Summary

The present paper deals with phytosociological and pedological investigations in natural as well as anthropogenous forests of the *Molinio-Pinetum* from Swiss Midlands. The author's results having been compared with the previous data, the following classification of the *Molinio-Pinetum* is suggested:

a) subassociation with
   1) *Epipactis palustris* - variant
   2) *Listera ovata* - variant
   3) *Genista tinctoria* - variant
   4) *Sanguisorba minor* - variant

b) subassociation with *Laserpitium latifolium*
   5) typical variant
   6) *Geranium sanguineum* - variant
   7) *Parnassia palustris* - variant

The variants described under 1 - 3 represent open forests with well-developed herb layer containing numerous *Graminae* and *Cyperaceae*. The variant No. 4 cannot be fully compared to them, for a different method has been used for the resp. releves. The variants No. 5 - 7 are natural forests occurring on steep slopes of northwestern Swiss Midlands; the variant No. 6 appears on drier soils than the typical variant, but its exposure is most frequently the same, i.e. southern or western. The variant No. 7 occurs on N-exposed steep slopes within the ridge of Albis, in sites that are permanently wet due to seeping soil water.

All the studied variants are characterized by the absence of *Fagus silvatica* in the tree layer, in spite of the fact that the beech represents the climax forest species of colline and submontane zone within the studied area. The present investigations show that the *Molinia-Pinus* forests inhabit the marly rendzina that is younger and shallower than soils of the neighbouring forests of *Fagus*. Marly rendzina developes very slowly; its uppermost layer may sometimes be removed by landslides which results in recurrent successions. *Fagus silvatica* is able to germinate in the *Molinio-Pinetum*, its life span beeing about 30 years; however, only exceptionally grow the individuals taller than 50 cm and so they nearly always remain within the herb layer. The abnormally reduced growth is apparently caused by properties of the marl soil that may remain quite wet for some time, but rapidly manifests a strong water deficiency in dry periods. The shallowness of marly rendzina as well as the above mentioned qualities of the marl may accordingly be considered as principal factors responsible for the absence of *Fagus silvatica* in the *Molinia-Pinus* forests occurring within the climax zone of this species.