

[Shoyakngaku Zasshi, 44, 245 (1990)]

**Regional Variation on Morphology of *Geranium thunbergii*.**

EIJI SAKAI, TOSHIHIRO TANAKA\* and MIZUO MIZUNO

In our previous works, we made a microscopic examination of Gennoshouko (*Geranium thunbergii*) and reported on the morphology of cultivated *G. thunbergii* and on the seasonal morphological variations of the leaves. As a part of the studies of the morphology of *G. thunbergii*, in this work, we made microscopic studies of the herbarium specimen of *G. thunbergii* in order to clarify the regional variations of the plant in Japan. The result showed that *G. thunbergii* with red flower was distributed in the western part of Japan, that it had long glandular hairs on the calyx and knoblike thickness on the epidermal cell walls of leaves, that the palisade ratio was  $3.6 \pm 0.5$  and the stomatal indices on the upper and lower epidermis were  $4.6 \pm 2.0$  and  $19.8 \pm 3.5$  respectively, and that lignified cells were found in the phloems of 19 percent of the specimen.

[Shoyakugaku Zasshi, 44, 269 (1990)]

**Studies on Comparative Anatomy of Leaf and Stem of *Forsythia* spp.**

TOSHIHIRO TANAKA\*, EIJI SAKAI, NARUO MITSUI, MASASHI YOSHIDA  
and SANSEI NISHIBE

The fruits of *Forsythia* spp. have been described as the origin of crude drug Forsythiae Fructus. These chemical comparisons of lignans, glucosides and phenylpropanoids were already reported. In the previous paper we reported the comparative anatomy of these fruits. But in China, these stems and leaves were used for the folk medicine. In this paper, the leaves and stems of eight species of the genus *Forsythia* were observed anatomically. These were some differences in the shapes of the leaves, stomatal and hair characters, cork layer and distributions of the fibers in the vascular bundles of the petioles and leaves. Therefore, these eight species could be clearly distinguished from each other. These results were shown in the index table given.

[Shoyakugaku Zasshi, 44, 316 (1990)]

**Alkaloids Contents of *Datura* spp. on Flowering.**

YUKIO NORO, YOUICHI HISATA, KAZUYO OKUDA, TOMOKO KAWAMURA,  
MIKI YOSHIDA, MIE KAMIHARA, TOSHIHIRO TANAKA\* and EIJI SAKAI

We obtained 14 species of the genus *Datura* and measured the size, the dry weight and the hyoscyamine and scopolamine contents of the flowers collected on different days. The alkaloid contents of the flowers were the highest when they were harvested on the flowering day, and the alkaloid content per one flower was generally high in the section *Datura* plants. In these section *Datura* plants, the scopolamine content was higher than the hyoscyamine content. On the otherhand, in the case of the section *Stramonium* plants tested, the flowers were smaller, their alkaloid contents were lower than those of the section *Datura* plants and their hyoscyamine content and the scopolamine content were about the same.