

## PHYSICO-GEOGRAPHICAL REGIONALIZATION OF CZECHOSLOVAKIA

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### SUMMARY

For sustainable socioeconomic development and nature conservation we need better knowledge on landscape sphere. This should be based, among others, on complex physical geography, portraying hierarchy of physico-geographical complexes as spatial units for landscape ecological adjustment. Their spatial identification as regions consists in synergetic and synchoric processes/forms study. The characteristics of rocks, landforms, climate, run-off, soils, and phytocenoses tiers are given in the frames. Czechoslovakia is divided into four macrochores: the Česká vysočina (Czech Highlands), the Central European Lowland, the Karpaty (Carpathians) and the Panonia with 26 polymesochores and 131 monomesochores. Their delimitation overlaps Czechoslovak border and is tended for international correlation.

### INTRODUCTION

Proposed complex physico-geographical regionalization of Czechoslovakia is based on a number of component analytic thematic maps and only several attempts of synthetic view on natural landscape sphere of this country. The principal step is their integration using the idea of physico-geographical complexes hierarchy. We can follow inspiration by Soviet complex physico-geographical regionalization schools, e.g. Gvozděckij, Isačenko, Sočava, Fedina, Milkov, Michajlov and others. But the area of Czechoslovakia is not so large and therefore different sequence of spatial units have been used.

The experience of field survey in various parts of Czechoslovakia, mainly on synchores and microchores levels have been done for valuable results. We consider complex physico-geographical mapping as a very important method of physico-geographical research in the framework of landscape and regional studies. It is relevant for solving tasks in sustainable socioeconomic development and nature conservation.

The frames representation of physico-geographical complexes is including their component account: rocks, landforms, climate, run-off, soils, phytocenoses. Knowledge on these components is ordered in physico-geographical terms as 'key words': relief classes as flat, hilly, lowlands, highlandt, mountain, etc., landforms as plateau, horst, graben, glaciis, karst, mesa, cuesta, planation surface, etc., the heights are given above sea level. The characteristics of climate were accepted after E. Quitt (1971) — hydrothermic aeric regime. The categories of run-off are given in rank ordered scale from  $0.4 \text{ l} \cdot \text{s}^{-1} \cdot \text{km}^{-2}$  to  $38.4 \text{ l} \cdot \text{s}^{-1} \cdot \text{km}^{-2}$  based

on a map of B. Hlubocký (in Atlas of Czechoslovak Socialist Republic, 1966): low — moderate — high — very high.

Soil cover is represented by soil types in the form of soil nomenclature, not preferring any soil classification, it is mixed national/international one. Vegetation is described in vegetational tiers according to J. Raušer and A. Zlatník (in Atlas of Czechoslovak Socialist Republic, 1966) from oak, beech-oak, oak-beech, via beech, beech/oak-fir, beech-fir-spruce to spruce, subalpine, alpine. Pine, wetland, peaty bogs, floodplain as ash-elm-oak, alder, willow-poplar phytocenoses are not omitted, though they are only reconstructional, potential ones. The frames serve as a basic physico-geographical information system for situations research.

## THE CONCEPTS AND CONSTRUCTS

Physico-geographical regionalization consists in physico-geographical complexes spatial identification. They may be considered as natural landscape units. The purpose of physico-geographical regionalization is to portray a synthetic picture of landscape sphere, interconnections of landforms development, rock/regolith cycle, climate, hydro-cycle, pedogenesis and biocenoses/biotic processes and evolution. The identification of physico-geographical regions is a mode of physico-geographical synthesis. They are spatial forms of natural complexes formed by component interactions, i.e. synergetic process, and links among complexes as synchoric process. They have specific origin, genesis, evolution, and dynamic including responses of former synergetic/synchoric processes.

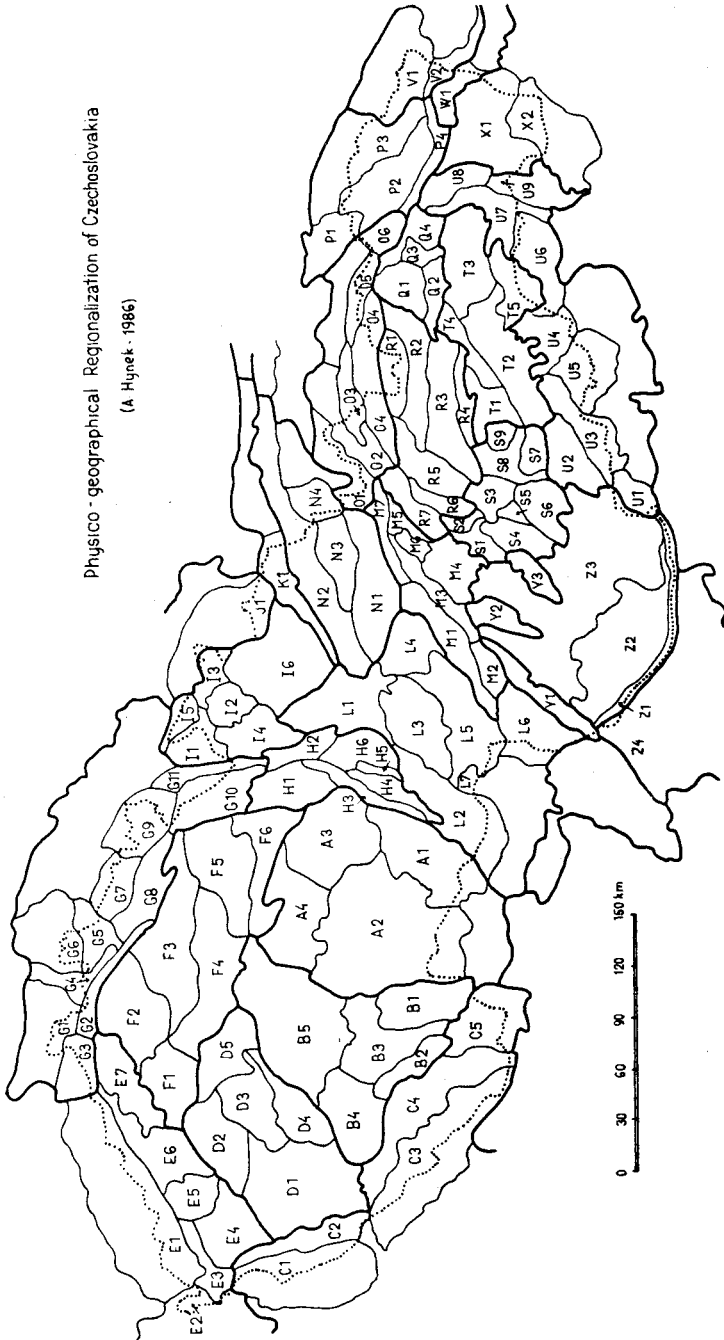
We subdivide a territory on the basis of observed differences, the outcome is an areal classification of spatial continuity. The basic principles involve to derive basic relatively homogeneous physico-geographical spatial units and the taxonomy of higher units. The delimitation of them is based on recognition of synchoric links among complexes, minimizing within regions differences and the between class differences maximizing.

A hierarchy of physico-geographical regions designates basic unit - elementary area as order 1 : top, site, we prefer the term synerg for integrative role of synergetic processes functioning among its natural components. Spatial patterns of synergies show recurrent pattern of synergies combination: synchores as order 2. They have a form of scalars, gradients, vectors, pallets, mosaics, cycles, lines (Hynek, 1986, Hynek and Trnka, 1981). Order 3 is formed by synchores spatial patterns: microchores, simple are monomicrochores, whilst compound are polymicrochores. Order 4 includes microchores combinations: monomesochores and polymesochores, while order 5 concerns of large natural spatial units: mono- and polymacrochores, e.g. the Alps, the Carpathians, the Česká vysočina (Highlands) and the Hercynian Europe.

In the case of Czechoslovakia the only comprehensive survey on complex natural natural or physico-geographical regions are from J. Hromádka with interpretation of J. Kůnský and J. Demek original attempt (1968, 1977). The former prefer morphology, the latter is a brief typology of natural landscapes. Because new information is available, the new modified physico-geographical regionalization is being developed. Regionalization is made with overlapping Czechoslovak border for the international correlation.

Czechoslovakia is divided into monomacrochore of the Česká vysočina with polymesochores A—I, monomacrochore the Central European Lowland with poly-

Physico - geographical Regionalization of Czechoslovakia  
 (A Hýáek - 1986)



mesochore J, the Karpaty (Carpathians) with polymesochores K—W, and the Panonia with polymesochores X—Z. Comprehensive scheme of 26 polymesochores includes 131 monomesochores. They are all drawn on enclosed map and the following text in the frame forms is a brief survey.

Mesochores delimitation was done by adopting two ways: division and the reverse procedure of field testing in selected mesochores, e.g. the Dyjsko-svratecký Graben, the Tatras, etc. More detailed survey has been made in the Brněnská polymesochore, where the basic units employed are synergs, synchores and microchores. Reconnaissance surveys cover selected tracks with detailed survey in different parts of Czechoslovakia.

## PHYSICO-GEOGRAPHICAL REGIONS OF CZECHOSLOVAKIA: POLYMESOCHORES AND MONOMESOCHORES

### Česká vysočina (the Czech Highlands)

#### A Českomoravská (the Bohemia-Moravian Highlands)

##### A1 Dyjsko-oslavská (the Dyje and Oslava rivers)

flat/hilly planation surfaces: 300—600 m, incised valleys; granitoids, gneisses, schists; warm—mild warm, dry/mild dry climate, very low/low run-off; argilluvisols, cambisols, pseudogleys, oak-hornbeam-beech phytocenoses

##### A2 Jihlavská (Jihlava)

planation surfaces, horsts and grabens: 500—837 m; granitoids, gneisses, schists; mild warm/mild cold and moist climate; moderate run-off; cambisols, pseudogleys, podzols; beech-fir phytocenoses

##### A3 Žďárská (Žďár)

planation surfaces, faulted domes, troughs: 500—836 m; gneisses, schists, granitoids; mild warm/mild cold and moist climate, moderate/moderately high run-off; beech-fir phytocenoses

##### A4 Sázavsko-chrudimská (the Sázava and Chrudimka rivers)

planation surfaces, tilted blocks, incised valleys: 400—709 m; granitoids, schists, gneisses; mild warm and mild dry climate; moderate run-off; cambisols, pseudogleys; oak-beech-fir phytocenoses

#### B Střední Povltaví (the Middle Vltava-river)

##### B1 Třeboňská (the Třeboň Basin)

flat relief: 400—500 m; Cretaceous, Tertiary and Quaternary deposits; flood-plains, terraces, peaty depressions, sandy places; mild warm - mild dry/moist climate; moderate run-off; pseudogleys, stagnogleys, gleys, histosols, podzols, paracambisols; oak-beech-fir, pine, wetlands phytocenoses

##### B2 Českobudějovická (the České Budějovice Basin)

flat/hilly relief: 400—500 m, flood-plains, terraces, wet depressions; Cretaceous, Tertiary and Quaternary deposits; mild warm — mild dry/moist climate; low/moderate run-off; pseudogleys, fluvisols, gleys, stagnogleys, cambisols; oak-beech-fir, wetlands phytocenoses

##### B3 Lužicko-vltavská (the Vltava and Lužnice rivers)

flat/hilly relief: 450—723 m, planation surfaces, horsts; plutonic rocks; mild

warm — mild dry climate; moderate/low run-off; cambisols, pseudogleys, argilluvisols, stagnogleys; oak-beech-fir phytocenoses

**B4 Blatenská (Blatná)**

flat/hilly relief, planation surfaces, horsts, 400—706 m; plutonic rocks; mild warm — mild dry climate; moderate run-off; pseudogleys, cambisols; oak-beech-fir phytocenoses

**B5 Vltavsko-sázavská (the Vltava and Sázava rivers)**

planation surfaces, horsts and grabens, incised valleys: 400—722 m; plutonic/extrusives, Paleozoic sediments; mild warm/mild cold — mild dry climate; low run-off; cambisols, pseudogleys, oak-beech-fir phytocenoses

**C Šumavská (the Šumava Mts.)**

**C1 the Český les (Oberpfälzer Wald)**

mountain relief: 400—1042 m; gneisses, mica-schists; mild cold — moist climate; moderate/moderately high run-off; dystic cambisols, podzols, pseudogleys; beech-fir phytocenoses

**C2 Tachovsko-všerubská (Tachov, Všeruby)**

subsided blocks, furrows and low horsts, flat/hilly relief: 400—739 m; schists, granitoids, crystalline complex, quartz line, Neogene deposits; mild warm/mild cold — dry/mild dry climate; moderate run-off; cambisols, pseudogleys, argilluvisols; oak-beech-fir phytocenoses

**C3 the Šumava Mts.**

massive mountain ranges, planation surfaces, grabens, 500—1378 m; schists, granitoids, migmatites, granulites, gneisses; cold/mild cold — moist climate; high/very high/moderately high run-off; dystic cambisols, podzols, gleys, pseudogleys, histosols; beech-fir-spruce phytocenoses

**C4 Šumavské podhůří (the Šumava Piedmont)**

highlands: 400—1096 m; crystalline complex; horsts, grabens, tilted blocks; mild cold — mild dry/moist climate; moderate/high moderate run-off; cambisols, pseudogleys, podzols; oak-beech-fir phytocenoses

**C5 Novohradská (Mts. + piedmont)**

mountain range, highlands, hilly land: 400—1040 m; gneisses, granitoids, schists, the western furrow filled by Neogene deposits; fault blocks; mild cold — mild dry/moist climate; moderate/moderately high run-off; cambisols, pseudogleys, podzols; oak-beech-fir phytocenoses

**D Berounská (the Berounka-river drainage)**

**D1 Plzeňská (Plzeň)**

hilly relief, tracks of highlands, basins: 300—600 m, planation surfaces; crystalline complex, Paleozoic deposits and extrusives, Cenozoic deposits; mild warm — mild dry/moist climate; low/moderate run-off; cambisols, argilluvisols, pseudogleys; oak-beech-fir phytocenoses

**D2 Manětínsko-rakovnická (Manětín, Rakovník)**

limnic Permo-carboniferous sediments with coal beds, rhyolites, basalts, Cretaceous sediments (the Džbán); hilly relief with basins: 300—600 m; mild warm — dry climate; low/moderate run-off; cambisols, argilluvisols, pseudogleys; oak-beech-fir phytocenoses

**D3 Křivoklátsko-berounská (the castle of Křivoklát, the town of Beroun)**

hilly/highlands/basins/furrows relief: 300—700 m; weakly metamorphosed sediments of Proterozoic, Paleozoic folded and faulted deposits — shales, greywackes, conglomerates, limestones + extrusives as pillow basalts, tuffits; karst landscape; mild warm — dry climate; low run-off; oak, oak-beech-fir phytocenoses

**D4 Brdy and Hřebený (orographical names)**

mountain/highlands relief: 200—862 m; Cambrian sediments and basalts, faulted and structural landforms; mild warm/mild cold and moist climate; moderate run-off; cambisols, pseudogleys; oak-beech-fir phytocenoses

**D5 Pražská (Prague/Praha)**

flat/dissected sedimentary plateau, hilly relief: 200—400 m; limnic Carboniferous and Permian deposits covered with Cretaceous sediments, cut by the Vltava valley, crystalline outcrops; mild warm/warm — dry climate; low run-off; phaeozems, chernozems, cambisols; oak-hornbeam-beech phytocenoses

**E Krušnohoří (the Krušné hory, Mts.)**

**E1 Krušné hory Mts. (Erzgebirge)**

uplifted tilted crystalline blocks with fault—line scarp, planation surfaces; mountain relief: 200—1244 m, deep incised valleys; gneisses, schists, migmatites, granitoids, volcanic rocks; mild cold/cold — mild dry/moist climate; moderately high/high run-off; dystrie cambisols, podzols, pseudogleys; beech-fir, spruce-fir-beech phytocenoses

**E2 Smrčiny (Fichtelgebirge, Elstergebirge)**

a part of large mountain faulted and dissected crystalline dome: 500—750 m; mild cold — mild dry climate; moderately high run-off; cambisols, pseudogleys; beech-fir phytocenoses

**E3 Chebsko-sokolovská (Cheb, Sokolov)**

basins, Tertiary grabens filled up deposits with lignite beds, terraces, glacis, a track of hilly relief: 450—600 m; mild warm — moist climate; moderately high/moderate run-off; pseudogleys, gleys, cambisols; beech-fir phytocenoses

**E4 Tepelsko-slavkovská (relief units)**

highlands relief: 450—983 m, uplifted block with fault—line scarps; metapellits, metapsammitis, gneisses, migmatites, granites and even volcanic hills and mesas; mild warm/mild cold — moist climate; moderately high run-off; cambisols, pseudogleys; beech-fir, spruce-fir-beech phytocenoses

**E5 Doupovské hory—Mts.**

the inactive strato-volcano originated in Aquitanian (Tertiary), lava flows, basalt pyroclasts, base level 300 m, top level 934 m, dissected by deep valleys of radial network; mild warm/mild cold — moist climate; cambisols; moderate run-off, beech-fir, oak-beech-fir phytocenoses

**E6 Mostecko-žatecká (Most, Žatec)**

basin, Tertiary tectonic graben filled with sands, clays, pyroclasts, basalts, lignite beds; flat relief: 250—350 m; the Ohře rift zone; warm — dry climate; low/moderate run-off; vertisols, pelosols, phaeozems; oak-beech and flood-plain phytocenoses

**E7 České středohoří (orographical name)**

neovolcanic mountain/highlands range and isolated cones chain, stripped

volcanic necks and laccolits of former sedimentary plateau: 140—836 m; mild warm/warm — dry/moist climate; moderate run-off; cambisols, pelosols, pararendzinas, pseudogleys, vertisols; oak-hornbeam-beech phytocenoses

#### F Polabí (the Labe-river)

##### F1 Labsko-oharská (the Labe and Ohře-rivers)

plateau and flood-plains with terraces, Cretaceous sediments: marlstones, sandstones, claystones + Quaternary gravels and loess: 150—300 m, except volcanic cone of Říp, 455 m, otherwise very flat relief; warm and dry climate; low run-off; chernozems, pararendzinas, phaeozems, paracambisols; oak-hornbeam-beech phytocenoses

##### F2 Ralská (Ralsko Mt., 696 m)

sedimentary plateau, dissected by valleys and basins, Cretaceous deposits: sandstones with relief of 'rock cities', marlstones and claystones, 150—350 m, isolated volcanic cones and dikes; mild warm — mild dry climate; moderate run-off; podzols, histosols, argilluvissols, cambisols; oak-beech, pine, oak-hornbeam phytocenoses

##### F3 Jičínsko-jizerská (Jičín, the Jizera-river)

sedimentary plateau, dissected, structural relief: rock cities, cuestas, monoclines, mesas, basins, Cretaceous sediments: 200—488 m; mild warm — mild dry climate; moderate/low run-off; argilluvissols, pelosols, pseudogleys, cambisols; oak-beech phytocenoses

##### F4 Labsko-cidlinská (the Labe and Cidlina rivers)

low flat sedimentary plateau: 160—292 m; Cretaceous sediments, Quaternary gravels, loess; flood-plains and terraces; warm and dry climate; low/moderate run-off; oak-hornbeam-beech and flood-plain phytocenoses; phaeozems, chernozems, pelosols, paracambisols, planosols, pararendzinas

##### F5 Labsko-orlická (the Labe and Orlice rivers)

flood-plains and fluvial terraces with Quaternary deposits, sedimentary plateau, Cretaceous deposits: 200—450 m; warm and dry climate; low/moderate run-off; paracambisols, fluvisols; oak-hornbeam-beech, pine, flood-plain phytocenoses

##### F6 Loučensko-doubravská (the Loučná and Doubravka rivers)

sedimentary flat/dissected plateau, brachysynclines, Cretaceous sediments, Quaternary deposits; 200—500 m; mild warm and dry climate; moderate run-off; phaeozems, cambisols, pararendzinas; oak-beech phytocenoses

#### G Lužicko-orlická

##### G1 Lužická (Lausitzer Bergland)

hilly dome-like granites with inselbergs and volcanic remnants, depressions with Quaternary glacial and fluvio-glacial deposits: 300—608 m; mild warm — moist climate; high run-off; pseudogleys, cambisols, regosols; oak-beech phytocenoses

##### G2 Lužicko-kozákovská (the Lužické Mts., Kozákov Mt.)

mountain/highlands range, horst built of Paleozoic, Mesozoic sediments + crystalline complex, volcanic effusion: 400—1010 m; mild warm/mild cold — mild dry/moist climate; high run-off; pseudogleys, cambisols; oak-beech-fir phytocenoses

- G3 Labské pískovce (Elbsandsteingebirge)*  
 sedimentary plateau built of sandstones, deeply dissected by valleys, rock cities with bizzare landforms, basalt dikes: 250–726 m; mild warm — mild dry/moist climate; moderate/high run-off; cambisols, rankers, pseudogleys, podzols; oak-beech-fir and pine phytocenoses
- G4 Žitavská (the Žitava basin)*  
 graben filled with Miocene deposits, glacial till, fundament is crystalline: 300–450 m; hilly; mild warm — mild dry climate; high run-off; pseudogleys, luvisols, cambisols, regosols; oak-beech phytocenoses
- G5 Izerské hory—Mts. (Góry Izerskie)*  
 mountain relief, uplifted blocks, horst, crystalline complex, planation surfaces, ranges and spurs, deep valleys: 400–1122 m; cold/mild cold — moist climate; high/very high run-off; podzols, cambisols, rankers, pseudogleys: beech-fir-spruce phytocenoses
- G6 Izerské podhůří—piedmont (Pogórze Izerskie)*  
 piedmont, hilly: 300–550 m; orthogneisses, mica-schists; mild warm — moist climate; moderately high run-off; pseudogleys, luvisols, cambisols; oak-beech phytocenoses
- G7 the Krkonoše Mts. (the Giant Mts., Karkonosze)*  
 the highest mountains in the Czech Highlands: Sněžka Mt., 1602 m, planation surfaces, glacial forms; crystalline complex and Paleozoic sediments, quartzites; cold — moist climate; very high/high run-off; podzols, rankers, cambisols; spruce-beech-fir and subalpine phytocenoses
- G8 Krkonošské podhůří — piedmont*  
 hilly/highlands piedmont: 300–700 m, Permo—Carboniferous clastic sediments with basalts and rhyolites; mild warm/mild cold and moist climate; moderate/high run-off; cambisols, luvisols, pseudogleys, oak-beech-fir phytocenoses
- G9 Broumovská (Broumov)*  
 built of Paleozoic sediments and effusives: conglomerates, greywackes with coal beds, basalts, rhyolites + Cretaceous sandstones creating structural landforms of mesas, 'rock cities', cuestas: 400–950 m, basins, highlands; mild warm — mild cold and moist climate; cambisols, pseudogleys, argilluvisols; moderately high run-off; oak-beech-fir phytocenoses
- G10 Orlická (the Orlické Mts. + piedmont)*  
 mountain range, highlands and hilly piedmont: 300–1115 m; crystalline complex and Cretaceous sediments; mild warm — cold and mild dry/moist climate; high run-off; cambisols, pseudogleys, podzols; oak-beech-fir-spruce phytocenoses
- G11 Kladská (Kotlina Klodzka)*  
 basin/graben/furrow filled up Cretaceous sandstones, marlstones, bordered by fault-line scarps: 400–500 m; mild warm — mild dry climate; high run-off; pseudogleys, cambisols; beech-fir phytocenoses

H Brněnsko-třebovská

- H1 Svitavsko-třebovská (Svitavy, Česká and Moravská Třebová)*  
 brachsynclinal part of the Czech Cretaceous plateau dissected into structural ranges and furrows; Paleozoic/Mesozoic deposits, crystalline complexes: 350 to 700 m; mild warm/mild cold — mild dry/moist climate; moderate run-off;



cambisols, argilluvisols, pseudogleys, pararendzinas; oak-beech-fir phytocenoses

*H2 Zábřežská (Zábřeh)*

highlands, crystalline complex + Paleozoic sediments and effusives: 300—600 m; mild warm — mild dry climate; moderate run-off; cambisols, argilluvisols, pseudogleys; oak-beech-fir phytocenoses

*H3 Boskovická (the Boskovice furrow)*

furrow filled with Permian-Carboniferous deposits: conglomerates, shales, marlstones, Neogene and Quaternary deposits, flat/hilly relief: 300/500 m, transversed horsts and grabens; warm/mild warm — mild dry/dry climate; low run-off; phaeozems, argilluvisols, cambisols, pseudogleys, pararendzinas; oak-hornbeam-beech-fir phytocenoses

*H4 Bobravsko-svitavská (the Bobrava and Svitava rivers)*

horsts nad grabens with hilly/highlands relief: 250—667 m; plutonic complex + Cenozoic deposits; mild warm/warm — mild dry/dry climate; very low run-off; cambisols, argilluvisols; oak-beech-fir phytocenoses

*H5 Moravský kras (the Moravian karst)*

karst plateau: 330—530 m, dissected by deep canyons, blind, semi-blind valleys, caves, abysses, partly covered karst; Devonian limestones; mild warm/mild dry climate; very low run-off; rendzinas, terrae calcis, argilluvisols; oak-hornbeam-beech phytocenoses

*H6 Dražanská (the Dražanská Highlands)*

dome-faulted Paleozoic sediments, culm, dissected by valleys, highlands/hilly relief: 300—735 m; mild warm — mild dry/moist climate; low/moderate run-off; cambisols, pseudogleys, oak-beech-fir phytocenoses

I Jesenky

*I1 Kralicko-rychlebská (Grupa Sněžníka, Góry Złote)*

mountain relief of ranges + spurs and deep valleys: 400—1423 m; crystalline complex, uplifted horst; cold and moist climate; high run-off; cambisols, rankers, podzols; beech-fir-spruce phytocenoses

*I2 Hrubý Jeseník (orographical name)*

mountain ranges + spurs, deep valleys: 550—1491 m, crystalline complex: gneisses, schists, granitoids, migmatites, marbles, amphibolites; cold — moist climate; high run-off; cambisols, podzols, rankers; beech-fir-spruce phytocenoses

*I3 Zlatohorská (Góry Opawskie)*

mountain/highlands relief: 400—974 m built up of metabasites, phyllites, schists, shales, greywackes — Paleozoic; mild cold — moist climate; high/moderately high run-off; cambisols, pseudogleys; beech-fir phytocenoses + oak-fir ones

*I4 Hanušovicko-mohelnická (Hanušovice, Mohelnice)*

highlands/mountain relief, submountain furrows; crystalline complex — granitoids, migmatites, ophiolite series, phyllites, quartzites; the Morava-river headwater, flood-plain: 300—1000 m; mild warm/mild cold — mild dry/moist climate; moderate/moderately high run-off; cambisols, pseudogleys, podzols, argilluvisols, fluvisols; oak-beech-fir phytocenoses

*I5 Vidnavská (Przedgórze Packowskie)*

piedmont hilly relief: 250—450 m, Quaternary glacial + fluvial deposits,

granitoid inselbergs; mild warm — mild dry climate; moderately high run-off; cambisols, pseudogleys; oak-beech phytocenoses

**I6 Nizký Jeseník** (*orographical name*)

highlands relief: 300—800 m, culm greywackes and shales, Devonian sediments and effusives, isolated strato-volcanos of Neogene and Quaternary basalts, pyroclasts; mild warm/mild cold — mild dry/moist climate; moderate/moderately high run-off; cambisols, pseudogleys, argilluvisols; oak-beech-fir phytocenoses

J Slezská nížina (Nížina Slaska)

**J1 Osoblažsko-opavská** (*Plaskovýž Glubczycki*)

marginal part of lowlands covered by glacial deposits, till, remodelled by periglacial and fluvial processes; very flat relief: 250—300 m; mild warm — dry climate; low run-off; argilluvisols, pseudogleys; oak-hornbeam-beech phytocenoses

K Odersko-viselská (the Odra and Visla rivers)

**K1 Hranicko-ostravská** (*the towns of Ostrava and Hranice*)

Quaternary accumulation lowland: 200—300 m, flat relief on deposits: loess, loamy loess, proluvial, fluvial, glacio-fluvial, lacustrine modelled by glacial/periglacial/eolian/fluvial processes; covering Paleozoic deposits with coal beds; mild warm — dry/mild dry climate; moderate run-off; pseudogleys, fluvisols, argilluvisols; oak-hornbeam beech, ash-elm-oak, alder phytocenoses

L Pomoraví (the Morava-river)

**L1 Hornomoravská** (*the Upper Moravian Graben*)

fault-line graben, Cenozoic deposits: fluvial, loess covering Pliocene deposits; very flat relief: 195—275 m; warm/mild warm and dry climate; low/moderate run-off; oak-hornbeam, ash-elm-oak — alder phytocenoses; fluvisols, gleysols, phaeozems, planosols, chernozems, argilluvisols

**L2 Dyjsko-svratecká** (*the Dyje and Svratka rivers*)

graben with Cenozoic deposits: loess, gravels, shales, sands, clays, marls, loams; flat/hilly relief: 150—350 m; warm — very dry climate; chernozems, phaeozems, fluvisols, planosols, vertisols; very low run-off; oak-hornbeam, ash-elm-oak + alder phytocenoses

**L3 Chřibská** (*Chřiby: orographical name*)

hilly/highlands relief: 250—587 m; flysch Paleogene resistant sandstones, lower relief of shales, marl and claystones covered by loess; warm/mild warm/mild cold — dry/mild dry/moist climate; very low/low run-off; argilluvisols, phaeozems, cambisols, pelosols, vertisols; oak-beech-fir phytocenoses

**L4 Vízovická** (*orographical name*)

hilly piedmont and highlands relief: 300—672 m; Paleogene flysch sediments, ridges and furrows, sandstones and shales; mild warm — mild dry/moist climate; low/moderate run-off; cambisols, pelosols, pseudogleys; oak-hornbeam-beech-fir phytocenoses

**L5 Dolnomoravská** (*the Lower Moravia*)

graben with lowland relief: 160—190 m, wide flood-plains, sand dunes, terraces,

loess, Neogene deposits with lignite beds; warm and dry climate; very low run-off; fluvisols, planosols, chernozems, phaeozems, regosols, gleys, vertisols; oak-hornbeam, pine, ash-elm-oak + alder phytocenoses

**L6 Záhorská (the Záhorská lowland)**

flat/hilly relief: 140–281 m, flood-plains, terraces, sand dunes and wetland depressions; Quaternary fluvial and eolian deposits, partly Neogene deposits; warm/very warm and dry climate; low run-off; regosols, paracambisols, planosols, phaeozems; oak, pine, oak-hornbeam, ash-elm-oak + alder phytocenoses, peaty bogs

**L7 Pálavská (klippen strip of Weinvierteller Hügelland)**

only a small track of klippen strip built of Jurassic limestones reaching up 550 m, lower flat/hilly relief: 200–300 m on Cenozoic shales, loess; warm/very warm — dry/very dry climate; very low run-off; oak-hornbeam phytocenoses; pellic + vertic chernozems, phaeozems, rendzinas

**M Střední Pováží (the Váh river, middle part)**

**M1 Bílé Karpaty (the White Carpathians)**

mountain relief: 300–970 m, ranges + spurs, deep valleys; Paleogene flysch; mild warm/mild cold — mild dry/moist climate; moderate run-off; cambisols, pelosols, pseudogleys; oak-hornbeam-beech-fir phytocenoses

**M2 Myjavská (orographical name)**

hilly piedmont: 350–600 m, klippen belt, flysch shales; mild warm — mild dry; moderate run-off; cambisols, pararendzinas, argilluvissols, phaeozems; oak-hornbeam-beech phytocenoses

**M3 Povážské podolie (the Váh-Valley)**

depression with grabens, basins, gaps, terraces, fans, wide flood-plain, klippen belt, glacis: 200–500 m; Cretaceous/Paleogene flysch; warm and dry climate; moderate run-off; calcareous fluvisols, cambisols, argilluvissols, pararendzinas; oak-hornbeam, beech-fir phytocenoses

**M4 Stražovská (the Stražovské Mts.)**

mountain relief: 300–1213 m; uplifted horsts; crystalline complex: granite, schists, gneisses, Mesozoic limestones, partly karstified, flysch complex; structural landforms; mild warm/mild cold — mild dry/moist climate; moderate/high run-off; rendzinas, terrae calcis, cambisols; beech-fir, pine, oak-hornbeam phytocenoses

**M5 Žilinská (Žilina-town)**

wide flood-plains, fans, terraces, hilly relief on flysch: 330–550 m; warm/mild warm — mild dry climate; high run-off; cambisols, rendzinas, argilluvissols, fluvisols, pseudogleys; oak-hornbeam-lime, ash-elm-oak + alder phytocenoses

**M6 Súľovská (orographical name)**

Eocene lime conglomerates with structural landforms: crests, hogback klippen, brachyfolde elevations, combe basins, klippen elevations: 400–891 m; mild warm/mild cold — mild dry/moist climate; moderate run-off; rendzinas; beech-fir, pine phytocenoses

**M7 Javornicko-kysucká (orographical names)**

klippen relief, deep valleys, flysch structural landforms: 400–800–1095 m; mild cold — moist climate; moderate/moderately high run-off; cambisols, pseudogleys, rendzinas, pararendzinas; oak-hornbeam, beech-fir phytocenoses

N Moravsko-slezská (Moravia-Silesian)

N1 *Vsetínsko-javornická* (orographical names)

three mountain ranges with spurs of resistant Paleogene flysch sandstones + conglomerates reaching up 1071 m, lower highlands built of flysch shale, dissected by deep valleys: 350—600—800 m; mild cold and moist climate; high run-off; dystric + pellic cambisols, podzols, rankers; beech-fir phytocenoses

N2 *Podbeskydská* (piedmont)

hilly/highlands relief: 250—964 m, Cretaceous/Paleogene flysch, remnants of culm/devonian limestones with local karst, N part affected by continental glacial drift; mild warm — dry/mild dry/moist climate; moderately high run-off; cambisols, pseudogleys, argilluvisols, pelosols; oak-beech-fir phytocenoses

N3 *Moravsko-slezské Beskydy* (orographical name)

two main ranges with spurs, uplifted blocks of Cretaceous flysch — upper resistant sandstones, lower shales, claystones, deep river valleys: 450—1323 m; mild cold/cold — moist climate; high/very high run-off; cambisols, podzols, rankers, pseudogleys; beech-fir-spruce phytocenoses

N4 *Slezské Beskydy* (*Beskid Slaski*)

a marginal track of mountain range built of Cretaceous flysch sandstones reaching up 995 m; mild cold/cold — moist climate; high run-off; cambisols, podzols, pseudogleys; beech-fir-spruce phytocenoses

O Oravsko-dunajecká (the Orava and Dunajec rivers)

O1 *Kysucko-oravské Beskydy* (*Beskid Zywiecki*)

mountain range + spurs and deep valleys: 700—1725 m; Paleogene flysch: sandstones + shales in piedmont; cold/mild cold — moist climate; high run-off; cambisols, podzols, rankers, histosols; beech-fir-spruce, spruce, subalpine, peaty bogs phytocenoses

O2 *Podbeskydsko-magurská* (orographical names)

piedmont and mountain range: 700—1396 m, Paleogene flysch; mild cold/cold — moist climate; high run-off; cambisols, pseudogleys; beech-fir-spruce phytocenoses

O3 *Oravsko-nowotarská* (orographical names)

depression with flat/hilly relief: 600—700 m, wetlands, Neogene sediments, Quaternary fluvial, fluvio-glacial and organic deposits, peat; mild cold — moist climate; gleys, pseudogleys, histosols, stagnogleys; spruce-fir and peaty bogs phytocenoses

O4 *Skorušinsko-magurská* (*Pogórze Spisko-Gubalowskie*)

mountain range + spurs and marginal furrow built of Paleogene flysch and klippen belt: 700—1314 m; mild cold/cold — moist climate; high/very high run-off; cambisols, podzols, rankers, pseudogleys; beech-fir-spruce phytocenoses

O5 *Pienínsko-lubovnianská* (orographical names)

highlands/mountain relief: 700—1050 m, Paleogene flysch, klippen limestones, deep river valleys; mild cold/cold — moist climate; high run-off; rendzinas, pararendzinas, cambisols, pseudogleys; beech-fir-spruce, oak phytocenoses

O6 *Čergov* (orographical name)

massive mountains, uplifted block/horst: 400—600—1157 m, Paleogene flysch, fault-line scarps; mild cold/cold — moist climate; moderately high run-off; cambisols, podzols, pseudogleys; beech-fir phytocenoses

P Nížké Beskydy (orographical name)

*P1 Busov (orographical name)*

highland/mountain relief: 400—1001 m, Paleogene flysch; mild cold — moist climate; moderately high run-off; cambisols, pseudogleys; beech-fir, maple phytocenoses

*P2 Ondavská (the Ondava-river)*

highlands relief: 300—762 m, Paleogene flysch; ranges and valleys, furrows; mild warm/mild cold — dry/mild dry, moist climate; moderate/moderately high run-off; cambisols, pseudogleys, pelosols, argilluvisols; oak-beech-fir phytocenoses

*P3 Laborecká (the Laborec-river)*

hilly/highlands/mountains relief: 300—904 m, ranges+furrows; Cretaceous/Paleogene flysch; mild warm/mild cold — mild dry/moist climate; cambisols, pseudogleys; moderately high/high run-off; beech-fir, oak-hornbeam phytocenoses

*P4 Beskydské predhorie (piedmont)*

hilly relief: 180—642 m on klippen belt, Cretaceous/Paleogene flysch; mild warm — mild dry climate; moderate run-off; pararendzinas, rendzinas, cambisols, argilluvisols, fluvisols; oak-hornbeam-beech-fir, ash-elm-oak+alder phytocenoses

Q Šarišsko-spišská (the former counties)

*Q1 Lavočské vrchy—Mts.*

large horst mountain block dissected by deep valleys into ranges+spurs+valleys relief: 600—1291 m; Oligocene sandstones and conglomerates; mild cold/cold — moist climate; moderate/moderately high run-off; cambisols, podzols, rankers, pseudogleys; beech-fir-spruce phytocenoses

*Q2 Hornádská (the Hornád-river)*

graben bordered by fault-line scarps, hilly relief: 450—672 m; Paleogene flysch with travertine hills; mild warm — mild dry climate; moderate run-off; cambisols, pararendzinas, rendzinas, pseudogleys, semigleys, planosols; oak-beech, lime phytocenoses

*Q3 Bachureň, Branisko (orographical names)*

horsts with mountain/highlands relief: 600—1200 m, ranges+spurs, fault-line scarps; crystalline complex, quartzites, limestones, Eocene sandstones+conglomerates; mild cold — moist climate; moderate run-off; cambisols, rankers, podzols, pseudogleys, rendzinas; beech-fir-spruce phytocenoses

*Q4 Šarišská*

depression bordered by faults; structural relief: 300—895 m, hilly/highlands; Paleogene flysch + klippen belt; mild warm and mild dry climate; moderate run-off; cambisols, argilluvisols, phaeozems, pseudogleys, semigleys, planosols; oak-hornbeam-beech-fir phytocenoses

R Tatransko-fatranská (orographical names)

*R1 Tatry (the Tatras)*

high mountain relief: 900—2655 m, glacial, periglacial, fluvial, tectonic landforms, uplifted crystalline+sedimentary envelope and nappes blocks, troughs+

arêts, karst; very cold — very moist climate; very high run-off; lithosols, rankers, podzols, regosols, histosols; spruce, subalpine, alpine phytocenoses

*R2 Podtatranská (piedmont basins)*

two basins of Poprad and Liptov with piedmont furrows, glacio-fluvial and fluvial landforms on Quaternary deposits, Paleogene flysch outcrops, hilly/highlands relief: 550—1100 m; mild cold/cold — moist climate; high run-off; pseudogleys, gleys, semigleys, histosols, planosols, stagnogleys, fluvisols, cambisols, luvisols; fir-spruce, oak-lime, peaty bogs phytocenoses

*R3 Nízke Tatry (the Low Tatras)*

mountain/high mountain relief, uplifted faulted blocks of crystalline fundament, verrucano, envelope cover+nappes: granitoids, schists, conglomerates, sandstones, limestones with karst, basalt sheets; cold/very cold — moist/very moist climate; high run-off; cambisols, rankers, podzols, lithosols, rendzinas; beech-fir, pine, maple, spruce, subalpine, alpine phytocenoses

*R4 Horehronská (the Upper Hron-river valley)*

long narrow furrow with hilly/highlands relief: 400—1000 m, tectonic origin, crystalline complex+sediments, fans; mild warm/mild cold — mild dry/moist climate; high run-off; pseudogleys, cambisols, rendzinas, luvisols; oak-hornbeam, beech-fir phytocenoses

*R5 Veľká Fatra, Chočské vrchy (orographical names)*

mountain relief: 500—1611 m, ranges+spurs+valleys, horsts dissected by deep valleys, less stripped crystalline core+envelope, mainly nappes with karstified limestones; cold/mild cold — moist/mild dry climate; high run-off; rendzinas, cambisols, rankers, podzols; beech-fir, pine, maple, spruce phytocenoses

*R6 Turčianská (the Turčianská basin)*

tectonic basin/graben, flat/hilly bottom; flood-plains, terraces, fans: 400—600 m, Quaternary+Neogene deposits; mild warm/mild cold — moist climate; luvisols, cambisols, fluvisols, planosols, pseudogleys, gleys; oak-hornbeam, ash-elm-oak+alder phytocenoses

*R7 Malá Fatra (orographical name)*

crystalline core of schists, granitoids, Mesozoic envelope and nappes including limestones+dolomites; uplifted horst dissected into range+spurs+deep valleys; bordered by fault-line scarps, mountain relief: 400—1708 m; cold/mild cold — moist climate; cambisols, rendzinas, rankers, podzols; beech-fir-spruce, subalpine phytocenoses

S Slovenské Stredohorie (the Mid-Slovakia)

*S1 Hornonitrianská (the head Nitra-river)*

basin, tectonic trough built of Neogene deposits with loess cover, fans; hilly relief: 200—500 m; mild warm — mild dry climate; moderately high run-off; argillluvisols, cambisols, pseudogleys; oak-hornbeam-beech-fir, ash-elm-oak+alder phytocenoses

*S2 Žiar (orographical name)*

mountain horst, range+spurs; crystalline core+envelope+nappes: 450—1011 m; mild cold — moist climate; moderately high/high run-off; cambisols; beech-fir, maple, pine phytocenoses

*S3 Kremnické vrchy (orographical name)*

mountain/highlands relief: 500—1318 m, uplifted volcanic rocks: andesites, dacites, rhyolites, pyroclasts dissected into range+spurs+valleys; mild cold/cold — moist climate: high run-off; cambisols, partly andosolic; beech-fir, maple, pine phytocenoses

*S4 Vtáčnik, Pohronský Inovec (orographical names)*

volcanic highlands/mountain: 300—1346 m; rocks+relief as S3; mild warm — mild dry climate; high/moderately high run-off; cambisols, partly andosolic; beech-fir, oak-hornbeam phytocenoses

*S5 Žiarská (Basin)*

basin bordered by faults, filled with fluvial deposits as fans, gravels, loams; loess cover; flat/hilly relief: 220—400 m; mild warm — mild dry climate; moderately high run-off; cambisols, fluvisols, argilluvisols, pseudogleys; oak-hornbeam-beech-fir, ash-elm-oak+alder phytocenoses

*S6 Štiavnické vrchy (orographical name)*

uplifted volcanic complex (see S3), relief: 300—1009 m; mild warm — mild dry climate; moderately high run-off; cambisols, partly andosolic; oak-hornbeam-beech-fir phytocenoses

*S7 Juvorie (orographical name)*

rocks+relief as S3, but 350—1044 m high; cold/mild cold — moist climate; moderate run-off; cambisols, partly andosolic; beech-fir, oak-hornbeam phytocenoses

*S8 Zvolenská (Basin)*

large depression, Mesozoic sediments, Cenozoic deposits: fans, terraces, flood-plains + pyroclasts, basalts; flat/hilly/highlands relief: 350—700 m, isolated volcanic necks+dikes; mild warm — mild dry climate; moderate run-off; cambisols, argilluvisols, pseudogleys, rendzinas, fluvisols, regosols, oak-hornbeam-beech-fir, pine, ash-elm-oak+alder phytocenoses

*S9 Polana (orographical name)*

the highest volcanic mountain range: 1458 m, relics of strato-volcano with caldera, remodelled by fluvial, periglacial processes, built of andesites and pyroclasts; cold/mild cold — moist climate; moderately high/high run-off; cambisols, partly andosolic; beech-fir-spruce phytocenoses

T Slovenské Rudohorie (the Slovak Ore-Mts.)

*T1 Veporská (Vepor Mt.)*

mountain relief on crystalline complex: schists, granitoids with planation surfaces, partly dissected into range+spurs+valleys: 500—1439 m; cold — moist climate; high run-off; cambisols, podzols, rankers; beech-fir-spruce phytocenoses

*T2 Revúcko-stolická (orographical names)*

rocks+relief as T1, but 500—1476 m and metamorphosed Paleozoic complex and verrucano, furrows filled with Neogene deposits; mild warm/mild cold/cold — mild dry/moist climate; moderately high run-off; cambisols, podzols, pseudogleys, rankers; oak-hornbeam-beech-fir-spruce phytocenoses

*T3 Hnilecká (the Hnilec-river)*

crystalline core, envelope cover: phyllites, metamorphosed basalts, metaconglomerates + verrucano + Mesozoic sandstones, shales, limestones partly karsti-

fied; mountain relief, (see T1) here: 350—1322 m; cold/mild cold/mild warm — moist/mild dry/dry climate; moderately high run-off; cambisols, podzols, rankers, rendzinas; beech-fir-spruce, oak-hornbeam phytocenoses

**T4 Spišsko-gemerský kras (karst)**

high karst planation surfaces/plateau: 800—1200 m with small abysses, caves, wells, uvalas, hums; cold — moist climate; high run-off; rendzinas, terrae calcis, argilluvisols, calcaric lithosols+colluviosols; beech-fir-spruce, pine phytocenoses

**T5 Slovenský kras (the Slovak karst)**

karst plateau: 600—800 m, dissected by karst canyons filled with Neogene deposits+Quaternary while karst plateau is built of Triassic limestones, less shales; karst phenomena: sink-holes, abysses, caves, mogots, edge wells, ponors; mild warm/warm — mild dry/dry climate; low/moderate run-off; rendzinas, calcaric lithosols, terrae calcis, argilluvisols; oak-hornbeam, beech-fir, pine phytocenoses

**U Ipělsko-slanská (the Ipěl and Slaná-rivers)**

**U1 Burda (Börzsöny) (orographical names)**

isolated part of Börzsöny Mts., cut off by the river Ipěl, built of andesite pyroclasts, a range emerging of lowland (102 m) into 396 m, remodelled by fluvial processes; loess cover; very warm — very dry climate; very low run-off; cambisols, partly andosolic, argilluvisols, loess rendzina; oak-hornbeam phytocenoses

**U2 Krupinská (piedmont)**

piedmont hilly relief: 300—700 m, built of pyroclasts, radially dissected by erosion into highlands; mild warm/warm and very dry/dry climate; moderate run-off; cambisols, partly andosolic, argilluvisols; oak-hornbeam phytocenoses

**U3 Ipělská (the Ipěl-river)**

basin, Neogene deposits and pyroclasts, Quaternary terraces, flood-plains and loess cover, hilly relief: 130—300 m; very warm/warm — very dry/dry climate; low run-off; phaeozems, argilluvisols, pseudogleys; oak-hornbeam phytocenoses

**U4 Rimavská (the Rimavská basin)**

rocks+relief similar U3, the heights: 150—350 m; warm/very warm — dry climate; low run-off; pararendzinas, phaeozems, planosols-chnozems, fluvisols, argilluvisols; oak-hornbeam phytocenoses

**U5 Cerová (orographical name)**

inverse relief: volcanic remnants — lava flows, pipes as elevations formerly penetrated by Neogene deposits that were removed, base level 200—300 m, basalts necks as Karanč: 727 m; warm and dry climate; low run-off; argilluvisols, phaeozems, pararendzinas; oak-hornbeam, partly beech-fir phytocenoses

**U6 Bodvianská (the Bodva-river) (Cserehát)**

Neogene deposits, polygenetic Quaternary ones, glaciis landforms, hilly relief: 200—400 m, 519 in Hungary; mild warm/warm and dry climate; moderate run-off; phaeozems, cambisols, argilluvisols, fluvisols; oak-hornbeam-beech phytocenoses

**U7 Košická (Basin)**

basin with flat/hilly relief: 160—400 m, Cenozoic deposits; warm — dry climate;



moderate run-off; argilluvisols, phaeozems, fluvisols, gleys; oak-hornbeam, ash-elm-oak+alder phytocenoses

*U8 Slanské vrchy (orographical name)*

mountain horst bordered by fault-line scarps: 250—450—1092 m, andesite lava flows/sheets/pyroclasts dissected by erosion into range+spurs+deep valleys; mild warm — mild dry climate; moderate run-off; cambisols, partly andosolic, rankers; beech-fir, maple, oak-hornbeam phytocenoses

*U9 Milíč (Zemlení Hegység) (orographical names)*

similar to U8, but dacites+latites and the highest track: 895 m; mild warm/warm — mild dry/dry climate; moderate run-off; cambisols; oak-hornbeam-beech phytocenoses

V Bukovsko-ublianská (orographical names)

*V1 Bukovská (Bieszczady)*

built of Cretaceous/Paleogene flysch, mountain relief: 450—1221 m, range+spurs+deep valleys, erosional furrows; cold/mild cold — moist climate; high run-off; cambisols, pseudogleys; beech-fir phytocenoses + peaty bogs

*V2 Ublianská (Užská)*

marginal part of intermontane depression built of Paleogene flysch, piedmont/glacis relief: 250—500 m and separated ranges: 682 m; mild warm — mild dry climate; high run-off; cambisols, pseudogleys, argilluvisols; beech-fir, ash-elm-oak+alder phytocenoses

W Vihorlatsko-gutinská (orographical names)

*W1 Vihorlat and Popriečny (orographical names)*

strato-volcanoes of andesite lava-flows/sheets and pyroclasts, uplifted, dissected by erosion into range+spurs+deep valleys: 350—1075; mild warm/mild cold — mild dry/moist climate; moderate/moderately high run-off; cambisols, partly pellic+andosolic; beech-fir, maple, peaty bogs phytocenoses

X Severní Potisí (the Tisa-river) (the northern Tisa-river drainage)

*X1 Dolnoondavsko-laborecká (the lower Ondava and Laborec-rivers)*

flat/hilly lowland relief: 100—200 with the exception of the Zemplínské vrchy: 469 m — the horst of crystalline core+extrusives+Phanerozoic sediments; flood-plains, terraces, loess plains, fans, low hills, clay flushes, dells mainly on Quaternary, partly on Neogene deposits; warm — dry climate; moderate run-off; fluvisols pellic+gleyic, argilluvisols, phaeozems, pseudogleys, planosols; ash-elm-oak+alder, oak-hornbeam phytocenoses

*X2 Užsko-bodrožská (the Uh and Bodrog rivers)*

large flood-plains with meanders, cut-offs, oxbow lakes and swamps, natural levées, bar-and-swale; interfluvial area: levées, swamps, sand dunes, volcanic pipes and necks reaching 277 m, but base level: 94—110 m; warm — dry climate; low run-off; pellic+gleyic fluvisols, gleys, solonchaks, regosols; ash-elm-oak+alder, salty+peaty bogs, oak-hornbeam phytocenoses

## Y the West-Carpathians Fringe

### Y1 *Malé Karpaty (the Low Carpathians)*

mountain/highlands horst bordered by fault-line scarps, dissected into range + spurs + valleys relief with planation surfaces: 150—300—767 m; crystalline core, Mesozoic envelope/nappes and Neogene deposits; mild warm/mild dry-dry climate; moderate run-off; cambisols, rendzinas, argilluvisols, pseudogleys; beech-fir, maple, pine phytoceneses

### Y2 *Povážský Inovec (orographical name)*

rocks + relief similar to Y1, heights: 200—300—1042, piedmont pediment; mild warm — mild dry/dry climate; moderate run-off; soils as Y1; beech-fir + maple, oak-hornbeam phytoceneses

### Y3 *Trábeč (orographical name)*

rocks + relief as Y1 + quartzite hogbacks, top level: 829 m; cambisols; climate, run-off, phytoceneses, see Y1

## Z Malopanonská (the Little Panonia)

### Z1 *the Dunaj/Danube river*

subsidence track between Bratislava and confluence the Mosoni Duna-river: meandering, cut-offs, oxbows, swamps, natural levées, branching into parallel streams, aggradational floodplain; track to Štúrovo without meanders, only small bars/islands, down Štúrovo is the Visegrad-gorge with entrenching meanders in volcanic Highlands; stream gradient: 138—102 m; haplic + gleyic + calcareic fluvisols, regosols, gleys, histosols, ash-elm-oak, willow-poplar phytoceneses

### Z2 *Podunajská rovina (the Danube plain)*

higher and lower flood-plain levels, meandering rivers, large swampy depressions, sandy covers and dunes, terraces, loess deposits, flat/lowland relief: 103—125 m; very warm — very dry climate; very low run-off; fluvisols, gleys, histosols, chernozems, planosols; ash-elm-oak + alder, salty + peaty bogs phytoceneses

### Z3 *Podunajská pahorkatina (orographical name)*

lowland flat/hilly relief: 110—300 m with fluvial terraces, loess deposits, dells, shallow wide valleys; outcrops of Neogene deposits + pyroclasts; very warm/warm — very dry/dry climate; low run-off; chernozems, phaeozems, argilluvisols, gleys, pseudogleys; oak-hornbeam phytoceneses

### Z4 *Litavsko-dunajská (Haidboden, Mosoni-síkság)*

marginal part of the Kisalföld-lowland, aggradational flood-plain of the Dunaj-river, flat lowland: 130—140 m; very warm — very dry climate; very low run-off; fluvisols partly mollic + calcareic; ash-elm-oak, willow-poplar phytoceneses.

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