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Ribosomal DNA polymorphisms among Korean Bupleurum(Umbelliferae) species

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The identity of Korean Bupleurum taxa is not clear. In order to figure out the variation of Korean Bupleurum we have analyzed ribosomal RNA genes (rDNAs) of B. falacatum var. falcatum, B. falcatum var. scorzoneraefolium, B. longeradiatum and B. euphorbioides by means of Southern hybridization using electrochemical luminescence. Several rectriction enzymes which include *Eco*RI and *Bam*HI were used to digest genomic DNAs. Rice and helianthus rDNAs were heterlogous probes to map the genes. *Eco*RI digestion indicated 1.8Kb and 3.6Kb ristriction fragments and *Bam*HI digerstion indicated 1.2Kb and 2.6Kb restriction fragments respectively. Also we have conformed the restriction site variation and the length variation in Bupleurum for the physical mapping of the gene. rDNA patterns of B. falacatum var. falcatum collected from Japan(Mishima) appears quite diverse in both variations. And a phylogenic tree has been constructed on the base of the rDNA polymorphisms.

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The preliminary study of the palynological variation in *Polygonum* L. s. str., and the relationship of this group to *Polygonella* Michx. (Polygonaceae)

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To find out the systematic potentiality of pollen morphology in the genus *Polygonum* L. s. str., 23 species representing all three sections of *Polygonum* and as a putatively related taxa, 5 species from the genus *Polygonella* Michx. was examined by light microscopy and scanning electron microscopy (SEM). The aperture of the investigated taxa is mostly 3-colporate, rarely 4-6-colporate (especially, sect. *Polygonum*). The clear differences in pollen morphological features, especially exine sculpturing pattern, between the sections of *Polygonum* s. str. were found: Type 1 (psilate, tectum with very small puncta together with small scabrae: in sect. *Polygonum* and sect. *Tephis* (Adans.) Meisn.); Type 2 (dimorphic exine, i.e., verrucate cap in both poles expanding up to 1/3 of mesocolpium, and psilate in between, nearly triangular pollen shape in polar view: in *Polygonum molliaeforme* Boiss. or often treated as a monotypic section, *P.* sect. *Pseudomollia* Boiss.); Type 3 (dimorphic exine, i.e., semitectate-reticulate at the mesocolpium and rugulate or foveolate with microspinules around ectoaperture: in sect. *Duravia* S. Wats. and *Polygonella*). Palynologically, it is suggested that the pollen of sect. *Tephis* is similar to that of sect. *Polygonum*. It can be presumed that the pollen of *P. molliaeforme* seems to be an intermediate-type between sect. *Polygonum* and sect. *Duravia*, and is well supported the value of separated section for its own. The systematic utility of palynological data of these taxa at various taxonomic levels will also be discussed. More detailed studies by applying transmission electron microscopy including SEM examination of fractured pollen grains to examine the inner surface of nexine in a more extensive material are badly needed.