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show the validity of the above mentioned facts. The vast virgin beech forests of Subcarpathian Russia have, in general, very advantageous soil conditions, though the geological substrata are formed here by sandstone and schists of the so-called Flysch formation. The soil reaction, according to Zlatník ([4], pp. 411), shows here a wide range from pH 3.9 to 7.4, but the markedly acid soils are characteristic only for the «spruce» associations of the beech forests, especially those with *Vaccinium myrtillus*. Podzolation, even at high altitudes is only slight.

V. **Regeneration of the beech within the forest.**

The regeneration of the beech is good in natural beech growths, but not very uniform. Of special interest is the type without herbaceous undergrowth having instead, real thickets of a very rich natural growth of young beech. This type is to be found in the virgin forests of Subcarpathian Russia where imposing beeches, a hundred to three hundred years old, attain a height of 30 to 40 meters; these forests are not very dense. Pure virgin beech forests with only Acer pseudoplatanus interspersed, as well as mixed forests, are usually never densely developed. The thick layer of half-decayed beech leaves on the forest floor does not favour the growth or germinating beeches. In the Little Carpathians, I have seen mighty bare-floor beech forests with a dense undergrowth of beech-seedlings, but the thick layer of dry leaves cheked their development so that only a few out of thousands could maintain themselves. In a loose Caricetum pilosae growth, the conditions for beech-seedlings already are somewhat more favourable. The shrubby beech colonies in old bare-floor beech forests arise in such manner that, under the protection of a young beech that has somewhat disturbed the dry-leaf carpet, new beech-seedlings take root and finally form these characteristic colonies.

VI. **Dominance of the beech and mixture of other trees.**

We know all possible intermediate stages of forests beginning with a 100 % dominance of the beech, to various types of coniferous and deciduous forests in which the beech is only scattered. Typical trees accompanying the beech in our beech forests are: deciduous *Acer pseudoplatanus*, *A. platanoides*, *Fraxinus excelsior*, *Ulmus*

scabra, *Tilia platyphylla*, *T. ulmifolia*, coniferous *Abies alba* and less often also *Picea excelsa*. Also other trees (*Acer campestre*, *Carpinus betulus*, *Quercus sessilis*, *Q. cerris*, even *Q. lanuginosa*, *Pinus silvestris*) may be interspersed but they cannot be considered as typically accompanying the beech.

A peculiar mixed beech forest sociation is found on ridges in our Carpathians, especially on talus in the mountain zone. The beech retreats here sometimes to such a degree that, locally, it may even disappear, but its typical ground vegetation remains. Interesting and frequent is the fact that talus, especially under the influence of the summit climate (and even at lower altitudes), shows a certain relation to an increasingly mixed beech forest, in which often, besides the dominant deciduous trees, conifers may also come in. I described this phenomenon, for instance, in the České Středohoří Mts. but it is even more typical in various parts of Slovakia.

VII. Transitions to other types of forest.

It is necessary that we distinguish the deciduous forests mixed with beech which are usually stable sociations, from the transitional types of beech forests to other forest communities.

I have shown in my book on the Brdy Mts. (1), that at the beginning of historic times, mixed forests of deciduous and coniferous trees predominated in Bohemia almost everywhere, and that these growths were most fit for maintaining favourable edaphic conditions. The percentage proportion of each type of individual trees fluctuated according to the habitat, or without any correlation to it, even in the natural mixed growths. This is, for instance, illustrated by the famous virgin forest of Boubín in the Šumawa Mts. The chief trees forming the virgin forest are four in number, namely the fir (*Abies alba*), the beech (*Fagus silvatica*), the spruce (*Picea excelsa*), and the maple (*Acer pseudoplatanus*), which last, however, plays a far smaller role than do the first three; the elm (*Ulmus montana*) is very rare. It is extremely difficult to determine accurately the proportionate percentage of each tree, because in different parts of the forest the percentage is different and also changes in the course of time. In many parts there is forty per cent of firs