

CYTOLOGICAL STUDIES IN THE LOGANIACEAE

BY

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INTRODUCTION

Previously, the chromosome number of some species of *Loganiaceae* was dealt with (GADELLA, 1961, 1962). In continuation of these studies, 19 species are treated now, of which 15 species had not been investigated cytologically before.

MATERIAL AND METHODS

The materials, kindly supplied to me by Dr. A. J. M. Leeuwenberg and Ir. F. Breteler, were collected in the form of seed samples in the Ivory Coast and in Cameroun. Some plants, however, were obtained from cuttings, originating from different botanical gardens, viz. *Desfontainia spinosa*, *Fagraea cf. ceilanica*, *Gelsemium sempervirens*, *Geniostoma ligustrifolium* and *Nuxia floribunda*.

Roottips of the seedlings or cuttings, and in some cases of the mother-plants, were fixed in Karpechenko, embedded in paraffin, sectioned at 15 μ and stained according to Heidenhain's haematoxylin method.

RESULTS

The table lists the chromosome numbers of the investigated species, together with the origin of the material, the herbarium where the voucher specimens are deposited and the botanical garden(s) where the living material is grown.

DISCUSSION

1. *Anthocleista liebrechtsiana* de Wild. et Dur.

The chromosome number of *A. liebrechtsiana* is the same as that of *A. djalonensis*. MANGENOT and MANGENOT (1958) reported the chromosome number of *Anthocleista kerstingii* Gilg. ex Volk. ($2n=60$). This name, however, is synonymous with *A. djalonensis* Chev.

2. *Desfontainia spinosa* Ruiz et Pavon.

MOORE (1947) counted the same chromosome number for this species.

3. *Fagraea cf. ceilanica* Thunb. (cult. as *F. obovata* Wall.).

According to Dr. Leenhouts, who is preparing the *Loganiaceae* for the

Species	Chromosome number 2n	Source	Herbarium material of mother-plant	Herbarium material of seedling	Herbarium material of cutting	Living material in greenhouse
<i>Anthocleista liebrechtiana</i> de Wild. et Dur.	60	Cameroun, Nyong R.	BRETELER 1771 (WAG)	—	—	Wageningen, Arbor. Agric. Univ.
<i>Desfontainia spinosa</i> Ruiz et Pavon	14	Andes, South America	—	—	LEEUWENBERG 3507 (WAG)	Amsterdam, Hort. Bot. Univ.
<i>Fagraea cf. ceilanica</i> Thunb. (cult. as <i>F. obovata</i> Wall.)	66	S. E. Asia	—	—	LEEUWENBERG 3518 (WAG)	Edinburgh, Royal Bot. Gard.; Wageningen, Arbor. Agric. Univ.
<i>Gelsemium sempervirens</i> (L.) Ait.	16	Central America	—	—	LEEUWENBERG 3513 (WAG)	Edinburgh, Royal Bot. Gard.; Wageningen, Arbor. Agric. Univ.
<i>Geniostoma ligustrifolium</i> A. Cunn.	40	New Zealand	—	—	LEEUWENBERG 3516 (WAG)	Edinburgh, Royal Bot. Gard.; Wageningen, Arbor. Agric. Univ.
<i>Mosduaea brunonis</i> Didr. var. <i>brunonis</i>	20	Cameroun, Yaoundé	BRETELER 2258 (WAG)	—	—	Wageningen, Arbor. Agric. Univ.
<i>Nuxia floribunda</i> Benth.	38	East Africa	—	—	LEEUWENBERG 3517 (WAG)	Edinburgh, Royal Bot. Gard.; Wageningen, Arbor. Agric. Univ.
<i>Strychnos aculeata</i> Solered.	44	Cameroun, Sangmélima	BRETELER 2667 (WAG)	BRETELER 3006 (WAG)	—	—
<i>Strychnos ajzelskii</i> Gilg.	44	Ivory Coast, Hana R.	DE WILDE & LEEUWENBERG 3600 (WAG)	LEEUEWENBERG 4576 (WAG)	—	Wageningen, Arbor. Agric. Univ.
<i>Strychnos angolensis</i> Gilg.	88	Cameroun, Bertoua	BRETELER 1879 (WAG)	—	—	Wageningen, Arbor. Agric. Univ.
<i>Strychnos camptoneura</i> Gilg.	44	Ivory Coast, Bianouan	LEEUEWENBERG	LEEUEWENBERG	—	Wageningen, Arbor. Agric. Univ.

<i>Strychnos floribunda</i> Gilg.	44	Ivory Coast Forêt d'Abouadou	3706 (WAG)	DE WILDE & LEEUWENBERG 3441 (WAG)	LEEUWENBERG 4575 (WAG) *	—	Wageningen, Arbor. Agric. Univ.
<i>Strychnos icaja</i> Baill.	44	Liberia, Ganta (coll. by H. C. D. de Wit)	—	—	LEEUWENBERG 4993 (WAG)	—	Wageningen, Arbor. Agric. Univ.
<i>Strychnos longicaudata</i> Gilg.	44	Cameroun, Doumé	BRETELER 2135 (WAG)	BRETELER 3002 (WAG)	—	—	—
<i>Strychnos malacoclados</i> C. H. Wright	88	Ivory Coast, Hana R.	DE WILDE & LEEUWENBERG 3613 (WAG)	LEEUWENBERG 4578 (WAG)	—	—	—
	88	Ivory Coast, Hana R.	DE WILDE & LEEUWENBERG 3613 (WAG)	LEEUWENBERG 4992 (WAG)	—	—	Wageningen, Arbor. Agric. Univ.
<i>Strychnos ngouniensis</i> Pelleg.	44	Ivory Coast, Guéyo	LEEUWENBERG 3727 (WAG)	LEEUWENBERG 4571 (WAG)	—	—	—
	44	Ivory Coast, Guéyo	LEEUWENBERG 3727 (WAG)	LEEUWENBERG 4991 (U, WAG)	—	—	Wageningen, Arbor. Agric. Univ.
<i>Strychnos nigritana</i> Bak.	44	Ivory Coast, Hana R.	DE WILDE & LEEUWENBERG 3602 (WAG)	LEEUWENBERG 4575 (WAG)	—	—	—
<i>Strychnos splendens</i> Gilg.	44	Ivory Coast, Brafouédi	LEEUWENBERG 3705 (WAG)	LEEUWENBERG 4577 (WAG) *	—	—	Wageningen, Arbor. Agric. Univ.

*) The seedling was grown in Africa and was dried after its roottip had been taken off and fixed in Karpechenko. Some of the other seeds were grown in Wageningen and cultivated in the greenhouses.

Flora Malesiana, *Fagraea obovata* Wall. is synonymous with *Fagraea ceilanica* Thunb. As it was not possible to recognise the vegetative plant he saw in the Edinburgh Botanic Garden, it is cited as *Fagraea cf. ceilanica*.

MOHRBUTTER (1936) studied the species *Fagraea fragrans* and *Fagraea litoralis*. The chromosome number of both species turned out to be $2n=12$. As the chromosome number of *Fagraea cf. ceilanica* is $2n=66$, the basic chromosome number of this genus may be $X=6$. Further investigations, however, are needed in order to corroborate this supposition.

4. *Gelsemium sempervirens* (L.) Ait.

MOORE (1947) counted the same chromosome number for this species.

5. *Geniostoma ligustrifolium* A. Cunn.

Hitherto no cytological studies were carried out in the genus *Geniostoma*. Nothing can be said with certainty of the basic number of this genus.

6. *Mostuaea brunonis* Didr. var. *brunonis*.

Up to the present, only one species of the genus *Mostuaea* was examined, *Mostuaea hirsuta*, $2n=20$, (GADELLA, 1962). The chromosome number of *Mostuaea brunonis* is the same as that of the previously investigated species.

7. *Nuxia floribunda* Benth.

The genus *Nuxia* belongs in the subfamily *Buddlejoideae*. The basic chromosome number of *Buddleja*, another genus of this subfamily, is $X=19$ (MOORE, 1947, 1960; JANAKI AMMAL, 1954). As far as can be concluded from the chromosome number of *Nuxia floribunda*, the placing of the genus *Nuxia* in the subfamily *Buddlejoideae* (or in the tribe *Buddlejeae*), is justified.

8. *Strychnos*.

The chromosome number of 12 species was determined, of which 10 species had the number $2n=44$ and 2 species $2n=88$. 2 species were investigated before: *Strychnos nigriflora*, $2n=44$, (MANGENOT and MANGENOT, 1958) and *Strychnos aculeata*, $2n=44$, (MANGENOT and MANGENOT, 1958; GADELLA, 1962). The number $2n=36$ for *Strychnos aculeata* was reported by MANGENOT and MANGENOT (1957), but afterwards the correct number appeared to be $2n=44$ (MANGENOT and MANGENOT, 1958).

The chromosome number of 17 species of the genus is known at present, 12 species having the number $2n=44$, 2 species $2n=88$, and according to MOHRBUTTER (1936), three species having the number $2n=24$. As only a few species of the genus have been investigated cytologically, the taxonomical value of the data available cannot be elucidated for the moment.

SUMMARY

The chromosome number of 19 species of *Loganiaceae* is dealt with.

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