

Early Fagaceae from the Late Cretaceous of the Northern Pacific

Gnilovskaya, A.¹

1) Komarov Botanical Institute, Russian Academy of Sciences, St. Petersburg, Russia,
E mail: agnilovskaya@gmail.com

The Fagaceae is one of the most significant families of woody plants in the Northern Hemisphere. Representatives of this family began to play an important role in the vegetation from the beginning of the Paleogene. Early records of Fagaceae in the Cretaceous are rare. Flowers and pollen are known from the Santonian of North America and from the Coniacian of Japan. Fossil leaves similar to foliage of extant Fagaceae appeared also in the Late Cretaceous.

The earliest findings of fagaceous-like leaves were recorded from the Santonian-Campanian of the Northern Pacific Region. They belong to the genus *Barykovia* MOISEEVA, which are known from Northeastern Russia and Alaska.

The earliest unequivocal fagaceous leaves appeared in the Maastrichtian deposits of the Koryak Upland (Northeastern Russia). They are assigned to *Fagopsiphyllum groenlandicum* (HEER) Manchester. In the Paleocene, the distribution of this species increased considerably. It was recorded from Northeastern Russia, Canada, USA (Alaska, Washington, Wyoming), Greenland, Spitsbergen and Scotland (Isle of Mull). The second species of this genus (*Fagopsiphyllum nipponicum* TANAI) comes from the Eocene deposits of Japan (Hokkaido) and Russia (Sakhalin, Kamchatka).

Leaves of *Fagopsiphyllum* have the greatest similarity with those of the genus *Fagopsis* Hollick. However, the distinctive reproductive structures of *Fagopsis* have never been found associated with *Fagopsiphyllum*. Representatives of *Fagopsis* were recorded from the Eocene–Oligocene deposits of USA (Washington, Colorado, Montana) and from the Eocene deposits of Russia (Kamchatka).

Barykovia, *Fagopsiphyllum* and *Fagopsis* share a specific combination of leaf characters, such as elongate shape, pinnate craspedodromous venation, dentate margin, teeth with biconvex sides, and triangular acute sinuses, which distinguished them from other extinct and extant Fagaceae. We supposed that these tree genera represented a separate evolutionary lineage of extinct early Fagaceae, which can be traced from the Santonian to the Oligocene. The evolution of this lineage was related with the Northern Pacific region. Only *Fagopsiphyllum groenlandicum* is characterized by the wide circumpolar area in the Paleocene.