

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

BY

TH. W. J. GADELLA

(*Botanical Museum and Herbarium*)

(Communicated by Prof. Dr. J. LANJOUW at the meeting of March 29, 1969)

INTRODUCTION

Only limited cytological information is available for tropical plant species. In view of the fact that to an increasing extent chromosome numbers are employed as a taxonomic character, it is desirable that many tropical species will be studied from the cytological point of view. Therefore, the present author was invited by Ir F. J. Breteler and Dr. A. J. M. Leeuwenberg to study some plants collected in the Ivory Coast and Cameroun. It is true that in West Africa some hundreds of species were studied cytologically by MANGENOT and MANGENOT (1957, 1958, 1962) and by MIÈGE (1954, 1960a, b, 1962), but still many species remain to be analysed. In this paper the chromosome numbers of 16 species are mentioned.

MATERIALS AND METHODS

Of all investigated species herbarium material was collected in the field. The seeds of the same plant were germinated in the greenhouse and grown in pots. In all cases the counts were based on the study of roottip-cells. The roottips of some plants were taken directly in the field. After fixation in Karpechenko's fixative the roottips were embedded in paraffin, sectioned at 15 micron and stained according to Heidenhain's haematoxylin method. Of all investigated plants herbarium material of the mother plant and of the seedling is preserved in the herbarium of the Agricultural University of Wageningen (WAG) and in some other herbaria. All plants were identified by Ir. F. J. Breteler and Dr. A. J. M. Leeuwenberg.

RESULTS

The following results could be obtained:

Apocynaceae

Ancylobotrys scandens (Schum. et Thonn.) Pichon $2n=44$

Origin of the material: Cameroun, Nkolbisson, 7 km. W. of
Yaoundé

- Herbarium material of the mother-plant: F. J. Breteler 2882
(WAG; A; BR; FI; K; LISC; M; P)
Herbarium material of the seedling: F. J. Breteler 3005, 3015
(WAG)

Dichapetalaceae

- Dichapetalum cymulosum* (Oliv.) Engl. 2n = 24
Origin of the material: Cameroun near Kribi
Herbarium material of the motherplant: J. J. Bos et F. J.
Breteler 3059 (WAG)
Herbarium material of the motherplant: J. J. Bos et F. J.
Breteler 3102 (WAG)
Herbarium material of the seedling: F. J. Breteler 6205 (WAG)
Dichapetalum martineaui Aubrev. et Pellegr. 2n = 24
Origin of the material: Ivory Coast, Abidjan, Banco Forest
Herbarium material of the mother plant: F. J. Breteler 5216
(WAG)
Herbarium material of the seedling: F. J. Breteler 6209 (WAG)
Dichapetalum mombuttense Engl. 2n = 24
Origin of the material: Cameroun, 2 km. N.E. of Nguélémdouka
Herbarium material of the mother plant: F. J. Breteler 2113
(WAG; A; BR; FI; K; LISC; M; P; UC)
Herbarium material of the seedling: J. de Bruyn s.n. (WAG)
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 5330
(WAG)
Dichapetalum toxicarium (G. Don) Baill. 2n = 24
Origin of the material: Ivory Coast, 12 km. N. of Aboisso
Herbarium material of the mother plant: F. J. Breteler 5325
(WAG)
Herbarium material of the seedling: F. J. Breteler 6210 (WAG)

Icacinaceae

- Rhaphiostylis beninensis* (Hook. f. ex Planch.) Planch. ex Bth. 2n = 40
Origin of the material: Cameroun, 40 km. S.E. of Yaoundé,
bank of Nyong R.
Herbarium material of the motherplant: Breteler, de Wilde
et Leeuwenberg 2551 (WAG; A; BR; FI; G; K; LISC;
M; P; SL; UC; Z)
Herbarium material of the seedling: F. J. Breteler 3001 (WAG)

Loganiaceae

- Strychnos barteri* Solered. 2n = 44
Origin of the material: Cameroun, 3 km. S. of Victoria

- Herbarium material of the mother plant: Leeuwenberg 6910
(WAG)
- Herbarium material of the seedling: Leeuwenberg 6911 (WAG)
Strychnos elaeocarpa Gilg ex Leeuwenberg 2n = 44
- Origin of the material: Cameroun, 5 km. E. of km 65 of Edéa-
Kribi road
- Herbarium material of the mother plant: Leeuwenberg 7005
(WAG; and many other herbaria, see Leeuwenberg, 1969,
p. 116)
- Herbarium material of the seedling: Leeuwenberg 7007 (WAG)
Strychnos mimifensis Gilg ex Leeuwenberg 2n = 44
- Origin of the material: Cameroun, 24 km. N.E. of Douala
- Herbarium material of the mother plant: Leeuwenberg 6821
(WAG; and many other herbaria, see Leeuwenberg, 1969,
p. 189)
- Herbarium material of the seedling: Leeuwenberg 6823 (WAG)

Moraceae

- Bosqueia angolensis* Ficalho 2n = 28
- Origin of the material: Cameroun, Nkolbisson, 7 km. W. of
Yaoundé
- Herbarium material of the mother plant: F. J. Breteler 2732
(WAG; A; BR; FI; G; K; LISC; M; MO; P; Z)
- Herbarium material of the seedling: F. J. Breteler 2995
(WAG; P)

Papilionaceae

- Airyantha schweinfurthii* (Taub.) Brummit 2n = 22
- Origin of the material: Cameroun, 40 km. S.E. Yaoundé, bank
Nyong R.
- Herbarium material of the mother plant: F. J. Breteler 1765
(WAG)
- Herbarium material of the seedling: J. de Bruyn s.n. (WAG)
- Baphiastrum brachycarpum* Harms 2n = 22
- Origin of the material: Cameroun, near Toungrelo, 27 km.
S.W. of Bertoua
- Herbarium material of the mother plant: Breteler, de Wilde
et Leeuwenberg 2457 (WAG; A; BR; FI; G; K; LISC;
M; MO; P; Z)
- Herbarium material of the seedling: F. J. Breteler 2999 (WAG)

Passifloraceae

- Deidamia clematoides* (Wright) Harms 2n = 22

Origin of the material: Cameroun, village Oveng, km. 27, Rd.
Sangmelima-Yaoundé

Herbarium material of the mother plant: F. J. Breteler 2714
(WAG; A; BR; FI; K; LISC; M; P; SL; UC; Z)

Herbarium material of the seedling: F. J. Breteler 3000 (WAG)

Rhamnaceae

Ziziphus pubescens Oliv. 2n=24

Origin of the material: Cameroun, Mont Fébé, 3 km. W. of
Yaoundé

Herbarium material of the mother plant: F. J. Breteler 1980
(WAG; BR; K; LISC; P)

Herbarium material of the seedling: F. J. Breteler 2726, 2998
(WAG)

Herbarium material of the seedling: J. de Bruyn s.n. (WAG)

Sapindaceae

Pancovia pedicellaris Radlk. et Gilg 2n=32

Origin of the material: Cameroun, Gounté km. 27, Rd. Bertoua-
Betaré Oya

Herbarium material of the mother plant: F. J. Breteler 2758
(WAG; BR; FI; K; LISC; M; P)

Herbarium material of the seedling: F. J. Breteler 3004 (WAG)

NOTES ON SOME SPECIES

Hitherto no chromosome counts were carried out in the genera *Bosqueia* and *Deidamia*. *Airyantha schweinfurthii* (Taub.) Brummit was investigated by MANGENOT and MANGENOT (1958). They found the same chromosome number ($2n=22$) as the present author, but published their results under the synonym *Baphiastrum confusum* (Hutch. et Dalz.) Pellegr.

In *Ancylobotrys* the basic chromosome number is $X=11$, as may be deduced from the numbers $2n=22$ (found in *Ancylobotrys amoena* Hua by MANGENOT and MANGENOT, 1962) and $2n=44$ (found in *Ancylobotrys scandens* by the present author).

In the genus *Dichapetalum* only one species was analysed up to the present: *Dichapetalum liberiae* Engl. et Dinkl. (MANGENOT and MANGENOT, 1962; $2n=20$). In five species of this genus the chromosome number $2n=24$ was determined, which indicates that several basic numbers exist.

Pancovia pedicellaris Radlk. et Gilg proved to have the same chromosome number as *Pancovia bijuga* Willd., which was studied by MANGENOT and MANGENOT (1962).

Many species and cultivars of the genus *Ziziphus* were studied by KHOSHOO and SINGH (1963). In all cases the basic number appeared to be $X=12$. Also the chromosome number of *Ziziphus pubescens* fits in with this series.

In three species of the genus *Strychnos*, treated in this paper, the chromosome number appeared to be $2n=44$. Two of these species were recently described by LEEUWENBERG (1969). Up to the present 28 species of *Strychnos* have been studied cytologically (GADELLA, 1962, 1963, 1966, 1967), only in two species the number turned out to be $2n=88$, in all others $2n=44$. Most of the species studied were African, but also one South American and one Asiatic (Borneo) species were included.

The results obtained in *Rhaphiostylis beninensis* (Hook. f. ex Planch.) Planch. ex Benth. by MIÈGE (1960a) and MANGENOT and MANGENOT (1962) could be confirmed.

SUMMARY

The chromosome numbers of 16 species of Angiosperms, collected in Cameroun and the Ivory Coast, were determined. The numbers given for 14 species are new, in the remaining species the results of other authors could be confirmed.

ACKNOWLEDGMENT

These studies were carried out in the Institute of Systematic Botany, Lange Nieuwstraat 106, Utrecht (Director Prof. Dr. J. Lanjouw). The author is much indebted to Dr. A. J. M. Leeuwenberg and Ir. F. J. Breteler for providing him with identified material for cytological studies.

REFERENCES

- GADELLA, T. W. J., Acta Bot. Neerl. 11, 51-55 (1962).
 ———, Proc. Roy. Neth. Acad. Sci. C 66, 265-269 (1963).
 ———, Acta Bot. Neerl. 15, 490-491 (1966).
 ———, Proc. Roy. Neth. Acad. Sci. C 70, 302-304 (1967).
 KHOSHOO, T. N. & N. SINGH, Silv. Genet. 12, 158-174 (1963).
 LEEUWENBERG, A. J. M., Meded. Landbouwhogeschool Wageningen 69 (1), 1-316 (1969).
 MANGENOT, S. & G. MANGENOT, Bull. Jard. Bot. État Brux. 27, 639-654 (1957).
 ——— & ———, Bull. Jard. Bot. État Brux. 28, 315-329 (1958).
 ——— & ———, Rev. Cytol. Biol. Vég. 25, 411-447 (1962).
 MIÈGE, J., Rev. Cytol. Biol. Vég. 15, 312-348 (1954).
 ———, Ann. Fac. Sci. Univ. Dakar 5, 75-85 (1960a).
 ———, Rev. Cytol. Biol. Vég. 21, 373-380 (1960b).
 ———, Rev. Cytol. Biol. Vég. 24, 149-159 (1962).