

39. Variation of satellite in four plants of the genus *Paeonia*: Akinori UCHINO¹ and Minako MIYAGAWA² (¹Dep. Environ. Sci., Fac. Sci., Kumamoto Univ. and ²Dep. Biol., Fac. Sci., Kumamoto Univ.)

The five chromosomes, A to E, constitute a genomic set in the peony ($2n=2x=10$). The satellites on the chromosomes were very small and the number of SAT-chromosomes was different in the previous reports. In the present study, SAT-chromosome, signal of 18S rRNA in interphase nuclei by ISH method and nucleolus per cell varied in the number among the diploid peonies; *Paeonia japonica* Miyabe and Takeda, *P. obovata* Maxim., *P. lactiflora* Pall. cv. kumoinotsuru, and *P. lactiflora* Pall. medical peony. Signals of 18S rRNA in metaphase localized at the distal ends of homologous chromosomes of A, B, D and E (eight signals) in *P. japonica* and two kinds of *P. lactiflora*, and at the distal ends of chromosomes A, B and E (six signals) in *P. obovata*. In conclusion, it is considered that variations in the number of satellites, signals of 18S rRNA in interphase nuclei and nucleoli per cell attribute to the grade of activity of 18S rRNA genes and interaction among the chromosomes carrying their genes.

40. A karyomorphological comparison of four *Saxifraga* species collected in the western part of Sichuan Province, China: Tsuneo FUNAMOTO¹, Katsuhiko KONDO², Deyuan HONG³, Shi-liang ZHOU³ and Takiko SHIMADA⁴ (¹Biol. Inst., Showa Coll. Parm. Sci., ²Lab. Plant Chromosome Gene Stock, Fac. Sci., Hiroshima Univ., ³Bot. Inst., Chines Acad. Sci. and ⁴Res. Inst. Agri. Resou., Ishikawa Agri. Coll.)

Saxifraga aculeata Balf. f., *S. divaricata* Engl. et Irmsch., *S. montana* H. Smith and *S. cardiophylla* Franch. collected in Sichuan Province, China showed commonly the simple chromocenter type of karyomorphology at resting stage, and the proximal type at mitotic prophase. Somatic chromosome numbers were $2n=28$ in *S. aculeata*, $2n=22$ in *S. divaricata*, and $2n=32$ in *S. montana* and *S. cardiophylla*, respectively. The somatic chromosome number of $2n=28$ in *S. aculeata* and that of $2n=22$ in *S. divaricate* were reported here for the first time, while that of $2n=32$ *S. montana* supported the previous count. However, the chromosome number of $2n=32$ in *S. cardiophylla* was different from that of the previous count of $2n=48$. *Saxifraga aculeata* and *S. divaricata* had very small chromosomes ranged from 1.7-0.8 μ m long, while *S. montana* and *S. cardiophylla* had large chromosomes ranged from 4.6-2.0 μ m long. Thus, these four *Saxifraga* species could be divided into two groups with respect to their characteristics of mitotic metaphase chromosomes. This cytological grouping was agreed with taxonomical treatment of subgenera *Saxifraga* and *Hirculus*.