeneric.

Despite of their extremely interesting coronal structure, Neoschumannia as well as Swynnertonia fell into oblivion and, even in the most recent recircumscription of the tribe Stapelieae Decne., Bruyns & Forster (1991) do not list these genera as members of the tribe.

A detailed study of both genera was undertaken in the context of a review of the Asclepiadaceae – Stapelieae. In the present paper the congenerity of Swynnertonia cardinea and Neoschumannia kamerunensis is demonstrated. Arguments for
inclusion of the united taxon into the Stapelieae are presented and its presumed basal position close to the Carallulum/Ceropegia alliance is discussed.

Material and methods
The present investigation is based on herbarium specimens and spirit collections of Neoschumannia and Swynnertonia deposited at BM and K. Living material of numerous Stapelieae species cultivated at the Münster Botanic Garden was used for comparison.

For SEM investigation of the corona, two small buds from the specimen Rodgers & Hall 1346 (K) were soaked in a solution of aqua dest. : ethanol : glycerol (5 : 4 : 1), critical-point-dried, sputtered with gold and scanned at 20 KV using a Hitachi S530. For the description of corona morphology, the terminology of Liede & Kunze (1993) is followed: Cs = staminal parts of corona, Ci = interstaminal parts of corona, C(is) = ring of fused staminal and interstaminal parts of the corona.

Taxonomy
= Swynnertonia S. Moore, J. Bot. 46:308 (1908). Type (and only) species: S. cardinea S. Moore.

Large, woody climbers with slender stems, glabrous; latex clear. Leaves with long petioles and large, membranous lamina, elliptic to broadly ovate, shortly acuminate, basally rounded. Inflorescences three- to many-flowered, extra-axillary, pedunculate, bostrychoid, lax, with small floral bracts. Pedicels filiform, ± pendulous. Calyx fused at its swollen base, one colletor in each intersepal sinus. Petals not fused at the base, lanceolate, lax. Corona gynostegial, tripartite [formula: C(is) + Cs]: The staminal corona (Cs) in supported by a C(is) consisting of interstaminal lobes connate to a skirt with appendages predominantly developed in staminal position; skirt membranous, basally fused to fused for about 4/5 of its length, interstaminal parts of C(is) sickle-shaped, spreading horizontally or suberect (io erect in distal parts), adaxially grooved, bidentate, villose all over; staminal corona lobes (Cs) erect, lanceolate to obovate, with a basal hump. Gynostegium ontop a column (i.e., stalk between corolla and gynostegium with corona); guide rails short, oblique, protruding; anthers subquadrangular. Pollinaria (sub)erect, pollinia broadly ovate to quadrangular, with pellucid germination mouth on inner margin, yellow, caudicles subterminally inserted, corpusculum elliptic. Stylar head flat or depressed, white. Follicles long, slender, glabrous. Seeds not seen.

Distribution: Cameroon, Ivory Coast, Tanzania, Zimbabwe. Species: 2

Key to the species
1. Tips of petals nearly glabrous to pubescent, gynostegium supporting the column 2–2.5 mm high, staminal corona lobes lanceolate, obtusely acuminate, villose.................................................................N. kamerunensis
1’. Tips of petals with a tuft of long purplish hairs, gynostegium supporting the column 3–4 mm high, staminal corona lobes obovate to clavate, bidentate, pubescent.................................................................N. cardinea