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Chromosome numbers of some plants from Papua New Guinea

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Abstract

Baltisberger M. 1990. Chromosome numbers of some plants from Papua New Guinea. Bot. Helv. 100: 97–100.

The chromosome numbers of 6 species from Papua New Guinea are presented (Table 1). The record for *Desmodium umbellatum* ($2n=22$) is new.

At the Pharmaceutical Institute, ETH Zürich (Switzerland), Dr. Clemens Erdelmeier and his group are performing a chemical analysis on plants used for medicinal purposes by the native people of Papua New Guinea (P. N. G.). To provide sufficient plant material for this chemical investigation, a pharmaco-botanical excursion to P. N. G. was undertaken in September, 1988 (Fig. 1; Baltisberger and Erdelmeier 1989, Erdelmeier et al. 1989). The collected leaves were air-dried and shipped to Zürich. Herbarium specimens of every species investigated were taken (Baltisberger et al. 1989), and complete sets of duplicates deposited in L, LAE, UPNG and ZT (abbreviations according to Holmgren et al. 1981).

A few samples of seeds were collected on this excursion, and have since been cultivated in the greenhouse of the Geobotanical Institute of the ETH Zürich. Of these plants, chromosome numbers were determined from root tips which had been pretreated for 1/2 hour with colchicine (0.05%), then fixed in ethanol/acetic acid (3:1) and squashed in

Tab. 1. List of species investigated

Taxon	Specimen number	Plants investigated	2n
<i>Desmodium sequax</i>	11822	11	22
<i>Desmodium umbellatum</i>	11807	5	22
<i>Euphorbia geniculata</i>	11805	11	28
<i>Bidens pilosa</i>	11817	11	72
<i>Bidens pilosa</i>	—	11	72
<i>Crassocephalum crepidioides</i>	11810	11	40
<i>Tridax procumbens</i>	11802	8	36
<i>Tridax procumbens</i>	11808	6	36

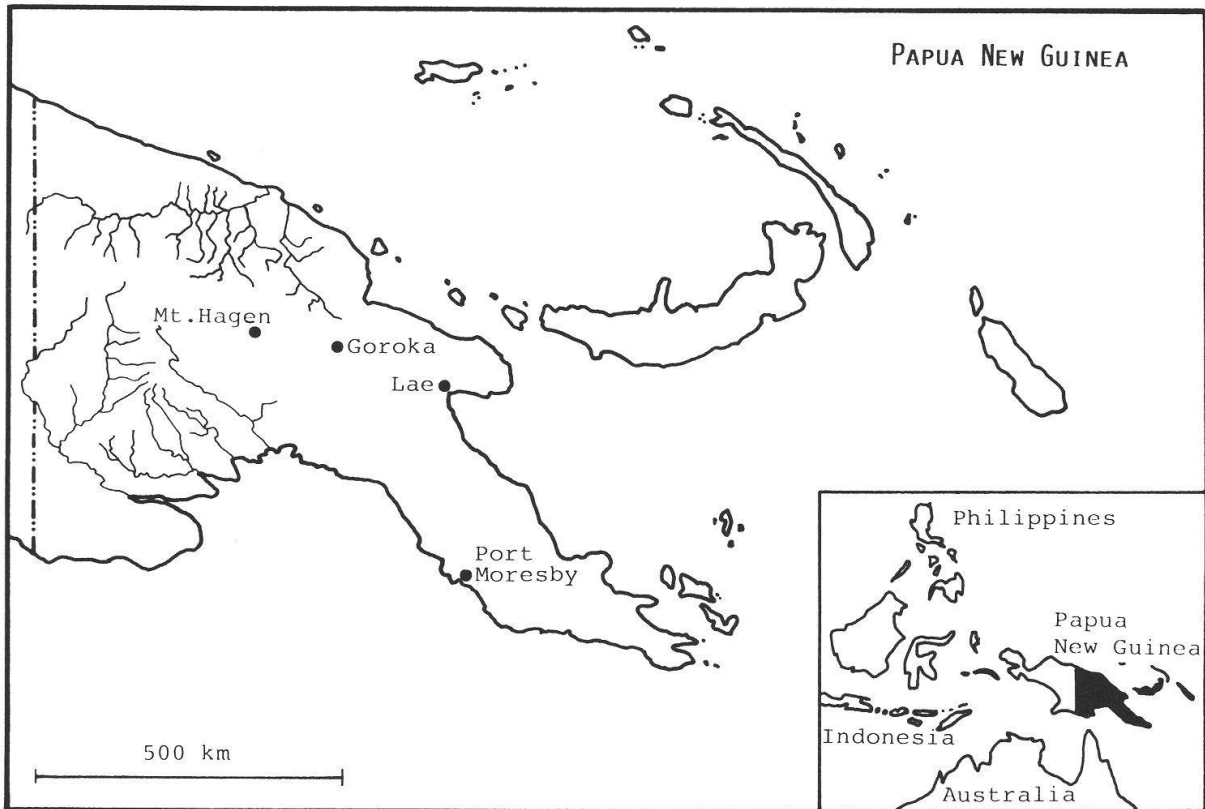


Fig. 1. Map of Papua New Guinea.

lacto-propionic orcein (Dyer 1963). At least 5 individuals of each species were investigated (see Table 1), and of each individual, 5–10 metaphases were counted out. Vouchers of cultivated plants are deposited in L and ZT.

1. Papilionaceae

Desmodium sequax Wall.

- Grassland, Patep near Mumeng, on the road from Lae to Bulolo, 40 km WSW of Lae, Morobe Province; ca. 1050 m; 21. 9. 1988; leg. E. & M. Baltisberger, C. Erdelmeier, P. Katik & T. Rali; Nr. 11822.

The chromosome number of $2n=22$ corresponds with indications in literature (Chuang et al. 1963, Mehra and Dhawan 1971).

Desmodium umbellatum (L.) DC.

- Savannah, on the road from Port Moresby to Rigo, between Gaire Beach and the turn-off to Barakau, ca. 25 km SE of Port Moresby, Central Province; 10–20 m; 9. 9. 1988; leg. E. & M. Baltisberger, C. Erdelmeier, M. Kuduk & T. Rali; Nr. 11807.

The chromosome number of this species was hitherto unknown. With its 22 chromosomes (Fig. 2) it corresponds with most references pertaining to the genus *Desmodium* (Federov 1974).

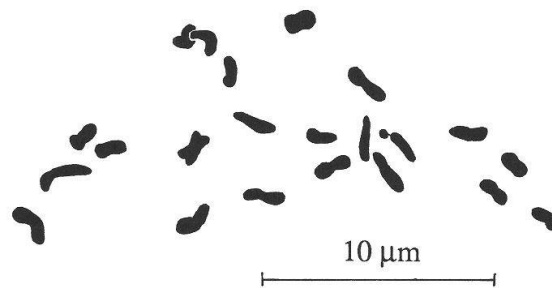


Fig. 2. Somatic metaphase of *Desmodium umbellatum*.

2. Euphorbiaceae

Euphorbia geniculata Ortega

- Very frequent weed in Doa Rubber Estate, on the road from Port Moresby to Bereina, ca. 50 km N of Port Moresby, Central Province; 10–20 m; 6. 9. 1988; leg. E. & M. Baltisberger, C. Erdelmeier, M. Kuduk & T. Rali; Nr. 11805 (cult. Nr. 11895).

Euphorbia geniculata should be considered as a synonym of *E. heterophylla* L. (van Balgooy, in lit.). But according to indications in literature *E. geniculata* ($2n=28$) and *E. heterophylla* ($2n=56$) seem to show a clear cytological difference (Federov 1974). The chromosome number of $2n=28$ would point out that the plants of P. N. G. belong to *E. geniculata*.

3. Compositae

Bidens pilosa L.

- Frequent on disturbed grounds and in gardens, Mt. Hagen, Western Highlands Province; ca. 1750 m; 17. 9. 1988; leg. M. Baltisberger; Nr. 11817 (cult. Nr. 11891).
- Roadside on the road to Mt. Gahavisuka-Park, N of Goroka, Eastern Highlands Province, 2100–2300 m; 14. 9. 1988; leg. E. & M. Baltisberger, C. Erdelmeier & T. Rali; no herbarium specimen of natural site (cult. Nr. 11892).

According to numerous indications in literature (Federov 1974, Moore 1973, 1974, 1977, Goldblatt 1981, 1984, 1985, 1988) 3 ploidy levels exist: $2n=24, 48, 72$. All plants of both sites showed $2n=72$ chromosomes.

Crassocephalum crepidioides (Benth.) Moore

- Roadside and clear bush, Koitaki Rubber Estate near Sogeri, ca. 30 km E of Port Moresby, Central Province; 450–500 m; 10. 9. 1988; leg. M. Baltisberger, C. Erdelmeier, M. Kuduk & T. Rali; Nr. 11810 (cult. Nr. 11893).

The chromosome number of $2n=40$ corresponds with indications in literature (see op. cit. *Bidens pilosa*).

Tridax procumbens L.

- Roadside on the University Campus, Waigani, Port Moresby; ca. 50 m; 5. 9. 1988; leg. M. Baltisberger; Nr. 11802 (cult. Nr. 11896).

- Roadside on the road from Port Moresby to Rigo, between Gaire Beach and the turn-off to Barakau, ca. 25 km SE of Port Moresby, Central Province; 10–20 m; 9. 9. 1988; leg. E. & M. Baltisberger, C. Erdelmeier, M. Kuduk & T. Rali; Nr. 11808 (cult. Nr. 11894).

All plants of both sites showed $2n = 36$ chromosomes, corresponding with the numerous indications in literature (see op. cit. *Bidens pilosa*).

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