

African Santalaceae II: *Osyridicarpos*
(*Santalales-Studien VI*)

The African Santalaceae genus *Osyridicarpos* was set up in 1857 by ALPHONSE DE CANDOLLE in his monograph of the family in the Prodrromus 14. The author was based thereby on two species which had been counted heretofore for genus *Thesium*. He describes (p. 635) the relations with the related genera *Osyris* and *Thesium* as follows: “Folia et drupa *Osyridis* unde nomen; ovarium vero, placenta et praesertim perigonium diversa. In hisce magis affinis *Thesio*, sed habitus, drupa enervis perigonio superne caduco, et forma floris differunt.” [Named from the leaves and drupes of *Osyris*; ovary exactly, placenta and especially the perigone diverse. To a greater extent related to *Thesium*, but also in habit, drupe perigone above without nerves and caducous, and form of the flowers different]

The genus was taken up as a consequence by HARVEY 1863, 1868, BENTHAM 1880 and HIERONYMUS 1889 and since that time recognized in all Floras of the circulation area and in all generic overviews of the family.

ALPHONSE DE CANDOLLE describes two species: For the first and typical species² *O. Schimperianus*, based on *Thesium Schimperianum* HOCHSTETTER ex A. RICHARD from Abessinia, in addition *O. natalensis* from South Africa: “Rami omnino praecedentis, cui sine dubio proxima species.” [branches entirely preceding, that without doubt is a proximal species]

Some further species and a variety in the genus were set up, which are arranged in Table 4.

Table 4. The Taxa of the genus *Osyridicarpos*

		Typus:	
1857	<i>Osyridicarpos Schimperianus</i> (HOCHST. ex A. RICH.) A. De.	SCHIMPER 404	
1857	<i>Osyridicarpos natalensis</i> A. DC.	DREGE V, b, 7 GUEINZIUS 122	Syntypen, Lectotypus: DRÉGE V, b, 7
1894	<i>Osyridicarpos scandens</i> ENGLER	V OLKENS 1596	
1894	<i>Osyridicarpos Kirkii</i> ENGLER	STUHLMANN 200 KIRK S. n.	Syntypen, Lectotypus: KIRK S. n.
1900	<i>Osyridicarpos linearifolius</i> ENGLER	STUHLMANN 9199 GOETZE 310	Syntypen, Lectotypus: GOETZE 310
1901	<i>Osyridicarpos linearifolius</i> ENGLER var. <i>Goetzei</i> ENGLER	GOETZE 1253	
1923	<i>Osyridicarpos Mildbraedianus</i> TH.C. E.FRIES	FRIES et FRIES 1473	

Different data concerning the morphology and taxonomy resulted in a contradictory picture from the literature: HARVEY 1863 mentions in opposition to DE CANDOLLE that the fruits of *O. natalensis* are crowned with the complete persistent perianth tube. BENTHAM points out in 1880 that *O. Schimperianus* and *O. natalensis* are very similar; OLIVER believed in 1883, that the two species should be combined, however found with this procedure no followers.

² PILGER 1935 mentions *O. natalensis* A.DC. as typical species of the genus. This procedure cannot be agreed, also among other things, because *Thesium Schimperianum* did not possess a valid description of the species as basionym during the alignment under *Osyridicarpos* (since 1851).

In 1932 PETER mentioned that *O. Kirkii* is probably not specifically separate from *O. Schimperianus*, the same was assumed by CUFODONTIS 1953, and BRENAN 1954 finally synonymized the two taxa.

These literature data and the meaning of the genus as switching between *Osyrideae* and *Thesieae* caused me to examine all types as well as extensive voucher material from these herbaria B, CBM, E, G, G-DC, K, and Mund Z. This examination resulted in, for the time, that in the genus, as it was so far understood exists as only two morphologically clearly separated taxa, which can be regarded as good species. The one covers *O. linearifolius* and its var. *Goetzei*, the other all remaining described species. The valid name for the second taxon is therefore according to the rules: *Osyridicarpos Schimperianus* (HOCHSTETTER ex A. RICHARD) ALPH. DE CANDOLLE. *O. linearifolius* is identical to *Thesium triflorum* THUNBERG ex LINNÉ F.

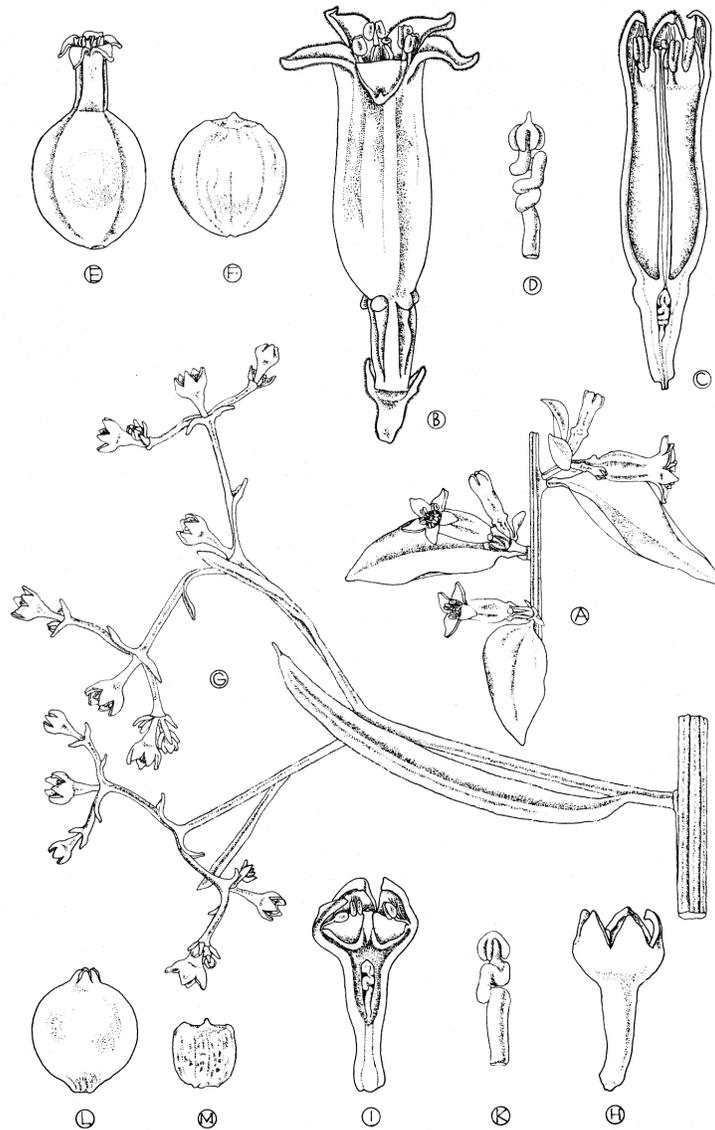
In addition Table 5 and illustration 5 give a comparison of the most important differential characteristics of the two species *Thesium triflorum* and *Osyridicarpos Schimperianus*; the table supplies data concerning the variability and the diffusiveness (? Verbreitung). In the basic organization a close relationship exists, thus in wood anatomy, flower and placental structure in the construction of the stomata, in the leaf position, in the ramifications, in the inflorescence, as well as in the fruits between the two species. Also the pollen is similar.

Table 5. Characteristic comparison of *Thesium triflorum* and *Osyridicarpos Schimperianus*

	<i>Thesium triflorum</i>	<i>Osyridicarpos Schimperianus</i>
Pubescence	reproductive and vegetative parts completely glabrous (only Poststaminal hairs available)	young axils and leaves, likewise the exterior of the tepals ± closely covered with short hairs
Inflorescence	Structure racemose, side axils dichasia, mostly one-flowered, rarely (1-)-3-flowered to 31-flowered, "carrying" bract [Tragblatt] frequently fused at the base to the axillary shoot	Structure racemose, side axils mostly one-flowered, rarely 3-(-7)-flowered dichasia, "carrying" bract [Tragblatt] free of the axillary shoot
Floral tube	very short, flask-shaped	long-cylindrical, bell-like
Disk	clearly defined with blunt lobes	not clearly defined
Style	short	long
Number of ovules	3-4	4-5
Placenta	at the apex without peg-shaped extension	at the apex with peg-shaped extension
Fruit	Drupe with short, persistent tepal tube and crown	Drupe with long, persistent tepal tube and crown
Variability within the vegetative range	Leaf form and size, leaf thickness, stature upright or climbing	Leaf form and size, leaf thickness, pubescence of all parts, stature upright or climbing
Variability within the reproductive range	Number of flowers per inflorescence, Degree of fusion of axil and bract [Tragblatt], size of flowers and fruits	Length of the flower and/or inflorescence axis, number of flowers per inflorescence, + leafy or bracteose construction of the bracts [Tragblätter], pubescence of all parts, size of the flowers and fruits, construction of the calyx glands
Geographical distribution	eastern Cape, Transvaal, Natal, Mozambique, Tanzania	southern and eastern Cape, Transvaal, Natal, Mozambique, Nyassaland, Tanzania, Kenya, Uganda, Abessinia, Eritrea

Illustration.5 *Osyridicarpus Schimperianus* (HOCHST.) ALPH. DE CANDOLLE: A-F *Thesium triflorum* THUNBERG ex LINNÉ F.: G-M

- A Partial inflorescence, 5:2
- B Flower, 15:2
- C Flower, longitudinal section, 15:2
- D Placenta, 15:1 (A-D: SCHOENLAND s. n.)
- E Fruit, 3:1
- F Endocarp, 3:1 (E, F: CHASE 5049)
- G Partial inflorescence, 5:2
- H Flower, 15:2
- I Flower, Längsschnitt, 15:2
- K Placenta, 15:1 (G-K: GOETZE 1253)
- L Fruit, 3:1
- M Endocarp, 3:1 (L-M: VERDOORN 1551)



The characteristics of *Thesium triflorum* yield strongly off of those, which in the diagnoses of the genus *Thesium*, and the tribe Thesieae is particularly indicated, generally, it approach far more those the Osyrideae. Table 6 gives the diagnoses of both tribes after BENTHAM 1880 and PILGER of the 1935.

Table 6 Diagnosis of *Thesieae* and *Osyrideae* after BENTHAM and PILGER

	<i>Thesieae</i>	<i>Osyrideae</i>
BENTHAM 1880	Perianthii tubus basi ovario adnatus, supra ovarium infra lobos plus minus productus, disco tamen nullo prominente vestitus. Fructus parvus, nucus, exocarpio tenui v. vix carnosulo (excepto Osyridicarpo)	Perianthii tubus ovario adnatus, ultra ovarium haud productus, v. intus disco vestitus, lobis usque ad discum v. ovarium solutis v. rarius deficientibus (Myzodendron m) Fructus plus minus drupaceus, exocarpio carnosulo v. succulento, rarius minor subsiccus
PILGER 1935	Perianth epigynous. Receptacle beyond the ovary more or less, usually tubularly extended, inside not clothed with the disk. Ovar inferior	Perianth more or less epigynous. Receptacle extended over the ovary or only shortly bell-shaped and then inside more or less not clothed with the disk.

It had to be examined with this situation whether *Thesium triflorum* was perhaps to be excluded from the genus *Thesium*. This genus has its center in South Africa and is there very polymorphic. Unfortunately both a convincing taxonomic treatment and more detailed morphological investigations are missing over the more important characteristic complexes. A cursory examination showed that *Thesium triflorum* belongs to a set of related species, which agreeing likewise show all the aberrant [? aberranten] characteristics for the Thesieae, especially the presence of a clear disk and a drupe. Also individual species from other “taxic circles” show a clear disk or a drupe.

There is not one characteristic, which is indicated in the diagnoses of BENTHAM and PILGER as typical for Osyrideae (and missing for Thesieae), which would not seem to be within the genus *Thesium* in South Africa. Now in addition close relations exists in wood anatomy and in the construction of pollen between *Thesium* and some of the genera BENTHAM sees in Osyrideae. The arrangement of parts of Santalaceae into tribe Osyrideae and Thesieae is to be let fall therefore as completely artificial.

It still remains to examine again Table 5. It shows that the differential characteristics between *Thesium triflorum* and the only remaining species of *Osyridicarpos* hardly suffice for the separation of the genera. As long as it is not yet possible, however, to grasp the characteristic progressions in the genus *Thesium*, clearly *Osyridicarpos* is to remain provisional, existing as a monotypic genus.

In the preceding work I already pointed out that generally small characteristic differences are used to separate the genera within the Santalaceae. It appears at least provisionally justified therefore to maintain *Osyridicarpos* due to the construction of the tepal tube (with no species of *Thesium* is this form known) and the placenta (with *Thesium* with 2-3 [- 4] ovules, never with 5). The extremely close relationship of the two genera is however beyond doubt.

Summary [from German]

After a detailed morphological analysis, *Osyridicarpos* can only two of the past taxa can be maintained in the genus: *O. Schimperianus* and *O. linearifolius*, whereby this latter genus was however recognized to be identical to *Thesium triflorum*.

The now monotypic genus *Osyridicarpos* is very closely related to *Thesium*, is to remain provisionally maintained, however, since still too little overview of the character progressions are present within *Thesium*.

As introduced by BENTHAM and accepted by PILGER, the classification of a part of the Santalaceae into tribe Osyrideae and Thesieae is not to be maintained, since within the genus *Thesium* mixed characteristic combinations occur plentifully.

Summary [given in English]

A morphological study of the genus *Osyridicarpos* shows that there are only two taxa that can be maintained: *O. Schimperianus*, the type-species of the genus, and *O. linearifolius*, that proved to be identical with *Thesium triflorum* however.

The genus *Osyridicarpos*, now considered as monotypic, is closely allied to *Thesium*, but should provisionally be maintained, until we get more complete information of the progressions of characters within *Thesium*.

The division of a part of *Santalaceae* into *Thesieae* and *Osyrideae*, as introduced by BENTHAM and accepted by PILGER, cannot be maintained: the genus *Thesium* offers many kinds of combinations of characters that had been considered as diagnostic for the tribes.

Literature

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