

distributed farther north, but the genus, nevertheless, has reached the eastern part of Siberia and Manchuria from where it extends to Alaska, until it reaches the northern and middle regions of this continent where, from the Atlantic to the Pacific, the genus exhibits its widest distribution.

It would seem quite natural to consider the wooded belts of the middle parts of this continent to represent a geographical centre of *Moneses*; possibly the genus migrated from there to eastern Siberia, Manchuria, and the Altai mountains, rather than vice versa.

Absent from arctic Siberia but recorded from all the other districts enumerated on the table (Table 6), *Pyrola minor* thus shows the widest distribution of all the members of Pyrolaceae. On this continent the habitat is given as "cold woods, Labrador, White Mountains of New Hampshire, Rocky Mountains from New Mexico and northward to the Barren country from Lat. 64° to the Arctic Islands." Nowhere is it alpine, however, and in the temperate parts of both Worlds it is associated with the same species of *Pyrola*, and, not infrequently, also with *Moneses*.

It seems barely possible to suppose that the species was formerly represented in arctic Siberia, thus having been a member of the circumpolar flora, even if it is known to occur very near Lat. 70° on the west coast of Greenland (Hartz), and on Melville peninsula (Parry). It is, however, a rare plant in the arctic region and, being decidedly a sylvan type, the geographical centre must have been located south of the polar regions, in the wooded belts of the Old World, presumably, since it is much more abundant there than on this continent, and more evenly distributed from north to south. Like *Moneses* it is very constant in habit, only one variety having been recorded, var. *brevis* Lge. from Greenland.

An almost corresponding distribution is shown by *P. secunda*, with exception of its absence from arctic America and Kamtchatka; in Greenland the typical plant does not occur, but is replaced by the variety *obtusata* Turcz.; this variety is also recorded from Terra Tschukchorum, from Canada, the Atlantic and Central United States. Like the preceding species, *P. secunda* is a woodland type and is not known to be alpine. Besides the variety *obtusata*, two others have been described, viz.: *pumila* Cham. et Sehl., and *dispersiflora* Norm.; of these the former is distributed from Labrador to Alaska; it follows the Rockies south to Colorado, and has been recorded from eastern Siberia and Altai. The var. *dispersiflora* Norm. is known only from arctic Scandinavia. Considering the relatively wide distribution of the typical plant on this continent in the north as well as in the south, extending to California, Colorado, and Maryland, and in view of the development of two characteristic varieties, it appears as if some important centre must have existed on this continent, presumably in the wooded belts of the northern part. With regard to the Siberian distribution of *P. secunda*, we have seen that this extends from Terra Tschukchorum, eastern Siberia to Altai, and, furthermore, Maximowicz has recorded it from East Manchuria. But the absence of the species from the boreal regions of Siberia, except in the northeastern corner, makes me believe that the Asiatic element of the species has really originated on the American continent.

Two important centres of distribution must undoubtedly be attributed to *P. chlorantha*, as shown on the accompanying table (Table 6). On this continent the distribution extends from Newfoundland, Labrador, and the Maritime Provinces westward to northern British Columbia and Alaska, south to California, Colorado, and Maryland. In Europe *P. chlorantha* has reached the arctic zone in Finmark; it is quite generally distributed through the European continent, going as far south as the Alps, the Pyrenees, and Kasan in Russia. But so far, the species has not been observed in Asia, and it is thus the more interesting to notice that an analogous species does exist in eastern Manchuria, namely *P. renifolia* Maxim. It would be well to combine the European distribution