INDIAN SPECIES OF COMMELINACEAE— MISCELLANEOUS NOTES

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While studying the Indian species of Commelinaceae in different herbaria in the United Kingdom and on the Continent, and subsequently in India, the writer has made a few interesting observations which are noted below. He wishes to express thanks to the authorities of the herbaria at the Royal Botanic Gardens of Edinburgh and Kew, at the British Museum (Natural History) and the Linnean Society of London, at the Jardin Botanique de l'Etat at Brussels, Rijksherbarium at Leiden, Institute of Systematic Botany at Utrecht, Muséum National d'Histoire Naturelle at Paris, Conservatoire et Jardin Botaniques at Geneva, Universitets Botaniske Museum at Copenhagen and Institute of Systematic Botany at Uppsala, who have kindly allowed him to examine specimens in their charge or sent material on loan: also to Mr. B. L. Burtt, Royal Botanic Garden, Edinburgh, for all his kind guidance, valuable help and critical suggestions, and to Dr. H. Santapau, Chief Botanist, Botanical Survey of India for kindly going through the manuscript and for all his help and encouragement.

I. COMMELINA LINN.

1. Commelina diffusa Burm. f.

(= *Commelina nudiflora* auct. non Linn.)

While working at Geneva Herbarium, the writer picked out from the collections of Commelinaceae the type specimen of *Commelina diffusa* with the original descriptive note by Burmann himself. This was first identified by Burmann as *Commelina papilionacea* but he inserted a question mark indicating doubt. Subsequently the specific name was struck off and the name *diffusa* was added by Burmann himself as is evident by his handwriting. Figure 2 of the plate in Burmann's Flora Indica (18, t. 7: 1768) was evidently drawn from the same sheet after correction and correctly represents *Commelina diffusa*.

2. Commelina longifolia Lamk., Ill. Gen. **1,** 129 (1791); Rolla Rao in Taxon **10**, 254 (1961).

Syn.: *C. salicifolia* Roxb., Hort. Beng. 4 (1814), *nomen nudum;* Fl. Ind. 1, 176 (1820); C. B. Clarke in DC., Mon. Phan. **3,** 157 (1881); Hook. f., Fl. Br. Ind. **6,** 370 (1890).

Nothing is clearly known regarding the type of *Commelina salicifolia* Roxb. There are, however, coloured drawings among Roxburgh's Icones, one at the Calcutta Herbarium and the other at Kew Herbarium. (This species is characterized by long spathe sometimes with distinct acuminate

tip resembling that of *C. appendiculata* C. B. Cl. but can be distinguished from that by the absence of white hairs along the inner margin of the spathe besides a few other distinct characters.)

During the scrutiny of Lamarck's specimens from the Paris Herbarium, the type of *Commelina longifolia* Lamk. which bears Lamarck's label indicating it as Commerson's collection from Java, was sorted out by the writer. This species, which proves to be identical with *C. salicifolia* Roxb., was well described by Lamarck (Illust. 1, 129: 1791) on the basis of Commerson's collection from Java. Subsequently Vahl (Enum. 2, 166: 1805) elaborated this description, possibly on the basis of a specimen received from Lamarck. On examination of Vahl's specimen obtained from the Botanical Museum, Copenhagen,[1] though it is a poor specimen it is quite clear that the plant is not at all the same as that in Lamarck's own herbarium and is certainly not *C. longifolia*. This specimen can only be identified as *Commelina undulata* R. Br.,[2] which is recorded from North Australia, Philippines and Malaysia. The extended description which Vahl gave under the name *C. longifolia* Lamk. must therefore be disregarded. C. B. Clarke in his monograph on the family (in DC. Mon. Phan. 3, 187: 1881), kept Lamarck's species under "*species mihi ignotae*" as he had not seen the type. Lamarck's specimens which remained in Germany for a long period, were acquired by the Paris Herbarium in November, 1886, in a loose unmounted state; they had not been available to Clarke or other workers before that date.

On Lamarck's type sheet, besides one good specimen of *C. longifolia* there are two small bits of specimens mounted on either side of it; these are similar to *Commelina kurzii* C. B. Cl. var. *glochidia* (Koen.) C. B. Cl.,[3] a thinner, less hairy form having the characteristic spathe and capsule with indehiscent striated cell. This species has so far not been recorded from Java and evidently these bits were not with the specimen of *C. longifolia* as Lamarck did not include any characters from them while describing *C. longifolia*. These pieces may be Commerson's collection from India(?) which got mixed up while loose specimens of Lamarck were being mounted at Paris Herbarium after their return from Germany. A few instances of such mixing up of species whose identity was quite clear to Lamarck, were observed by the writer in Lamarck's collections.

There is a Roxburgh specimen of *C. salicifolia* at the British Museum kept under type cover which consists of two specimens with two labels. One label—"*Commelina dipetala* Dr. R.", and another label in Roxburgh's hand—"*Commelina salicifolia* R." Of the two, one is a poor specimen of *C. salicifolia* Roxb. with characters of seed (dried white appendage at one end and truncate at the other) matching those of the description but the leaf and spathe are not very typical. The other specimen was identified by the writer as *C. forskalaei* Vahl. Clarke's citation of this sheet as *C. hasskarlii* p.p. is therefore wrong. There is also another sheet of

[1] The writer is greatly indebted to Dr. A Skovsted, Curator of the Botanical Museum, Copenhagen, for all his best co-operation.

[2] This specimen on the basis of a photograph was misidentified by the writer as *C. forskalaei* Vahl and reported as such in Taxon 10 (8), 254 (1961).

[3] This was noted by mistake as *C. albescens* Hassk. on the note kept in the cover attached to the type sheet by the writer during his study at the Paris Herbarium and recorded as such by the writer in Taxon (l.c.) under the impression that the collections originated from Mauritius.

Roxburgh named as *C. dipetala* R. which is also *C. forskalaei* Vahl.

Commelina longifolia Lamk. is a valid species and is identical with the later *Commelina salicifolia* Roxb. The correct name and synonymy is therefore as given above. This species has so far been recorded from Peninsular and Eastern India and also from Malaya and Java.

3. Commelina wightii Rolla Rao in Bull. Bot. Surv. India, **3,** 168 (1961).

Syn.: *Commelina glabra* (Wt.) C. B. Cl. in DC. Mon. Phan. **3,** 163 (1881) non G. F. W. Meyer.

No specific type for the species has been indicated; but Wight's specimens quoted by Clarke and a few other sheets have been examined at the Kew Herbarium and also at the Central National Herbarium, Calcutta. The species is distinct in the peculiar shape of its spathe, and it has been recently scrutinised in relation to the various species described subsequently by Barnes and Blatter. As *C. glabra* (Wt.) C. B. Cl. is a later homonym of *C. glabra* G. F. W. Meyer (Primitiae Florae Essequeboensis, 22: 1818), it is illegitimate. The necessity for a new name had already been suggested by the writer (in Proc. 45th Session of Ind. Sc. Congress, Part 3, 331: 1958), and the subsequent name *C. wightii* Raizada (in Ind. Forester, **84,** 479: 1958) was not validly published owing to the absence of a reference.

4. Commelina paludosa Bl. Enum. Pl. Java **1,** 2 (1827).

Syn.: *Commelina obliqua* Buch.-Ham. ex D. Don, Prodr. Fl. Nep., 45 (1825), non Vahl.

Commelina obliqua Buch.-Ham. ex D. Don is illegitimate as it is a later homonym of *Commelina obliqua* Vahl (Enum. **2,** 172: 1806), which is a Mexican species. The next available valid name is *Commelina paludosa* Bl. whose type was examined by the writer at Rijksherbarium, Leiden and found to be identical to *C. obliqua* D. Don, except that all specimens from Malaysia are rather more robust. *Commelina paludosa* Burm. (Thes. Zeyl. 69, t. 20, f. 2: 1737) is a pre-1753 name and hence does not invalidate Blume's use of the epithet.

This species is highly polymorphic with much variation in size and is widely distributed in India, Burma and Malaysia. It is, however, a very stable species which shows a constant chromosome number $n=30$ and $2n=60$ irrespective of its size and habitat and its altitude.

Clarke described two varieties of this species on the basis of the smaller size and glabrous or reddish-brown viscid hairs on leaves. On careful scrutiny of a wide range of material of small plants both in the field and in the herbarium, it is evident that the glabrous leaves gradually merge into the viscid leaves through a variety of intermediates and therefore the two varieties are united into one, which can be distinguished by its smaller form and a few viscid hairs. Further, the chromosome number of both the glabrous and viscid forms has been found to be $n=30$, identical with that of *C. paludosa* Bl. The synonymy is given below:

C. paludosa Bl. var. **viscida** (C. B. Cl.) Rolla Rao et Kammathy in Bull. Bot. Surv. India, **3,** 168 (1961).

Syn.: *C. obliqua* Buch.-Ham. var. *viscida* C. B. Cl. in DC. Mon. Phan. **3,** 178 (1881).
C. obliqua Buch.-Ham. var. *mathewii* C. B. Cl. (l. c.).
C. paludosa Bl. var. *mathewii* (C. B. Cl.) Rolla Rao et Kammathy in Bull. Bot. Surv. India, **3,** 168 (1961).

II. Aneilema R. Br.

1. Aneilema ovatum (Hassk.) C. B. Cl., Commelin. et Cyrt. Bengal. t. 25 (1874).

Though this is a good species, the citation has to be modified as noted above. Normally it is presumed that the name *A. ovatum* Wall. as used by Clarke is illegitimate as its circumscription included *Dictyospermum montanum* Wight (Ic. t. 2069) and *D. ovalifolium* Wight (Ic. t. 2070), although these two species are now separated. When describing *Dictyospermum ovatum* Hasskarl (Comm. Ind. 24: 1870) quoted *Aneilema ovatum* Wall. (Kunth, Enum. **4,** 73: 1843—*nomen nudum*). C. B. Clarke published *Aneilema ovatum* without a direct reference to Hasskarl but also quoted Wallich's usage of it. This may be accepted as an indirect reference and the binominal *Aneilema ovatum* stands as a combination based on *Dictyospermum ovatum* Hassk. Although C. B. Clarke used this combination in an illegitimate sense, the combination itself is not illegitimate and it may be used now that *Dictyospermum montanum* and *D. ovalifolium* are excluded.

2. Aneilema montanum (Wight) C. B. Cl.

This is a good species and appears to be restricted to Peninsular India. Its occurrence in Assam as recorded by Hooker (Fl. Br. India, **6,** 382: 1894) is presumably based on misidentification of Clarke's material from Assam in the Kew Herbarium (Neederogard, Naga Hills, 17 Oct. 1885, C. B. Clarke 40826C). This has been identified by the writer as *Aneilema conspicuum* (Bl.) Kunth. Watt's specimen from Manipur could not be traced in the Watt Herbarium deposited at the Royal Botanic Garden, Edinburgh, but there is a similar specimen in the Calcutta herbarium.

3. Aneilema scaberrimum (Bl.) Kunth.

This species is very widely distributed along the Western Ghats including Travancore and extending up to Ceylon and also along the Central and Eastern Himalayas, Khasi and Jaintia Hills (Assam) and Malaysia. It is recorded by the writer as the most common component of herbaceous undergrowth in the Siang and Lohit valleys of North-East Frontier Agency of India and further extending to Tirap and Manipur ranges. Quite considerable variation in the size and robustness of the plant has been observed.

The types of Hasskarl's varieties *latifolium*, *intermedium* and *angustifolium* of this species were studied at Leiden and found to be different eco-forms of *A. scaberrimum* and in view of wide variation and close intermediates, there seems to be no justification for forming any distinct varieties.

On the examination of the two types of *A. scaberrimum* (Bl.) Kunth and *A. monadelphum* (Bl.) Kunth, namely, *Commelina scaberrima* Bl. and

Commelina monadelpha Bl. at Leiden along with a few other specimens of both the species, it is considered that the latter is only a variety of the former though the distribution of *A. monadelphum* is restricted to Java only. So (incidentally), the new combination, which follows, is given here though this is not an Indian plant:

Aneilema scaberrimum (Bl.) Kunth var. **monadelphum** (Bl.) Rolla Rao **nov. comb.**

Syn.: *Commelina monadelpha* Bl., Enum Pl. Jav. **1,** 4 (1827).
Aneilema monadelphum (Bl.) Kunth, Enum. Pl. **4,** 70 (1843).

III. Murdannia Royle

1. Murdannia blumei (Hassk.) Brenan in Hook. Ic. Pl. t. 3578 (1962).

Syn.: *Dichaespermum blumei* Hassk., Comm. Ind. 41 (1870) (Type! Leiden).
Aneilema hamiltonianum Wall. ex C. B. Cl. in DC. Mon. Phan. **3,** 213 (1881) (Type! Kew).
Aneilema blumei (Hassk.) Bakhuizen f. in Blumea, **6,** 2 (1950).

Aneilema hamiltonianum Wall. ex C. B. Cl. published in 1881 was antedated by Hasskarl's *Dichaespermum blumei* published in 1870.

There has been considerable doubt with regard to the correct identity of *Tradescantia terminalis* Bl. which was included as a synonym by some workers, including Clarke, under *A. hamiltonianum*. The type of this species even after careful search could not be located[1] in the collections of either Bogor Herbarium or Rijksherbarium, Leiden.

Further, *T. terminalis* can never be conspecific with *A. hamiltonianum*. Blume described the flowers as solitary and terminal while the genus *Aneilema* is characterized by axillary flowers. Blume further states that *T. terminalis* grows on grassy plains whereas *A. hamiltonianum* is never found on grassy plains but in marshy areas, ditches and other wet places. Ultimately, *T. terminalis* may prove to be a species of *Cyanotis* but as Blume's description is very short and no type is available, it is better to treat this as a doubtful species rather than try to adjust it as a synonym of some other known species.

Apparently, Backer did not find the type of *T. terminalis* during his study of Flora of Java (1924) even though he included this under *Cyanotis moluccana*. Further, there are indications that Hasskarl also (Comm. Ind.: 1870) did not see the type specimen of *T. terminalis*. Judging from Blume's description of *T. terminalis*, Merrill is fully justified in keeping this species completely apart from *Cyanotis moluccana*.

Raizada's proposal to replace *Aneilema hamiltonianum* by *Murdannia terminalis* (Bl.) Raizada (in Ind. For. **84,** 499: 1958) ignores the true identity of the basionym and cannot be accepted.

In a previous publication (Rolla Rao in Proc. Ind. Sci. Congress, pt. 3, 331: 1958) the statement was made "*Murdannia blumei* (Hassk. 1870) Rolla *nov. comb.* is the valid name for *Aneilema hamiltonianum* Wall. ex

[1] The writer is grateful to Dr. P. van Royen and Dr. Bakhuizen van den Brink of the Rijksherbarium for help in searching for the specimen and for their valuable opinions.

Clarke (1881)." Unfortunately the basionym was not cited in that brief abstract and the delay in effecting full publication gives priority to Brenan's combination.

2. Murdannia loriformis (Hassk.) Rolla Rao et Kammathy in Bull. Bot. Surv. India, **3,** 393 (1961).

Syn.: *Aneilema loriforme* Hassk. in Pl. Jungh. 143 (1852).
Aneilema terminale Wt., Ic. Pl. Ind. Or., **6,** 31, tab. 2076 (1853).
Aneilema nudiflorum R.Br. var. *terminale* (Wt.) C. B. Cl. in DC., Mon. Phan. **3,** 211 (1881).

This, as described by Wight, is a distinct species. Small bits of plants with inflorescence as available on the herbarium sheets look similar to *Murdannia nudiflora* (Linn.) Brenan but comparatively more robust and such observation might have led to the reduction of this species into a variety of *M. nudiflora.* But when studied from living plants and also under field conditions, one can easily distinguish this species from the very slender *M. nudiflora.* It has a distinct rosette of leaves which measures 20–30 cm. in diameter, a leaf-breadth of 1·3–1·5 cm., a larger number of flowers from 10–15 on an inflorescence, robust branches from 20–30 cm. in length spreading in all directions from the axils of radical leaves. Further the chromosome number and size (Bull. Bot. Surv. India **3,** 393: 1961) give further support to this view.

Murdannia terminalis (Bl.) Raizada (in Ind. For. **84,** 499: 1958) which has no relation with *Aneilema terminale* Wt. has already been validly published. However, *Aneilema loriforme* Hassk. is in fact an earlier name for this species: the type in the Rijksherbarium, Leiden, has been examined.

3. Murdannia loureirii (Hance) Rolla Rao et Kammathy **comb. nov.**

Syn.: *Aneilema loureirii* Hance in Seem. Jour. Bot. 250 (1868); C. B. Clarke in DC., Mon. Phan. **3,** 201 (1881).

This is a good species with distinct epiphytic habit. Brückner (in Pflanzenfam. 2 Aufl. 15a, 1935) did not consider this species either under *Aneilema* or *Murdannia.* While examining collections from Burma available at the Central National Herbarium, Calcutta, the floral characters and other features of the plant have been examined and found to be those of *Murdannia,* and it has therefore been included here though not known to occur in India.

4. Murdannia wightii Rolla Rao et Kammathy **nom. nov.**

Syn.: *Aneilema pauciflorum* Wight, Ic. Pl. Ind. tab. 2077 (1853) – non Dalzell in Hook. Jour. Bot. 136 (1851).

Aneilema pauciflorum Wight is a good species distributed in different parts of peninsular India. The name is illegitimate under the hononym rule. Dalzell's *Aneilema pauciflorum* is, however, a synonym of *Murdannia vaginata* (Linn.) Bruckn.

IV. Cyanotis D. Don

1. Cyanotis papilionacea (Linn.) R. & S.

Linnaeus (*Mantissa* **2,** 233: 1767) described *Tradescantia papilionacea* and subsequently in Additamenta of *Mantissa* added that *Commelina papilionacea* of Burmann f. was nothing but his species *Tradescantia papilionacea*, evidently after verifying Burmann's description in Flora Indica (1768), because in the original copy of Flora Indica handled by Linnaeus *Commelina* was deleted by Linnaeus and *Tradescantia* was written in its place. After examining a Linnaean specimen at the Linnean Society of London (no. 406.7) and another such specimen at Royal Botanic Garden Herbarium, Edinburgh, where the specific name "*cristata*" was deleted and "*papilionacea*" was written by Linnaeus and both of which were specimens collected from Hortus Upsaliensis, the writer is of the opinion that the specimens are slightly tender forms of *Cyanotis cristata* (Linn.) D. Don. Linnaeus may have made this mistake while comparing 406.7 with the unusually robust form of his *Tradescantia cristata* (no. 406.6). *Cyanotis cristata*, as is well known, is very variable in size and form but can be identified by the smooth, fleshy nature of leaves and the elongated leafy bract of the inflorescence. There is another specimen in the Linnaean Herbarium (no. 406.5) with the name *Tradescantia cristata* which is quite distinct from *Cyanotis cristata* and is clearly *Cyanotis vaginata* Wight. C. B. Clarke, however, put in a note on this specimen "*Cyanotis burmanniana* Wight nec *cristata* R. & S." The microfiche photos of the Linnaean specimens cited above have been further examined in comparison with several fresh collections and living material of these species to confirm these corrections of identification. With the hope that a type of *Tradescantia papilionacea* Linn. might be available at Uppsala, as this species was studied by Linnaeus from the cultivated plants of Uppsala Garden, Dr. Rolf Santesson, Curator of the Herbarium, Institute of Systematic Botany, Uppsala, was requested to take up the search once again. He replies that no type of *Tradescantia papilionacea* is available at Uppsala and refers back to the same specimen 406.7 of the Linnaean Herbarium. Thus it is quite evident the type of *Tradescantia papilionacea* Linn. turns out to be a tender specimen of *Tradescantia cristata* Linn., a robust form of which is represented by specimen 406.6 at the Linnaean Herbarium.

While scrutinizing the various specimens of Commelinaceae at Geneva, the writer found amongst unidentified material of the family a small, badly mounted specimen with the name "*Commelina papilionacea* nova" on the sheet proper and a note containing detailed description, both written by Burmann himself. After complete study and comparison of descriptions written on the note attached to the sheet and published in Flora Indica, the writer is fully convinced that this is the type of *Commelina papilionacea* Burm. All the characters of "*Cyanotis papilionacea* (Linn.) R. & S." are quite evident from this type specimen though the inflorescence was badly pressed, thus altering the typical shape of the biseriate bracts into a spathe-like structure. This may be the reason for the wrong representation of the species (Fl. Ind. t. 7 f. 1) with spathes like those of *Commelina*. The interesting correspondence between Burmann and Linnaeus extracted from the records at the Linnean Society of London

throws further possible evidence that Burmann, after failing to get diagrams as asked for in his letter[1], had written out a description himself and published the same with figures in his Flora Indica (1768).

The biseriate bracts shown for *Commelina cristata* by Burmann (tab. 7, fig. 4) are not at all similar to *Cyanotis cristata* (Linn.) D. Don. Wight's remarks (in Icones 34, t. 2089: 1853) that *Commelina cristata* Burm. f. non Linn. is a distinct species, are correct and his creation of the new species in honour of Burmann as *Cyanotis burmanniana* is also fully justified. Hasskarl's comments (in Comm. Ind. 112: 1870) on Burmann's figures 1 and 4 are also very appropriate. The author's study and understanding of these three closely allied species, namely, *Cyanotis vaginata* Wt., *C. burmanniana* Wt. and the so-called "*C. papilionacea* (Linn.) R. & S." based on living material, their habit and habitat, indicate clearly that they are distinct species.

Since Linnaeus's specimen of *Tradescantia papilionacea* proves to be *Cyanotis cristata*, the name *Cyanotis papilionacea* (Linn.) Roem. & Schult. must be dropped. Its existence, however, prevents the transfer of *Commelina papilionacea* Burm. fil. to *Cyanotis*. Two later synonyms for the species given by Clarke (in DC., Mon. Phan. **3**, 246: 1881) are:

Cyanotis hirtella Miq. in Pl. Hohenack. n. 130 (1847) and

Cyanotis hispida Dalz. in Hook. Journ. Bot. 1851, 139.

The author is attempting to study the types of these two species.

2. Cyanotis vaga (Lour.) J. A. & J. H. Schultes, Syst. Veg. **7,** 1153 (1830); Merrill in Trans. Amer. Phil. Soc. **24** (2), 102 (1935).

Syn.: *Tradescantia vaga* Lour., Fl. Cochin. **1,** 239 (1790); Bl., Enum. Pl. Java **1,** 5 (1827); Hassk., Comm. Ind. 62 (1870) *non* Zollinger.
Cyanotis fasciculata Wall. Cat. 8990, nec R. & S.
C. barbata Don, Prodr. Fl. Nep. 46 (1825).

The recorded distribution of this species, under the name *Cyanotis barbata* Don, is very extensive, starting from North Africa and Central Asia (according to Brückner) and extending as far as Burma and China through the tropical Himalayan Zone. Attempts to trace Loureiro's specimens of Commelinaceae from Indo-China in the Paris Herbarium have not been successful and thus the type of *Tradescantia vaga* could not be examined. However, from the description in Flora Cochinchinensis of *T. vaga* it can be ascertained that *C. barbata* is synonymous with this species. The extensive distribution with considerable variability in robustness and size of leaves in different grades of geographical races, does not warrant any distinct specific entity for the Chinese and Indo-Chinese forms of this species. As such, *Cyanotis vaga* the earlier name is considered as valid.

3. Cyanotis arachnoidea C. B. Cl. var. **thwaitesii** (Hassk.) Rolla Rao et Kammathy, **comb. nov.**

[1] Burman wrote to Linneaus (Letter No. 524 dated 17/2/1766 in Letters Book of Linnean Society of London)—"I have a mutilated specimen of *Commelina papilionacea* with me. I understand that you are growing *Commelina papilionacea* and *Commelina cristata* in your garden at Uppsala and can I have a drawing of those if it is not very troublesome for you."

Syn.: *Cyanotis thwaitesii* Hassk. Commel. Ind. 136 (1870).
Cyanotis fasciculata (Heyne ex Roth) Roem. & Schult. var. *thwaitesii* (Hassk.) C. B. Cl. in DC. Mon. Phan. 3, 254 (1881).

This plant has a distinct underground bulb. After careful scrutiny under living conditions in the field and in cultivation and a comparison of herbarium specimens with the type and with the allied species *C. arachnoidea* and *C. facsiculata* it is clear that this taxon is most closely allied to the former. In view of the considerable variation in *C. arachnoidea* it is considered as a variety rather than a distinct species.

However this problem needs further study as *C. arachnoidea* var. *thwaitesii* alone out of 12 Indian species of *Cyanotis* (sensu stricto) has an aneuploid chromosome number, n=11 instead of n=12 as in all the other species.

V. Zygomanes Salisb.

1. Zygomanes cucullata (Roth) Rolla Rao et Kammathy **nov. comb.**

Syn.: *Tradescantia cucullata* Roth, Nov. Pl. Sp. 189 (1821).
Cyanotis cucullata (Roth) Kunth, Enum **4,** 107 (1843); C. B. Clarke in DC., Mon. Phan. **3,** 245 (1881).

The two good Indian species known, under the genus *Cyanotis*, as *C. axillaris* (Linn.) R. & S. and *C. cucullata* (Roth) Kunth have been further critically studied both in the field and under cultivation (Rolla Rao & Kammathy in J. Bombay Nat. Hist. Soc. **59,** 68: 1962). The characteristic pattern of sessile, axillary inflorescence coupled with general features and development of the plant and the distinct chromosome number and morphology as examined by the author and supported by others (Sharma in Genetica **27,** 353: 1955; Kammathy and Rolla Rao in Bull. Bot. Sur. Ind. **3,** 394: 1961; Shetty and Subramanyam in Nucleus **5,** 48: 1962) form sufficient justification to separate the two Indian species from the genus *Cyanotis* and to consider them under *Zygomanes* which has a wider representation in Tropical Africa. A few of the African species of *Zygomanes* have also been examined and found to be identical in generic characters. A critical study including chromosome number and morphology of the African species of *Zygomanes* is being attempted for a further understanding of the genus.

The type species of the genus is *Zygomanes axillaris* (Linn.) Salisbury in Trans. Hort. Soc. **1,** 271 (1872) (=*Cyanotis axillaris* (Linn.) R. & S.).

VI. Belosynapsis Hassk.

Belosynapsis ciliata (Bl.) Rolla Rao **nov. comb.**

Syn.: *Tradescantia ciliata* Bl., Cat. 61 (1823) (Type! Leiden).
T. capitata Bl., Enum. Pl. Java **1,** 6 (1827) (Type! Leiden).
T.? cyanotidea Hassk., Comm. Ind. 65 (1870) (Type! Leiden).
Cyanotis capitata (Bl.) C. B. Cl. in DC., Mon. Phan. **3,** 243 (1881).
C. ciliata (Bl.) Bakh. f. in Blumea, **6,** 399 (1950).
Belosynapsis capitata (Bl.) Sprague & Fischer in Kew Bull. 1928, 254.

The type and description of *Tradescantia ciliata* Bl. are quite clear and

as this is earlier than *T. capitata* Bl. the valid name is *Belosynapsis ciliata*. The above note on a non-Indian species is included in this paper as the types concerned have been examined by the writer.

VII. Pollia Thunb.

Pollia hasskarlii Rolla Rao **nom. nov.**

Syn.: *Pollia aclisia* Hassk. in Pl. Jungh. **1,** 148 (1851), excl. syn.; Commelin. Ind. 55 (1870); C. B. Cl. in DC. Mon. Phan. **3,** 123 (1881).

Hasskarl at first (1851) considered that *Aclisia* was not distinct from *Pollia* and he renamed *Aclisia sorzogonensis* C. A. Mey. as *Pollia aclisia*—an illegitimate name. The Javan plant he was studying he recognized to differ in certain details from *Aclisia sorzogonensis* and he enumerated these points. It is, however, clear that *Pollia aclisia* was a new name for *Aclisia sorzogonensis* and is not to be typified by the plant described. Subsequently (1870) Hasskarl separated *Aclisia* from *Pollia* but retained the name *Pollia aclisia* for the Javan plant. This, of course, is inadmissible: *Pollia aclisia* must be retained as a synonym of *Aclisia sorzogonensis* and cannot be used for the different species which Hasskarl at first misidentified with it.

Before a new name was selected for this species, attempts were made to trace the type specimen of *Pollia glaucescens* Teijs. & Binn. (in Pl. Novae in Nat. Tijdschr. Ned. Ind. **24,** 305: 1862) whose description as given by Hasskarl (Comm. Ind.: 1870) appears to be somewhat similar. These efforts were of no avail in spite of careful search both of Leiden and Bogor Herbarium material by the writer in 1957. On the examination of other specimens quoted by Hasskarl it is evident that he himself had not seen the type of this species. On discussion at Rijksherbarium, Leiden, it was understood that it may be difficult to procure any type specimen of Teijsmann as he described and published several species from the living plants of Bogor garden. Hence this species is left aside as a doubtful one and the new name *Pollia hasskarlii* Rolla Rao has been proposed.

Excluded Species

The various species of *Aneilema* and *Cyanotis* published by Blatter (in Jour. Bomb. Nat. Hist. Soc. 33, 73-77: 1928), have been carefully studied by the writer and R. V. Kammathy. Specimens collected from the type localities in the precise seasons as noted by Blatter have been examined, both under field conditions and under cultivation at Poona, and the following conclusions reached. It should be recorded here that the types of these species by Blatter are not available either at the Blatter Herbarium, St. Xavier's College, Bombay or anywhere in India. It is reliably learnt that Blatter described these species while working in the Parish School at Panchgani. Either he did not retain any type specimens or they have been lost.

1. *Aneilema hallbergii* Blatter, l.c. 74 = **Aneilema ovalifolium** (Wt.) Hook. f. ex C. B. Cl. in DC., Mon. Phan. **3,** 218 (1881).

In this species the fertile stamens are either two or three, but are wrongly recorded by Clarke and also by Hooker (in Fl. Br. India, **6,** 382: 1892) as only two.

2. *Aneilema rigidum* Blatter, l.c. 73 = **Murdannia simplex** (Vahl) Brenan in Kew Bull. 1952, 186.

3. *Aneilema sienneum* Blatter, l.c. 75 = **Murdannia lanuginosa** (Wall. ex C. B. Cl.) Brück. in Engl. & Prantl, Pflanzenfam. 2 Aufl., 15a, 173 (1935).

4. **Cyanotis sahyadrica** Blatter, l.c. 77.

This species is very similar to *Cyanotis tuberosa* Roem. & Schultes (Syst. Veg. **7,** 1153: 1830) so far as general understanding of *C. tuberosa* with its polyploids are concerned; but *C. sahyadrica* as a gigantic hexaploid of *C. tuberosa* has recently been invariably collected from the Sahyadri ranges of the Western Ghats mostly along 1000–1500 metres only, including the type locality, and can easily be spotted out even in seedling stage. More details will be discussed elsewhere when the status of the species is fully established.

5. *Cyanotis epiphytica* Blatter, l.c. 76 = **Belosynapsis vivipara** (Dalzell) Sprague & Fischer in Kew Bull., 1928, 252.

The sheets at St. Xavier's Herb. no. 35004, 35047 and Herb. Sedgwick and Bell 7193 cited by Blatter for this species and available at the Blatter Herbarium have also been examined.

6. *Commelina alisagarensis* Kumar et Deodikar in Proc. Ind. Acad. Sci., **13,** 168 (1941) = **Commelina hasskarlii** C. B. Cl., Commel. et Cyrt. Beng. t. 5 (1874).

Very intensive search was made along the Alisagar area (Nizamabad, Andhra Pradesh), the type locality besides the other localities in peninsular India in both the pre- and post-monsoon periods but no distinct species other than those already known including *Commelina hasskarlii* was collected. Further, by a careful scrutiny of the description as well as the type at Kew, which is, however, not a good specimen, it is evident that this species compares well with *Commelina hasskarlii*, which is very variable.

7. *Commelina persicariaefolia* Wight (in Wall., Numer. List, no. 8984) ex C. B. Cl. in DC., Mon. Phan. **3,** 171 (1881)—non *C. persicariaefolia* DC. in Rédouté, Lil. 8 (1816) = **Commelina jacobii** C. E. C. Fischer in Kew Bull., 1928, 277.

Recent study reveals that this species grows in several localities in peninsular India only, including Dindigul, the type locality of Wight's species. There is considerable variation in the size and shape of the leaves.