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The genus *Isodon* (Schrad. ex Benth.) Spach in Africa and a new genus *Rabdosiella* Codd (Lamiaceae)

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ABSTRACT

The typification of the genus *Isodon* (Schrad. ex Benth.) Spach and its occurrence in Africa are discussed; an allied genus **Rabdosiella** Codd is described and the combinations *R.* **calycina** (Benth.) Codd and *R.* **ternifolia** (D. Don) Codd (the latter an Indian species) are effected.

INTRODUCTION

In Bentham's treatment of the genus *Plectranthus* in his *Labiatarum Genera et Species* (1832) and in DC., *Prodr.* 12: 55–61 (1848) he divided the genus into seven sections: sect. *Germanea* (Lam.) Benth., sect. *Coleoides* Benth., sect. *Heterocylix* Benth., sect. *Melissoides* Benth., sect. *Isodon* Schrad. ex Benth. (based on *Isodon* Schrad. in herb.), sect. *Pyramidium* Benth. and sect. *Amethystoides* Benth.

In Benth. & Hook. f., *Gen. Pl.* 2,2: 1175 (1876), the arrangement of sections was revised and two primary sections were recognized: sect. *Germanea*, which contained the true *Plectranthus* spp. in which the calyx is 2-lipped with the upper lip consisting of a single tooth usually distinctly larger than the remaining 4 somewhat subulate teeth; and sect. *Isodon* in which the calyx is equally 5-toothed or obscurely 2-lipped with the upper lip composed of 3 teeth and the lower of 2 teeth, all 5 teeth being more or less equal in size and triangular in shape. Sect. *Isodon* included *Isodon, Pyramidium, Amethystoides* and *Melissoides* as subsections. Briquet in *Natürl. PflFam.* 4,3a: 352–357 (1897) treated *Germanea* and *Isodon* as subgenera.

With the exception of certain species which have been retained in *Plectranthus,* and sect. *Pyramidium* which is now raised to generic rank, the majority of species of subgen. *Isodon* have been regarded, by most modern workers in Lamiaceae, as being worthy of separate generic status. In Taiwan, Kudo in *Mem. Fac. Sci. Agric. Taihoku imp. Univ.* 2: 118–141 (1929) took up the name *Isodon* for this group, attributing it to Schrader and making 37 combinations of species names in the genus. Several more have been added since. In Japan, Nakai in *Bot. Mag., Tokyo* 48: 785 (1934) described the genus *Amethystanthus* Nakai, based on the sect. *Amethystoides* Benth., and this genus was reduced to a synonym of *Isodon* by Hara, *Enum. Spermat. Jap.* Vol. 1 (1949). In Africa the genus *Homalocheilos* J. K. Morton in *J. Linn. Soc., Bot.* 58: 268 (1962) was erected to accommodate African representatives. On the other hand, Keng in *Fl. Malesiana* 1,8: 382 (1978), an area where only a few members of this group occur, retained *Plectranthus* in a very broad sense.

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Isodon, Amethystanthus and *Homalocheilos* are considered to be congeneric (Codd in *Taxon* 17: 239, 1968; Blake in *Contr. Queensland Herb.* 9: 4, 1971; Hara in *J. Jap. Bot.* 47: 193, 1972). In addition, Blake pointed out that the generic name *Rabdosia* (Bl.) Hassk. in *Flora* 25, Beibl. 2: 25 (1842) is applicable to this group. This resulted in Hara *(l.c.)* recombining over 90 Asiatic species in *Rabdosia* and, in South Africa, the generic name was taken up (wrongly it now appears) for *Rabdosia calycina* (Benth.) Codd in *Bothalia* 11: 426 (1975). Recently the compilers of the *Index Genericorum* (Vol. 2, 1979) have revealed the still earlier publication of *Isodon* (Schrad. ex Benth.) Spach, *Hist. Nat. Vég. Phan.* 9: 162 (1840), so that *Isodon* must be reinstated as the correct name for this group.

TYPIFICATION OF *ISODON*

In lectotypifying *Plectranthus* sect. *Isodon* Schrad. ex Benth. (and hence the genus *Isodon*) one must consider the 13 species which Bentham originally included in the section. Here only one binomial is attributed to Schrader, namely, *Isodon plectranthoides* Schrad., a name only, which Bentham listed in synonymy under *Plectranthus rugosus* Wall. This species agrees with the description of the section and it seems a reasonable choice. It was put forward as the lectotype in *Taxon* 17: 239 (1968), where the combination *Isodon rugosus* (Wall.) Codd was effected.

A point which appears to have resulted in some confused inferences is that Wallich, after his description of *P. rugosus* (*Pl. As. Rar.* 2: 17, 1831), added: ' *Ocimum densiflorum* Roth, *Nov. Pl. Sp.* 275 (?)'. The question mark indicates that he was not sure of the identity of Roth's species and so *P. rugosus* Wall. should not be regarded as a superfluous name. Bentham was equally uncertain of the identity of Roth's species.

Kudo, *op. cit.* p. 120, erroneously took up the name *Isodon plectranthoides,* attributing it to 'Schrad. apud Benth., *Lab. Gen. et Spec.* p. 43, pro syn.' and placed *P. rugosus* Wall. as a synonym. The *Index Genericorum* goes a stage further when they give the type of *Isodon* as: *'I. plectranthoides* Schrad. ex Kudo, *nom. illeg. (Ocimum densiflorum* Roth)'. In my opinion, this conclusion is a wrong

interpretation of Wallich's and Bentham's presentations. The actual specimen which presumably was annotated as ' *Isodon plectranthoides* Schrad.', and which was seen by Bentham, has not been traced and whether it is correctly identified as belonging to *P. rugosus* has not been verified. However, neither the identity of this specimen nor the identity of *Ocimum densiflorum* Roth need be considered in lectotypifying the genus *Isodon*.

The genus is concentrated mainly in Asia, with outliers extending to Malesia and tropical Africa.

ISODON IN AFRICA

Isodon *(Schrad. ex Benth.) Spach,* Hist. Nat. Vég. Phan. 9: 162 (1840); Kudo in Mem. Fac. Sci. Agric. Taihoku imp. Univ. 2: 118 (1929); Hara, Enum. Spermat. Jap. 1: 204 (1949); Codd in Taxon 17: 239 (1968); in Mitt. bot. StSamml., Münch. 10: 250 (1971); Farr, Leussnik & Stafleu, Index Genericorum 2: 880 (1979).

Plectranthus sect. *Isodon* Schrad. ex Benth., Lab. Gen. Sp. 40 (1832).

Elsholtzia sect. *Rabdosia* Blume, Bijdr. 825 (1826).

Rabdosia (Blume) Hasskarl in Flora 25: Beibl. 2: 25 (1842); Blake in Contr. Queensland Herb. 9: 4 (1971); Hara in J. Jap. Bot. 47: 193 (1972); Codd in Bothalia 11: 436 (1975); Tseng-Chieng Huang & Wu-Tsang Cheng in Fl. Taiwan 4: 504 (1978).

Amethystanthus Nakai in Bot. Mag., Tokyo 48: 785 (1934).

Homalocheilos J. K. Morton in J. Linn. Soc., Bot. 58: 249, 268 (1962); in Fl. W. Trop. Afr. edn 2, 2: 460 (1963).

The genus is characterized by the flowers being borne in dichasia, in dichotomously branched axillary as well as terminal panicles in which the bracts are not sharply differentiated from the leaves, but become progressively smaller towards the apex of the inflorescence; the calyx is subequally 5-toothed, sometimes obscurely separated into a 3-toothed upper lip and a 2-toothed lower lip; the calyx tube is usually ventricose and somewhat circinnate; the corolla tube is relatively straight and not markedly ventricose or saccate at the base; the lower lip of the corolla is small and almost flat; and the stamens are attached at the mouth of the corolla tube with filaments all free to the base.

Isodon ramosissimus *(Hook. f.) Codd* in Taxon 17: 239 (1968). Type: Fernando Po, *Mann* 624 (K, holo.!).

Plectranthus ramosissimus Hook. f. in J. Linn. Soc., Bot. 6: 17 (1861); Bak. in Fl. Trop. Afr. 5: 418 (1900). *Homalocheilos ramosissimum* (Hook. f.) J. K. Morton in J. Linn. Soc., Bot. 58: 268 (1962).

P. schimperi Vatke in Linnaea 37: 317 (1871); Bak., l.c. 418 (1900). Syntypes: Ethiopia, *Schimper* 1174; 1179 (PRE!).

P. hoslundioides Bak., l.c. 418 (1900). Type: Tanzania, *Thomson* s.n. (K, holo.!).

P. whytei Bak., l.c. 419 (1900). Syntypes: Malawi, Tanganyika Plateau, *Whyte* s.n. (K!); between Mpata and Tanganyika Plateau, *Whyte* s.n. (K!); Masuka Plateau, *Whyte* s.n. (K!); north Nyasa, *Whyte* s.n. (K!).

FIG. 1.—*Isodon ramosissimus*, after Morton in J. Linn. Soc., Bot. 58: 249 (1962).

P. paniculatus Bak., l.c. 419 (1900). Syntypes: Malawi, Nyika Plateau, *Whyte* 200 (K!); Blantyre, *Buchanan* 105 (K!).

P. bullatus Robyns & Lebrun in Rev. Zool. Bot. Afr. 16: 355 (1928), nom. illegit. Type: Zaire, *Robyns* 2191 (BR, holo.!).

Although there is variation in size and texture of leaves, this may be due to habitat differences in its wide range of distribution, at fairly high altitudes, in West Tropical Africa and in Ethiopia southwards to Zimbabwe. The species now placed in synonymy were separated by Baker, *l.c.*, mainly on flower size, but this is a character of doubtful diagnostic value and the impression gained is of one variable species. Figs 1–4.

An examination of type material of the above species, kindly sent on loan by the Director, Royal Botanic Gardens, Kew, has emphasized the differences which exist between the genus *Isodon* and the South African species previously combined as *Rabdosia calycina* (Benth.) Codd. The latter is now placed in a new genus, *Rabdosiella* Codd.

FIG. 2.—Holotype of *Plectranthus hoslundioides* in K: Tanzania, *Thomson* s.n.

FIG. 3.—Syntypes of *Plectranthus whytei* in K: Malawi, Tanganyika Plateau, *Whyte* s.n. (left), between Mpata and Tanganyika Plateau, *Whyte* s.n. (right).

FIG. 4.—Syntype of *Plectranthus paniculatus* in K: Malawi, Blantyre, *Buchanan* 105.

RABDOSIELLA, GEN. NOV.

Rabdosiella *Codd*, gen. nov., a *Isodonte* (Schrad. ex Benth.) Spach inflorescentia terminali, dense paniculati, calyce fructifero erecto, tubuloso, dentibus calycis anguste deltoideis, corolla basi gibbosa vel saccata, declinata differt.

Rabdosia sensu Codd in Bothalia 11: 436 (1975).

TYPE SPECIES.—*R. calycina* (Benth.) Codd (*Plectranthus calycinus* Benth.)

Herba perennis vel suffrutex; caules erecti, striati. *Folia* ternata vel opposita, rugosa. *Inflorescentia* non nisi terminalis, dense paniculata. *Calyx* fructifer erectus, aequaliter 5-dentatus; tubus tubulosus, 10-nervosus; dentes anguste deltoidei. *Corolla* bilabiata; tubus basi gibbosus vel saccatus, declinatus; labium supernum breve, obscure 4-lobatum; labium infernum cymbiforme. *Stamina* 4, filamentis liberis. *Stigma* breviter bilobatum.

The genus is allied to *Isodon* and *Plectranthus*. It differs from *Isodon* in the stouter, erect stems which are distinctly ribbed; the dense terminal panicles in which the branches are ascending, not dichotomously spreading as in *Isodon;* the tubular, erect fruiting calyx which is distinctly 10-nerved, with the teeth tending to close the mouth of the tube; and the corolla with its saccate-based, declinate tube and the distinctly concave lower lip. Fig. 5.

From *Plectranthus* it differs mainly in the bracts being leaf-like and becoming progressively smaller towards the apex of the inflorescence. Also, the plants tend to be more woody and the leaves are usually ternately arranged (especially near the base), a character which is rare in *Plectranthus*. There are a few species of *Plectranthus* in which the calyx is subequally 5-toothed (subgen. *Burnatastrum*), but these represent a different line of evolution from the *Isodon*–*Rabdosiella* complex.

FIG. 5.—*Rabdosiella calycina*, Umzimkulu, *Ward* 6279.

Two species of *Rabdosiella* are recognized, both of which were included in *Plectranthus* sect. *Pyramidium* Benth. in DC., *Prodr.* 12: 61 (1848): *R. calycina* (Benth.) Codd from South Africa and *R. ternifolia* (D. Don) Codd from northern India. Despite their wide geographical separation, they are remarkably similar in appearance. The main differences are that *R. calycina* tends to have leaves broader in relation to their length and a longer calyx tube with teeth more narrowly deltoid than *R. ternifolia*.

Rabdosiella calycina *(Benth.) Codd,* comb. nov.

Plectranthus calycinus Benth. in E. Mey., Comm. 230 (1837); Drège, Zwei Pfl. Doc. 148, 152 (1843); Benth. in DC., Prodr. 12: 61 (1848); Briq. in Natürl. PflFam. 4,3a: 352 (1897); Cooke in Fl. Cap. 5,1: 270 (1910); Trauseld, Wild Flow. Drakensberg 160 (1969); Compton, Fl. Swazild 502 (1976). *Rabdosia calycina* (Benth.) Codd in Bothalia 11: 117 (1973); ibid. 11: 426 (1975); Codd ex Ross, Fl. Natal 305 (1972), non rite publ. Lectotype: Cape, between St Johns and Umsikaba Rivers, *Drège* 3584 (K, lecto.!; = *Drège* b in G!; MO!; P!; S!).

P. pyramidatus Gürke in Bull. Herb. Boissier 6: 552 (1898). Type: Transvaal, Houtbosch, *Rehmann* 6179 (Z, holo.!).

P. pachystachyus Briq. in Bull. Herb. Boissier ser. 2, 3: 1003 (1903). *P. calycinus* var. *pachystachyus* (Briq.) T. Cooke in Fl. Cap. 5,1: 270 (1910). Type: Natal, Umkomaas, *Medley Wood* 4621 (K!).

Its distribution extends from the Blouberg and Soutpansberg in northern Transvaal along the eastern escarpment to Swaziland, Natal, eastern Orange Free State, Transkei and eastern Cape Province to around Stutterheim. Over most of its range, it grows in dense grassland, usually forming several rigid, erect, unbranched stems arising annually from a woody rootstock, probably in response to cold and/or periodic burning. However, several specimens from the Blouberg and Soutpansberg indicate that it may also form a branched perennial shrub, presumably in the absence of fire or frost. Fig. 5.

Rabdosiella ternifolia *(D. Don) Codd,* comb. nov.

Plectranthus ternifolius D. Don, Prodr. Fl. Nepal. 117 (1825); Benth., Lab. Gen. Sp. 44 (1832); in DC., Prodr. 12: 61 (1848); Hook. f., Fl. Brit. India 4: 621 (1885). *Isodon ternifolius* (D. Don) Kudo in Mem. Fac. Sci. Agric. Taihoku imp. Univ. 2: 140 (1929). *Rabdosia ternifolia* (D. Don) Hara in J. Jap. Bot. 47: 201 (1972). Type: India, Nepal, *Hamilton* s.n.

From the description it appears to be an erect shrub 1–1,5 m tall. According to Hara, *l.c.*, it occurs in the mountainous parts of north-eastern India, Burma, Thailand, Indo-China and south-western China.

UITTREKSEL

Die tipifikasie van die genus Isodon *(Schrad. ex Benth.) Spach word bespreek; 'n verwante genus* **Rabdosiella** *Codd word beskryf en die kombinasies* R. **calycina** *(Benth.) Codd en* R. **ternifolia** *(D. Don) Codd (die laasgenoemde 'n spesie uit Indië) word gemaak.*