

Chromosome count in *Dendrobium* II. 30 species*

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デンドロビウム属の染色体数 II. 30種

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In Series I of the present paper (Hashimoto 1981), the chromosome numbers of 87 species of the genus *Dendrobium* were studied. The chromosome numbers of 36 species of them were recorded for the first time and those of 14 species were redocumented. The present paper, continued from the previous paper, was undertaken to expand the chromosome number determinations of 30 species in the genus *Dendrobium*.

Acknowledgement

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Materials and Methods

All materials identified by the observation of flowers were grown in the Hiroshima Botanical Garden. The taxonomy of the materials was followed to Schlechter (1912, 1927).

The methods for the observation of the somatic chromosomes were the same as those described in Series I.

Results and Discussion

The somatic chromosomes observed in the present investigation were shown in Fig. 1–4. Results of the chromosome counts of the species of the genus *Dendrobium* investigated were listed in alphabetical orders in Table 1. In Table 1 the previous counts appeared in papers were

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Table 1. Chromosome numbers of the species of *Dendrobium* studied.

Species	Chromosome number		Reference
	Present count 2n n	Previous count 2n n	
<i>acinaciforme</i> Roxb.	38	19	Mehra & Sehgal 1975
<i>aduncum</i> Wall. et Ldl.	38		
<i>aggregatum</i> Roxb.			
var. <i>jenkinsii</i> (Wall.) Ldl.	38	38	Jones 1963
<i>baileyi</i> F. Muell.	38		
<i>bambusaefolium</i> Par. et Rchb. f.	38		
<i>bellatulum</i> Rolfe	38		
<i>bicameratum</i> Ldl.	38	38	Jones 1963
			Mehra & Kashyap 1978
		40	Arora 1968
		19	Vij, Gupta & Garg 1976
<i>bracteosum</i> Rchb. f.	38		
<i>capituliflorum</i> Rolfe	38	38	Jones 1963
<i>chameleon</i> Ames.	38	38	Pancho 1965
<i>coelogyne</i> Rchb. f.	40		
<i>cumulatum</i> Ldl.	40		
<i>densiflorum</i> Wall.	40	40+2f	Kosaki 1958
	40+3f		20+(1-2f) Mehra & Vij 1970
		38	Sharma 1970
		42	Chatterji 1976
		20	Mehra & Sehgal 1976
		40+1f	Hashimoto 1981
<i>dixanthum</i> Rchb. f.	40	40	Kamemoto & Sagarik 1967
	40+4f		Wilfret & Kamemoto 1971
		41	Jones 1963
		40+2f	Hashimoto 1981
<i>gibsonii</i> Paxt.	40	38	Vajrab. & Randolph 1960
			Sharma 1970
<i>gouldii</i> Rchb. f.	38	38	Kosaki 1958
			Kosaki & Kamemoto 1961
			Wilfret & Kamemoto 1971
<i>gratiosissimum</i> Rchb. f.	38	38	Jones 1963
			Wilfret & Kamemoto 1971
<i>lawesii</i> F. Muell.	38		
<i>linguella</i> Rchb. f.	38	38	Kamemoto & Sagarik 1967
			Wilfret & Kamemoto 1971
<i>loddigesii</i> Rolfe	38	40	Ito & Mutsuura 1957
		38	Jones 1963
			Banerji & Chaudhuri 1972

Table 1. (continued)

<i>longicornu</i> Ldl.	38	38	19	Jones 1963 Mehra & Sehgal 1976 Malla et al. 1977
<i>monophyllum</i> F. Muell.	38			
<i>musciferum</i> Schltr.	40			
<i>nakaharaei</i> Schltr.	40	30		Hsu 1972
<i>papilio</i> Loher	40			
<i>phlox</i> Schltr.	38			
<i>rigidum</i> Ldl.	38			
<i>unicum</i> Seidenf.	38			
<i>victoriae-reginae</i> Loher	38	38		Jones 1963 Wilfret & Kamemoto 1971
<i>williamsonii</i> Day et Rechb. f.	38	38		Kosaki & Kamemoto 1961 Kamemoto & Sagarik 1967
			57	Vij, Gupta & Garg 1976

also listed.

Among the 30 species in the genus *Dendrobium*, 22 were $2n=38$, 6 were $2n=40$ and the rest were other numbers such as $2n=40$ and $2n=40+3f$ in *D. densiflorum*, $2n=40$ and $2n=40+4f$ in *D. dixanthum*.

The chromosome numbers of following 14 species in the genus *Dendrobium* were recorded for the first time : *D. aduncum* $2n=38$, *D. baileyi* $2n=38$, *D. bambusaefolium* $2n=38$, *D. bellatulum* $2n=38$, *D. bracteosum* $2n=38$, *D. coelogyne* $2n=40$, *D. cumulatum* $2n=40$, *D. lawesii* $2n=38$, *D. monophyllum* $2n=38$, *D. musciferum* $2n=40$, *D. papilio* $2n=40$, *D. phlox* $2n=38$, *D. rigidum* $2n=38$, *D. unicum* $2n=38$.

The chromosome numbers of four species were here redocumented as follows : $2n=38$ to $2n=40$ in *D. gibsonii*, $2n=30$ to $2n=40$ in *D. nakaharaei*, $2n=38$, 42 , $40+1f$, $40+2f$ to $2n=40$ and $2n=40+3f$ in *D. densiflorum*, $2n=40$, 41 , $40+2f$ to $2n=40+4f$ in *D. dixanthum*. The chromosome numbers of $2n=40$, $2n=40+1f$ and $2n=40+3f$ in *D. densiflorum* and $2n=40$, $2n=40+2f$ and $2n=40+4f$ in *D. dixanthum* might have been natural variants, since each plant investigated was collected in the native localities of Thailand.

Summary

1. Chromosome counts were carried out in 30 species of *Dendrobium*.
2. Among these 30 species in the genus *Dendrobium*, 22 were $2n=38$, 6 were $2n=40$, one was both $2n=40$ and $2n=40+3f$ and the rest one was both $2n=40$ and $2n=40+4f$.
3. The chromosome numbers of the 14 species of the genus *Dendrobium* were recorded for the first time and those of four species were redocumented.

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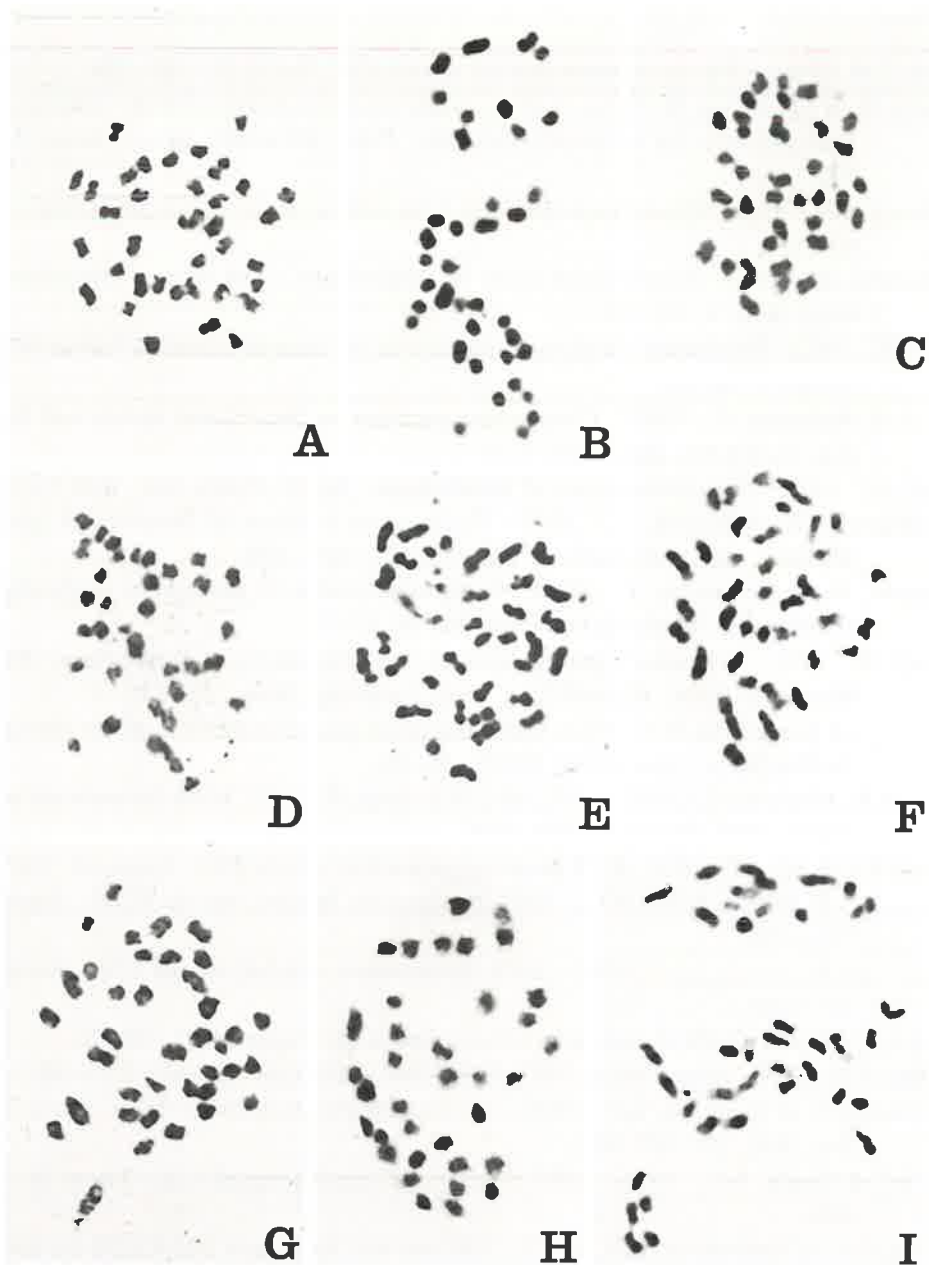


Fig. 1. Photomicrographs of somatic chromosomes of *Dendrobium*. $\times 2000$.
 A, *D. acinaciforme* $2n=38$. B, *D. aduncum* $2n=38$. C, *D. aggregatum* var. *jenkinsii* $2n=38$. D, *D. baileyi* $2n=38$. E, *D. bambusaefolium* $2n=38$. F, *D. bellatulum* $2n=38$. G, *D. bicameratum* $2n=38$. H, *D. bracteosum* $2n=38$. I, *D. capituliflorum* $2n=40$.

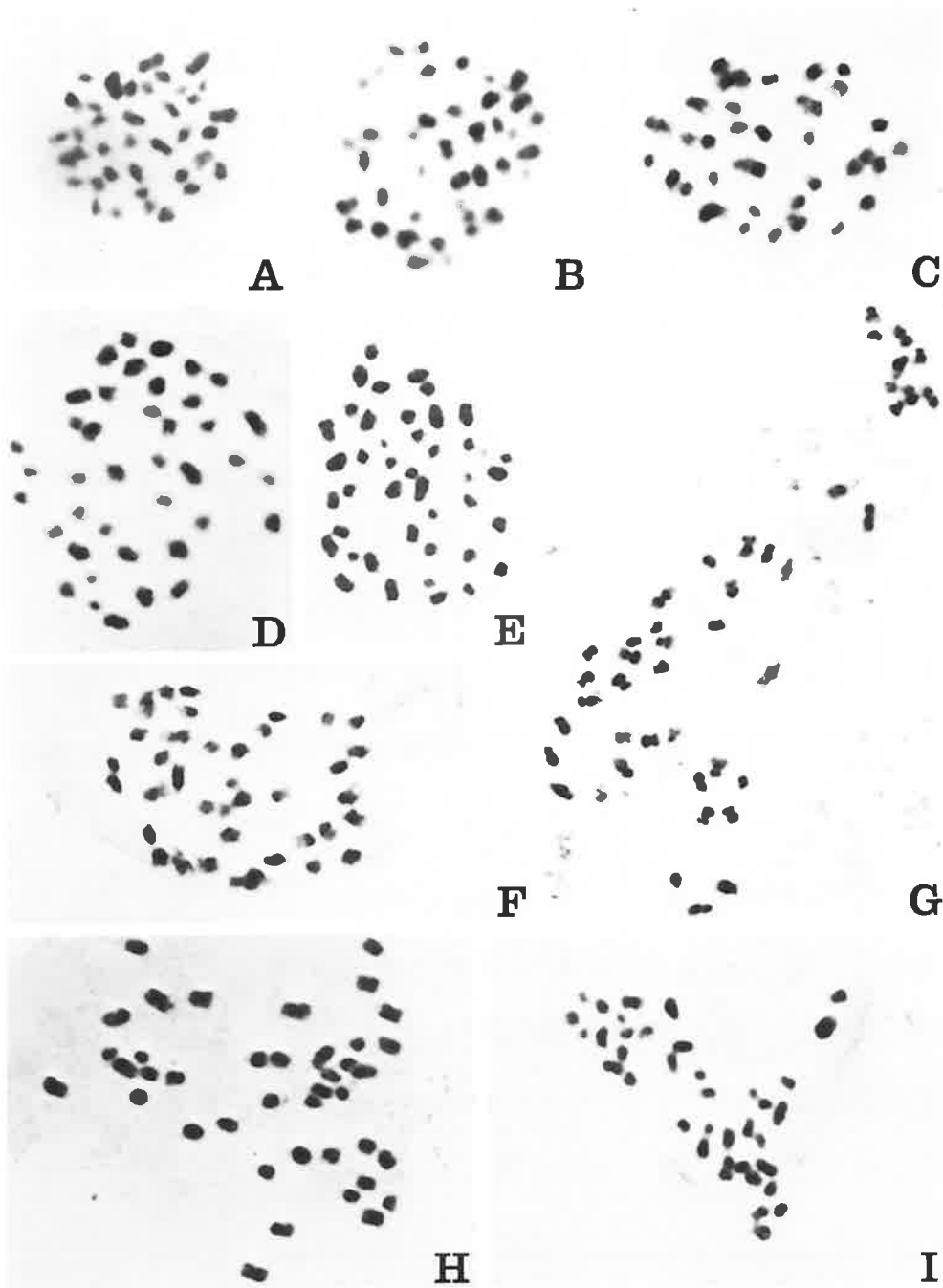


Fig. 2. Photomicrographs of somatic chromosomes of *Dendrobium*. $\times 2000$.
 A, *D. chameleon* $2n=38$. B, *D. coelogyne* $2n=40$. C, *D. cumulatum* $2n=40$.
 D, *D. densiflorum* $2n=40$. E, *D. densiflorum* $2n=40+3f$. F, *D. dixanthum* $2n=40$.
 G, *D. dixanthum* $2n=40+4f$. H, *D. gibsonii* $2n=40$. I, *D. gouldii* $2n=38$.

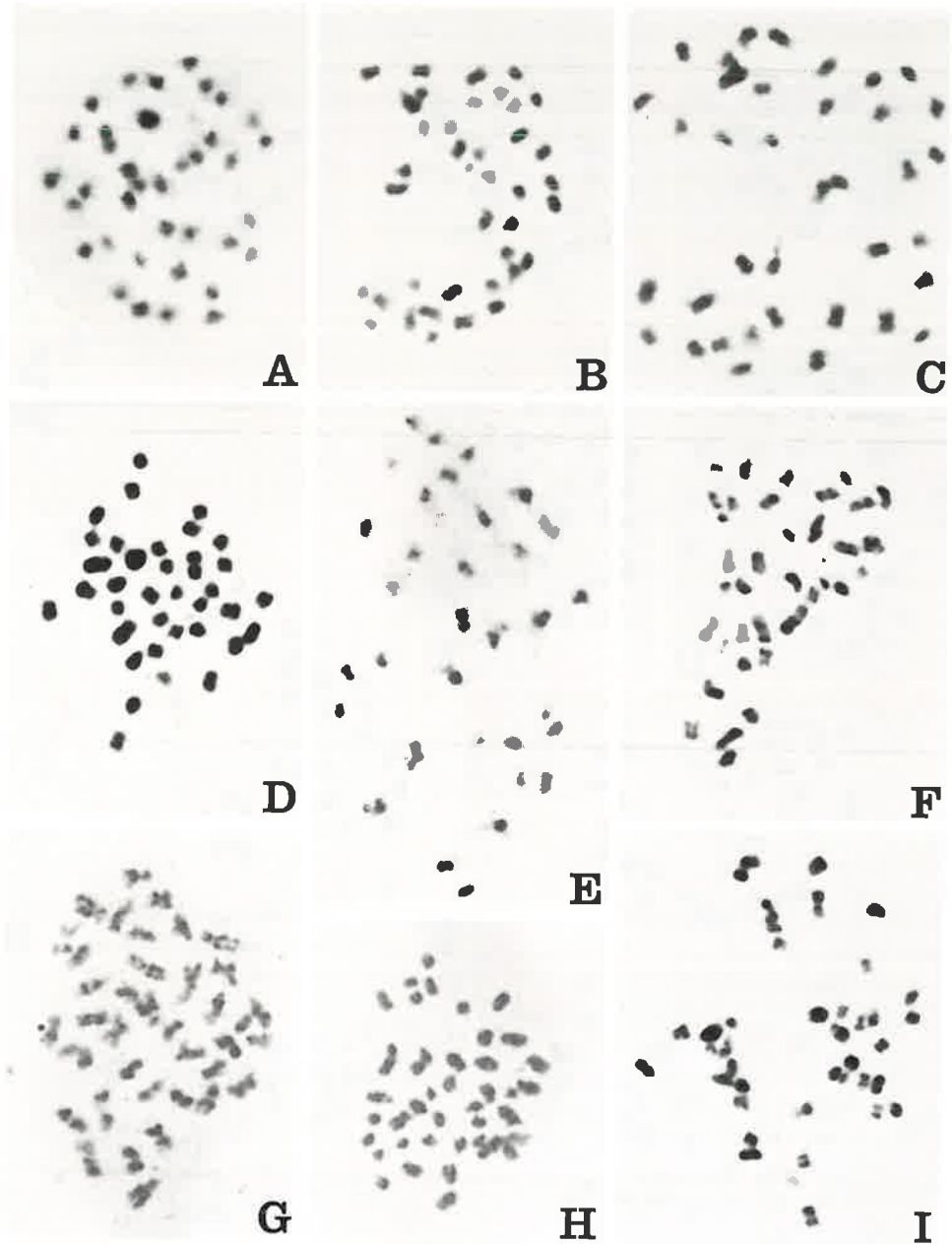


Fig. 3. Photomicrographs of somatic chromosomes of *Dendrobium*. $\times 2000$.
 A, *D. gratiosissimum* $2n=38$. B, *D. lawesii* $2n=38$. C, *D. linguella* $2n=38$. D, *D. loddigesii* $2n=38$. E, *D. longicornu* $2n=38$. F, *D. monophyllum* $2n=38$. G, *D. musciferum* $2n=40$. H, *D. nakaharaei* $2n=40$. I, *D. papilio* $2n=40$.

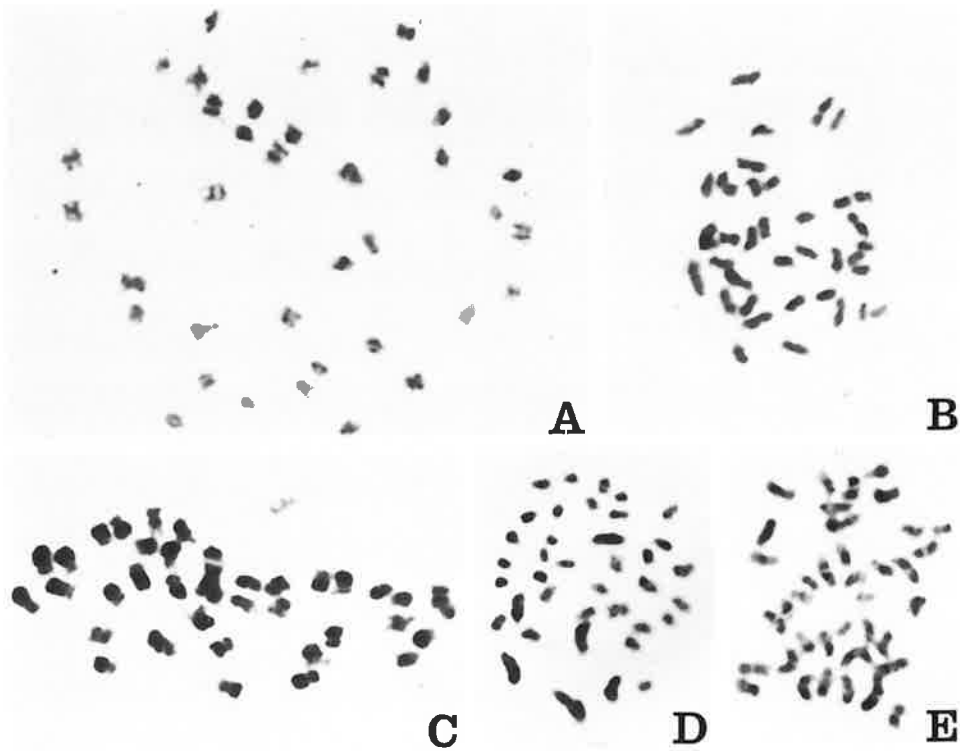


Fig. 4. Photomicrographs of somatic chromosomes of *Dendrobium*. $\times 2000$.
A, *D. phlox* $2n=38$. B, *D. rigidum* $2n=38$. C, *D. unicum* $2n=38$. D, *D. victoriae-reginae* $2n=38$. E, *D. williamsonii* $2n=38$.