

HISTORICAL LANDSCAPE STRUCTURES AND THEIR IMPORTANCE FOR LANDSCAPE CHARACTER

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Abstract

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This paper deals with studying and mapping of historical landscape structures, specifically with the so-called „unintended landscape composition“, i. e. with such a landscape structures that did not arise with the compositional intent, but by means of economic exploitation. They are therefore not the result of landscape architects' suggestions, but rather the reflection of the normal way of life in Bohemia and Moravia.

The most important feature of the landscape are ground plan types of settlements and their “pluzinas” (ploughlands). According to the compactness of the settlement and the spatial arrangement of plots and objects, the settlements were put to different ground plan types. Also pluzinas (ploughlands) – supporting hinterland of settlements – we divide by size, shape and spatial arrangement of plots into different types. Because a settlement and ploughland have always been forming a single functional unit, we shall consider their mutual relationship, especially ownership relationship of ploughland with individual homesteads in a settlement. The result is the definition of areas with the same type of settlements and ploughlands, i. e. the area with the same type of land use, the area with the same landscape character.

Knowledge of historical type of pluzinas (ploughland) should be the fundamental basis for planning the landscape – when designing comprehensive landscaping. Likewise, knowledge of the historical type of settlement should be used in town & country planning so that the future development of settlements respects the historical context of a given area. Then it is possible to harmoniously integrate the new development into the landscape without brutally interfering it, as it happened in many places and still happens.

Keywords: historical structure of landscape, concept of landscape arrangement, historical types of rural settlements and their pluzinas (ploughlands)

INTRODUCTION

The work is part of the research project “Landscape architecture's methods and tools for spatial development”, that meets the thematic priority TP 1.4. of the Programme of Applied Research and Development of the National and Cultural Identity, funded by the Ministry of Culture of the Czech Republic. The solved stage of research deals with cultural identity of the Bohemian and Moravian landscape with emphasis on recent development. It describes the manifestation of functions in

the landscape character from the users' point of view and how these functions manifest themselves through the ages. The way of land use (Baranová, Kubačák, 2010) is reflected in the composition of elements of the landscape system (structure), in its texture (granularity and consistency), presence of contrasts, gradients and perceptual dominants. The term “unintended compositions” is an oxymoron (contradiction) – it expresses the fact that a good arrangement of pluzina (ploughland) is a manifestation of the correct perception of natural

conditions of inhabitants of a given area. As a side product of the correct perception is the existence of elements that create an illusion of compositional intent in the structure, texture, contrast and dominance. There are no contradictions and conflicts between primary (natural) structure of a landscape and its secondary structure (created by its users and owners) in a landscape used by this way. Landscape character then expresses the rate of harmony or disharmony, it describes the culture of life in society (tertiary landscape structure).

History of landscape structure (Brabcová, Molnarová, 2010) therefore involves the development of relationships in human society that are also reflected in the semantic development of terms: the “hide” was originally an amount of land sufficient to support a household, but later in Anglo-Saxon England became a unit used in assessing land for liability to “geld”, or land tax. The Anglo-Saxon word for a “hide” was “*hid*” (or its synonym *hiwisc*). Both words are believed to be derived from the same root *hiwan*, which meant “family”. Bede in his Ecclesiastical History (Bede, 731) describes the extent of a territory by the number of families which it supported, as (for instance), in Latin, *terra x familiarum* meaning ‘a territory of ten families’. In the Anglo-Saxon version of the same work *hid* or *hiwan* is used in place of *terra ... familiarum*. Other documents of the period show the same equivalence and it is clear that the word hide originally signified land sufficient for the support of a peasant and his household (Lennard, 1944). The term “pluzina” (ploughland) is of the same origin and it describes the way of division of land tenure among family members and later among all the inhabitants of a village.

MATERIALS AND METHODS

As part of the project “*Typology of the Czech landscape*” were defined framework residential landscape types that arose from the union of the dominant characteristics: vegetation zones and biogeographic differentiation landscape (taken from defined biochores of biogeographic classification of the Czech Republic); biogeographic subprovinces; historical types of rural settlements and their pluzinas – ploughlands and corrected based on orthophotomaps of the Czech Republic; types of folk house; development of landscape settlement.

By the synthesis of these five dominant characteristics we defined 7 framework types of landscape that affect their basic properties and their changes on the specified axes. As the best classification, describing the interdependence of these characteristics, showed to be the classification by the time of origin of a given residential landscape. However, manifestation of the same settlement principles varied considerably according to the overall character of landscape relief and macroclimatic properties, expressed by differences of the biogeographic subprovinces. The period

of landscape settlement of a given biogeographic subprovince remarkably correlates with the corresponding vegetation zone, and the type of settlement, ploughland and folk house corresponds to this period, too. The period when a landscape became a residential landscape, i. e. adopted by a human being, showed to be the appropriate collective designation of individual residential landscape types.

There are defined these framework residential landscape types in the Czech Republic: old residential landscape of the Hercynian and Polonian regions; old residential landscape of the Pannonian region; landscape of the Hercynian region colonized in High Middle Ages; landscape of the Carpathian region colonized in High Middle Ages; landscape of the Hercynian region colonized in Late Middle Ages; landscape of the Hercynian region colonized in Modern Times; landscape of the Carpathian region colonized in Modern Times. Graphical representation in the map expresses the “Landscape atlas of the Czech Republic” (2004).

However, the practice has shown that framework residential landscape types gives us a basic idea of the character of settlement at the national level, but are too generalising for a particular territory. It was therefore resorted to their significant refinement (comp. Máčel, 1955; Láznicka, 1956; Kuča, 1991; Kuča, 2006–2011).

The issue of historical types of settlement and their ploughlands was dealt with in the past. Individual works had different levels of detail and partly also classified types (Štěpánek, 1967; Mencl, 1980; Škabrada, 1999). Much less attention was paid to pluzinas (ploughlands) and particularly to their relation with the settlement. It proved preferable to conduct the own detailed mapping of settlement types and their ploughlands, than just to take and supplement existing works. To this decision also contributed the ongoing digitization of historical map series which are an invaluable tool for their classification. The basic analysis of historical types of settlement and their ploughlands showed that significant parts of the Czech Republic are relatively homogenous. For a detailed mapping are thus selected areas where there is an accumulation and transitions between different types.

So far, these areas are mapped in detail (the core is always stated; mapped including the surroundings): Šumava, Český ráj, Žďárské vrchy, Dražanská vrchovina, Hrubý a Nízký Jeseník, Oděské vrchy, Chřiby, Vizovické vrchy, Moravský kras, Bílé Karpaty.

Historical types of settlements and their pluzinas (ploughlands) are then compared with their current state and are thus delimited the best preserved segments or entire units and is given a form of their disruption.

The basic source for study of historical types of settlements and their pluzinas (ploughlands) are historical map series, especially the Stable Cadastre maps (indication sketches, Imperial Imprints), as

well as maps of Ist, IInd and IIIrd military mapping, maps of Cadastre of lands and historical aerial photographs. An integral part is also the study of the historical context that clarifies the possible changes in ground plan structures and their differences from the surrounding ones. The aim is to completely capture their variability, i. e. to describe what individual settlements and ploughlands unites and what differentiates them. The exploration up to now classified the following types (these are working titles that can be still modified in order to unify the terminology). Likewise, it is possible that the classification itself will change.

RESULTS AND DISCUSSION

1 Settlements

1.1 Town (Square and Continuing Development)

Towns were established according to plan, especially in the Middle Ages. At the heart of each town is predominantly rectangular square, from which extends in all directions network of streets. Development of square and surrounding streets was usually very tight; the rule is that houses directly follow each other. In the past, major towns or cities were surrounded by walls that clearly separated them from the surrounding rural landscape. Towns have long maintained their original range. Until in the 19th century begins their massive growth across the board, with its typical both carpet as well as block and industrial development.

1.2 Road and Street Villages

These include compact villages with the central axis formed by an opened communication (road). According to the importance of this communication is this type of settlement divided into the road villages, situated on the main road, and street villages, situated on the side road. Along this communication stand densely ordered houses, which often touch each other; the typical is regular arrangement of houses that refers to the targeted establishment of the basic form. Road and street villages are typical for old residential landscapes and rank among the oldest residential types at all. Apart from the earliest times, these types of settlements were rarely built in modern times, too, often near the manor-house. However, these modern road formations are generally smaller, mostly one-sided and consist of simple objects, in contrast to relatively large farms of historical road villages. According to the development concentration can be tighter or loose.

Road and street villages are typically associated with pseudo-longlands and longlands; locally, for example in České středohoří, are somewhat atypically connected with parts of a plot and split parts of a plot. They are established only later near manor-houses and are surrounded by dominical ploughland.

The main feature is compact character of the settlement, with houses aligned along the road that are separated from the open, undeveloped landscape mostly by orchards.

1.3 Agglomerated Road Villages

In cases of irregular arrangement of road and street villages (different orientation of houses, different mutual distances and distances from communication) are the settlements classified as agglomerated road settlements. This is mostly older type of settlement.

Like the road villages, this type is connected with pseudo-longlands, longlands, or longitudinal plots, and locally as well as atypically with parts of a plot and split parts of a plot. This type is similar to short row village. These, however, were formed only in the late Middle Ages and are connected with longitudinal plots. Plots related with short row villages have backfield arrangement (direct connected with a given homestead; roads often do not lead to a public area of the village but directly to individual homesteads).

The main feature is compact character of the settlement and irregular arrangement of objects near the communication forming the axis of the settlement. Objects are separated from the open landscape mostly by orchards.

1.4 Two-row (Street) Village Green and Wide Street Village

This is de facto a transitional type between road villages and village greens. It is the concentrated type of settlement in compact villages. Typical is central public space – the village square. Houses are arranged along the edge of village square and visually define the public spaces. In village greens is the village square that has an elongated, mostly triangular shape, and it typically gradually narrows in one or both ends and passes into the road form. Wide street village is similar as the classical road village, only the distances between opposing rows of houses are larger, and therefore creates a broader public space called village square. It has a rectangular shape and usually runs through the whole length of the village. It differs from the traditional village green in elongated character that is typical for all the road villages. Plots have generally elongated shape and houses thus stand close together. Houses often touch one another with their side walls. The gardens, where traditionally dominates the mature fruit trees, are connected to outbuildings. Concentrated settlements are thus typically separated from the open landscape by the ring of garden trees. In some settlements was the village square secondary irregularly re-built, and thus the village partially acquired an agglomerated or road character.

Two-row (street) village greens and wide street villages are typically connected with longland. This is an old residential type characteristic for

old residential and High Middle Ages residential landscapes.

The main feature is a compact village with a central public space, delimited by homesteads, and with a ring of orchards, that separate the settlement from an open, undeveloped farming landscape.

1.5 Row Village

Specific and relatively rare type of settlement that is to be found mainly in older residential area (old residential and in High Middle Ages). Its origin is probably conditioned by natural conditions. These are de facto two one-sided road villages that are separated by alluvial plain or otherwise waterlogged territory.

The main feature is concentrated road form of development in two spatially separated parts.

1.6 Green Village

This is the concentrated type of settlement in compact villages. Typical is central public space – the village square. Houses are arranged along the edge of village square and visually define the public spaces. A village square has various shapes, both regular and irregular. Plots have generally elongated shape and houses thus stand close together. Houses sometimes touch one another with their side walls, what is especially true in case of old residential landscapes. The gardens, where traditionally dominates the mature fruit trees, are connected to outbuildings. Concentrated settlements are thus typically separated from the open landscape by the ring of garden trees. In some settlements was the village square secondary irregularly re-built, and thus the village partially acquired an agglomerated character.

Village greens are typically connected with longland and pseudo-longland, in area of České středohoří atypically also with part of a plot and with split part of a plot. This is an old residential type characteristic for old residential and High Middle Ages residential landscapes.

The main feature is a compact village with a central public space, delimited by homesteads, and with a ring of orchards, that separate the settlement from an open, undeveloped farming landscape.

1.7 Agglomerated (Cluster) Village

The concentrated form of settlement, characterized by an irregular arrangement of objects. Mostly detached houses generate no regular structures of development. Typical is irregularity of arrangement of objects in relation to communication as well as in relation to each other; mutual distances between houses often differ. Their character shows unplanned foundation of the settlement.

Agglomerated villages belong to the oldest residential types, mostly emerging in old residential landscapes. They were secondarily established in the neighbourhood of manor-houses and near Modern Times colonization of the border mountains (agglomerated ground plan is often to be

found in glasswork villages that were spontaneously founded in the neighbourhood of glassworks).

Agglomerated villages are not tightly connected with a specific type of ploughland. However, they are most often associated with pseudo-longlands and parts of the plot.

The main feature is a compact village with no prominent central space. This type of settlement is separated from an open, undeveloped landscape mainly by orchards.

1.8 Forest Village With Regular Hides

(Forest-hide-village)

Characteristically loose settlements of a linear ground plan, often considerable long. Mutual distances of buildings were given by the width of land stripes of backfield, inside of which stood individual houses. Stripes were generally perpendicular to the axis of a settlement, which was formed by the water flow with one or two communications alongside it (one-sided or two-sided development). The structure of backfield usually filled the whole deforested area of an enclave. These villages are originally associated exclusively with backfield. The boundaries of individual land stripes of a backfield were usually formed by dirt roads which, however, did not lead to the main communications in an settlement, but led directly to individual homestead. Original loose character of villages with regular hides was gradually thickened by a secondary development. To these objects, however, did not belong practically any ground and compared to original homesteads were much smaller. Numerous demolitions of objects in the second half of the 20th century caused a number of settlements to regain the loose character again.

Forest village with regular hides are characteristic type of settlements for landscapes of the colonization in Late Middle Ages.

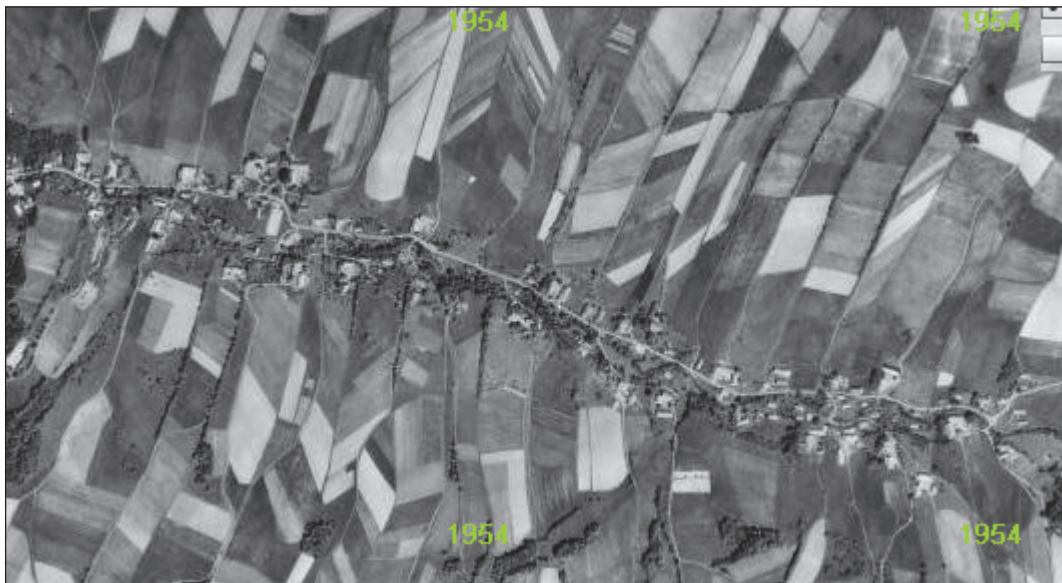
The main feature of settlements with regular hides is their linear character. Villages are often directly linked one another in the end of a cadastre and thus form kilometres long residential lines. Backfield is essentially free, without construction work.

1.9 Short Village With Regular Hides

Similar to the previous type, but it does not go through the whole length of a cadastre (usually through one third). It is the transition between forest village with regular hides and short row village.

1.10 Short Row Village

It is the concentrated type of settlement in compact villages. It is essentially a transitional residential form between forest villages with regular hides and circular village. The concentrated, compact character of a settlement resembles a circular village, object placement and character of public space resembles mainly forest villages with regular hides. Development has character of relatively tight irregular double-sided row



1: Example of forest village with regular hides Loučky, historical aerial photograph (1954)
Source: <http://kontaminace.cenia.cz>

development. Development regularity used to be diverse. Frequent is the similarity with agglomerated road villages. Characteristic is the connectivity of homesteads with individual stripes of ploughland.

Short row villages are typical for landscapes of colonization in Late Middle Ages. The main feature is concentrated character of a settlement and open, undeveloped ploughland.

1.11 Road Village With Regular Hides

It is similar to the short row village. Development is, however, regularly arranged along the communication. Characteristic is

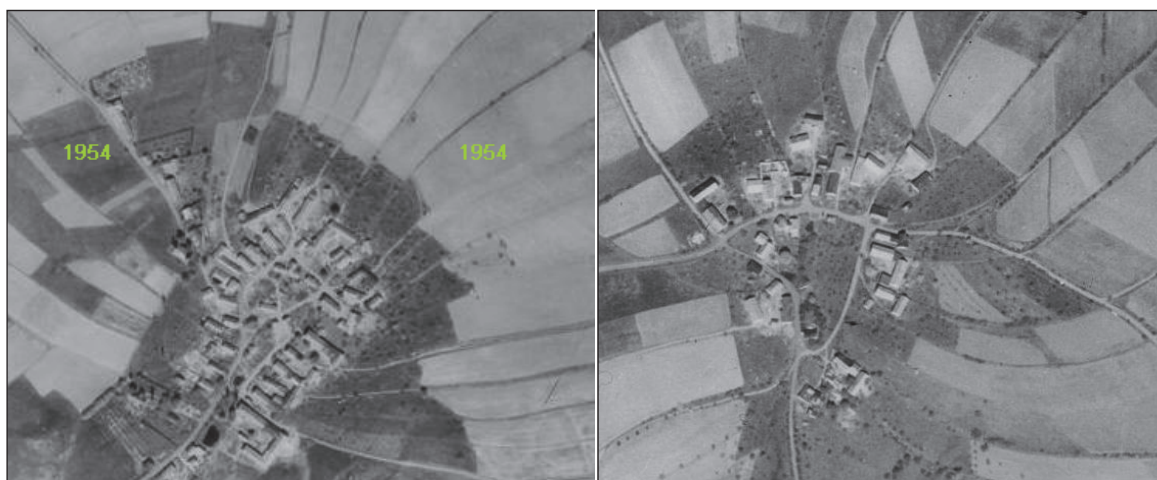
the connectivity of land stripes with individual pluzinas (ploughlands).

1.12 Valachian Chain Village

This is the specific form of settlement typical for Valachian region. Originally it was probably the same village as forest villages with regular hides. But family cohesion led to the fact that children built houses in the neighbourhood of their parents' house. Linearly elongated village is thus formed by clusters of objects.



2: Example of road village with regular hides Chlum, map of the Stable Cadastre (1820–1840)



3: Example of radial villages – Velké Chvojno and Slavošov, historical aerial photograph (both photos 1954)
Source: <http://kontaminace.cenia.cz>

1.13 Forest Circular Village Green (Circular Village)

This is the concentrated type of settlement in compact villages. Typical is central public space – the village square. Houses are arranged along the edge of village square and visually define the public spaces. Compared to village greens, that have a similar ground plan, the village squares used to be less regularly delimited and individual homesteads have greater mutual distances. In some settlements was the village square secondary irregularly re-built, and thus the village partially acquired an agglomerated character. Each outbuilding is connected with land stripe of radial ploughland belonging to it. These villages are originally associated only with radial ploughland. Just immediate connection of circular villages with radial ploughland is next to the different period of settlement foundation the main reason of their difference from village greens.

Circular villages with radial ploughland are characteristic type of settlements for landscapes of colonization in Late Middle Ages.

The main feature is a compact village with a central public space, often surrounded by a ring of orchards that separate the settlement from an open, undeveloped farming landscape.

1.14 Forest Oval Village Green

Similar to the previous type, but the village square is more elongated. This is transitional type between circular village and short village with regular hides.

1.15 Dispersed Settlement

Dispersed settlement is characterized by strong mutual distances of individual buildings and by structure without regular spatial relationships. It is associated exclusively with part of a plot. This residential type is typical for colonization in Modern Times and in the highest parts of our border

mountains. The main feature is detached objects irregularly dispersed in a given area.

1.16 Modern Structures

With the development of the industry, approximately from the 19th century, begin to arise mainly around factories new residential communities as housing for factory workers. These modern hamlets, or new parts of original villages, are of various ground plan types. It is, though, always small, simple objects with a minimum of land that belongs to them.

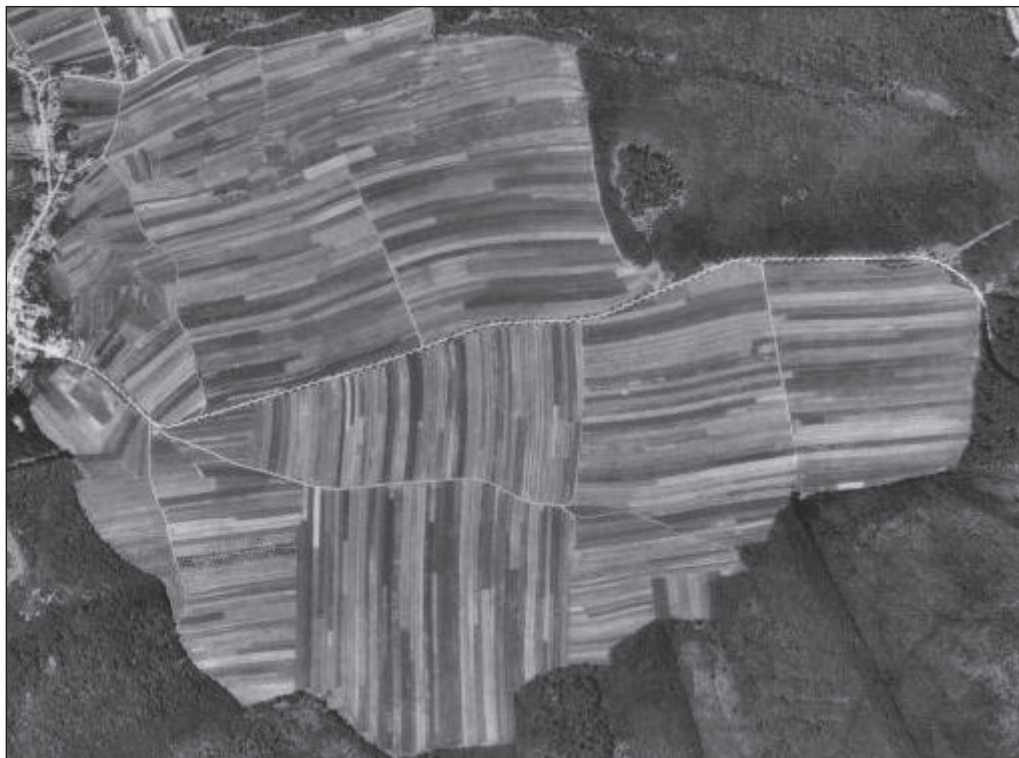
After the World War II it appears another type of development – chalet sites and allotted gardens.

2. Pluzinas – Ploughlands

2.1 longland (sectional pluzina)

It arose as a result of three-field system and of the use of heavy plough. Longland was established in newly colonised areas or in areas where the relief of already settled area was not inconsistent with its parcelling. These ploughlands are typical with their narrow and long strips of land. Every farmer in a village has a strip of field in each of the three blocks of longland (spring crop, winter crop, fallow land). The width of each strip was determined primarily by number of homesteads in the village – that is, by the number of strips to which every plot must be divided. This basic division into three main field lines is often complemented by smaller tracks with similar division. Longlands are mostly connected with village greens (and also with road villages, two-row (street) village greens and wide street villages). This is the residential type used during colonization in High Middle Ages.

For longlands it is typical open landscape without settlement, sharply separated from the compact villages. Rare exceptions are functionally specific objects (mills, manor-houses, game-keepers' lodges, lime works etc.)



4: Example of longland of Babice, historical aerial photograph (1953)
Source: <http://kontaminace.cenia.cz>

2.2. Pseudo-longland (*Pseudo-sectional Pluzina*)

It arose due to transition to the three-field system in areas where previous farming led to emergence of such land forms in landscape which were not practical to change. Narrow, longer stripes of land are typical even for pseudo-longlands, but with row of plots. This type arose in the Middle Ages during reorganization in the past settled areas. For this type it is typical open space without settlement, sharply separated from the compact villages. Rare exceptions are functionally specific objects (mills, manor-houses, game-keepers' lodges, lime works etc.). Pseudo-longlands are connected with road villages and village greens.

2.3 Part of a Plot and Split Part of a Plot (*Segmental Pluzina*)

Part of a plot was probably the oldest way of organization of agricultural plots in old residential landscapes. But in the Middle Ages, a lot of these old ploughlands were transformed to longlands and pseudo-longlands due to the change of land management. Later, newly arose parts of a plot in the context of landscape settlement during the Modern Times and these are typical feature of landscapes colonized in the Modern Times. Individual parts always applied in the organization of plots on the edges of various types of ploughlands.

Parts of a plot are not connected exclusively with one residential type. Except of connection with dispersed settlements, which is typical for them, are

partially connected also with agglomerated villages, road villages and short row villages. In still explored areas, for České středohoří and its surroundings it is specific massive, atypical connection of parts of a plot and split parts of a plot with green villages.

Ploughland is divided into different sizes and various regular, but mostly compact parts that can have square, rectangular and quite irregular shape, too. Also common is completely irregular arrangement of parts. Only in connection with dispersed settlement, normal detached residential and agricultural buildings are embodied in parts of the plot. In connection with other types of settlement, ploughlands are essentially open, without settlement and are sharply separated from the compact villages. Rare exceptions are functionally specific objects (mills, manor-houses, game-keepers' lodges, lime works etc.)

Some parts of the parts of the plot used to be variously divided into mostly narrower stripes. This internal division of parts occurred secondarily. These split parts only rarely create separated – split parts of a plot; they are more often mixed with unitary parts. In contrast to pseudo-longlands, the separation of parts is not regular and results are as long as possible the longest possible narrow stripes.

2.4 Dominical Pluzina (*Ploughland*)

Dominical ploughland consist of plots belonging to a manor-house. The whole ploughland therefore belonged to one owner. Dominical ploughlands



5: Example of dominical ploughland of Konojedy u Úštěku on the Imperial Imprint of a map of the Stable Cadastre (1843) and historical aerial photograph (1954)

Source: www.archivnimapy.cuzk.cz and <http://kontaminace.cenia.cz>

are often not connected with a village, but with a farmyard. Individual plots were relative large (but still smaller than the fields created during the collectivization of agriculture) and had mainly regular, especially rectangular shape. It was typical for them that rows or alleys of tress lined individual fields. Frequent was also spatial composition where paths lined with alleys converged to the farm yard or castle. Dominical ploughlands used to by essentially open, with no detached objects. More often than in an open landscape, manor-houses are situated on the edge of settlement and dominical ploughland actually forms just a part of ploughland surrounding the settlement.

Manor-house was often secondarily abolished. Its objects were converted to a number of homes for farmers and dominical ploughland were parcelled out, mostly to split parts.

2.5 Backfield (Croft Pluzina)

Backfield started to develop only after the transition to the individual uncoordinated forms of farming. They are characteristic for landscapes colonized in the Late Middle Ages, but also occur in residential landscape of the Modern Times. Backfields were formed exclusively with forest villages with regular hides and short villages with regular hides on flat slopes of river valleys. The distance of houses in village with regular houses were determined by the width of land stripe in which each house stood. Each strip belonged by ownership to a given house and backfield arrangement of plots was the rule in this case. Individual strips stretched across the whole cadastre. Except of main communications, linking

villages, dirt roads ran along the land boundaries to individual homesteads and residential buildings of stone, baulks, etc. arose along them. Typical is stripe, usually one-way arrangement of plots in the backfield.

Backfields are thus connected with significantly elongated villages with regular hides, often go through the whole length of a cadastre. But except of this developed axis it is open undeveloped landscape. Locally on the edges of backfields secondarily arose even the detached objects or sites of dispersed settlement. These are, however, in these backfields a new atypical element.

2.6 Stripe Pluzina

With its character is this type actually the same as backfield, but it is not directly connected with the settlement. It usually fills the peripheral parts of cadastres of short villages with regular hides and short row villages.

2.7 Radial Pluzina

This is actually a type of backfield. It is, however, connected exclusively with compact settlements – with forest village greens, less then with short row villages. Every strip of land belonged to a homestead from which it came out and gradually expanded to the edge of a cadastre. Paths ran along land boundaries to individual homesteads; directly to the village square led only a few major roads. Radial ploughland is typical for landscapes colonized in the Late Middle Ages.

This is an area of concentrated settlement. Radial ploughland is therefore open and undeveloped with houses.

CONCLUSION

The results of the work proved in the model areas a direct relation between the residential structure and a type of the pluzina (ploughland). The aim of this work is detail understanding of the historical context, which significantly shaped and in many cases still shape the character of the cultural landscape. These historical landscape structures are from mid-20th century heavily distorted. In many

places, however, are still exceptionally well preserved and are de facto cultural monuments reminding us the lives of our ancestors. The definition of the best preserved segments is of great importance for the protection of cultural heritage. Although the internal structure of soil block is heavily disturbed in the most places, the basic structure of the ploughland, consisting of dirt roads, remained preserved in most of the country and is still so involved in shaping the character of the landscape. The historical landscape structures are fundamentally involved in shaping the landscape patterns of territory, their knowledge is therefore crucial for its effective and efficient protection. The existence of historical landscape structures helps to identify the original structure of a settlement and could become an important inspirational source for the new urban planning concept.

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