

Notes on the Loganiaceae, Salvadoraceae and Oleaceae in South Africa.

By

I. C. Verdoorn.

1. NOMINATION OF NEOTYPE FOR *STRYCHNOS DECUSSATA* (PAPPE) GILG.

When describing *Atherstonea decussata*, the basionym of the above species, Pappe wrote at the foot of the botanical description (see *Silva Capensis* ed. 2: 29, 1862)—“Grows in the thickets and forests of Uitenhage, Olifants Hoek and elsewhere in the districts of the Eastern Province”. In a footnote he wrote “named in honour of Dr. W. G. Atherstone, of Grahamstown, a gentleman whose merits rendered to South African Botany and Geology rank high, and to whom I am under great obligations for valuable information towards this work”. The type or types of this species would therefore be a specimen or specimens from the mentioned localities collected by Pappe or annotated by him as being *Atherstonea decussata*. To date no such specimens have been found and it is probable that no material was preserved. From the excellent description there is no mistaking what tree Pappe was describing so there can be no doubt that it is the same species that Harvey described and figured in his *Thesaurus Capensis* 2: 41 (1863) as *Strychnos atherstonei* with Dr. Pappe's name as a synonym. One of the specimens cited by Harvey is “On the Kowie, Dr. Atherstone”.

Through the kindness of Prof. D. A. Webb, Trinity College, Dublin, I was able to examine this specimen. According to the notes and labels on it, the sheet contains two gatherings, both by Dr. Atherstone from a tree on the Kowie in the Bathurst district. The flowering material, which is mounted on the lower half of the sheet (and spare material which is in an attached envelope), Dr. Atherstone states was picked by him in November 1863 from the same tree from which he had sent a fruiting specimen earlier in the year. (NOTE.—This is a year after the publication of Pappe's species and therefore cannot be the specimen on which he based *Atherstonea decussata*.) This fruiting specimen is mounted on the upper half of the sheet but the fruit is missing.

It is the flowering material that I wish to nominate as the neotype of the species. There is duplicate material of it in the Kew Herbarium and a scrap in the National Herbarium, Pretoria. Neotype of *Strychnos decussata* (Pappe) Gilg.: Cape, Kowie, *Atherstone* s.n., flowering material, (TCD, neo.!, K, PRE, iso-neo).

2. THE RELATIONSHIP BETWEEN *STRYCHNOS INNOCUA* DEL., *S. DYSOPHYLLA* BENTH. AND *S. GERRARDII* N.E.BR.

In the Kew Bulletin 1938, page 46 Bullock and Bruce reduced *Strychnos dysophylla* Benth., together with a number of other described species and varieties, to synonymy of *S. innocua* Del. In 1956, after studying the tropical African specimens involved, Miss E. A. Bruce decided to exclude *S. dysophylla* Benth. (and three species which she regarded as being synonymous with *S. dysophylla*) from that long list of synonyms and again treat it as a separate species. Her views were published posthumously in the Kew Bulletin of that year on page 270 under notes by Bruce & Lewis. The main reason given is that it is “undesirable to conceal the variation” in this group.

A study of the South African material both in herbaria and in the wild leads to the conclusion that the broader view of *S. innocua* Del. can be more satisfactorily applied to the whole complex. If *S. dysophylla* Benth., with its southern distribution, is restored to specific rank the following are some of the difficulties that are encountered.

i. Specimens in the southern regions, prepared from different parts of the same tree or in different seasons, could be identified from the key, some as *S. innocua* and some as *S. dysophylla*.

ii. It is very difficult to decide to which of these two species the taxon which was described as *S. gerrardii* N.E.Br., and which occurs in Natal, is the more closely related, in other words, of which is it a subspecies or variety since it obviously belongs to the same complex and should not have specific status.

In connection with the first difficulty, *S. dysophylla* as defined by Bruce and Lewis differs generally from *S. innocua*. ssp. *innocua*, of which, to date, there is no authentic record from southern Africa, in the following features: the branchlets usually smooth and dark, either brown or grey, instead of pale and farinose; contracted lateral branchlets present; lenticels conspicuous, leaves on the whole smaller, seldom over 7 cm long as against up to 15 cm long, and drying a dark colour; the inflorescence sessile instead of shortly pedunculate and the flowers only about 5 mm long instead of about 10 mm long. But there are exceptions and one or more characteristics of the tropical specimens may be found among specimens which, from the locality, or because of some other features, belong best to *S. dysophylla*. These exceptions seem to indicate that the differences are merely subspecific, that certain features have become accentuated on plants in the one region and another set in the other, so that, on general appearance, the specimens can, roughly, be separated into groups.

With regard to the second difficulty, *S. gerrardii* N. E. Brown differs from *S. innocua* ssp. *innocua* principally in the comparatively slender branchlets which are not fairnose, the conspicuous lenticels and the narrower leaves and it agrees with this taxon in the normally developed branchlets and the peduncled inflorescences. These latter features seem more important taxonomically and they are the features in which it differs from *S. dysophylla*. Therefore it would seem to be more closely related to *S. innocua*. Yet Bruce and Lewis suggest (Kew Bull. 1956: 275) that *S. gerrardii* may be synonymous with *S. dysophylla* ssp. *engleri* (Gilg) Bruce and Lewis, giving it a closer relationship with *S. dysophylla*.

These difficulties are overcome if *S. dysophylla* and *S. gerrardii* are included in the compound species, *S. innocua*, and given subspecific status, the same rank as *S. innocua* subsp. *burtonii* (Bak.) Bruce and Lewis and *S. dysophylla* subsp. *engleri* (Gilg) Bruce and Lewis but under one species. This does not conceal the variation in the complex species and the objection expressed by Bruce and Lewis will be overcome.

New combinations will be necessary in this arrangement and are made below:—

S. innocua Del. subsp. ***dysophylla*** (Benth.) Verdoorn.

S. dysophylla Benth. in Journ. Linn. Soc. 1: 103 (1857).

Type: Delagoa, *Forbes* s.n.

S. innocua Del. subsp. ***gerrardii*** (N.E.Br.) Verdoorn.

S. gerrardii N.E.Br. in Kew Bull. 1896: 162 (1896).

Type: *Medley Wood* 5624 (K, lecto, PRE fragment lecto!).

I nominate *Medley Wood* 5624, the sheet in the Kew Herbarium seen by Brown and of which there is a portion in the National Herbarium, Pretoria, as the lectotype of *Strychnos gerrardii* N.E.Br., selected from the following syntypes: *Berea*, *Medley Wood* 5624; *Cult. Medley Wood* 1777; without locality *Gerrard* 1421.

3. SINKING THE GENUS *CHILIANTHUS* UNDER *BUDDLEIA*.

The three genera *Nuxia*, *Chilianthus* and *Buddleia* as defined in the *Flora Capensis* (Vol. 4, 1: 1037) are obviously closely related and *Chilianthus* is the link between the other two genera which, by themselves, would be easily distinguishable. Being the intermediate group it is not surprising to find that its members have at different times been classified under either *Nuxia* or *Buddleia*.

Bentham classified all 4 known species of *Chilianthus* as *Nuxia* species (see *Comp. Bot. Mag.* 2: 60, 1836) and from Burchell's unpublished notes on his specimens it can be seen that he identified the two *Nuxia* species he collected, *N. floribunda* Bth. and *N. congesta* R.Br. ex Fres., as "*Chilianthus*". When describing the new genus *Chilianthus* (see *Travels* 1: 94 (1822), Burchell contrasted it only with *Scoparia* and did not mention *Nuxia* or *Buddleia*.

The view that *Nuxia* and *Chilianthus* are congeneric can hardly be justified, for although in general appearance the flowers in both genera are similar, having the corolla tube short and the stamens exserted, yet in the leaves, general habit and certain other details they are markedly dissimilar. For instance in *Nuxia* the anther-cells are confluent, the corolla circumscissile near the base, and there are no stipules present, whereas in *Chilianthus* the anther-cells are distinct, the corolla not circumscissile and there are stipules, or at least interpetiolar ridges, present.

The view, on the other hand, that *Chilianthus* and *Buddleia* are conspecific has proved on investigation, to be feasible.

In 1946, E. P. Phillips reduced the genus *Chilianthus* to a synonym of *Buddleia* (see *Journ. of S.A. Bot.* 12: 113). When doing so he showed that in the last analysis the only character by which these two genera could be separated is the exserted stamens of *Chilianthus* as against stamens included in *Buddleia*, and then, he continues, that in one known *Chilianthus*, *C. corrugatus*, "the anthers are very little exserted". He points out too that in most of the known classifications, such as *Genera Plantarum* and *Pflanzenfamilien*, the close relationship of *Chilianthus* and *Buddleia* is emphasized.

On first thoughts one may be inclined to wonder why *Chilianthus* and *Buddleia* should not remain distinct since in South Africa the two groups are easily distinguished, for all our known species of *Buddleia* have flowers with a tubular corolla and stamens included while the *Chilianthus* species have short campanulate corolla-tubes and at least the anthers exserted. But a study of the whole genus *Buddleia* reveals that the representatives in Africa are not typical of the genus as represented in America and, as Dr. Phillips also pointed out, differ almost as much from the type species, *B. americana*, as they do from the species placed in *Chilianthus* in S. Africa. From this it is obvious that the two groups of species in South Africa can at most be treated as two sections of the genus *Buddleia*.

4. REASONS FOR AGAIN REDUCING THE GENUS *LACHNOPYLIS* TO *NUXIA*.

In the *Kew Bulletin*, 1930 C. A. Smith resuscitated *Lachnopylis* Hochst. which Bentham had reduced to *Nuxia* Lam. giving his reasons for considering it generically distinct from this monotypic genus. These reasons have never seemed very convincing.

In several publications on the tropical African flora, Smith was followed, for example by Robyns in the *Flora of the Parc National Albert*, Vol. 2: 59 (1947), and Brenan and Greenway in *Check-List of the Forest trees and Shrubs of the British Empire* No. 5, 2: 270 (1949). On the other hand, when dealing with the specimens in the Mascarene Islands, that is in the region where both genera occur, *Nuxia* on Mauritius and Reunion and *Lachnopylis* on Madagascar and the Comoro Islands, Paul Jovet retains the name *Nuxia* for all the species and treats *Lachnopylis* as a sub-genus of *Nuxia* (see for instance *Notulae Systematicae* 13: 97 (1947).

Further, the systematists at present working on the *Loganiaceae* for the "Flora of Trop. East Africa" have independently come to the decision that *Lachnopylis* is not generically distinct from *Nuxia* and so all the tropical African species are to be placed in the genus *Nuxia* in that work.

With these two supporting opinions, and for the sake of uniformity in Africa it has been decided to re-instate *Nuxia* in the South African Flora as well.

The taxonomic reasons for favouring this treatment are that the points of similarity between *Nuxia verticillata*, the type species of the genus, and the species in the Mascarenes and Africa which Smith would refer to *Lachnopylis*, seems to be of more significance as generic characters than are the differences.

The similar features are: ternate leaves; inflorescence of compound cymes; a tubular calyx with erect lobes and lined with appressed hairs; the corolla circumscissily deciduous from near the base; and the anther-cells confluent. A combination of some or all of these features are convincing as generic characters. The most important differences are that *Nuxia verticillata* has the corolla-tube longer than the calyx with the style included in the corolla-tube as against the calyx being longer than the corolla-tube in all the other species with the style exerted from both calyx and corolla.

These are hardly generic differences especially since the general appearance of the flower is the same in both groups, the corolla-lobes reflexing in *N. verticillata* exactly as in the others, although the calyx does not reach to the point where they reflex; and if one takes the relationship of the style to the persistent calyx instead of to the deciduous corolla it is longer than the calyx in both groups. These differences seem no more than specific but might be regarded as worthy of some higher (sub-generic) ranking if all the species, including those in the Mascarenes, are studied.

Under the present treatment the following combination is necessary:—

Nuxia glomerulata (C.A.Sm.) Verdoorn for *Lachnopylis glomerulata* C. A. Smith in Kew Bull. 1930: 24 (1930).

Although C. A. Smith described 8 new species under *Lachnopylis* in the above mentioned publication it has been found, now that the genus is better known in the wild, that only this one (*L. glomerulata*) can be maintained as a species. Of the other seven, one, *L. suaveolens* C.A.Sm., is a synonym of *L. glomerulata* and the rest have been reduced under the very variable and widespread, but characteristic, species *Nuxia congesta* Fres.

This wide view of *N. congesta* conforms to that of the workers on the Flora of Tropical East Africa.

5. NEW STATUS FOR *SALVADORA AUSTRALIS* SCHWEICKERDT.

Comparison of the specimens of *Salvadora australis* Schweickerd (Bothalia 3, 3: 248, 1938) with the description and figure of the Madagascar species *S. angustifolia* Turrill (Kew Bull., 1918 and Flora Madagascar, 1946), shows a great similarity especially in features such as the shape and spread of the leaves and the presence of well developed glands between the filaments. These are the very features which characterize *S. australis* and distinguish it from *S. persica* L. Through the kindness of Dr. Renaud Paulian I was able to examine two specimens of *S. angustifolia* from Madagascar which he sent on loan to the National Herbarium, Pretoria. This confirmed the similarity between the specimens from the two countries and the only evident difference noted was the persistent, short, dense pubescence on the South African specimens as compared with the glabrous or partly scaly specimens from Madagascar.

Pubescence in this family is not usually of specific significance and, in most cases, does not warrant even subspecific distinction, but the nature of the pubescence and the remoteness of the areas of distribution seem, in the case under consideration, to justify varietal separation. The following combination is therefore made:—

Salvadora angustifolia Turrill var *australis* (Schweick.) Verdoorn stat. nov. *S. australis* Schweick. in *Bothalia* 3, 3: 248 (1938).

6. LECTOTYPE OF *JASMINUM BREVIFLORUM* HARV. EX WRIGHT.

In the revision of the Oleaceae, *Bothalia* 6: 549 (1956), I wrote in the introduction on page 549, concerning the authorship of certain species, that, in my opinion, Harvey should get the credit for them rather than the publishing author. I felt that since Harvey supplied the descriptions these were parallel cases to those cited under Recommendation 46B of the 1956 Code of Botanical Nomenclature. While I still abide by my decision in the case of *Menodora juncea* which was published post humously in Harvey's *Genera Plantarum* ed. 2, 1869, I now feel that in connection with *Jasminum breviflorum*, *J. Gerrardii* and *Olea enervis*, it is more correct to cite the authority as "Harv. ex Wright" and therefore if abbreviating "Wright" should be cited.

My reasons are: (1) That "in Wright in *Flora Capensis*" may not be what is intended by "in a work by another author (see Rec. 46B)". (2) I have no proof that Wright did not change Harvey's descriptions to some extent; (3) at least in one case Wright cites a specimen that Harvey could not have seen; and (4) if Harvey is cited as author there is uncertainty about the holotypes.

The reviewed treatment, that is citing the author in these cases as "Harv. ex Wright", requires the selection of a type for *J. breviflorum* since Wright cited 2 specimens. I here select the sheet in the Kew Herbarium of Burke from the Magaliesberg which has on it a label reading "seen by Dr. W. H. Harvey" and written to the left of this label the word "type".

