

American continent where it is widely distributed from Labrador and Hudson bay to the alpine and sub-alpine Rocky mountains, extending south to the borders of New Mexico, west to British Columbia, and south in the Sierra Nevada to King's river in California.

Typical *P. palustris* does not occur on this continent but is represented by the variety *Wlassoviana* Bunge, "floribus minoribus galea retinensula obtusa," a native also of Baikal and Dauria; on the other hand, the type does occur in the arctic regions outside of America but is much more common farther south where it evidently developed; thus the species illustrates a case of two geographic centres, both south of the arctic region, from which two forms developed but modified to such a small extent that they can be considered only as forms of one species.

The small family Selaginaceae is in the arctic region represented by the genus *Lagotis* Gaertn. (*Gymnandra* Pall.); the genus comprises, according to Bentham and Hooker, eight species which are natives of Central Asia, some of which extend to the arctic regions. In North America *L. glauca* Gaertn. with the variety *Stelleri* (Cham. et Schl.) is credited to Alaska and adjacent islands. While the variety has been reported from several stations in arctic Siberia, from St. Lawrence bay (Kjellman) to Ural, it seems to be very rare in Russia: "Terra Samojedorum versus caemen montis Sordop. in vicinia promontorii Mikulkin (Ruprecht)," and it is absent from Scandinavia, Greenland, and the arctic American archipelago. The genus must be of Asiatic origin.

*Valeriana capitata* Pall. and *V. officinalis* L. are the only species of the genus which have been found in the arctic regions; of these the latter does not grow in America except as an escape from gardens. *V. capitata*, on the other hand, is by Macoun (Catal. l.c.) recorded from cool woods and by brooks, generally in the mountains and on the arctic shore; it is rare in arctic Russia, and with regard to Siberia Kjellman gives the distribution as follows: Konyam Bay, St. Lawrence Bay, Terra Tschuktschorum, Kolyma River, mouth of the River Olenok and Lena, Tajmyr River, and the mouth of the River Jenisej; it occurs also in Caucasus, Altai, and Baikal. As a species it occupies a somewhat isolated position in Russia and Siberia since the nearest allies are natives of southern regions, notably Caucasus.

On this continent there are four species in the northern Rocky mountains two of which, *V. uliginosa* and *V. sitchensis*, may be considered as close allies; it would thus appear as if the genus has a centre of distribution and development on this continent located in the northern Rocky mountains. In the Old World, Caucasus with its nine species, four of which are endemic, must constitute another centre, and the fact that *V. capitata* is among the species indigenous to these mountains might indicate that the species has had a dual origin; it certainly would be difficult to combine these two centres with each other, not only on account of the great distance, but also on account of the very distinct element developed in these mountains.

Of the 230 species of *Campanula* recognized by Bentham and Hooker, "per hemisphaerium boreale late dispersae, in regione Mediterranea imprimis orientali copiosissimae," some few have spread to the arctic regions; among these *Campanula uniflora* is recorded from latitudes as far north as 79° on Spitzbergen (Eaton); 76° 7' on the west coast of Greenland, Cape York (Nathorst), and 74° 40' on the east coast (Dusén). However, the fact that, so far, only four species have been recorded from the arctic regions seems surprising when we consider the distribution of the genus in Europe, in the mountains of Central Europe and Caucasus especially. For in the mountains of Switzerland, Austria, and Germany not less than 21 species are indigenous, several of which are alpine; and with regard to Caucasus 20 species have been recorded from these mountains, 11 of which are endemic. But as indicated above, the Mediterranean region