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STUDIES IN THE GESNERIACEAE OF THE OLD WORLD
XXV: ADDITIONAL NOTES ON SAINTPAULIA

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Even while a revision of *Saintpaulia* as known to us five years ago was in the press (Notes R.B.G. Edinb. xxii (6), 547-568: 1958), further wild stocks were being received for cultivation at Edinburgh. This was due to the continued assistance of Mr. W. R. Punter of Tanga, who has been indefatigable in seeking new localities for these plants and in encouraging others to do likewise. Publication of these new introductions has been held up through other work, but the longer period of cultivation, observation and contemplation has not been without its advantages. At first it seemed that each new stock either fitted into a species recognized in the revision or else clearly represented a new entity. This is, in fact, true: it is the status of the new entities that further contemplation has called into doubt.

In addition to new material of recognized species I have to deal with no less than six recognizable entities different from any available for study before. These are now classified as two new species and four new varieties of existing species. Five years ago it was unnecessary to use the varietal category at all. No taxonomist likes having to do so: it is too often an admission of ignorance and uncertainty. In the revision I was able to define the species very largely by habit and leaf indumentum; now when this new material fits to a known species on these criteria but differs in floral details or leaf dimensions I have adopted the varietal category for it. In a sense this may seem an artificial method, but I am seeking a workable classification and it is too early to be certain that these other characteristics will have the robustness that experience has shown habit and indumentum do, in fact, possess. The position may alter when extensive and critical field surveys are undertaken.

The collection of a *Saintpaulia* at Kaloleni, 25 miles N.W. of Mombasa (*S. rupicola*, p. 193) recalls the fact mentioned in the previous paper that the second earliest record of the genus is a specimen from the "Giryama and Tsimba Mountains" in the same area of S.E. Kenya. The Kaloleni plant is described as *S. rupicola*, and we must probably now consider

that the "Giryama and Tsimba" plant is at last, after nearly eighty years, accorded scientific recognition.

It will be convenient if these notes are read in conjunction with the previous revision and the numbering of the species used there is retained. The new species are inserted as 10a and 10b; they should be understood as preceding No. 11, *S. velutina*, rather than following No. 10. Opportunity is taken to effect the reduction of *S. amaniensis* to *S. magungensis* as already foreshadowed in the revision. *S. amaniensis* is a much less distinct entity than that now recognized as *S. magungensis* var. *minima*.

The whole key will be republished in the account of the family in preparation for the Flora of Tropical East Africa; meanwhile the following changes will accomodate the new species:

- (1) The final phrase of lead 2a requires the addition "or of short erect hairs only".
 - (2) Lead 3b should end with the words "or these only present", and, instead of leading direct to 12, should lead to X:
- | | |
|--|-------------------------|
| Xa. Long hairs on the upper leaf surface almost completely absent | Y |
| Xb. Long hairs present on upper leaf surface | 12 |
| Ya. Leaves suborbicular; hairs on upper surface very short erect and even | 10a. <i>brevipilosa</i> |
| Yb. Leaves ovate, hairs on upper surface short and erect but somewhat uneven | 10b. <i>rupicola</i> |

The addition of six taxonomic entities to a genus previously containing only 18 (*S. amaniensis* being included in *S. magungensis*) calls for a re-examination of the distribution. Is the general picture markedly changed? The answer to this question is certainly, no: rather is it confirmed. *S. brevipilosa* from the Nguru Mts. and *S. rupicola* from Kaloleni in S.E. Kenya are distinctive enough and come from the peripheral area of the genus where all the known species are well-marked ones. *S. orbicularis* var. *purpurea* and *S. magungensis* var. *occidentalis* are from the West Usambaras and are on the fringe of specific level. *S. pendula* var. *kizarae* and *S. magungensis* var. *minima* are lesser varieties and these come from the Eastern Usambaras, where the taxonomic entities are characteristically closely allied and difficult of discrimination. The one surprising geographical item is the discovery of a variety of *S. magungensis* in the Western Usambaras, making it the only species common to the Western and Eastern areas. It would be unwise, however, to make too much of this. The study of ripe fruits of this form is required before its status as a variety of *S. magungensis* is finally confirmed.

The species are dealt with below in the order of the revision, novelties being intercalated as appropriate. Only species on which additional information has come to hand in the last five years are mentioned.

4. *Saintpaulia teitensis* B. L. Burt

This species is now in cultivation at Edinburgh and a few supplementary notes can be made. The leaves are rather dark shining green above and reddish-purple below and rather hard in texture. The subpeltate character of the leaf base must be sought especially on the older leaves: the young leaves are often simply cordate. It looks as though there is a little residual

meristematic activity at the base of the lamina which leads to the formation of the subpetalate base as the leaf ages. The hairs on the upper surface of the leaf are at first erect, but on the older leaves they tend to bend forwards and become appressed.

8. *Saintpaulia pendula* B. L. Burtt var. *kizarae* B. L. Burtt, var. nov. pedunculis bi- vel pluri-floris, calycis segmentis anguste lanceolatis distincta.

TANGANYIKA. North East Usambaras, Kizara, comm. *W. R. Punter* 1958, entry no. 58/3589; cult. in R.B.G. Edinburgh C.3066 (holo. E); *ibidem*, comm. *W. R. Punter* 1959, "Kizara II", entry no. 59/4354, cult. in R.B.G. Edinb. C.3725.

In the typical stock of *S. pendula* grown at Edinburgh the leaf blades and petioles are light green: in the variety the leaves are noticeably darker and the petioles are well-tinged with brownish-red. The peduncles of the type plant are often coloured, but not so deeply or consistently as in the variety. The variety appears to be a somewhat more compact plant than the type.

10a. *Saintpaulia brevopilosa* B. L. Burtt, species nova *S. nitidae* B. L. Burtt et *S. rupicolae* (sequenti) affinis; ab illa foliis laete viridibus superne pilis brevissimis erectis obsitis, ab hac foliis suborbicularibus pilis brevioribus recedit.

Herba rosulata. *Petiolus* ad 4 cm. longus pilis patentibus dense vestitis. *Lamina* suborbicularis, c. 4 cm. longa et lata, apice rotundata, basi cordata, marginibus crenatis, supra laete viridis pilis brevissimis densis erectis (in vivo difficilibus visu) induta, subtus etiam breviter patenter pilosa, nervis subtus paulo prominulis supra leviter insculptis utrinque 5-6. *Inflorescentiae* axillares, c. 2-6-flori, pedunculo c. 6 cm. longo uti pedicellis pilis patentibus aliis longis aliis brevibus instructo. *Calyx* patenter pilosus fere ad basin in segmenta 5 lanceolata 2.5 mm. longa partitus. *Corolla* purpurea tubo 2 mm. longo basi albo excepto; lobi glanduloso-ciliati; labium superius 1 cm. $\times$ 1.3 cm., paullo ultra medium bilobum; inferius 1.5 cm. $\times$ 2.3 cm. ad medium trilobum. *Stamina* ad orem tubi orientia; filamenta 4 mm. longa, alba vel leviter purpureo-suffusa, verrucoso-papillosa; antherae flavae 2 mm. longae et latae, coram cohaerentes, polline ochroleuco. *Discus* annularis, aurantiacus. *Ovarium* conicum, c. 2.5 mm. longum, pilis acutis rigidis dense indutum, in stylo basi piloso superne glabro 6.5 mm. longo abrupte attenuatum.

TANGANYIKA. Nguru Mountains, Lulaga, comm. *W. R. Punter*, Sept. 1959, entry no. 59/4350; cult. in R.B.G. Edinb. C.3827 (holo. E).

So far in cultivation *S. brevopilosa* has proved to be a rather weak growing species of no very distinctive character until the leaves are examined more closely. On the living plant, it may easily be thought that, though obviously hairy at the margins, the upper surface is glabrous. This is because the hairs are very short, erect and translucent. If a thin slice across the leaf is examined under the lens, or better under a binocular dissecting microscope, the indumentum is seen to be very dense.

10b. *Saintpaulia rupicola* B. L. Burtt, species nova *S. diplotrichae* B. L. Burtt et *S. ionanthae* H. Wendl. affinis, ab ambabus pilis in folii pagina

superiore laete viridi omnibus breviusculis inter se leviter inaequalibus erectis, foliis pro rata longioribus. *S. brevipilosa* B. L. Burtt (vide supra) etiam peraffinis sed in illa specie pili in foliis pagina superiore omnes fere aequilongi brevissimi sunt.

Herba rosulata. *Petiolus* ad 9 cm. longus breviter et patenter pubescens pilis paucis longioribus intermixtis. *Lamina* ovata c. 6.5 cm. longa et 4.5 cm. lata, basi leviter et aperte cordata, apice obtuse acuta marginibus primum conspicue demum obscure crenato-serrata, supra pilis brevibus erectis paucis glanduloso-capitatis et paucis longioribus, infra breviter patenti-pubescens; nervi laterales utrinque c. 5 (3 subbasales), ascendentes supra inconspicui, subtus prominuli. *Pedunculi* petiolos subaequantes, breviter patenti-pubescentes pilis longioribus perpaucis intermixtis, ad 6-flori. *Calyx* patenti-pubescens, fere ad basin in segmentis anguste lanceolatis 3 mm. longis divisus. *Corolla* tubo 3 mm. longo excepto purpurea, limbo c. 2.25 cm. diametro, labio superiore bilobo, inferiore 3-lobo. *Filamenta* 4 mm. longa, superne flava; antherae intense flavae, 1.5 × 2 mm. *Discus* pallide flavo-viridis. *Ovarium* conicum, 2.5 mm. longum, dense pubescens, in stylo glabro leviter purpureo 7 mm. longo abrupte angustatum. *Fructus* cylindricus 1.5–1.8 cm. longus, pubescens. S.E. KENYA. Kaloleni, between Mariakari and Kalifi, c. 25 miles N.W. of Mombasa, coll. R. D. Bayliss, comm. W. R. Punter, no. 8 of 30 Oct. 1958, entry no. 58/3591; cult. in R.B.G. Edinb. C.3065 (holo. E).

The close community of characters between this species and *S. brevipilosa* from the Nguru Mts. (almost at the other extreme of the range of the genus) is noteworthy. *S. rupicola* does not seem to be very closely related to the other species from Kenya, *S. teitensis*. I am indebted to Mr. A. Kincaid of Kincaid and also to Mr. A. B. Graf for colour transparencies of this species in its native haunts: its habitat is in crevices on bare rock, and indeed it seems to be more of a rock-dweller than other species of whose habitats I have been told.

11. *Saintpaulia velutina* B. L. Burtt

In describing this species I put some emphasis on the white tips to the corolla lobes; the feature is apparently inconstant and was linked to the tendency mentioned towards the production of abnormal flowers. A new stock has been perfectly normal and has produced self-coloured flowers throughout.

14. *Saintpaulia orbicularis* B. L. Burtt var. *purpurea* B. L. Burtt, var. nov., floribus omnino intense purpureis praecipue differt. Characteres alii varietatis *purpureae* sunt: pili petioli et inflorescentiae leviter patentes, lamina folii plus minusve ovata basi aperte cordata, corollae lobis oblongis (vix oblongo-obovatis).

TANGANYIKA. West Usambaras, Ambangulu, comm. W. R. Punter, no. 3 of Oct. 1958, entry no. 58/3586; cult. R.B.G. Edinb. C.2959 (holo. E.).

My first reaction to this plant was that it represented another undescribed species. At a glance it is more easily distinguished from *S. orbicularis* than a good many of the closely related species are from one another. But closer examination shows that the difference is largely in the flower colour, secondarily in a number of minor features whose worth and

constancy in the genus is quite unknown. It seems unwise to switch to these features to justify a species that, on the reliable characters of leaf indumentum and habit, falls within one already established.

The delay in publishing these notes has enabled me to study hybrids between typical *S. orbicularis* and this new variety and these hybrids are intermediate in all features. The pollen of the hybrid all appears to be well-developed. At least there is no genetical evidence that varietal rank undervalues the new discovery.

19. *Saintpaulia magungensis* E. Roberts in African Violet Mag. iii (4), 6 (1950); Burt in Notes R.B.G. Edinb. xxii (6), 567 (1958).

Syn.: *S. amaniensis* E. Roberts in African Violet Mag. iv (2), 7 (1950); Burt in Notes R.B.G. Edinb. xxii (6), 566 (1958).

var. *minima* B. L. Burt, var. nov. a typo foliis minoribus (3-3.5 × 2.7-3.5 cm.), tota planta graciliore, floribus minoribus differt.

TANGANYIKA. East Usambaras, Mavoera estate near Amani, mountain top, comm. W. R. Punter, entry no. 59/4352, cult. in R.B.G. Edinb. C.3724 (holo. E); *ibidem*, half-way up the mountain, comm. W. R. Punter, entry no. 58/3588, cult. in R.B.G. Edinb. C.2960.

var. *occidentalis* B. L. Burt, var. nov. caulibus robustioribus longius repentibus purpurascens, foliis crassioribus nitentibus superne pilis appressis parvis indutis, pilis calycis magis patentibus a *S. magungensis* typica recedit.

TANGANYIKA. West Usambaras, Mlalo, Bagai, comm. W. R. Punter, Nov. 1959, entry no. 59/4355; cult. in R.B.G. Edinb. C.3854 (holo. E).

Mr. Punter writes of his visit to see this plant alive. From the hotel at Magamba it was 23 miles of bad road up to Mlalo and then a walk of 1½ hours over the mountain to Bagai, where the plant grows. They then found themselves "on the north east edge of the West Usambaras and the boy told me that one can see the lights of Mombasa at night—90 miles away. We passed several streams on the way but it was at the fourth, only a small trickle but well shaded, where we found them in great numbers all around the sides of the gully formed by the stream. They were mostly growing in soil, not on rocks, but the angle was 45°-60°. There was about 1½ acres of them but not a single flower, though there were a few seed pods which were full grown—say 2 months since flowering."

Mr. Punter also points out the resemblance to *S. teitensis*, which grows 100 miles across the plains to the north. This is most striking in leaf texture, both being somewhat thick and brittle, and in leaf colouring.

When first introduced this plant grew vigorously and for two seasons quite refused to flower. However, good flowering plants have now been raised and it is certainly a more attractive plant than typical *S. magungensis*. I have been greatly tempted to anticipate that it will eventually be ranked as a species, but it seems advisable to stick to the evidence actually available and to admit that this does not at present do more than justify varietal status.