

# CHROMOSOME NUMBERS OF SOME ANGIOSPERMAE COLLECTED IN CAMEROUN AND THE IVORY COAST II.

TH. W. J. GADELLA

Instituut voor systematische Plantkunde, Afd. Biosystematiek, Universiteit Utrecht

## SUMMARY

The chromosome number of 15 species of Angiosperms, occurring in Cameroun and the Ivory Coast, was determined. The numbers given for 11 species are new, for three species the results of previous studies could be confirmed, whereas in one species the presence of intraspecific polyploidy could be demonstrated.

## 1. INTRODUCTION

Å. & D. LÖVE (1970) remark that the increase in published chromosome number reports already reached the 5000 annual mark, representing studies from every land of the globe. They are of the opinion, however, that still there is plenty of space for new cytotaxonomists, because the majority of the plants of the world remain cytologically untouched. Since this is especially true for the flora of Africa, which is very insufficiently known from the cytotaxonomic point of view, the present author continued his cytological studies.

The present report gives the chromosome number of 15 species belonging to 5 families. As in the first paper, the material studied originated exclusively from natural habitats in Cameroun and the Ivory Coast. J. J. Bos, F. J. Breteler, R. W. den Outer and C. Versteegh collected the plants and put them at the present author's disposition.

## 2. MATERIALS AND METHODS

Herbarium material of all species was collected in the field. The plants were identified by F. J. Breteler (*Dichapetalaceae*), Dr. A. J. M. Leeuwenberg (*Loganiaceae*) and Dr. G. J. H. Amshoff (*Omphalocarpum*, *Vitex*).

Seeds of the same plant were germinated in the greenhouses of the Agricultural University of Wageningen. After fixation in Karpechenko's fixative, the root-tips were embedded in paraffin, sectioned at 15 micron and stained according to Heidenhain's haematoxylin method. Of all investigated plants herbarium material of the motherplant (and in most cases also of the seedling) is preserved in the herbarium of Wageningen (WAG).

## 3. RESULTS

The following results could be obtained:

**Dichapetalaceae**

1. *Dichapetalum altescandens* Engl. . . . . 2n = 24  
Origin of the material: Cameroun, 12 km. Road Kribi – Lolodorf.  
Herbarium material of the mother plant: J. J. Bos 3631 (WAG).
2. *Dichapetalum brevitubulosum* Engl. . . . . 2n = 24  
Origin of the material: Cameroun, near Kribi.  
Herbarium material of the mother plant: J. J. Bos 5431 (WAG).
3. *Dichapetalum choristilum* Engl. . . . . 2n = 24  
Origin of the material: Cameroun, near Kribi.  
Herbarium material of the mother plant: J. J. Bos 4542 (WAG);  
4637 (WAG).  
Herbarium material of the seedling: under Bos 4542 (WAG).
4. *Dichapetalum cymulosum* (Oliv.) Engl. . . . . 2n = 24  
Origin of the material: Cameroun near Kribi.  
Herbarium material of the mother plant: J. J. Bos 3249 (WAG);  
J. J. Bos & F. J. Breteler 3066 (WAG).  
Herbarium material of the seedling: F. J. Breteler 6215 (WAG).
5. *Dichapetalum longitubulosum* Engl. . . . . 2n = 24  
Origin of the material: Cameroun, near Kribi.  
Herbarium material of the mother plant: J. J. Bos 4185 (WAG);  
J. J. Bos & F. J. Breteler 3092 (WAG).
6. *Dichapetalum mekametane* Engl. . . . . 2n = 24  
Origin of the material: Cameroun, near Kribi.  
Herbarium material of the mother plant: J. J. Bos 5029; 5258 (WAG).
7. *Dichapetalum oblongum* (Hook.f. ex Bth.) Engl. . . . . 2n = 24  
Origin of the material: Ivory Coast, near Aboisso.  
Herbarium material of the mother plant: F. J. Breteler 5946 (WAG).  
Herbarium material of the seedling: F. J. Breteler 6221 (WAG).
8. *Dichapetalum rudatisii* Engl. . . . . 2n = 24  
Origin of the material: Cameroun, near Kribi.  
Herbarium material of the mother plant: J. J. Bos & F. J. Breteler  
3115 (WAG); J. J. Bos 3180; 3255; 3375; 3412; 3464; 3560; 3645  
(WAG).  
Herbarium material of the seedling: J. de Bruijn 1902 (WAG), from  
no. 3560.
9. *Dichapetalum toxicarium* (G. Don) Baill. . . . . 2n = 24  
Origin of the material: Ivory Coast, S.E. of Agboville, 5°44'N.,  
4°7'W.  
Herbarium material of the mother plant: F. J. Breteler 5342, 5347  
(WAG).  
Herbarium material of the seedling: F. J. Breteler 6204 (WAG).

**Loganiaceae**

10. *Anthocleista vogelii* Planch. . . . . 2n = 60  
 Origin of the material: Cameroun, near Kribi.  
 Herbarium material of the mother plant: J. J. Bos 5203 (WAG).
11. *Mostuea brunonis* Didr. var. *brunonis* . . . . . 2n = 20  
 Origin of the material: Cameroun, about 8 km. S. of Kribi, Lobé R. bank.  
 Herbarium material of the mother plant: J. J. Bos 5030 (WAG).  
 Herbarium material of the seedling: J. W. van Steenberg 199 (WAG).  
 Origin of the material: Cameroun 1 km N of Longji, about 30 km. N. of Kribi, riverbank.  
 Herbarium material of the mother plant: J. J. Bos 5080 (WAG).
12. *Strychnos asterantha* Leeuwenberg . . . . . 2n = 44  
 Origin of the material: Ivory Coast, km 32, Road Sassandra-Lakota.  
 Herbarium material of the mother plant: F. J. Breteker 6059 (WAG).  
 Herbarium material of the seedling: J. de Bruijn 1861, 1885, 1924 (WAG).

**Passifloraceae**

13. *Crossostemma laurifolium* Planch. ex Bth. . . . . 2n = 22  
 Origin of the material: Ivory Coast, near Sassandra.  
 Herbarium material of the mother plant: F. J. Breteker 6124 (WAG).  
 Herbarium material of the seedling: J. de Bruijn 1927 (WAG).

**Sapotaceae**

14. *Omphalocarpum elatum* Miers . . . . . 2n = 26  
 Origin of the material: Ivory Coast, Bonoua, between Grand Bassam and Aboisso.  
 Herbarium material of the mother plant: C. Versteegh & R. W. den Outer 645 (WAG).  
 Herbarium material of the seedling: van Steenberg 206 (WAG).

**Verbenaceae**

15. *Vitex ferruginea* Schum. et Thonn. . . . . 2n = 32  
 Origin of the material: Ivory Coast, near Grand Lahou.  
 Herbarium material of the mother plant: C. Versteegh & R. W. den Outer 562 (WAG).  
 Herbarium material of the seedling: J. W. van Steenberg 205 (WAG).

**4. NOTES ON SOME SPECIES**

a. *Anthocleista vogelii* Planch. (2n = 60).

The number 2n = 60 was reported for *A. djalonensis* Chev. (GADELLA 1961) and for *A. liebrechtsiana* de Wild. et Dur. (GADELLA 1963). The species *A. vogelii* was studied before: 2n = 48 (GADELLA 1967). It appears that intraspecific

polyploidy occurs within this species:  $2n = 48$ ,  $2n = 60$ , which probably indicates that the basic number of the genus *Anthocleista* is  $x = 6$ .

b. *Dichapetalum*

All species treated in this paper are characterized by the number  $2n = 24$ . Previously 6 species had been counted: In 5 species the number  $2n = 24$  was established (GADELLA 1969), in one species  $2n = 20$  (MANGENOT and MANGENOT 1962).

c. *Mostuea brunonis* Didr. var. *brunonis* ( $2n = 20$ ).

Two species of the genus *Mostuea* were studied cytologically before: *Mostuea hirsuta* (T. Anders. ex Benth. et J. D. Hook.) Baill. ex Bak. and *Mostuea brunonis* Didr. var. *brunonis*. The chromosome number of both species turned out to be  $2n = 20$  (GADELLA 1962, 1963, respectively). The same number was established in material originating from two different sources in Cameroun.

*Mostuea brunonis* Didr. is a very complex species. LEEUWENBERG (1961) divided the species into three varieties, of which the variety *brunonis* represents a highly complicated complex. Numerous variants have been described as species, but the correlation between the variable characters does not seem to be good enough to permit the taxonomic recognition. A tentative segregation of some forms was given by Leeuwenberg (l.c.), but for these forms no new combinations were coined, because separating these as distinct taxa would be mere herbarium taxonomy and not a delimitation based on constant and distinct characteristics. According to Leeuwenberg coll. no. Bos 5030 belongs to the form "*M. angustifolia* Wernham", coll. no. Bos 5080 to the form "*M. megaphylla* Good". The whole complex seems extremely suitable for future cytotaxonomic research.

d. *Omphalocarpum elatum* Miers ( $2n = 26$ ).

The chromosome number of this species turned out to be the same as that of all previously investigated species:  $2n = 26$ . MANGENOT and MANGENOT (1957) studied *O. ahia* A. Chev. and *A. pachysteloides* Mildbr., MIÈGE (1954) *O. anocentrum* Pierre.

e. *Crossostemma laurifolium* Planch. ex Bth. ( $2n = 22$ ).

Hitherto no species of the genus *Crossostemma* were cytologically investigated.

ACKNOWLEDGEMENT

The author is much indebted to Ir. F. J. Breteleur and Dr. A. J. M. Leeuwenberg for providing him with identified material for cytological studies.

CHROMOSOME NUMBERS IN PLANTS FROM CAMEROUN AND IVORY COAST II.

REFERENCES

- GADELLA, T. W. J. (1961): The chromosome number of *Anthocleista djalensis* Chev. *Acta Bot. Neerl.* **10**: 107-108.
- (1962): Some cytological observations in the Loganiaceae. *Acta Bot. Neerl.* **11**: 51-55.
- (1963): Some cytological observations in the Loganiaceae II. *Proc. Roy. Neth. Acad. Sci.*, ser. C, **66**: 265-269.
- (1967): Some cytological observations in the Loganiaceae IV. *Proc. Roy. Neth. Acad. Sci.*, ser. C, **70**: 302-304.
- (1969): Chromosome numbers of some Angiospermae collected in Cameroun and the Ivory Coast. *Proc. Roy. Neth. Acad. Sci.*, ser. C, **72**: 306-310.
- LEEUWENBERG, A. J. M. (1961): The Loganiaceae of Africa. II. A revision of *Mostuea* Didr. *Meded. Landbouwhoges. Wageningen* **61**: 1-31.
- LÖVE, Å. & D. LÖVE (1970): A unique chromosome manual. *Taxon* **19**: 123-126.
- MANGENOT, S. & G. MANGENOT (1957): Nombres chromosomiques nouveaux chez diverses Dicotylédones et Monocotylédones d'Afrique occidentale. *Bull. Jard. Bot. Bruxelles* **27**: 639-654.
- & — (1962): Enquête sur les nombres chromosomiques dans une collection des espèces tropicales. *Rev. Cytol. Biol. Vég.* **25**: 411-447.
- MIÈGE, J. (1954): Nombres chromosomiques et répartition géographique de quelques plantes tropicales et équatoriales. *Rev. Cytol. Biol. Vég.* **15**: 312-348.