TYPES OF PLANS OF RURAL SETTLEMENTS IN BOHEMIA AND MORAVIA-SILESIA: A STUDY IN HUMAN GEOGRAPHY

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CURRICULUM STUDIORUM

Georgina (Jiřina) Mizerovsky, (née Frantíková) received the Bachelor of Arts degree from Masaryk University, Brno, Czechoslovakia in 1939, majoring in Geography and History. In 1945 she successfully completed the Second State Examination in Geography and History, equivalent to the Master of Arts degree, at the same university. The title of her thesis was Zeměpisný nástin Zlínska (A Geographical Appreciation of the District of Zlín).

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INTRODUCTION

As a fixed and localized unit, a settlement is primarily a geographical phenomenon. Consequently, types of settlements have an enormous importance in the general evaluation of a cultural region. Towns, villages, hamlets, or isolated farmsteads, all leave a special imprint on any landscape. Cultivated fields of a settled countryside are marks of systematic human activity reflecting the number, proximity and permanence of human establishments. The latter can be divided into two main categories - urban and rural settlements.

This study is concerned with the distribution of the types of rural settlements which characterize extensive areas of the cultural regions in Bohemia and Moravia-Silesia, and the neighbouring countries.

Existing literature concerning the development of settlement types and their distribution in the Czech lands is not extensive. Neither were all sources available for this study. Therefore, the research was conducted on the basis of a detailed, settlement by settlement analysis of the maps covering the territory.

In order to obtain a better understanding of the development of rural settlements, a brief review of physical characteristics and historical events in Bohemian lands is presented. Special attention is given to the complex ethnic history of the area and to the changes in the natural vegetation cover in Bohemia and Moravia-Silesia, on which the human activity and particularly that of the grazer and agriculturalist made its early impression. The text is illustrated by several maps attached to the study.

INTRODUCTION

A detailed analysis follows of the types of rural settlements on the territory of Czech lands and adjacent areas of the neighbouring territories. The ground plan of the villages, the system of field division and the processes of history are considered. Seventeen various types of rural settlements are distinguished and their regional distribution discussed.

Further, the different maps of rural settlements in Europe and Czechoslovakia are critically reviewed. Methods and materials used for the map of rural settlement types in Bohemia and Moravia-Silesia are described (Map 1). Comparison of the distribution of rural settlements with the existing maps of the neighbouring territories is included.

Finally, this study discusses the relationship between physiographic and human factors and their joint influence on the evolution of rural settlements. It also outlines the changes which affected the types of villages during the urbanization, industrialization and land reforms in Bohemia and Moravia-Silesia.

CHAPTER I

METHODICAL APPROACH

This chapter describes the geographical location of the area studied, and discusses the methodical approach used in analysing the distribution of the various rural settlement types. The history of previous research into the problem is outlined, and a review of the literature on the subject given. Finally, the cartographic material, available for the study is described.

1. Area of Study.

Bohemia and Moravia-Silesia, two western provinces of Czechoslovakia, have a long political history; they are often called "historic lands", or being a home of the Czechs, the Czech lands.[1] Their geographical position in the heart of Europe and their distance from any sea always resulted in much contact between the Czechs and their neighbours. Often, throughout European history, this area was the battleground between the Germans and the Slavs, even when the typical natural boundaries counteracted to a certain degree the danger of its general position.

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1 By the Act of July 14, 1927, regarding the Organization of Political Administration of Czechoslovakia, the country was divided into four provincial areas - Bohemia, Moravia-Silesia, Slovakia, and Sub-Carpathian Ruthenia. The official names, Province of Bohemia (Země Česká) and Province of Moravia-Silesia (Země Moravskoslezská) became effective as of December 1, 1928. By Decree of December 21, 1948, the Provinces of Bohemia and Moravia-Silesia were abolished and replaced by 19 administrative units, called "Regions" (Kraje). The area of Bohemia and Moravia-Silesia is 30,452 sq. miles and the population approximately 9 million.

The nucleus of Bohemia since prehistoric times was the fertile plain of the Upper Labe river - Polabí. In this region the possibility of early farming, easy communications, and consequently active trade, were assets to the young state. Moravia was a true march and frontier land between the east and west as well as between the north and south of Europe. The basin of the Morava river links two most important lowland areas of Europe, the North-European plain and the Middle Danube lands. Here occurs the break on the Odra-Morava divide between the older Hercynian uplands and younger folded ranges of the Carpathians. The pass, known as the Moravian Gate, was one of the main migratory routes of both prehistory and of early European history.

Thus, geographical characteristics of Bohemia and Moravia-Silesia favoured the growth and survival of the Slavic state, surrounded to a great degree by German speaking people; and the political and cultural history of this state has been of consequence to the whole of Central Europe.

2. Importance of the Problem and the Significance of the Typology of Rural Settlements.

With the development of general foundations of human and economic geography, the studies of settlements, whatever type they may be, became of an extreme importance. Consequently, in the last fifty years research interest in problems of the village and of agricultural structure increased, and research on rural settlements has been extended. The studies dealt with various problems such as development of the cultural

landscape, the genesis of the villages and their field layouts, functional types of settlements, cultivation methods, ownership relations, problems of settlements in areas deserted by agriculture, etc.

Although conceptions of a rural settlement differ greatly, its definition can be stated as follows:

> From the point of view of geography of settlements, a rural settlement is a permanently or temporarily inhabited independent group of rural homesteads, the function of which is basically of the same nature. Therefore, the occupation of its inhabitants is mostly uniform and a great part of its formative elements is analoguous. In the category of rural settlements belong beside the villages all scattered types, irrespective of their various functions.[2]

On historic soil of Europe and consequently in Bohemia and Moravia-Silesia, which belongs to regions of long established settlements, different types of human establishments can be distinguished. Various forms, which are the expression of a different stage reached in the cultivation of former natural landscape, here are found side by side.

It has to be noted that the different types do not occur singly, but in series, being dependent on the evolution of the cultural landscape, function of the settlement and the prevailing way of life. Particularly in the past, the numerous daily relationships between inhabitants of the same region did not permit different manners of grouping and housing, characteristic of the prevailing mode of life. The type of settlement once established in a region became a dominant one "because of the necessity

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2 F. Říkovský, Základy k sídelnímu zeměpisu Česko-Slovenska, Brno, Československá Společnost Zeměpisná, 1939, p. 42.

which the inhabitants would feel of living together in harmony".[3] Because of this mutual adjustment, the villages appear in series and should be studied as such.

3. History of the Study of the Problem.

The geographical-historical research on rural settlements has been conducted in France and Germany since the second half of the 19th century, but on a small scale only. Later the other countries also joined them in the research of this problem, which has been mostly done as a part of human geography. In the following pages, some of the publications on rural settlements will be discussed.

A. Review of Research on Rural Settlements in Europe - mainly in Central Europe.

V. Jacoby,[4] as early as in 1845, was interested in the distribution of rundlings along the Slavic-Germanic border in approximately 800 A.D. A. Meitzen's works, especially the "Siedlungen....."[5] offer an immense amount of material in the field of the history of settlements and in the economic history as well. He divided the types of villages into several groups, paying attention not only to the ground plan of a village,

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3 P. Vidal de La Blache, Principles of Human Geography, London, Constable, 1926, p. 278.

4 V. Jacoby, Forschungen über das Agrarwesen d. Altenburgischen Osterlandes, Leipzig, 1845.

5 A. Meitzen, Siedlungen u. Agrarwesen der West - und Ostgermanen, der Kelten, Finnen, Römer und Slaven I, Berlin, 1895.

but also to the layout of the fields. It should be noted that Meitzen's thesis, concerning the ethnical reasons for the arising of various types of villages and pattern of the field divisions, has not been accepted by many authors.

R. Gradmann's approach introduced new methods into the research of geography of rural settlements. He established two laws of colonization (justified by laborious research conducted in Württemberg),[6] which are of fundamental importance for Central Europe:

1) From the late Neolith until the Middle Ages there existed two types of terrains, different from the standpoint of human occupancy:

a) open areas intensively cultivated and settled

b) dense forest, cultivated to a very small extent with scarcely any clearing.

2) The relation between these two terrains has not undergone many changes since Neolithic times, during the Bronze Age, Halstatt and La Tène period through the Roman epoch until Medieval times, the two elements opposing each other reciprocally.

Because the primitive population could not and would not clear the land, the intensive clearing and cultivating of the land began first in the Middle Ages, with the improvement of the agricultural technique. Afterwards, new types of later villages quickly developed in the cleared areas.

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6 R. Gradmann, "Die landlichen Siedlungsformen Württembergs," Petermanns Geographische Mitteilungen, Vol. 56, 1910, p. 182-186, 246-249.

O. Schlüter's extensive studies are in a certain sense a completion of Gradmann's research. In his work "Die Siedlungen im nordöstlichen Thüringen"[7] he stresses the importance of the study of the names of settlements. He believes that the endings of names could approximately indicate the age of rural settlements. According to his opinion, the names which comprise the expressions of "Wald" (forest), such as -walde, -waldau, -tann, or "Rodung" (clearing) such as -schwende, -hau, -rode, -holz, -schlag, might be of younger origin.

The latest work of Schlüter[8] dealt with the changes of landscape in Central Europe, from the early Middle Ages up to the 19th century. The map (scale 1:1,500,000) which accompanies his work is very valuable. It shows settled areas of the early Middle Ages, areas of heather-lands in the early Middle Ages, areas cleared from forests before and after 900 A.D., extension of the forest at the end of the 19th century, natural pastures above the tree-line, ice and snow-covered tops of the high mountains, extension of former swamps, swamps at the end of the 19th century and the seashore marshes.

H. Mortensen[9] was concerned with the extension of forested and settled areas of Baltic countries from early historic up to the present

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7 O. Schlüter, Die Siedlungen im nordöstlichen Thüringen, Berlin, Constenoble, 1903.

8 -------- Die Siedlungsräume Mitteleuropas in Frühgeschichtlicher Zeit, Erläuterung zu einer Karte, Hamburg, Atlantik-Verlag, 1952, 47 p.

9 H. Mortensen, "Zur Frage d. heutigen u. frühgeschichtlicher Verteilungung v. Wald u. Siedlungsland i. den Südostbaltischen Gebieten", Zeitschrift d. Ges. f. Erdkunde, No. 4, 1924, p. 147-151.

times. He believed that the relief and the diversity of the landscape offered many advantages to its early settlers.

R. Martiny[10] studied the origin and types of villages in Province Poznań (Posen) using the historical-cartographic method, and tried to locate there the oldest rural settlements - rundlings and "Langdörfer". He was of the opinion that these villages are of Slavic origin.

W. Geisler[11] dealt with the forms of rural settlements in Lower Vistula region, and described mainly the distribution of loose row villages, street villages, estates, multistreet villages, hamlets and scattered farmsteads in that area. His opinions about the settlement processes in Pomerania, Province Poznań (Posen) and along the Varta river (which he believed were predominantly influenced by the colonization coming from western Germany) have to be taken with reserve.

G. Niemeier[12] described the forms and field layouts of early chain villages and extension of this type of rural settlement into Europe. He believed that the earliest forms of "Waldhufen"[13] originated in Westphalia, and that from there they extended during the land clearing period in the Middle Ages (8 - 9th century) in the neighbouring territories

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10 R. Martiny, "Die Formen der ländlichen Siedlungen in der Prov. Posen", Zeitschrift der Hist. Gesell. f. die Prov. Posen, Vol. 28, 1913, p. 23-42.

11 W. Geisler, "Probleme der ländlichen Siedlungsformen in unterem Weichsellande", Vom Deutschen Osten, Wrocław, M. Marcus, 1934, p. 161-178.

12 G. Niemeier, "Frühformen der Waldhufen", Petermanns G. Mitteilungen, Vol. 92, No. 3/4, 1948, p. 14-27.

13 Waldhufe = a measure of land, cleared from the forest.

of Central Europe first, and later on further into the Slavic countries.

W. Radig[14] presented a detailed historic picture on the development of rural and urban settlements in Central Europe (especially in Germany), based on archeological finds. His opinions about the types of villages are discussed more fully in Chapter III of this study.

A. Demangeon[15] gave a detailed description of French farm country houses and their distribution, classifying rural dwellings not according to their materials or external form, but according to their internal plan and their agricultural function. Another of Demangeon's works[16] dealt with the types of villages in France. He distinguished four main types of rural settlements: "les villages longs, les villages massés, les villages en étoile, les villages dispersés".

P. Vidal de la Blache[17] in his book classified and defined the principles of human geography and surveyed the distribution and types of villages in different parts of Europe and of the world, especially in China and India. He stressed the point that rural settlements developed independently of the main communication lines, being satisfied with a rudimentary system of roads. To the contrary, lines of contact of different climatic soil zones or climatic formations always attracted the

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14 W. Radig, Die Siedlungstypen in Deutschland u. ihre frühgeschichtlichen Würzeln, Berlin, Deutsche Bauakademie, 1955, 183 p.

15 A. Demangeon, "L'habitation rurale en France", Annales de Géographie, Vol. 29, No. 161, 1920, p. 352-375.

16 -------- "Types de peuplement rural en France", Annales de Géographie, Vol. 48, No. 271, 1939, p. 1-21.

17 P. Vidal de la Blache, op. cit., p. 271-318.

location of rural establishments, whose inhabitants chose the best and most useful combination possible.

J. Brunhes[18] analysed the influence of geographical factors on the settlements and their location. He studied their relationship to sun, water, wind and topographical conditions (terraces, thalwegs, sea coast, etc.) and the influence of the landscape on the concentration or dispersal of human settlements. Nevertheless, he stressed the immensely important role of strictly human factors.

A. Blanc[19] was concerned with the origin of the following types of rural settlements in western Croatia: 1) The dispersed settlements, founded in the 16th century by Vlah (Valaques) and Serbian immigrants, fleeing from the Bosnia and Lika, occupied by Turks. 2) The agglomerated villages, especially the types of regular villages, which originated in the devastated regions of former Turkish rule, newly colonized during the 18th century after the Peace Treaty of Karlovce (1699) and Sistova (1791).

From among the Polish authors, the work of B. Zaborski[20] was of the utmost importance for this study. Dealing with the types, origin, positions and distribution of rural settlements in Poland and Central Europe, the author illustrated his book with many figures and two

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18 J. Brunhes, Human Geography, London, Harrap, 1952, 256 p.

19 A. Blanc, "Problèmes d'habitat rural en Croatie occidentale" Annales de Géographie, Vol. 62, No. 330, 1953, p. 108-117.

20 B. Zaborski, Über Dorfformen in Polen und ihre Verbreitung (O kształtach wsi w Polsce i ich rozmieszczeniu), Wrocław, Osteuropa-Institut, 1930, 112 p.

valuable maps. He emphasized the role of social factors, which besides the geographical ones were very much responsible for the development of the field layouts and types of settlement. Frequent references to his work are mentioned in this study.

J. Zaborski's[21] study of northern Eurasian dwellings, based on a laborious research, presented a detailed analysis of the structural and genetic aspects of these habitations, and their interrelationship with the dwellings of Eurasian northlands and other continents. He also presented a map which shows the distribution of house types in northern Eurasia.

M. Kiełczewska-Zaleska[22] and M. Biskup[23] dealt with the development and distribution of rural settlements in Pomorze Gdanskie, and these works will be more fully discussed in Chapter IV of this thesis.

The latest study of M. Kiełczewska-Zaleska[24] describes new trends in historical geography of rural settlements, approaching the settlement's population and social and cultural character as well as the cultivated area. Attention was paid to the cultivation methods, ownership relations, etc.

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21 J. Zaborski, Nomad Dwellings of Northern Eurasia and their Geographical Distribution, unpublished Master's thesis presented to the Faculty of Arts of the University of Ottawa, Ontario, 1959, 151 p.

22 M. Kiełczewska Zaleska, "O powstaniu i przeobrazaniu i kształtow wsi Pomorza Gdanskiego," Prace Geograficzne, No. 5, 1956, p. 9-178.

23 M. Biskup, "Osady na prawie polskim na Pomorzu Gdańskim w pierwszej polowie XV W.," Prace Geograficzne, No. 5, 1956, p. 181-224.

24 M. Kiełczewska Zaleska, "Nowe kierunki studiów geograficzno - historycznych nad osadnictwem wiejskim, "Przeglad Geograficzny, Vol. 35, No. 1, 1963, p. 3-19.

M. Dobrowolska[25] dealt in her study with the changes of the social-economic structure of the villages in Lesser Poland. The author established that the non-agricultural occupations and commuting to work induced decisive changes in rural Lesser Poland. The districts mainly affected are those close to mining and industrial centres; here the original function of rural settlements was often changed into a mining or industrial function.

B. Review of Literature on Rural Settlements in Czechoslovakia.

It was in the first half of the 19th century that the importance of a study of rural settlements as a key to historical problems, was recognized by P. J. Šafařík, author of "Slavic Antiquities". Even before, Czech historians of the 18th century assembled rather valuable information about the history of settlement and colonization of the Bohemian lands. The studies of F. Palacký[26] a prominent Czech historian, politician and philosopher, of the 19th century, which formed the foundation of the concept of Czech history are very valuable. L. Niederle's[27] study about the culture and language of early Slavic people is also of great importance.

Nevertheless, it was not until the 20th century, that the Czech scientists, especially geographers, conducted research of the typology

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25 M. Dobrowolska, "Przemiany struktury społeczno-gospodarczej wsi małopolskiej" Przegląd Geograficzny, Vol. 31, No. 1, 1959, p. 3-32.

26 F. Palacký, Dějiny národu českého v Čechách a na Moravě, Praha, 1836-67, 5 Volumes.

27 L. Niederle, Slovanské starožitnosti, Praha, 1921.

of rural settlements and their distribution. The first classification of the villages in Bohemia was attempted by J. Pohl[28], who used as material for his study the maps of the Stable Cadastre of 1840, dividing the types according to their ground plan and pattern of the fields.

J. Král[29] distinguished two main forms of rural settlements, namely clustered and scattered settlements, and believed that by intermingling of these basic types the transitional forms are developed. He also studied the relationship occurring between the rural settlements and the physico-geographical factors.

F. Koláček's[30] discussion of the rundlings occurring in Moravia, was of great importance. There are, however, many disagreements concerning the origin and distribution of this type of settlement. Koláček for example, believed that they are originally Slavic types.

F. Říkovský[31] presented the typology of villages in Czechoslovakia on the evolutional basis of the settlements. He distinguishes four principal types:

1) agglomerated village

2) street village

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28 J. Pohl, "Typy vesnických sídel v Čechách," Národopisný věstník Československý, Vol. 27-28, 1934-1936, p. 13, 36.

29 J. Král, "Studium venkovských sídel v Československé republice", Sborník III sjezdu čs. geografů v Plzni 1935, Praha, 1936.

30 F. Koláček, Moravské okrouhlice, Brno, Československá Společnost Zeměpisná, 1933.

31 F. Říkovský, Základy k sídelnímu zeměpisu Česko-Slovenska, Brno, Československá Společnost Zeměpisná, 1939, 150 p.

3) green-village (village with a square)

4) row village

These types he associates with the four basic types of the field layouts:

a) Blockflur (plužina úseková) - Figure 1

b) Blockgewannflur (" nepravá traťová) - Figure 2

c) Gewannflur (" traťová) - Figure 3

d) Waldhufenflur (" záhumenicová) - Figure 4

Říkovský made an exhaustive study of all available French, German and Polish literature, dealing with the rural settlements. Nevertheless, his classification is based chiefly on the conclusions of the German genetic school (Gradmann, Schlüter), because the German - especially East-German - types of rural settlements are very similar to those found on the Czechoslovakian territory. Unfortunately, he does not present a map, showing the distribution of villages.

After 1945 Z. Láznička[32], a disciple of Říkovský, continued research on rural settlements in Czechoslovakia. His concepts are usually in agreement with those of Říkovský's and, consequently, his typology is determined by both the ground plan of the village and by the pattern of the fields. The maps accompanying Láznička's works, as well as different opinions expressed about the classification of rural settlements, are fully discussed in Chapters III and IV of this study.

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32 Z. Láznička, Typy venkovského osídlení na Moravě, Brno, Československá Společnost Zeměpisná, 1946, 57 p.

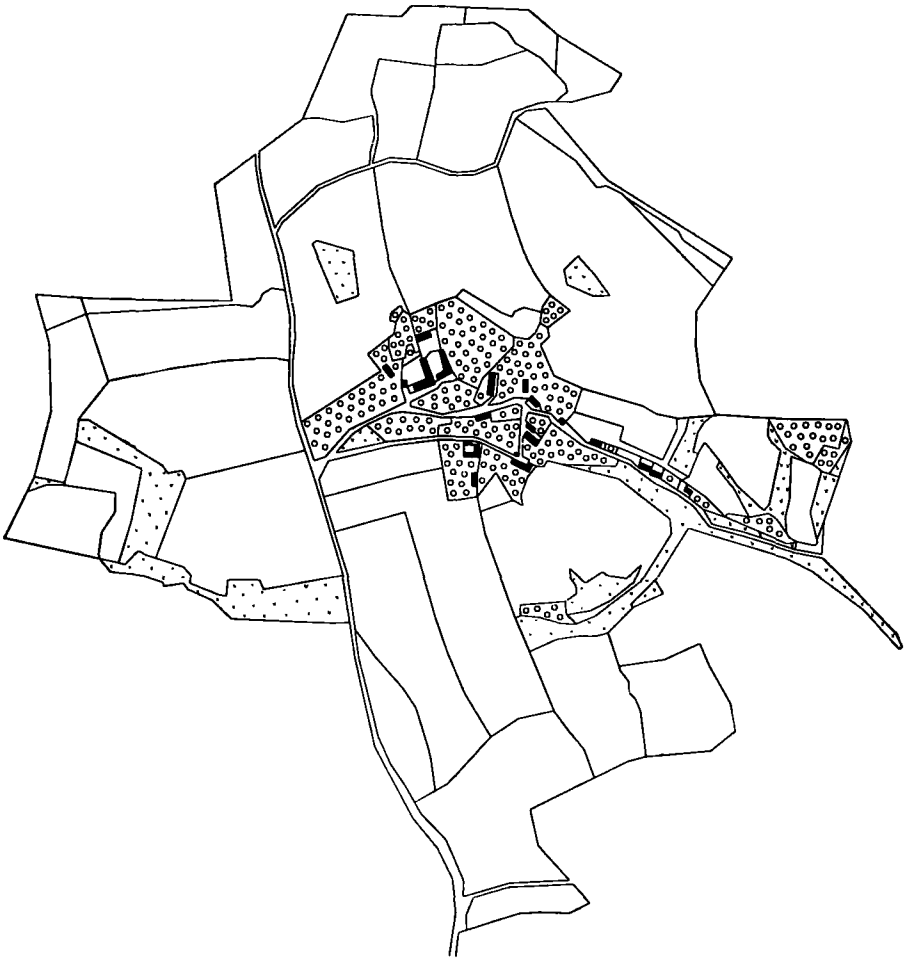

Figure 1. - Blockflur (plužina úseková).
Útěchov, hamlet, district of Brno.
After F. Říkovský, p. 60.

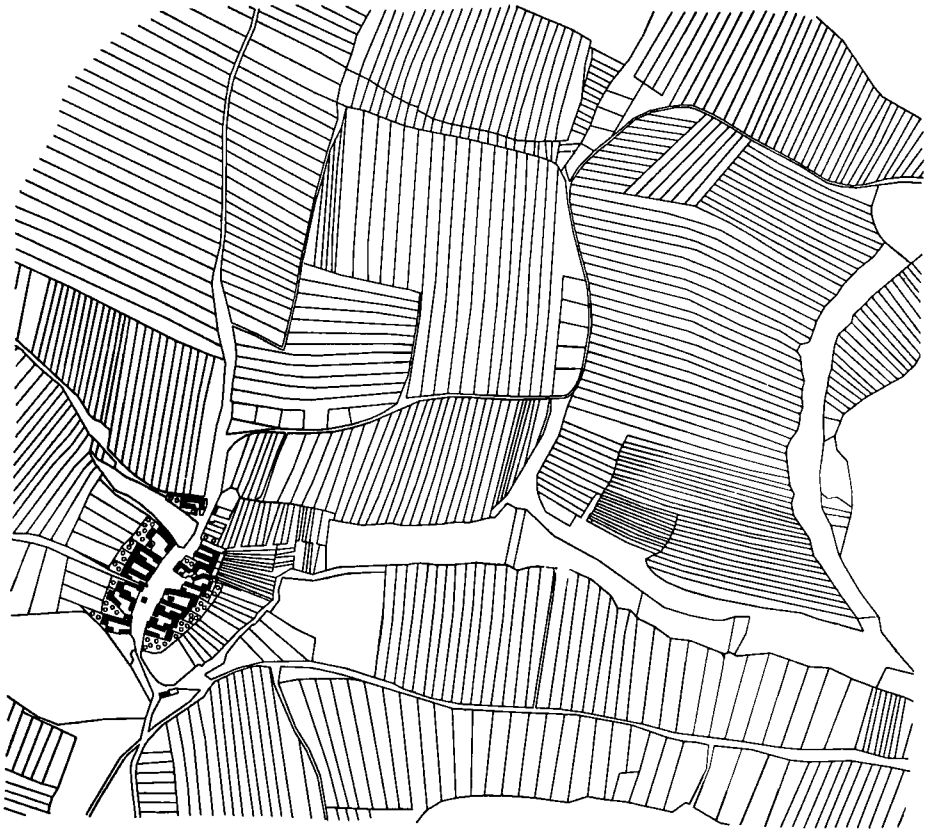

Figure 2. - Blockgewannflur (plužina nepravá traťová). Urbanec, street village, district of Dačice. After F. Říkovský, p. 62.

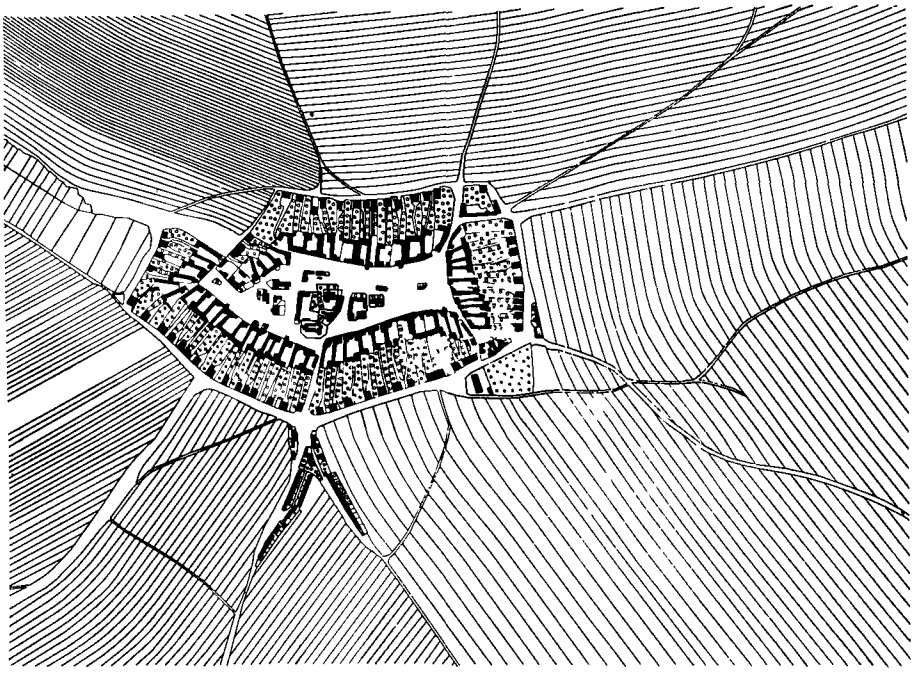

Figure 3. - Gewannflur (plužina traťová).
Hněvotín, spindle-type village,
district of Olomouc.
After F. Říkovský, p. 64.

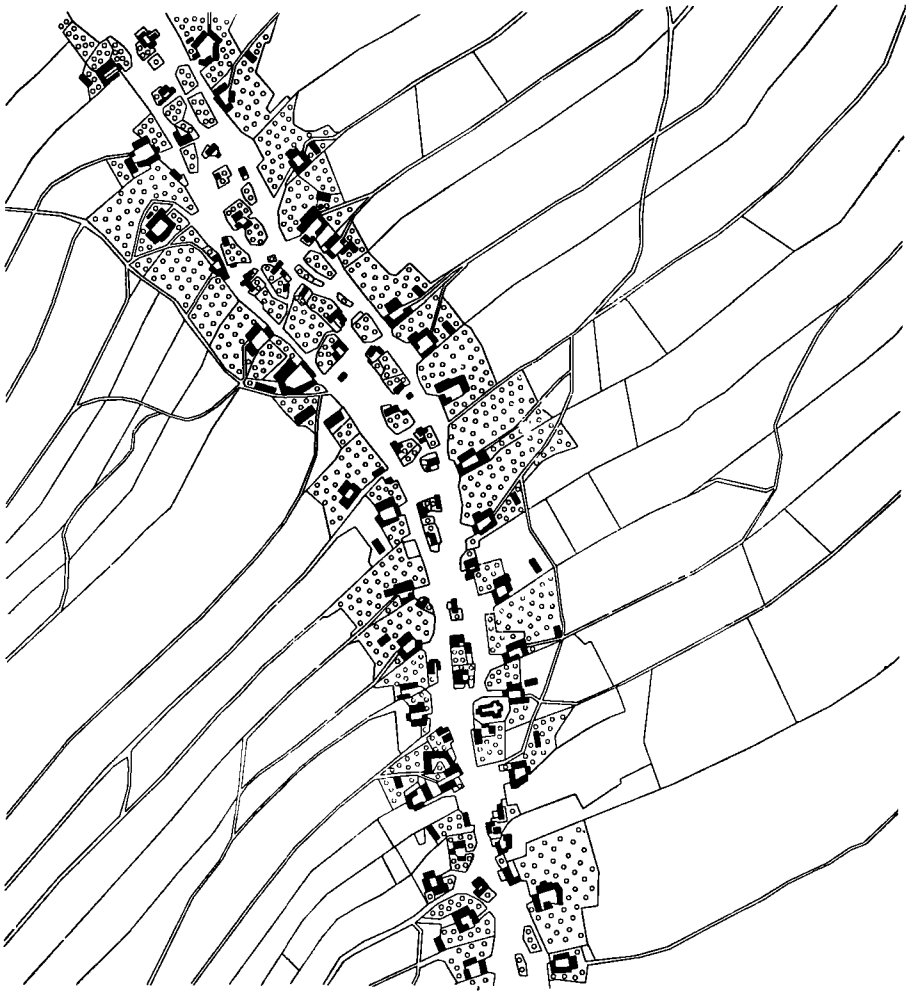

Figure 4. - Waldhufenflur (plužina záhumenicová).
Rudoltice, chain village, district of Město Libavá.
After F. Říkovský, p. 76.

Z. Láznička also conducted research, dealing with the classification of settlements from the point of view of slope and morphological conditions in Czechoslovakia. His study[33] investigated the settlements of greater than 5000 inhabitants, which are mostly the urban settlements. The altitude, orographic situation and the geological substratum were taken into consideration. He arrived at the following conclusions:

1) The majority of settlements in Czechoslovakia belong to the plain settlements (gradient 0^{o} to 2^{o}) and mixed settlements (gradient from 2^{o} to 10^{o}).
2) The greatest number of plain settlements occurs in southwestern Slovakia, because of the large villages in the Danubian Lowland, in the plains of Polabí and the plains of Moravia.
3) Mixed settlements occur mainly on the gentle slopes of the Bohemian Massif, where large numbers of settlements are situated on valley slopes.
4) Settlements of a pronounced slope-type (abrupt gradient 10^{o} to 20^{o} and more) are scarce, because the abrupt slopes do not provide enough place for any settlement to be founded.

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33 Z. Láznička, "Příspěvek k charakteristice našich sídel z hlediska jejich sklonových poměrů a morfografické polohy, "Sborník Československé Společnosti Zeměpisné, Vol. 67, No. 4, 1962, p. 287-302.

Authors M. Blažek[34] and J. Doberský[35] represent the newest trends in the geography of settlements in Czechoslovakia, as far as it can be traced from the scarce literature available. The research on urban and rural settlements is conducted as part of economic geography and is directed mainly at the building-up and reconstruction of the villages. Their work and approach is discussed later in Chapter V.

4. Aim of the Study.

The aim of the study is to analyse the different types of plans of rural settlements which can be found in Bohemia and Moravia-Silesia. Should this typology be of any value to geography of settlements, it must be accompanied by a map showing the regional distribution of the various types. This map must be generalized, because the pattern of rural settlements in Czech lands is very complex; still, the generalization must be done very carefully, in order not to distort the true picture of the occurrence of various types.

5. Methods and Material Used.

The plans of villages, being the product of the gradual development of human settlement, are influenced by many factors. Therefore, all factors, physiographic or human, which played a role in shaping the

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34 M. Blažek, "Dosídlování Toužimska", Sborník Československé Společnosti Zeměpisné, Vol. 60, No. 4, 1955, p. 264-271.

35 J. Doberský, "Úkoly sídelního zeměpisu ve výstavbě naší nové vesnice" Sborník Československé Společnosti Zeměpisné, Vol. 57, 1952, p. 82-86.

different types of settlement, must be studied and evaluated. The development of rural settlements in Central Europe, and in the particular area studied, was very complicated. Large areas, less accessible, were not settled until medieval times, whereas the neighbouring areas, mostly lowlands, had attracted settlers for previous millenia. The historical processes and social changes of the last centuries also created new types of rural settlements. Therefore, the historical approach often helps to see the problems of the typology of the villages in its proper perspective.

As already mentioned, the literature dealing with the problem discussed in this study is sparse. As only some of the existing publications on the topic were available, the research was done mainly from cartographic documents.

Fortunately the special maps, at a scale of 1:75, 000, covering the whole area of study were available (Map 2). These maps [36] are revised editions of the old (1:75, 000) black and white hachured "Spezialkarte" of the former Austro-Hungarian Monarchy, which for a long time have been regarded as the most elaborate military maps of Europe. On new editions the main roads are shown in red and forested areas in green colour. Some of the maps at a scale of 1:25, 000 (Topographical Sections)[37] with the contour interval of every ten, twenty and hundred meters and many details, were also available for the research in this thesis (Map 2).

The cartographic method enabled the old forms of the settlements to be distinguished from the younger ones, according to the form of the

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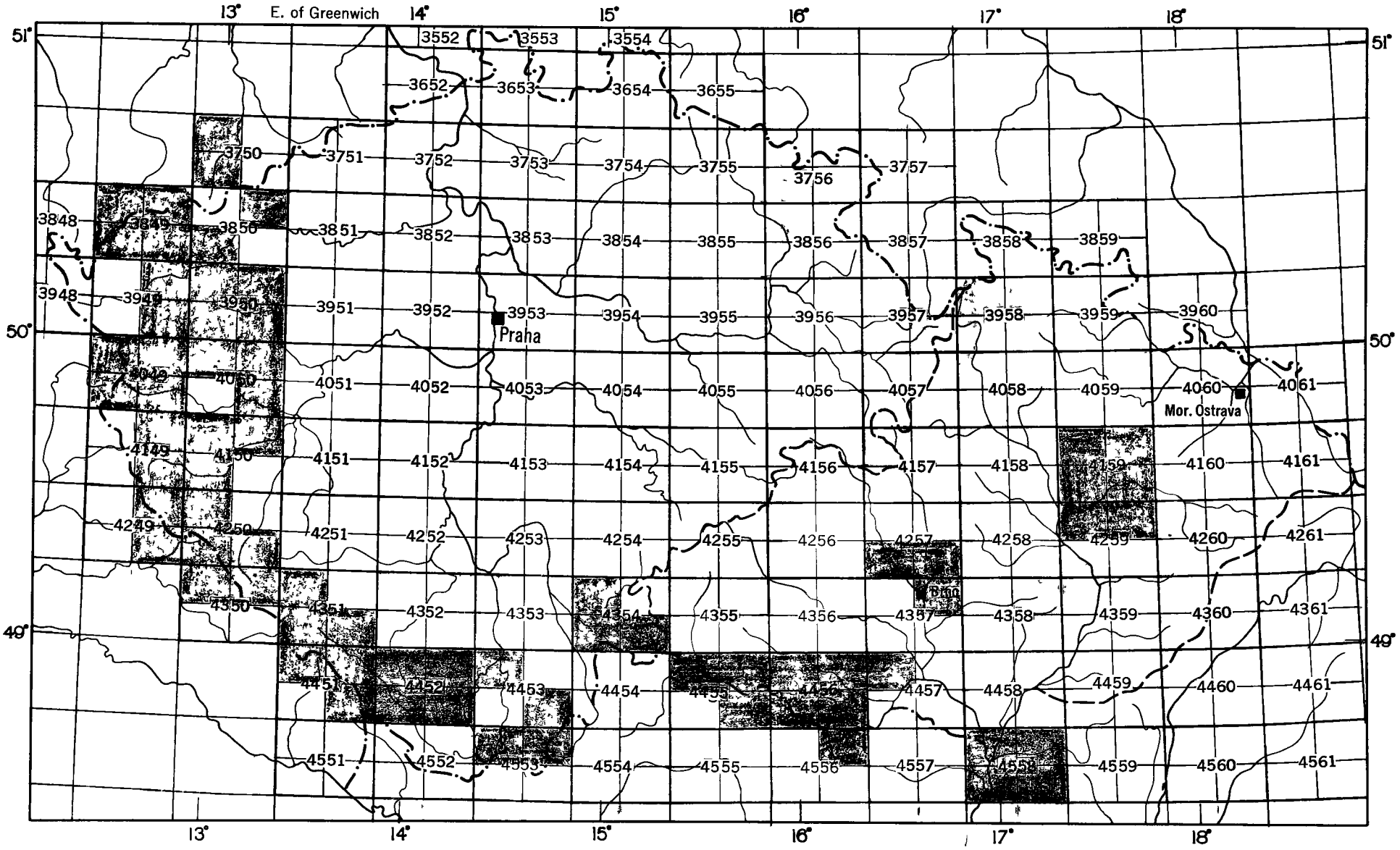
36 Published by Vojenský Zeměpisný Ústav, Praha, 1922-37.

37 Published by Vojenský Zeměpisný Ústav, Praha, 1922-37.

ground plan of the village and its field pattern division, and the side roads, characteristic of certain types of rural settlements.



BOHEMIA AND MORAVIA-SILESIA

Index map of area studied

Map 2

Sheets of the 1:75,000 — 3953

Sheets of the 1:25,000 — 1 | 3953 | 3 | 4

CHAPTER II

PHYSICAL AND SOCIAL CONDITIONS IN THE STUDY AREA

In order to obtain a fuller understanding of the influence of physiographic and social factors on the development of rural settlements, a brief review of the physical and social conditions in the area of Bohemia and Moravia-Silesia is presented.

1. Geological Structure and Geomorphology.

From the geotectonic point of view, the whole territory of Czechoslovakia belongs to two different geological provinces (Map 3). The western half of the state, which comprises almost the whole "Czech (Bohemian) Massif"[1] belongs to the Variscian (Hercynian) province, whereas the eastern part, the West Carpathians, belongs to the Alpine system.

The Czech Massif, a vast mass of crystalline, Algonquian and older Paleozoic rocks has the nature of an old peneplain mountain system, morphologically rejuvenated by the Tertiary block tectonics. The Western Carpathians, a young orogenic region, show high mountain relief. These two main structures are separated by the Carpathian foredeep which, from the genetical and structural point of view, is a link between the earlier Czech Massif structure and the young folded Alpine-Carpathian system.

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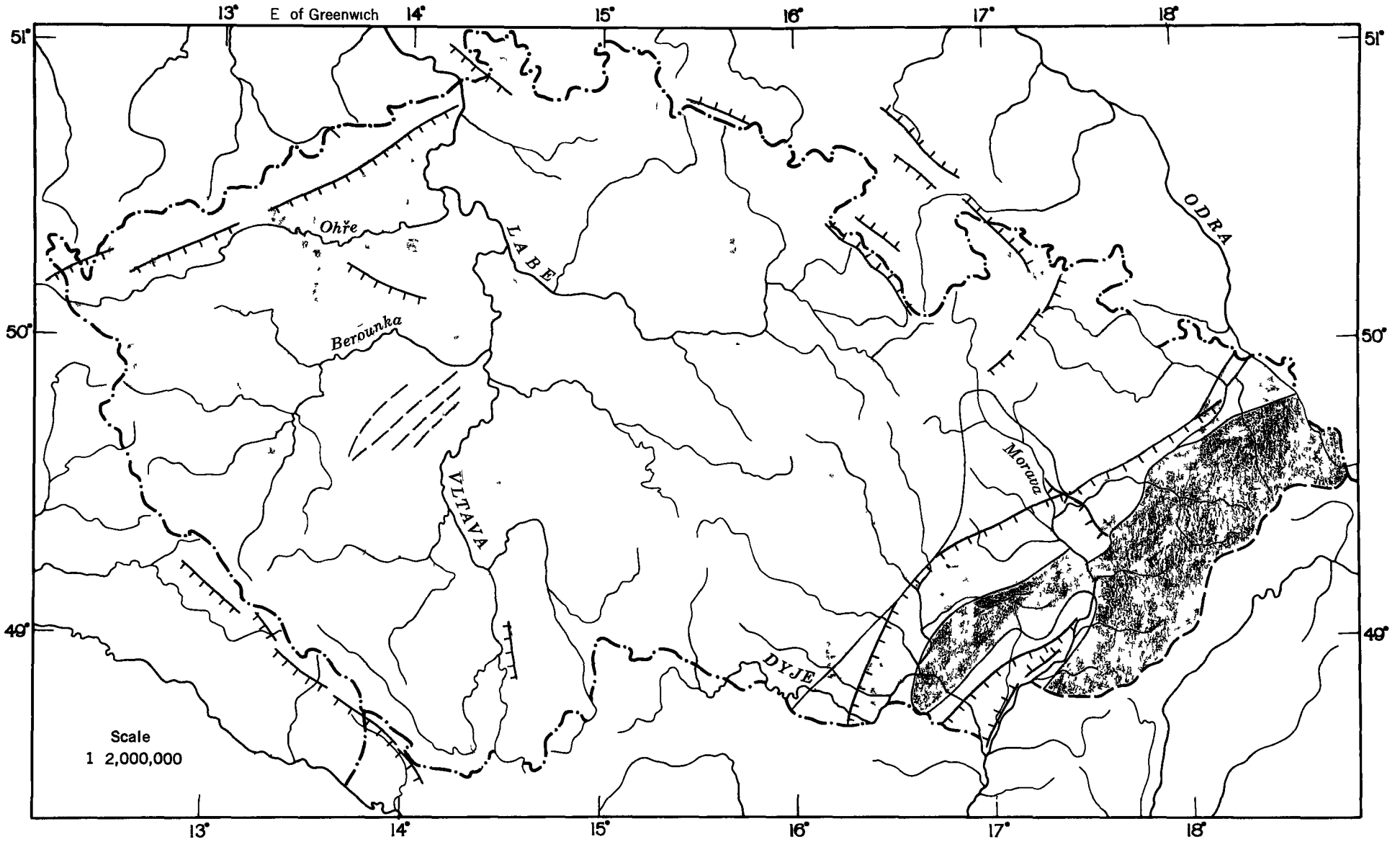
1 The massif extends into Poland and Germany in the north and west, and into Austria in the south.



BOHEMIA AND MORAVIA-SILESIA

Structure - Generalized

After V. Zoubek

Map 3

Within these structural units developed old political units. The whole territory of Bohemia belongs to Hercynian Europe. Moravia-Silesia, the meridional axis of Czechoslovakia, can be regarded as a geological borderland. It includes a part of Bohemian Massif, the Carpathian foredeep and partly the Carpathian Arc of Alpine Europe.

A. Czech (Bohemian) Massif.[2]

The older of the two fundamental units of the geological structure of Czechoslovakia is a "platform" type (kratonic) block, structurally and genetically very complicated. This horst type block appears as the most rigid and crustally consolidated part of the West-European Hercynian platform (Stille's "Meso-Europe").[3] The last true folding of this unit, which was preceded by much earlier foldings, occurred during the Hercynian (Variscian) tectogenesis in the Carboniferous period. This mountain-building period, which marked so strongly the landscape features of Czech lands, was followed by peneplanation, which softened and lowered the Hercynian mountains.

At the end of the Paleozoic and the beginning of the Mesozoic era, when the continent was largely submerged by the sea, peneplaned Hercynian ranges were covered by deposits of limestone and sandstones. After the regression of the Emscherian sea (in the Upper-Cretaceous

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2 V. Zoubek et al., Tectonic Development of Czechoslovakia, Praha, Ustřední Ústav Geologický, 1960, p. 7-138.

3 Idem, ibid., p. 11.

period), the Czech Massif remained above the sea level of the ocean, except for regions adjacent to the just arising Alpine-Carpathian orogeny.

There was little further folding of the Hercynian Mountains themselves (except the Saxonic Upper-Cretaceous folding), but the pressure of the Alpine-Carpathian orogeny caused the uplift, tilting, faulting and breaking of the older mountains of the old fundamental block of Bohemian Massif. The old peneplain surface acquired the form of a basin with a sharply defined, diamond shaped, rim. Volcanic remnants and hot springs in northwestern Bohemia are witnesses to these Tertiary disturbances.

Within the Massif there came a second period of sedimentation after the period of Alpine-Carpathian mountain-building. The freshwater sedimentation basins were formed in the depressions caused by the Saxonic folding. These Tertiary deposits in Bohemia include the valuable lignite beds of the northwest and also sands and clays of the high basins of the south.

During the Tertiary, the Alpine-Carpathian foredeep was formed in the eastern and southeastern periphery of Czech Massif; its Miocene marine sedimentation (clays, sands and relatively rare conglomerates) partly represent the fillings of old morphological depressions, mainly of old river valleys, and tectonic depressions of a graben character. Haná area in Moravia (between Olomouc, Prostějov, Přerov and Kroměříž) is one of the cases. Brno and Znojmo areas, which were connected with the foredeep proper, also belong here. A Miocene transgression also penetrated deeper into the Czech Massif, up to Česká Třebová and the

Ústí nad Orlicí areas.

The Quaternary also influenced the geological development of the Czech Massif. The Nordic glaciation reached only the northeastern margin of the Czech Massif in the north of Bohemia, in the northeastern piedmont of the Eastern Sudetes Mountains, and in the Moravian Gate (Moravská Brána).[4] Here the tongues of the Pleistocene ice sheet crept farthest south. The local mountain glaciation developed in the Krkonoše Mountains and on a lesser scale in the Šumava Mountains. However, during the glacial periods in the whole Czech Massif there was a periglacial climate resulting in extensive weathering and solifluction deposits. The weathering products cover the greatest parts of the Czech Massif, but are absent in the most exposed mountainous ridges and narrow, deep valleys. The loesses, formed from the local material appear as thick drifts in the lowlands, in the shadow of the western and northwestern winds, prevailing at that time. A cyclical incision of the rivers and aggrading of river terraces were also produced by the climatic changes; the earliest Pliocene terraces may be traced along most streams; the Quaternary terraces are prevalently well developed. Peats, distributed in southern Bohemia, Krušné hory (Ore Mountains) and in other places are mainly of Holocene age.

The Quaternary reverberations of the Alpine foldings resulted in antecedent and subsidence processes. The Labe lowland in central

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4 Moravian Gate, the pass about ten kilometers in width, is a geological frontier between east and west in mountain building movements.

Bohemia sank and the Labe river, piercing through it, acquired the form of a canyon. Traces of Quaternary movements are more abundant in the wider area of the Moravská Brána (Moravian Gate).

B. Carpathian Part of Moravia-Silesia.

Eastern Moravia lies within the Alpine system of Central Europe; although the Morava river forms the Czech-Slovak frontier in the extreme south, farther north the boundary runs through the White Carpathians (Bílé Karpaty) and the Javorníky Mountains.

These outer ranges of the Carpathian Arc belong to the western part of a flysh zone[5] which forms the northern limb of the general structural elevation of the West Carpathians.

The flysh zone is the result of the orogenic movements of the post-Paleogene foldings (Savian and early Styrian). During these phases the flysh miogeosyncline was repeatedly reduced and partial tectonic flysh units originated; they have been predeterminated by the earlier sedimentation. The flysh Carpathians were gradually shifted toward the north-northwest on the Miocene of the initiating foredeep and during this evolution several overthrusts took place. Uniform flysh rocks add little to the individualization of each of its massifs. They are characterized

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5 J. Hromádka, "Orografické třídění Československé republiky", Sborník Československé Společnosti Zeměpisné, Vol. 61, No. 4, 1956, p. 272-275.

H. Wanklyn, Czechoslovakia, London, Philip, 1954, p. 40-47.

V. Zoubek et al., op. cit., p. 186-198.

by massive beds of hard sandstones on one side and weak rocks on the other.

2. Orography.

As a result of the complicated geological history, the topography of Bohemia and Moravia-Silesia (Map 4) is also very diverse. It includes the high peripheral ranges, undulating plateaus, intermontane basins as well as fertile plains.

A. Bohemia.

The whole territory of Bohemia belongs to one large orographic unit - Bohemian Highlands (Česká vysočina)[6] - a vast mass of crystalline, Algonquian and older Paleozoic rocks, which resisted the Alpine folding. The old peneplain was preserved there in the form of low and slightly undulated highlands. In the east and in the north the peneplain was broken into blocks which were affected by vertical movements and arranged into block ridges and basins. Finally, a huge central Bohemian Basin (Česká pánev) was formed through continuous subsidence. It is bordered with high mountains on its margins. The Bohemian Highlands are divided into several structural parts.

a) Mountain border. - The rim of the highlands which frames

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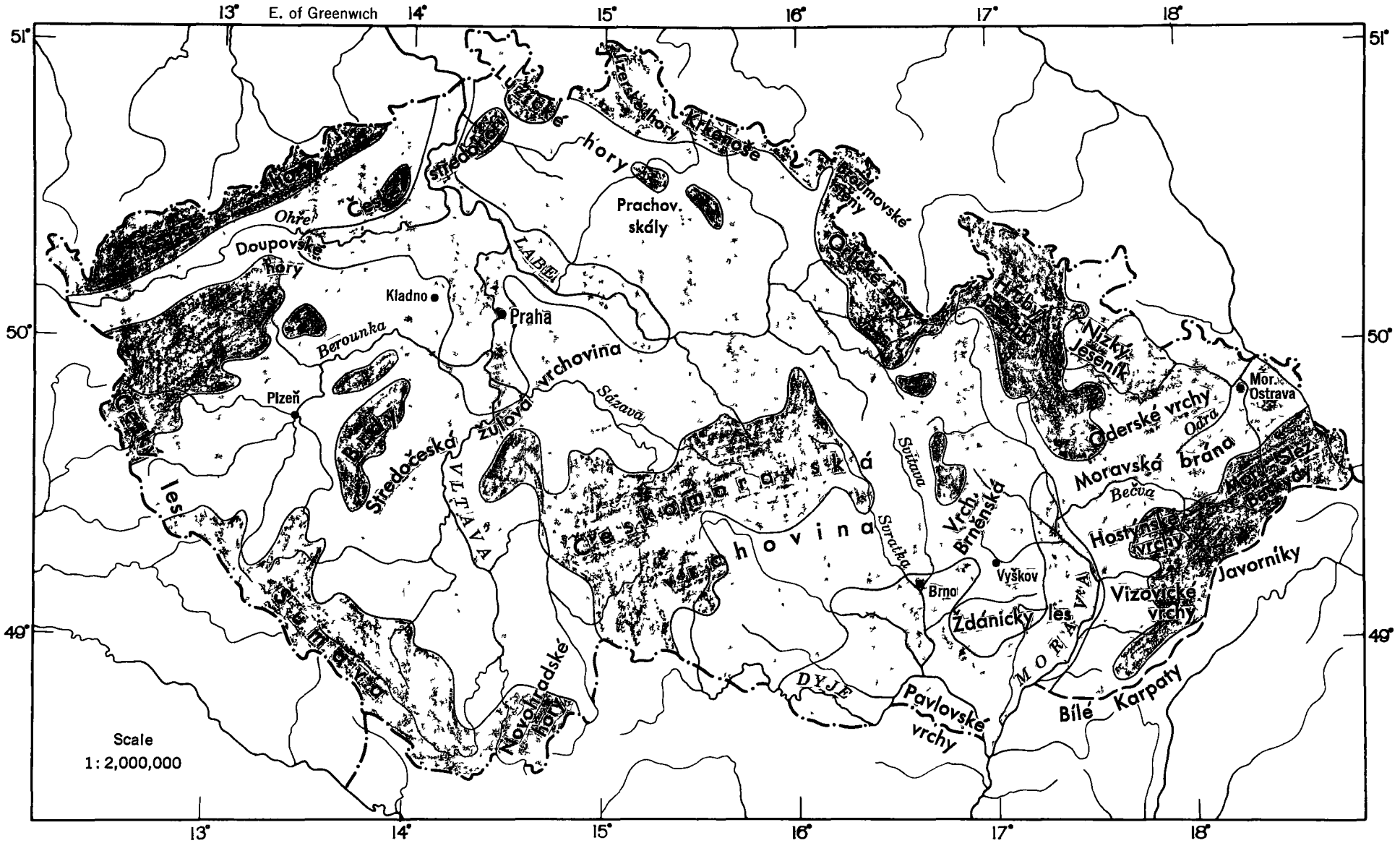
6 V. Häufler, et al., Zeměpis Československa, Praha, Československá Akademie Věd, 1960, p. 57-106.

J. Hromádka, op. cit.,No. 3/4, 1956, p. 161-180, 265-299.

H. Wanklyn, op. cit., p. 13-49.



BOHEMIA AND MORAVIA-SILESIA

Physical Map

Relief-generalized

0 - 500'

500' - 1500'

1500' - 5000'

Map 4.

the Bohemian Basin and reaches in some places a height of over 4000 feet may be divided into three groups.

i) The northwestern highlands. - Their outer ridge is formed by the crystalline Krušné hory (Ore Mountains). The structure of these block-type mountains (highest elevation 4080 feet) has a certain political and economic significance. The gentle gradient of these ranges to the northwest probably helped the German element to penetrate from Saxony to Bohemia during the Middle Ages; the steepness on the inner side of the Krušné hory might have prevented to a certain degree the Czech settlement movement from the Bohemian Basin to the surrounding upland. The Karlovarská vrchovina, which includes Císařský les and Tepelské vrchy also composed of crystalline rocks, forms the inner zone. These two zones are divided by the rift valley of Ohře river. Further northeast stretch the Doupovské hory and České středohoří, results of the volcanic activity of the Tertiary Era. The whole region is rich in varied resources. In the contact zones between the crystalline schists and granitic laccoliths silver, lead, copper, tungsten and pitchblende are found; in the areas of former volcanic activity occurs valuable kaolin clay. In addition, the depressions of the area are rich in Tertiary lignite and mineral springs.

Between the Středohoří and the Sudetes ranges lie Děčínské stěny and Lužické hory - the area of Cretaceous sandstone highland with a spectacular scenery - often called "Czech-Saxon Switzerland". The erosion of the Labe mainstream is here very evident.

ii) The northeastern highlands. - The northeastern ranges bordering the Czech lands are the horst-type mountains (crystalline nuclei, surrounded by gneiss, slates and limestones) of the Sudets. They include Jizerské hory, Krkonoše, Gory Sowie (in Polish territory), Orlické hory and the Jeseník Mountains. The last-named lie mostly in the territory of Moravia-Silesia. The highest peak of these ranges is Sněžka (5,200 feet) in Krkonoše, which also include the headwaters of the Labe river.

The middle part of Sudets, between Krkonoše and Orlické hory is called "Sudetské mezihoří". It is much lower than Krkonoše and consists of Carboniferous, Permian, Triassic and Cretaceous sediments of various resistance. Here, denudation of these different structures formed typical cuestas. The picturesque landscapes of Broumovské stěny and Teplické skály attract many tourists into this region.

iii) The southern Bohemian highlands. - The Šumava Mountains, which form the southwestern frontier of Bohemia, are monotonous highlands running from northwest to southeast, parallel to the smaller Bayrischer Wald, which lies in Germany. The highest point Javor (4788 feet) lies on the Bavarian side. The uplift and tilting during the Tertiary resulted in the series of fault-line scarps, running northwest-southeast on the German side of the state boundary. The scarp slope is on the German (Bavarian) side and the gentle gradients on the Czech one. This easier gradient seems to have encouraged and maintained Czech settlements in spite of German immigration from Austria and Bavaria in both medieval and modern times.

Northwest of the Šumava Mountains lies Český les (Bohemian Forest) of a much lesser height. The pass over the Český les - Všerubský průsmyk - situated in the tectonic depression, enabled the easy connection between Bohemia and Bavaria. It was guarded on the Czech side by the town of Domažlice, the settlement area of the Chod tribe since the early Middle Ages.

In southern Bohemia the central Bohemian peneplain stretches almost to the frontier. The Novohradské hory (nearly 4000 feet high) form the watershed between the Vltava and Danube drainage areas.

b) Central Bohemia. - The landscape features of the core of Bohemia are very varied, being an alternation of plains, basins and plateaus with an average elevation of 1500 feet. The region is divided into several structural units.

i) The Berounka Highlands (Vrchovina Berounky). - This is a peneplaned basin of Algonquian and older Paleozoic rocks, differently resistant. It can be divided as follows:

1) The Brdy Plateau. - It is a region of broken relief and complicated structure. The ridges of Brdy hills (highest elevation of 2840 feet) are composed of Cambrian sandstones and conglomerates, interspersed with patches of Silurian schist and Devonian limestone. They run northeast-southwest with the symmetry characteristic of "Appalachian" folding.

2) The Plzeň and Kladno Basins, which have been excavated by upper Berounka river and its tributaries in

soft Carboniferous limestones and shales. The rich coal deposits caused an enormous economic importance of these basins.

3) The Plateau of Central Bohemia (Pražská plošina), composed of ancient Silurian schists and quartzites, covered by thin Cretaceous deposits. The effect of the rising of the Bohemian Massif during the Alpine orogeny is marked by the gorge of the Vltava river, which has cut the plateau in two parts during the renewed work of erosion. The cliff banks are very high and steep; this physical feature provided the setting for the early defensive settlements of the capital Praha (Prague), the Vyšehrad and the Hradčany.

ii) The Central Bohemian Highlands (Středočeská žulová vrchovina). - Located southeast of Brdy and largely composed of granite and gneiss, these uplands (the highest elevation about 2440 feet) form a large stretch of rugged country between the Lužnice and Sázava, tributaries of the Vltava river.

iii) The Bohemian Chalk Plateau (Česká křídová tabule). - Situated in the northeastern part of the Bohemian Basin the plateau is characterized by low elevations (up to 1500 feet) and uniformity of rocks - Cretaceous marls and sandstones. Its monotonous surface is relieved by the scattered remnants of Tertiary volcanic activity (Trosky); the resistant Cretaceous sandstones of the northern margin of the plateau also offered the erosion to form spectacular stone cities in Prachovské skály.

Important feature of the Bohemian Chalk Plateau is the Plain of Polabí, drained by the upper Labe river. The plain is a tectonic depression, which was further eroded. The immense alluvium and loess deposits have made this region a centre of agricultural activity since prehistoric times.

B. Moravia-Silesia.

The territory of Moravia-Silesia contains much greater contrasts in geological structure than Bohemia, forming the depression between the Bohemian Massif and the Carpathians. Nevertheless, morphological detail is rather less intricate than in Bohemia.

a) The Moravo-Bohemian Highlands (Českomoravská vrchovina). - This eastern mountainous rim of the Bohemian Basin forms the boundary between Bohemia and Moravia. It reaches the highest elevation in Jihlavské and Žďárské vrchy (up to 2746 feet). The passes through the highlands are frequent and easy; the landscapes, cultivated valleys separated by forested watersheds, look very much alike on both Bohemian and Moravian side. The highlands are composed of granitic rocks with the exception of the Třebova-Boskovice region in northwestern Moravia, which contains Cretaceous sandstones.

The eastern part of the Moravo-Bohemian Highlands is Brněnská vrchovina (Highlands of Brno), which includes the distinctive karst country (Moravský Kras), situated north of Brno. It is a region of Devonian limestone, interspersed with Carboniferous schists and partially covered with Jurassic and Miocene deposits.

All the karst phenomena, the great caverns, the spectacular Macocha gorge (453 feet deep), the underground streams, the sink holes and stalactite and stalagmite formations are present here.

b) East Sudetes (Jeseníky). - Jeseníky are crystalline horst type mountains, broken at places with basins, with a faultline scarp facing the northern frontier. On the Moravian-Silesian territory they include the following units: Kralický Sněžník, Hrubý and Nízký Jeseník and Oderské vrchy. Their hills drop in height from northwest to southeast from 4890 to 2100 feet. Adjacent to the Oderské vrchy lies the Odra Basin, the plain of which (Oderská nížina) is a part of a big Silesian plain.

c) Subcarpathian basins. - On the margin of the Carpathians are situated the Subcarpathian basins. There are three outer basins on the territory of Moravia-Silesia:

i) Ostrava Basin (Ostravská pánev),

ii) Upper Morava Basin (Úval Hornomoravský),

iii) Dyje-Svratka Basin (Úval Dyjskosvratecký).

The Morava and Dyje basins are composed of Tertiary marine deposits with a thick and fertile covering of Quaternary alluvium and loess; they have been settled and cultivated since prehistoric times. The Ostrava Basin contains the most valuable coal beds, laid down in the Upper Carboniferous period. The basins are connected with each other by two "gates", the Moravian and Vyškov Gate.

The Moravian Gate (Moravská brána), a tectonic depression between the Ostrava and Upper Morava Basins, forms one of the main

natural passages in Central Europe, connecting the North European Plain with the Danube Valley.

From large inner Carpathian Basins, only one belongs to Moravia-Silesia. It is the Lower Morava Basin (Úval Dolnomoravský) the most northern part of the Vienna Basin, composed of the marine sediments of the Miocene epoch, covered by later alluvial and aeolian deposits (loess).

d) Moravo-Silesian Carpathians. - Eastern uplands of Moravia-Silesia belong to the outer flysh zone of the Carpathians, which resulted from the nappe folding. It rises from the Pavlovské vrchy (1800 feet) in southern Moravia toward the northeast, where it reaches its greatest height in Babia hora (5660 feet). On the territory discussed, three arcs of the flysh Carpathians may be distinguished:

i) The outer or Beskydy arc (Západní Beskydy), which includes Pavlovské vrchy (composed of Jurassic limestones), Ždánický les and Moravsko-Slezské Beskydy, characterized by hard sandstones.

ii) The middle Vizovice-Javorníky arc, to which belong Vizovické vrchy and Javorníky; they contain slates over thin layers of sandstones.

iii) The inner curve of Bílé Karpaty (White Carpathians), which is also characterized by hard sandstones.

It is interesting to compare the main physiographic units, discussed in previous paragraphs, with the historical evolution of the population in Czechoslovakia. In the Morava-Silesian syncline the Slavonic

state originated in the 9th century. However, it was soon destroyed by the Hungarian nomads. Then in the Bohemian Basin, bordered with mountains and dense forests, the Czech state and nation began to develop. It expanded soon to the east and joined the syncline region where the tradition of the first vast state still existed. In the basins of the Carpathian Mountains in Slovakia, the Slovakian population survived in spite of the long lasting Hungarian oppression, and crystallized into the Slovak nation which, in 1918, joined the Czech in the forming of the Czechoslovak Republic.

3. Hydrography.

The hydrography of Czech lands reflects the position of this region in the heart of Europe with affinities north and south, east and west. There are three large drainage basins, indicating the general slope of the land. For the most part, Bohemia is drained by the river Labe toward the North Sea; most of Moravia is drained by the river Morava toward the Danube and the Black Sea; the northern or Silesian part of the territory is drained by the river Odra toward the Baltic.

The drainage areas of the Labe and Morava systems are separated by Českomoravská vrchovina; the Moravian Gate forms the divide between the headwaters of the Odra and Bečva rivers.

a) The Labe-Vltava river system. - The river system of Bohemia is very symmetrical in appearance. The Vltava and its tributaries (Berounka, Lužnice, Sázava) converge on the Labe north of Praha; farther north, the Labe receives the waters of the Ohře (Eger) river,

which cuts a deep gorge-bed between the two lines of hills. Other smaller tributary streams, which drain the hanging valleys of the České středohoří, plunge into the Labe by means of rapids and water falls. Here the Labe cuts through the sandstone highlands of the frontier country of Upper Lusatia and takes its course into Saxony.

The Upper Labe and Vltava waterways are very valuable in the economy of the country, forming the southeasternmost section of a trade route, linking Czechoslovakia with the highly industrialized countries of the North Sea.

b) The Morava river system. - The main stream of Moravia is the Morava river, a branch of the Danube. The course of the Morava is marked by alluvial deposits; near the point of confluence with the Danube, these alluvial plains are increasingly marshy and difficult to drain. This can explain the fact that the lower Morava region has acted as an effective separative force and the political frontier through the centuries.

The tributaries of Morava, the Haná and Bečva rivers, drain the very best of farming land in Morava. Farther south, the tributaries of the Morava are the Dřevnice and Olšava, swift flowing rivers, coming from the Moravian Carpathians. Close to the Czechoslovak-Austrian frontier, the Morava receives the waters of the Dyje river; its main tributaries are Svitava and Svratka, at the confluence of which the Moravian capital Brno has grown up.

c) The Odra river system. - The watersheds of the rivers which flow from Moravia-Silesia to the Baltic are very small; here

belong the Odra river and its tributaries - Opava, Ostravice and Olše. Since the beginning of this century, industrialists have been interested in the waterway transport on the Odra river. But the small navigable distance of the Upper Odra on the Czechoslovakian territory and the limitation of the size of vessels prevented a significant growth of water transport, in spite of the natural wealth of this region and its extremely well developed industry.

The full exploitation of the Odra waterway was dependent upon the construction of the projected Odra-Danube canal (connected with the Upper Labe bed), which would compensate the Moravian producers for the unsuitability of the Morava river for stream navigation. Nevertheless, the high expenses of this immense project and the political events of the last thirty years prevented the plan from being realized.

4. Climate.

The study area, like most Hercynian Europe, lies in the transitional belt between the maritime and continental influences.[7] These lands are affected not only by the Asiatic pressure system (high in winter and low in summer), but by the Icelandic low and Azoric high pressure as well. Therefore, Bohemia and Moravia-Silesia have greater

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7 V. Häufler, op. cit., p. 148-163.

S. van Valkenburg and E. Huntington, Europe, New York, J. Wiley, 1935, p. 510.

H. Wanklyn, op. cit., p. 63-92.

extremes of heat in summer and cold in winter than Western Europe, but considerably less seasonal ranges of temperature than Russia. The rainfall distribution shows the influence of the rain-bearing westerly winds, but the summer maximum is characteristic of Central Europe.

However, the influence of topography in Czech lands is more noticeable than that of the general position. Conditions of temperature, rainfall and wind depend very much on relief and altitude and vary largely between one locality and another.

The most important relief feature influencing climate is the mountainous rim of the Bohemian Plateau. Cold and characterized by heavy rainfall, it acts as a climatic barrier to humid winds from the Atlantic Ocean. From central Bohemia eastward, the continental type of climate with hot summers and cold winters becomes more distinct, although not extreme. Praha has the January average temperature of 30° F., a July average of 67° F., and a comparatively low rainfall of 20 inches. Brno has a January average temperature of 27.3° F., and a July average of 66° F.; but the rainfall is slightly higher, due to the wet winds blowing from the Adriatic Sea in October; it amounts to 22 inches.

The precipitation in Bohemia and Moravia-Silesia is well distributed and most of it occurs during the spring and summer months (Table 1).[8]

There is a curious lack of correlation between the rainfall and river regimes[9] of the area under study. The months of maximum

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8 H. Wanklyn, op. cit., p. 90.

9 V. Häufler, et al., op. cit., p. 187.

TABLE 1.-

Percentage of Rainfall according to Season.

Region	Station	Winter	Spring	Summer	Autumn
W. Bohemia	Cheb	19%	22%	37%	22%
C. "	Praha	13	27	38	22
S. "	Č. Budějovice	13	25	39	23
C. Moravia	Brno	15	25	39	21
E. "	Nový Jičín	13	23	42	22

rainfall in summer are followed by low water levels of the rivers in late summer; this is due to the very high evaporation rate of summer months, which is increased by the great extent of impermeable rocks in Bohemia and Moravia-Silesia. Therefore, the waterways benefit very little from the summer rainfall maxima.

The high water levels in the middle and lower courses of rivers occur in March, when the accumulated snowfall of the winter months (which are the months of lowest precipitation) melts.

The result of these conditions is a marked inconstancy of water levels. In early spring occasional disastrous floods occur, caused by choking of river beds with ice blocks; in late summer the high rainfall summer storms sometimes cause flooding. These have been recorded in Upper Labe, Ohře and Odra rivers.

5. Soil Types.

The existing soil types of Bohemia and Moravia-Silesia (Map 5) are the result of the physiographic variety as well as of climatic and biological factors.[10] On the studied territory exists a roughly concentric zoning of soil types with one core in lowland Bohemia and another in lowland Moravia.

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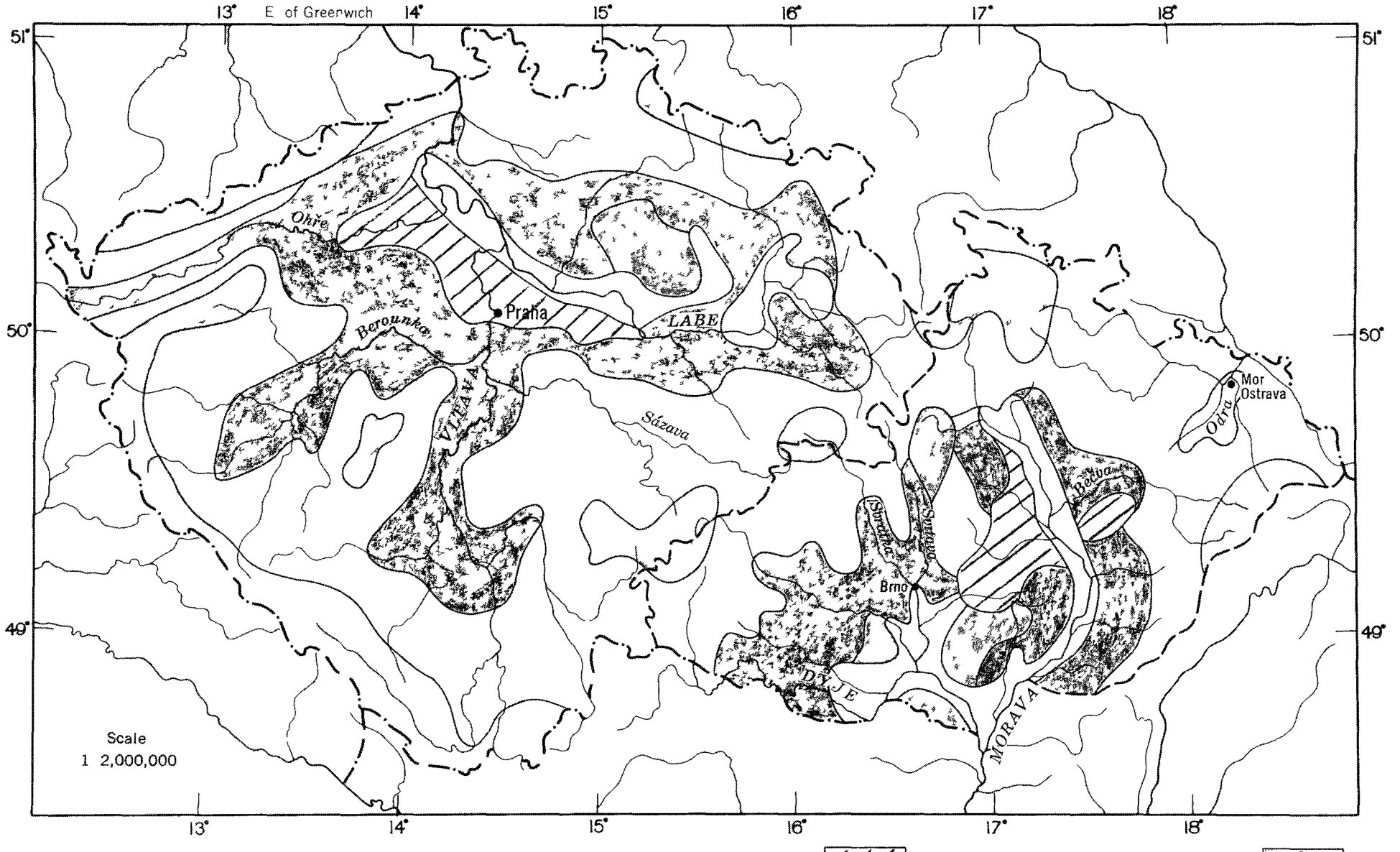
10 V. Häufler, et al., op. cit., p. 195-201.

-------- et al., op. cit., p. 150-151.

H. Wanklyn, op. cit., p. 93-96.



BOHEMIA AND MORAVIA-SILESIA

Soil Map

Map 5.

Chernozem . . . .

Brown Forest Soils . . .

Podzols . . .

Humus Carbonate

Alluvium . . .

Mountain Soils

To the south and west of Labe in Bohemia and in central Moravia are the areas of extremely fertile chernozems formed on loess; they are characterized by an accumulation of plant material, a high content of nutrient minerals and a granular structure.

The chernozems are rimmed by a very irregular belt of brown forest soils, which in Bohemia and Moravia extend up the river valleys, penetrating the belt of podzols in long tongues. The relatively high amount of organic and nutrient matter (the leaching was not too severe), their loamy texture and good drainage conditions make the brown forest soils highly productive.

Large areas of Bohemia, the periphery of Moravia and the greater part of Silesia are covered by podzolic soils. The deciduous forest cover, associated with their formation, is maintained in many areas of the territory under discussion. Although the clay accumulation is heavy and the acidity of these soils is quite high, podzols are still fairly productive when carefully managed and properly fertilized.

The higher parts of the bordering highlands in Bohemia are covered by the poor mountain soils with patches of peat bog; they also occur on the main ridges of Českomoravská vrchovina and in the Carpathians, which partly form the boundary between Moravia-Silesia and Slovakia.

In this fundamental pattern of soils zoning, there are also certain irregularities. The most important is the distribution of alluvium in the valleys of Labe, Morava, Dyje and Upper Odra rivers. Although the alluvial strips are small in extent, they are of great economic value. In the lowlands of central Bohemia and Moravia there also occur patches

of "rendzina" or humo-carbonate soils, in which the influence of parent material, soft limestone, is clearly evident.

6. Vegetation Cover in Historical Development.

The study of vegetation cover and its historical development is of extreme importance for human geography. The character of the original vegetation shows an interesting relationship with human activity at many stages. Migrations of people, settlements, farming possibilities, communications and trade are in close connection with the nature of plant cover in every territory, consequently also in Bohemia and Moravia-Silesia.[11] On this plant cover man worked for millenia, sometimes destroying, sometimes renewing, but generally always altering the original landscape.

a) Prehistoric and early historic times. - Early Paleolithic and Mesolithic man, who has left abundant evidence of his life as a hunter of mammoths on the area of studied territory, had only little influence on the development of the natural vegetation cover. Tundra and pine-birch forests, in later times oak forests mixed with hazel trees, offered excellent hunting grounds.

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11 K. Čermák, et al., Lesnický a myslivecký atlas, Praha, Ústřední Správa Geodesie a Kartografie, 1955, p. 37-38, Map 61.

G. W. Hoffmann, A Geography of Europe, including Asiatic U.S.S.R., New York, Ronald Press, 1961, p. 82-88.

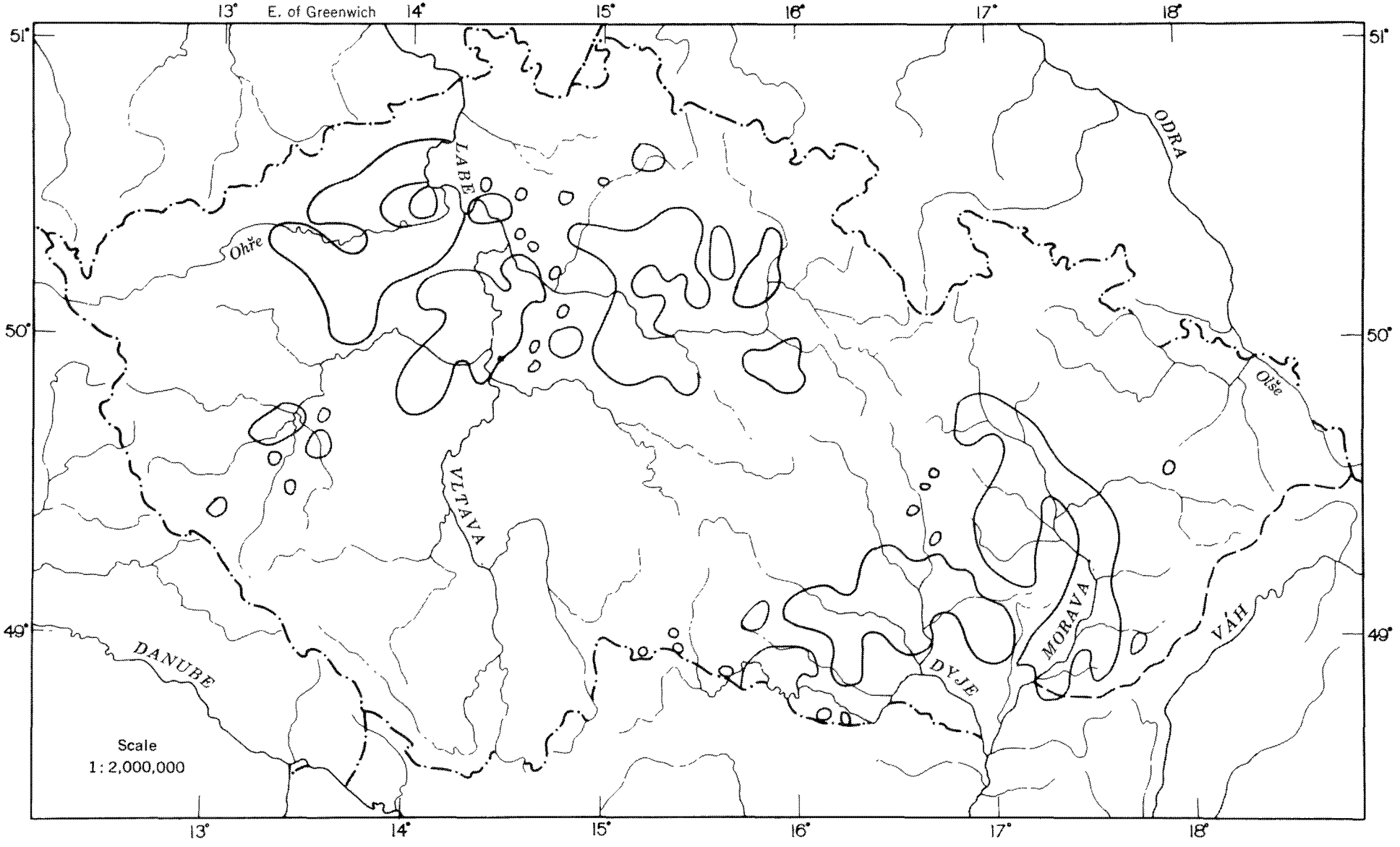
F. Říkovský, Základy k sídelnímu zeměpisu Česko-Slovenska, Brno, Československá Společnost Zeměpisná, 1939, p. 55-61.

H. Wanklyn, op. cit., p. 93-118.

First the Neolithic man, whose culture was based on agriculture and pastoral husbandry, played an active part in fashioning the lowlands and steppe regions from the original woodlands. Archaeological finds prove that in the Neolithic Age (4-3 millenium B.C.), which falls within the late Atlantic and sub-Boreal climatic phases, large areas of the studied territory were settled and cultivated by people with "Volute" ceramics (Map 6); they likely came to these lands from the Danubian Basin. Little forested areas of "cultural steppe", with fertile soils, were suitable for primitive agriculture and pastoralism. The grasslands and fields of the cultivated steppe were bordered by mixed forest with predominant oak and sparse pine trees. The peripheral regions were covered with mixed forests of oak, elm, linden and some spruce.

The boundaries of the settled area in the late Neolith, around 2000 B.C., did not change considerably (Map 7), even when new migratory groups, mainly pastoralists penetrated into the inner basins of Bohemia and Moravia. Nevertheless, the vegetation cover underwent certain changes. The spreading of the beech, especially in the peripheral regions of the territory became very extensive during the beginning of the sub-Boreal climatic period.

In the Bronze Age, around 1500 B.C., (Map 8), the area settled by agricultural and pastoral population in Bohemia extended considerably toward the south and southwest. There lived people with "mohylová" culture (mound burial grounds), mainly pastoralists; therefore, less fertile soils and cooler regions were more suitable for them. Widespread pastoralism meant thinning of forest, mainly by use of fire; the



BOHEMIA AND MORAVIA-SILESIA

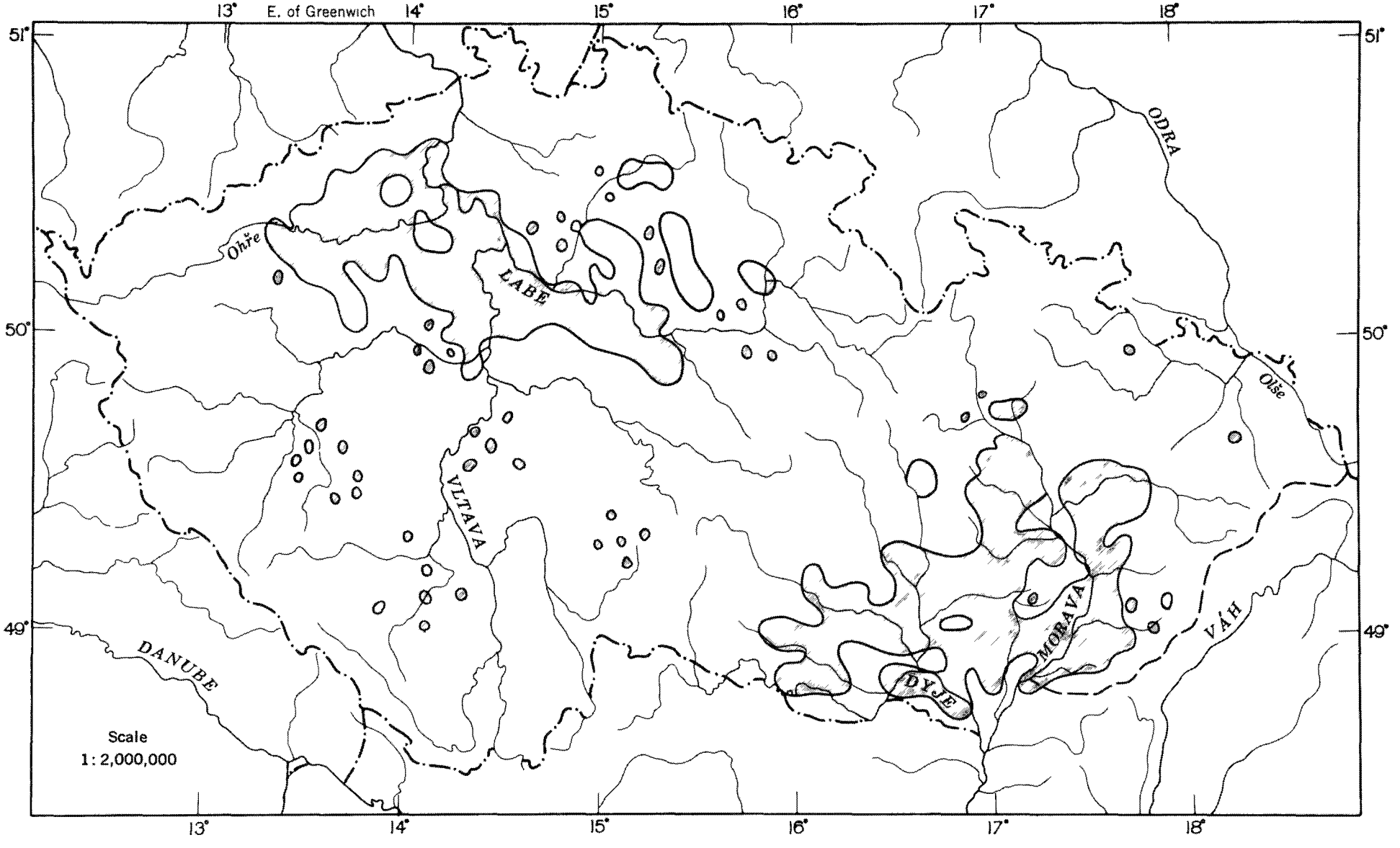
Areas of Prehistoric Settlements

After K. Mráz

Map 6.

Cultivated Steppe in Neolithic Epoch.(4-3 Millenium B. C.).....

Isolated finds proving the presence of man .....



BOHEMIA AND MORAVIA-SILESIA

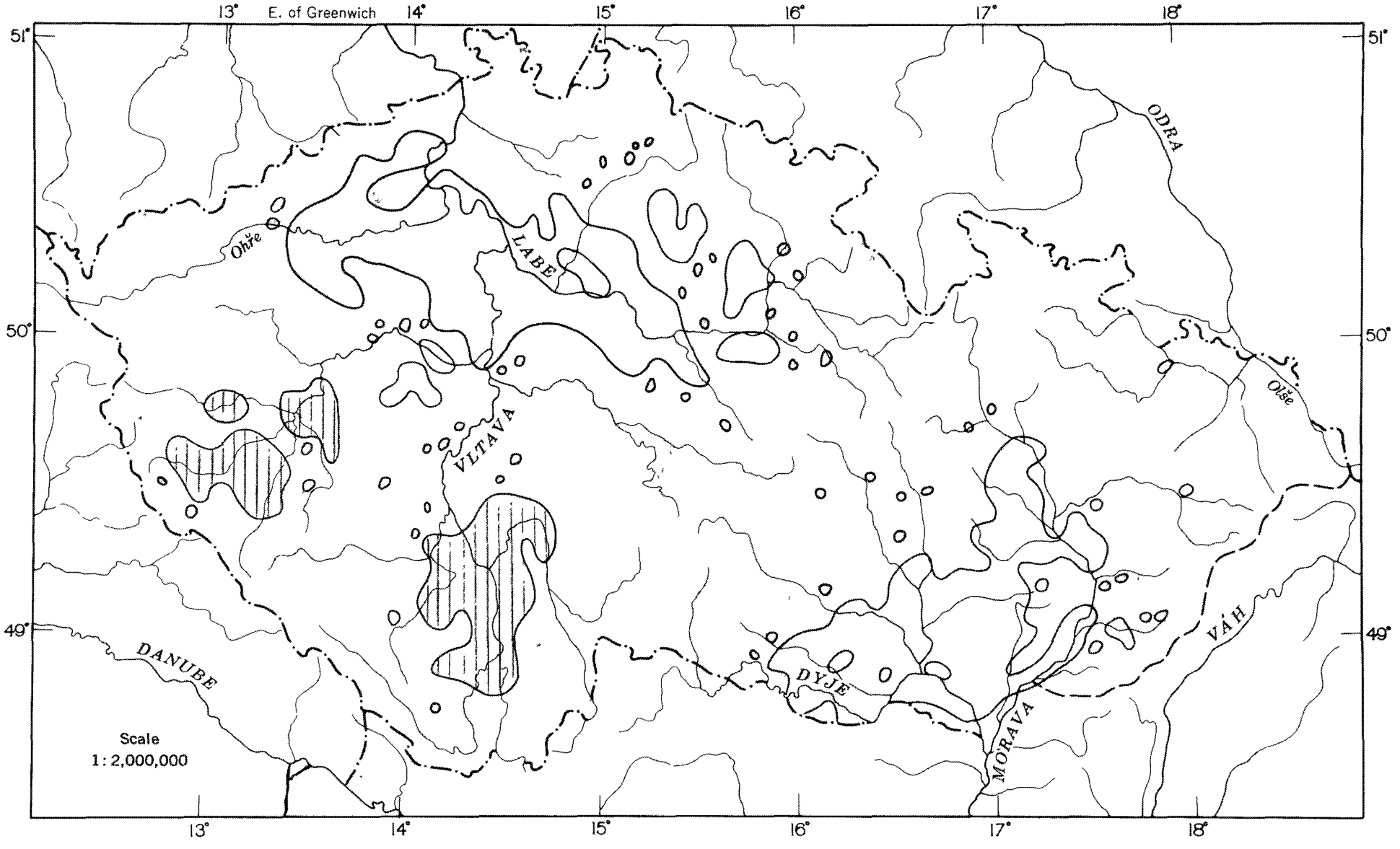
Areas of Prehistoric Settlements

After K. Mráz

Map 7.

Cultivated Steppe in Eneolithic Epoch (around 2000 B.C.) .....

Isolated finds proving the presence of man .....



BOHEMIA AND MORAVIA-SILESIA

Areas of Prehistoric Settlements

After K. Mráz

Map 8.

Cultivated Steppe in Bronze Age (around 1500 B.C.)

Sparse forest with grazing grounds, used predominantly by pastoral population

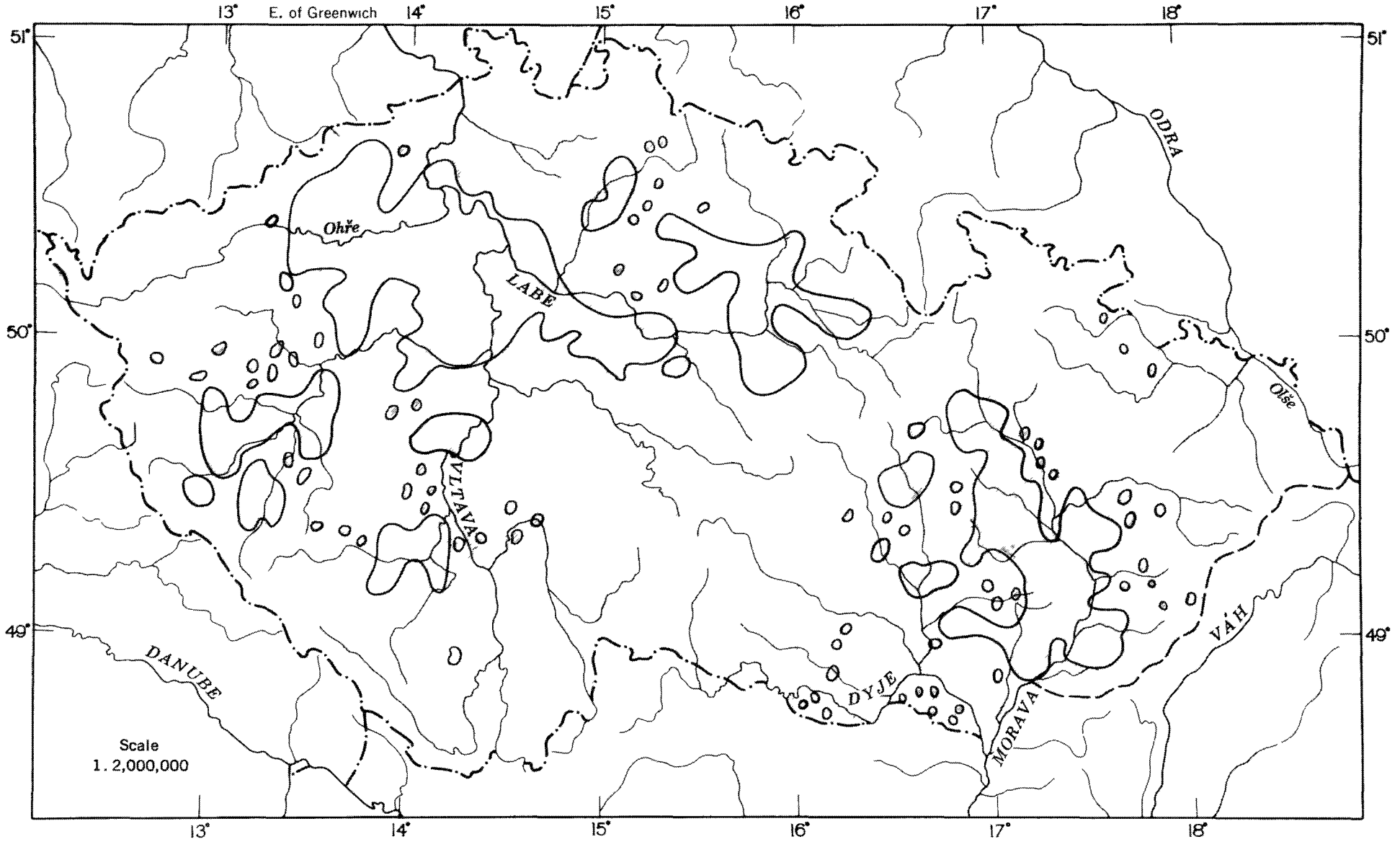
Isolated finds proving the presence of man

huge flocks and herds of grazing animals also influenced directly the development of forest cover. The mixed forests of oak and alder with sporadic pine trees were challenged by the extension of beech forest, intermixed with fir and spruce in the areas of lower elevations; in the high elevated peripheral regions the spruce became predominant.

In the Iron Age (1000-500 B.C.) settled areas extended further. Influence of the early agriculturalists from central Bohemia on the grazers of southern and southwestern Bohemia was evident (Map 9); here, the areas used formerly as grazing grounds were slowly turned into fields. This gradual evolution of the land use meant new impetus on the forested areas. Mixed beech and fir forests became predominant in the area of studied territory; spruce occurred only in highest elevations, whereas the oak forests, mixed with the beech, fir and pine fringed only the areas of the cultivated steppe.

In the times of La Tène period (around 600-500 B.C.) when the studied territory was occupied mainly by Celts, the consumption of woods, needed for construction of Celtic "oppida" (centers of early trade and mining) was increasing. This era falls in the beginning of sub-Atlantic climate period, marked by cold and moist conditions. Map 10 shows spreading of cultivated steppe, surrounded by mixed forest, in which beech was predominant.

In the sixth century A.D. (Map 11) the settlement of Bohemian lands by Slavic population was completed, which meant further extension of cultivated steppe. Nevertheless, large areas were still not settled, but covered with dense mixed forest. In higher elevations beech and fir



BOHEMIA AND MORAVIA-SILESIA

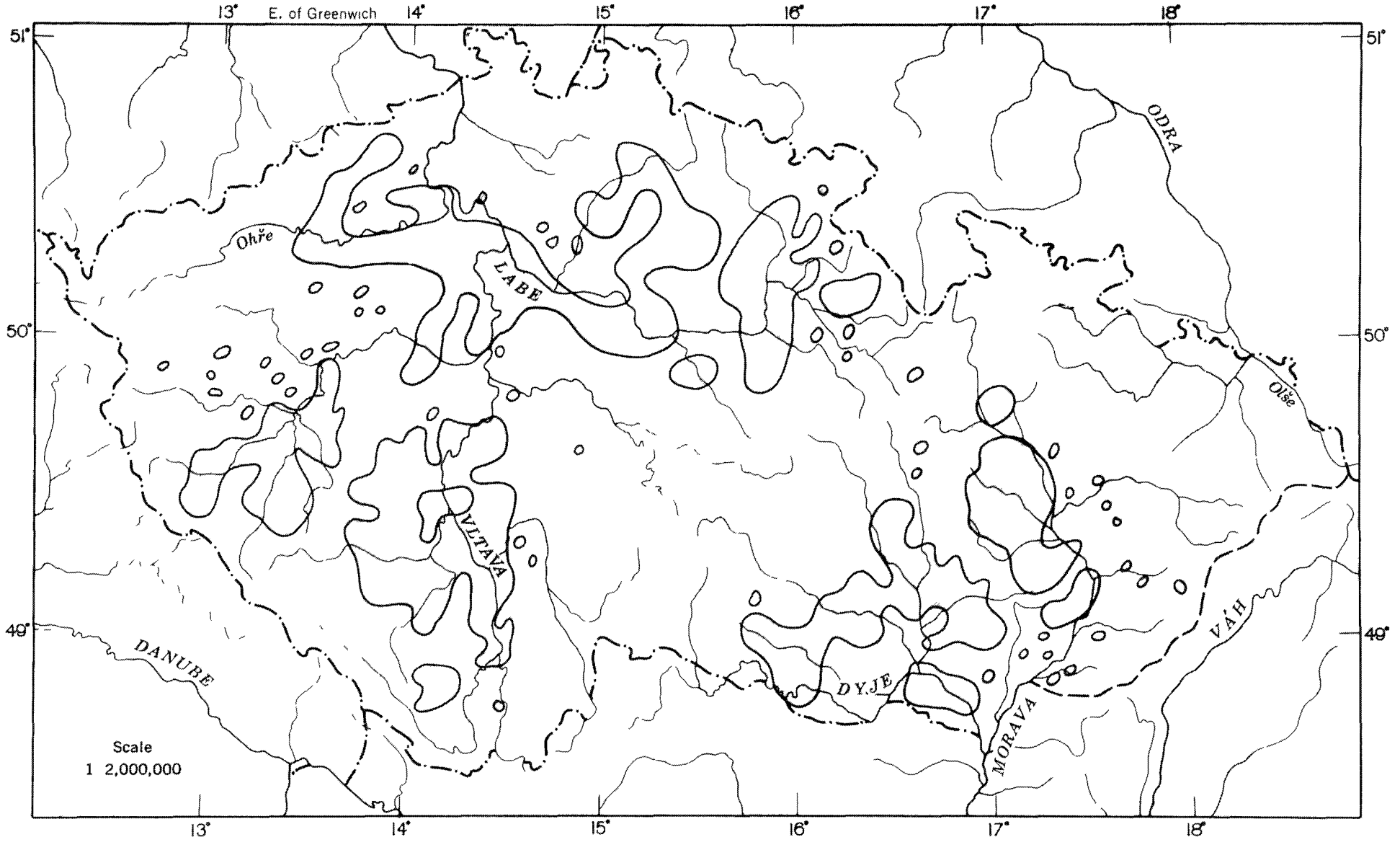
Areas of Prehistoric Settlements

After K. Mráz

Map 9.

Cultivated Steppe in the early Hallstatt Period (about 800 B.C.).....

Isolated finds proving the presence of man.....



BOHEMIA AND MORAVIA-SILESIA

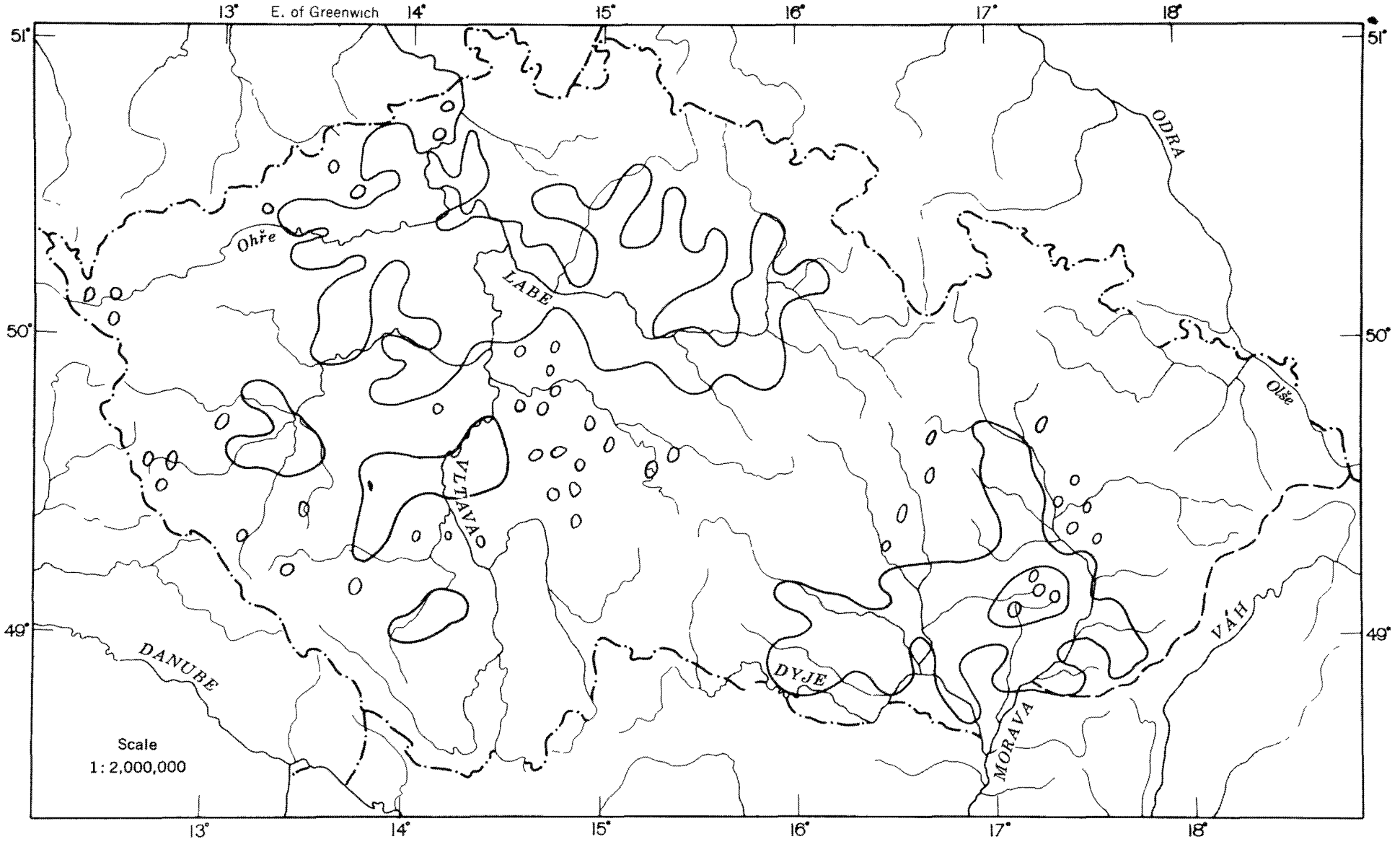
Areas of Prehistoric Settlements

After K. Mráz

Map 10.

Cultivated Steppe in the late Iron Epoch (about 600-500 B.C.).....

Isolated finds proving the presence of man.....



BOHEMIA AND MORAVIA-SILESIA

Areas of Prehistoric Settlements

After K. Mráz

Map 11.

Cultivated Steppe settled by Slavs, formerly by Celts (around 600 A.D.)...

Isolated settled areas.....

were predominant, whereas in lowlands the plant cover consisted mainly of oak, beech, pine and alder. Map 12, constructed after O. Schlüter,[12] shows the extension of swamps and heathlands during the early Middle Ages, in addition to forests.

The reconstruction of natural vegetation regions in Bohemian lands leads to the following conclusions:[13]

1) The original vegetation cover in the area of old settlements was formed by oak forest and cultural steppe, which attracted the early migratory groups, primitive farmers and pastoralists. The oak forests were suitable for grazing, not offering too much shadow and therefore enabling the development of grass cover. The extensive areas of lowlands in Bohemia and Moravia-Silesia offered to the early settlers enough space for primitive agriculture and grazing throughout the prehistoric and early historic times.

2) The natural vegetation of the remaining region of Czech lands, the area of so called young settlements, consisted of mixed beech forest, which predominated over spruce. These were not touched very much by human activity until the late Middle Ages.

b) Medieval times. - Although the tendency of population in Bohemia and Moravia-Silesia to clear the forest land for grazing, farming or housing purposes was evident during the prehistoric and early

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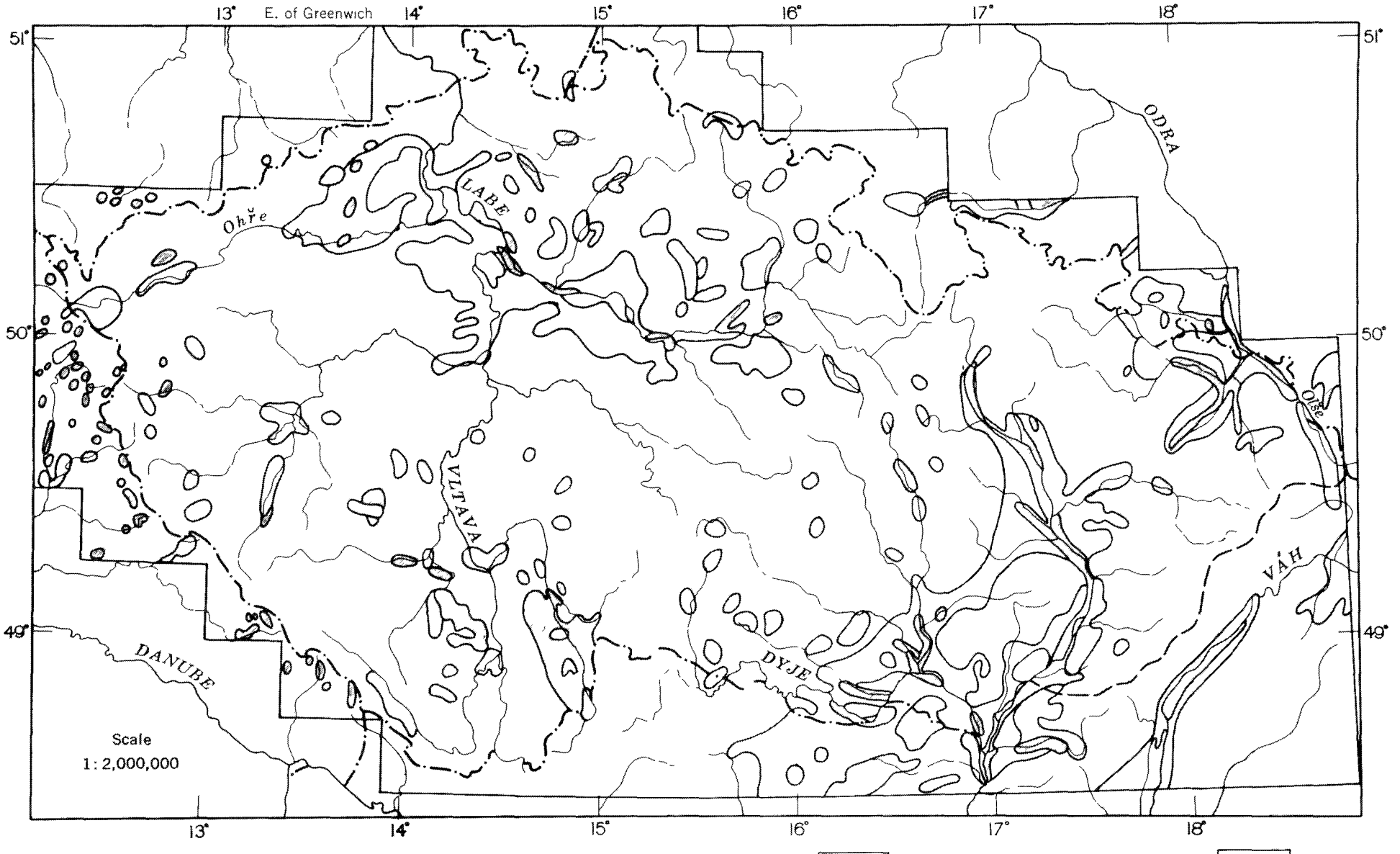
12 O. Schlüter, Die Siedlungsräume Mitteleuropas in frühgeschichtlicher Zeit, Hamburg, Atlantik Verlag, 1952, Scale 1:1,500,000.

13 F. Říkovský, op. cit., p. 34.



BOHEMIA AND MORAVIA-SILESIA

Land Use in the Early Middle Ages

After Otto Schlüter

Map 12.

Settled Areas .....

Swamps .....

Heathland .....

Forest .....

Limits of Area Studied .....

historic times, its peak was not reached until the late Middle Ages. The reclamation of land from forests or marsh-land was encouraged by the church as well as by the ruling princes and kings. Deciduous woodlands suffered the most, because the regions which were favourable for this kind of vegetation cover were also highly suitable for farming.

Finally the landowners recognized the importance of forest cover and the danger of the too vigorous clearing operations. Extensive legislation during the reign of Charles IV of Luxemburg in the 14th century tried to restrict and regulate the clearing of Czech forests.

During the Thirty Years War (1618-1648) the forests of Bohemia and Moravia-Silesia suffered severely again. Forest legislation became ineffective, woods were cleared without planning or burnt by the armies, engaged in the great religious wars.

c) Modern times. - In the 18th century the conservation of forest lands, held by secular and ecclesiastical owners, followed. The Schwarzenberg family, for example, managed the Šumava forests very efficiently. The central government in Vienna recognized the immense economic importance of Czech woodlands and supervised the management of forest properties very carefully. Superfluous exploitation of the timber resources was severely punished.

The industrial revolution of the 19th century brought special attention to the forests of Czech lands; consequently, the forest management of these countries underwent marked changes.[14] The species,

14 H. Wanklyn, op. cit., p. 104.

which were of greater economic importance, such as Norway spruce and the Scotch pine, became predominant species in the Bohemian highlands and southern Moravia. Other imported conifers and new deciduous species (the American walnut, the Lombardy poplar and the American red oak) were introduced and proved to be highly profitable.

Tables II and III show the percentages of the different kinds of timber in Bohemia and Moravia-Silesia in the years 1920 and 1954.[15] The high proportion of coniferous forest, developed for industrial purposes, is remarkable.

Forests in Bohemia and Moravia-Silesia at the present time cover an area of approximately 23,140 sq. kilometres (8930 sq. miles), which is roughly 29.3% of the total area.[16] The upper limit of the tree growth lies between 4300 feet and 4600 feet, in both the Hercynian and Alpine highlands; it is higher on the inner than on the outer slopes of mountainous ranges surrounding Bohemia. The average altitudinal limit for cultivation is 2460 feet. This figure is also considerably higher than the one for the farming boundary on the outer slopes of the Šumava, Krušné hory and Krkonoše Mountains.

Above the forest zone there is a meadow flora vegetation, where the following plants are predominant:[17] anemones (narcissi-flora), monkshood (aconitum napellus), oxslip (primula elator), larkspur

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15 K. Čermák, et al., op. cit., p. 43.

16 Idem, ibid., p. 42.

17 H. Wanklyn, op. cit., p. 96-97.

TABLE II. -

Representation of Coniferous Species in the Forests of Bohemia and Moravia-Silesia.

Species	1920 %	1954 %
spruce	53.3	61.0
fir	7.0	2.7
pine	22.9	20.0
larch	1.4	1.5
other coniferous	____	0.1
coniferous total	84.6	85.3

TABLE III. -

Representation of Deciduous Species in the Forests of Bohemia and Moravia-Silesia.

Species	1920 %	1954 %
oak	3.7	4.4
beech	4.2	5.3
alder, ash-tree, elm	____	3.7
other deciduous	7.5	3.7
deciduous total	15.4	14.7

(delphinium ajacis), thistle (conopordon acanthum) ammoniac plant (dorema ammoniacum), and foxglove (digitalis purpurea).

The high moors vegetation zone contains the dwarf birch and knee pine (pinus unciniata), the calluna heaths, the cranberry, whortleberry (vaccinium), cotton grass (eriphorum vaginatum), saxifrages, hawkweeds (hieraceae), bent grass and sphagnum moss.

An attempt was made in previous paragraphs to show the historical development of the great forest zone in Bohemia and Moravia-Silesia, which played an important role in the history of settlement and economic and political life of this territory.

7. Ethnic History and Migrations in the Study Area.

The ethnic basis of Czech people is highly complex, being the result of interaction of a number of diverse peoples and cultural influences.[18] It is known that Bohemia and Moravia-Silesia with the fertile loess soils rank as a region of high attraction for the early inhabitants and that the feature of Moravian Gate was one of the main migratory routes of early European history and prehistory.

a) Prehistoric migrations. - The archaeological finds at Dolní Věstonice near Mikulov in southern Moravia and famous archaeological remains at Předmostí near Přerov in central Moravia have

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18 K. Čermák, et al., op. cit., p. 37-38.

V. Häufler, et al., op. cit., p. 222-225.

R. J. Kerner, et al., Czechoslovakia, Berkeley, University of California Press, 1949, p. 3-10.

revealed settlements of early Palaeolithic man, who lived there about 25,000 years ago. At the end of Wurm glaciation a slowly evolving, food gathering, economy reached its climax in a communal hunting culture of considerable achievements and great ethnic complexity. The early hunters dwelled in caves and lived largely on flesh of mammoth, bison, antelope, cave bear and reindeer, which they killed by shots from the bow or by the spear. Outstanding archaeological and geological investigations at Věstonice[19] revealed the materials used for making tools, the bone industry, dyes, hangings from mollusc shells, animal teeth and stones, musical instruments, sculptures of baked clay, the symbol of woman from mammoth tusk (Venus of Věstonice), etc.

The Mesolithic people (about 8000 - 4000 B.C.) of the territory under discussion presumably still lived on hunting, fishing and food collecting, ignorant of agriculture and metals and without domesticated animals except the dog.

It was not until the Neolithic times (4-3 millenium B.C.) that the first agriculturalists with the Danubian culture settled in Bohemian and Moravian fertile lowlands, absorbing the Mesolithic culture. They brought a semi-nomadic hoe-farming technique, grew barley and oats, raised sheep and pigs, built villages of pit dwellings, made brown or grey pottery, decorated with incised meandering ribbons or pricked lines (Volute ceramics). This group of peasants carried their typical

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19 B. Klíma, "Dolní Věstonice" Bulletin, Czechoslovak Academy of Sciences, issue of March 1963, p. 9-10.

Danubian culture northeastward, via the Moravian Gate into Poland.[20]

The late Neolithic invaders, who came into the territory of Moravia and Bohemia around 2000 B.C. from Upper Odra and Saale river basins, were semi-nomadic tribes, whose original cradle was north of Caucasus. They introduced wheat, large herds of cattle, use of new tools and new crafts (Corded-ware culture = šňůrová keramika). There was another invasion of semi-nomadic tribes in the Neolithic times, which seemed to be of greater importance. They were the Bell-Beaker people (keramika zvonových pohárů) traders and archers, whose cradle was likely the Iberian peninsula or the adjacent North African coast. They remained for a long period of time as an independent group in Czech lands, side by side with the old agriculturalist settlers and the people with Corded-ware culture.

Out of this ethnic complexity, the Únětice Bronze Age culture[21] developed in Bohemia and Moravia around 1800 B.C., inspired by an indirect Near-Eastern influence and by the Bohemian tin and copper resources of the Krušné hory (Ore Mountains). This culture reached its peak around 1500 B.C. when the first stage of ethnic development of Czech lands was completed. It is marked by use of pins with pierced heads, triangular daggers, celts of bronze, and mining operations and trade all over Central Europe. Saxo-Thuringia and Silesia were also

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20 R. J. Kerner, et al., Poland, Berkeley, University of California Press, 1947, p. 16.

21 This culture is sometimes called "Aunjetitz" after the German version of Únětice (near Praha). However, the local population never uses this form.

included in the Únětice culture, mainly because of the flourishing amber trade. It was during the Bronze Age that new invaders, mainly pastoralists with mound burial culture (mohylová kultura), came to Bohemia from Upper Rhein and Danube basins. Coming from wetter and cooler regions, they chiefly occupied the higher elevated regions of southern and southwestern Bohemia. Toward the end of the second millenium the new culture centered in Lusatia, developed between the Labe (Elbe) and Wisła (Vistula) rivers. It is marked by the new rite of cremation, large urnfields and probably primitive scratch-plough agricultural technique. Preserved remnants from the cremation burials in northwestern Bohemia indicate that these people spread into that area. This new element, which came into regions previously densely settled, mixed with the original population more easily than the people with mound burial culture (south and southwestern Bohemia), who came into the areas settled only very sparsely.

In the early Iron Age (1000 - 600 B.C.), when the knowledge of the working of iron had penetrated from Near East into the Danubian Basin, the agricultural expansion in Bohemia and Moravia-Silesia was evident. The peasant settlers of this early Halstatt period, who lived in permanent villages gradually were absorbing the semi-nomadic pastoralists.

During the La Tène cultural period (around 600-500 B.C.), the mound burial culture of the southern part of the discussed territory was reinforced by the expansion of historic Celtic tribes (Boii and Cotini), who extended from Bavaria into the study area. The

consolidation of different ethnic elements followed and important economic changes took place. Iron was used for elaborate brooches, belt-plates, ploughshares and Celtic long swords. The Celts built fortified "oppida", centers of vivid trade and commercial expansion.

The name of Bohemia (Boiohaemia), originated in this Celtic period, being given to the land by the Roman historians; it was derived from Boii, a Celtic tribe that occupied the southern part of today's Bohemia.

b) Early historic migrations. - In the last century before Christ, Celtic Boii, under heavy pressure of Germanic tribes, moved across the mountainous border and soon disappeared from history. By the beginning of Christian era, Bohemia, Moravia-Silesia and western Slovakia were occupied by Germanic Marcomanni and Quadi, against whom Emperor Marcus Aurelius lead several difficult wars. Their attacks on the northeastern Roman frontier can be explained by the pressure of Slavic tribes from north and east. Slavic settlement, which in Bohemian and Moravo-Silesian basins sporadically started after 500 B.C., became more pronounced after the victorious campaign of Romans against the Marcomanni in 169 A.D.

c) Slavic settlement. - There are few written records on the early migrations of Slavs into Bohemia and Moravia-Silesia. This Slavic invasion started the third phase of ethnic evolution in this territory; it was the most important one, because it culminated in realization of a political and linguistic unit.

It may be assumed that the Slavic settlement of the areas of cultivated steppe (Map 11) in the territory studied was completed during the first half of the 6th century A. D. The Czechs[22] and related Slavic tribes, who came into these countries were agriculturalists, and although their farming techniques were of a rudimentary type, they were very tenacious tillers of the soil.

The peace in Czech lands did not last long. As early as in the sixties of the 6th century, these lands were invaded and for a time conquered by the nomadic Avars from the southeast. Their rule was so harsh as to arouse the Slavic population to revolt. Led by a Frankish merchant Samo, the Slavic tribes freed themselves from the Avar rule and chose Samo for their ruler. This early political unit of Western Slavs, the exact boundaries of which are difficult to define, fell apart soon after Samo's death in 659 A. D. In the same century the attacks of new invaders, the Germans, started. The history of the Czechs and Slovaks has been, in fact, an everlasting struggle against invaders - the Germans on the west, northwest and southwest; the Avars and later Magyars on the southeast.

The Czechoslovak element manifested itself first in the history in the 9th century in the Moravian Empire (Říše Velkomoravská) which broke up after the death of Svatopluk (894 A. D.) into its component parts. The western part, including Bohemia, Moravia and Silesia,

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22 The name Czech is derived, according to an old tradition, from the leader (Praotec Čech) of the main Slavic tribe, who brought them during the dawn of history to the heart of the land.

formed one political unit - state of the Crown of St. Wenceslaus, also called the lands of the Bohemian Crown. In 907 A.D. the eastern part, Slovakia, came under Magyar rule which lasted, with short interruptions in the 11th and 15th century, until 1918.

The western state lived its own independent life under the kings of the Premyslide, Luxembourg and Jagellon dynasties within the Holy Roman Empire. In 1526 the Czechs accepted by free election the Habsburgs as Bohemian kings and joined the other territories of the Habsburgs in a dynastic ensemble of this reigning family. In 1620 after the battle of the White Mountain, Bohemian lands lost their political independence, which was renewed in 1918, when the Czechoslovak Republic was established.

8. German Colonization.

Since the 8th century the Carolingian rulers exerted persistent and vigorous attacks against the Slavic settlement of Europe, which extended from the Baltic to the Adriatic Sea. Charles the Great established several buffer territories against the Slavs; these represented the military zones, settled by Slavic people, into which the Germanic element had only begun to penetrate. The Ost-Mark (later Austria) and the marches of Styria and Carinthia were the frontier territories in the south; the Bohemian Forest and the Saale and Elbe rivers defined approximately the military boundary farther north.

Along this frontier were founded many fortified trading posts (such as Regensburg, Hallstadt, Magdeburg, Hamburg etc.) which

characterized the beginning of German colonization in Slavic lands east of the Rhein. Nevertheless, it was not until the late Middle Ages and later, that German colonization permanently extended eastward - to the Baltic, to the Bohemian lands, to and even beyond the Middle Danube.

This advance of the German element, first initiated by Charles the Great and renewed later, was largely organized and stimulated by kings, lay and ecclesiastical lords. They desired to exploit cheap land, forested mountains, marsh lands and sandy heath because the price of land in the areas, settled many centuries ago, had greatly increased due to the growing population and trade activity. As a result of this colonization large forest areas were cleared, more effective agriculture introduced, and new villages and towns were founded. Although the German immigrants brought economic progress into the colonized territories, their penetration was bitterly resented by the Slavic population, because they also tried to impose their language and nationality on the Slavic people (for example in Mecklenburg, Pommerania and Lusatia).

a) German colonization in Czech lands during the medieval times. - The Bohemian Kingdom was not protected enough by surrounding wooded mountains from the German infiltration in the later Middle Ages. Nevertheless, these frontier highlands and forests helped to distinguish the Czech areas of settlement from the regions colonized by Germans. The cultural and linguistic distinction of both groups persisted and the Czech population of Bohemia and Moravia-Silesia largely escaped Germanization.

The immigration of Germans into these territories started in the 12th century, when the best farming land had already been densely and prosperously settled by the Czech people. Their rural settlements were mostly of the nucleated type. By the collective effort of the settlers, the villages were to a very large extent self-sufficient units. They were surrounded by arable fields and fallow land. Because the medieval agriculturalists were unaware of correct rotation of crops and of the sufficient fertilization of land, they had to use the practice of fallow field. The arable fields were divided into blocks ("úseky") which again were subdivided into small parcels. The pastures were not parcelled up into separate individual holdings, but shared by the villagers in common. The main crops of the Czech agriculturalists were cereals (rye, wheat, barley and oats) and also some industrial plants like hemp and flax.

Among the German incomers who came into Bohemia and Moravia-Silesia in the late Middle Ages, the following groups can be distinguished:[23] the Middle Bavarians and Austrians, who settled in southern Bohemia and around Jihlava in Českomoravská vrchovina; the North Bavarians and East Franconians, who penetrated into north-western and northern Bohemia; the Upper Saxons, whose main stronghold was the Ohre valley; and, Silesian Germans, whose settlement stretched from the Jeseník to the Beskyd Mountains.

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23 W. Krallert, et al., Atlas zur Geschichte der Deutschen Ostsiedlung, Monographien zur Weltgeschichte, Vol. 4, Bielefeld, Velhagen & Klasing, 1958, p. 10.

The German settlers cleared the deciduous forests of the fringes of Bohemia and Moravia-Silesia, founded new villages and also became associated with the origin and development of various forms of town life. They also built and organized many mining and manufacturing centres in the peripheral areas of the territory under discussion.

The new types of villages, which developed during their colonization, had the "Hufen" situated directly behind the farmstead of each respective farmer.[24] This "Waldhufe" became the arable land as far as it was cleared from the forest by its owner. The former obligation of all villagers to carry on joint sowing, tilling, harvesting, etc., of their fields ("Flurzwang"), which was a necessity in the old open-field system, was loosened as was the form of the ground plan of the new settlements - chain and row villages.

In the area of old settlements in Bohemia and Moravia-Silesia the names indicating clearing of the forest such as Polom, Paseky, Poruba, Světlá, Roubanín, are found only occasionally. To the contrary, in the peripheral territory the names with German endings, which show the connection with the forest clearing (-hain, -hau, -holz, -rode, -wald) are very frequent. Říkovský[25] stresses the fact that the names of the villages could not be regarded as a reliable source for the outline of the areas of young and old settlements. Numerous villages in the

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24 W. Radig, Die Siedlungstypen in Deutschland u. ihre frühgeschichtlichen Wurzeln, Berlin, Deutsche Bauakademie, 1955, p. 93-96.

25 F. Říkovský, op. cit., p. 37.

regions, cleared from forests in the Middle Ages, carry patronymic names with the ending -ice (-ici), and local names with the ending -ov, -in,[26] which are characteristic of the areas settled by Slavic people since prehistoric times. It can be assumed that many new settlements have been apparently named after the old types.

b) German immigration after the Religious Wars. - At the beginning of the 15th century the core of Bohemia and Moravia-Silesia, densely and prosperously settled by Czechs, was surrounded by German settlements on the fringes of the Czech territory. The Hussite Wars in the first half of the 15th century resulted in a noticeable withdrawal of the German element in Czech lands.

In the 17th century, after the Thirty Years War, the German position was reinforced by new immigration from the south. This wave of German newcomers was different from the agricultural, mining, trading and manufacturing colonists of the medieval times; it was formed by a small, but privileged group of Catholic German aristocracy and Bavarian peasants, who mostly settled in southern Bohemia. A last small German immigration was recorded in the late 18th century, when the Raab's experimental villages were established in the Upper Elbe Basin.

A discussion of all the economic and political consequences, resulting from the German colonization of Czech lands, would go beyond

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26 These have the analogous meaning as German names with the ending -ingen, -heim.

the limits of this study. Nevertheless, its influence on the development of new types of rural settlements on the territory of Bohemia and Moravia-Silesia has to be recognized.

CHAPTER III

ANALYSIS OF THE TYPES OF RURAL SETTLEMENTS AND THEIR DISTRIBUTION IN THE STUDY AREA

The village plans are products of the gradual evolution of human settlement. Their form is influenced by many factors, the presence and influence of which varies greatly in different areas. Consequently, the types of villages are not uniform and the views of many geographers, ethnographers and historians, dealing with the problems of rural settlements, differ considerably.

1. Basis for the Analysis.

The problem of what basis should be used for distinguishing the typology of the villages is a very important one. Říkovský[1] and Láznička[2] classify the rural habitations by their ground plan and pattern of field division and consider the latter of primary importance. This method could not be followed in this study as cadastral maps were not available. Even if they could have been obtained, it would not have been an entirely satisfactory method of classifying the types of villages. Many rural settlements of various origin and of different age can be accompanied by the same type of field division.

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1 F. Říkovský, Základy k sídelnímu zeměpisu Česko-Slovenska, Brno, Československá Společnost Zeměpisná, 1939, p. 55-61.

2 Z. Láznička, Typy venkovského osídlení na Moravě, Brno, Československá Společnost Zeměpisná, 1946, p. 54.

Therefore, the typology of villages, as recognized by Zaborski[3] was accepted, and the survey was done from the point of view of the geometrical-genetic method, which pays attention to the following factors:

a) the ground plan of the village

b) the system of the side roads

c) the division of the land (as much as it can be done from maps of scale 1:75, 000 and 1:25, 000)

d) the processes of the history of the settlement.

2. Types of Rural Settlements Studied.

Taking all above-mentioned factors into consideration, the types of villages which occur in the area of our study were divided into four groups.

Group I includes:

A^1 Round Village

A^2 Rundling

B Spindle-type Village

C Street Village

D^1 Multistreet Village

D^2 Loose Multistreet Village

E Fork and Ladder-type Village

The villages of this group belong to the types of old settlements,

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3 B. Zaborski, Über Dorfformen in Polen und ihre Verbreitung (O kształtach wsi w Polsce i ich rozmieszczeniu), Wrocław, Osteuropa-Institut, 1930, p. 36-40.

which originated before 1200 A.D., prior to the German colonization. These types have prevalently a concentrated ground plan, with a pattern of the fields, where the land belonging to the single homesteads was usually divided into several plots, which were repeatedly parcelled.[4]

Group II includes:

F^1 Chain Village

F^2 Chain Village less typical

F^3 Chain Village developed

G Row Village loosely built

H Regular Village

Rural settlements included in this group have predominantly a loose or dispersed ground plan, except for that of the regular village. The houses are placed mainly along one street. Pattern of the fields is represented by the typical "Streifenflur" and "Waldhufenflur"; crosswise from the street, along which the buildings are situated, long, single pieces of land are spreading. The delimitation between them is often represented by the characteristic, parallel side roads. The occurrence of this group is mostly found in the area of young settlements, which originated after 1200 A.D.

Group III includes:

I Hamlet

J Street Hamlet

K Hamlet with a square

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4 Z. Láznička, op. cit., p. 56.

The hamlets which also belong to the so-called young settlements are characterized by the small size and the irregular pattern of the fields. The roads connecting the hamlets are usually winding roads.

Group IV includes:

L Scattered Farmsteads

N Estates

Scattered farmsteads, forming independent agricultural units, are found mostly in mountainous terrain, which often influenced their dispersion. Estates are found in the areas of young and old settlements as well. Their development was greatly influenced by the political and economic evolution of Czech lands.

In the following paragraphs the characteristics of the settlements of each group are discussed more fully, different opinions of other authors about their origin are presented, and their distribution on the territory of Bohemia, Moravia-Silesia and adjacent parts of the neighbouring territories is described.

A. Rural Settlements of Group I.

Since the middle of the 19th century many historians and geographers have undertaken a laborious research about the origin and distribution of settlements, belonging to this group.

a) Rundling (= okrouhlice = okolnica = Kreisdorf = Hufeisendorf = Ringdorf). - Rundling is usually a small village, the houses of which are placed in the form of a more or less regular circle or horseshoe around a market place or pond. Rundlings were a kind of small fortresses,

sometimes surrounded by a wall and a moat; originally they had only one entrance, which was protected by a gate. The function of a market place could be explained by economic and defensive motives. All cattle were gathered overnight on the village green and the gate was closed. The pattern of the fields, belonging to this type, was such that the land was divided into several plots, radiating from the village, which were further divided into smaller or larger narrow parcels.

Different opinions concerning the origin of rundlings. - Although all settlement geographers agree on the characteristics of the ground plan of the rundlings, opinions concerning the origin of this type are not uniform. The German author V. Jacoby[5] was the first one to describe them as a typical Slavic form. A. Meitzen[6] agreed with him. In his opinion the Western Slavs, being the settlers of areas, exposed to many Germanic attacks, had to find a type of village which would be able to serve the defensive purposes. Another German author, O. Schlüter[7] was of a different opinion. He believed that rundlings are villages of German origin. In his concept, the villages with a square (green villages) which were the original settlements of German people, are older than the rundlings. When these villages changed the square form of their ground plan into a rounded form, the rundlings originated.

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5 V. Jacoby, Forschungen über das Agrarwesen d. Altenburgischen Osterlandes, Leipzig 1845.

6 A. Meitzen, Urkunden Schlesischer Dörfer, Vol. 4, Codex diplomaticus Silesiae, 1863, p. 19-23.

7 O. Schlüter, Die Siedlungen im nordöstlichen Thüringen, Berlin, Constenoble, 1903.

According to R. Mielke[8] the rundling is a prehistoric form of village, which originally occurred in the plains of Germany, Scandinavia and Jutland, then spread further, with the migration of Germanic tribes toward the south and east. He gives two other reasons to support his opinion:

1. only a small amount of rundlings have Slavic names;
2. division of the land is very often of the "Gewanneanteilung" form. (Gewannflur = champs assolés = open field = pružina trafová)

B. Zaborski[9] brings the following facts against this concept:

ad 1.) it is not historically verified that the German names of villages were their original names;

ad 2.) the "Gewannedivision" of the fields, which many German authors claim to be typically Germanic, is found in many old villages of undoubtedly Slavic origin. Therefore, it is nothing exceptional if this form is found by rundlings.

W. Radig[10] used the name of "Rundweiler" for rundlings and believes that only the Rundweilers of a very small extent, with a typical "Blockflur", may be of Slavic origin. He stresses the difference between

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8 R. Mielke, "Die Herkunft des Runddorfes", Zeitschrift für Ethnologie, Vol. 52, 1920/2, p. 273, 302.

9 B. Zaborski, op. cit., p. 43.

10 W. Radig, Die Siedlungstypen in Deutschland u. ihre frühgeschichtlichen Wurzeln, Berlin, Deutsche Bauakademie, 1955, p. 93-96.

the small rundling and large round village, which he calls "Rundplatzdorf". He considers the round village to be a transitional type, which might have developed from the small rundling, but places it in the group of younger settlements of the 12-13th century.

F. Říkovský[11] has some objections about the pure Slavic origin of the rundlings. He admits the wide occurrence of rundlings east of Limes Sorabicus (Slavic-Germanic boundary around 800 A.D.); that would confirm the use of this type of rural settlement by Slavic people. The division of the fields by these rundlings was the typical Slavic "Blockflur". However, he does not consider it to be reliable proof, stating that the "Blockflur" was also a typical field-division west of the Limes Sorabicus before the acceptance of the Frankish "Gewannflur" (open-field) division. Rundlings could also have developed there, by a combination of the "Blockflur" and a typical "Platzdorf" of the Franks.

His opinion concerning the function of the ground plan of the rundlings is interesting. He stresses its economic importance over the defensive function. Z. Láznička[12] agrees with Říkovský, placing more importance on the division of fields than on any other factor. He refuses to recognize the Slavic origin of the rundlings.

Rundlings in Bohemian Lands. - Many settlements with a rounded ground plan are found in the study area. Although some of them are typical examples of the rundlings, in some cases, however, it was

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11 F. Říkovský, op. cit., p. 81-89.

12 Z. Láznička, op. cit., p. 21.

difficult to distinguish them from the round villages. They occur not only in the areas where the Czech element intermingled with the German element, but also in regions where the German colonization never reached, and in the plains as well as in the hilly country. Their names are Czech, but in the areas closer to the western boundary of Czechoslovakia the maps also present German names, used in the period of the former Austro-Hungarian rule as, for example, Zádub (Hohendorf), Martinov (Martnau) Pístov (Pistau) Malkov (Molgau), etc.

The largest accumulation of this type occurs between Mariánské Lázně (Marienbad) and Plzeň. Other regions, not as large, but presenting the same typical examples, are found in southern Bohemia in the area of prevalently old settlements, near the following cities: Sušice, Tábor, Písek, Vodňany, Český Krumlov, Prachatice, České Budějovice, and Vyšší Brod. There are also some rundlings in central Bohemia around Rakovník and Roudnice, in western Bohemia near Žatec, and a larger region between Teplice and Ústí N. Labem. In eastern Bohemia between the villages of groups I, II and III, there are two regions of rundlings near Česká Lípa and Mnichovo Hradiště. In Moravia there are only a few typical examples of rundlings in the vicinity of Jihlava, Tišnov and Boskovice. We would like to stress that it was not always possible to clearly distinguish the rundlings from round villages, especially when the historical material was not available.

b) Round Village. - This type is of a larger size than the rundling and is very often situated around a pond, swampy ground or a meander of a river. These villages originated rather from the desire to

capitalize economically on the border of two different physiographical units and not on the strategic value of the ground plan. Therefore instead of one typical entrance, the village has several.

Sometimes typical round villages are found in an area of young settlements, with the hides[13] broadening radialwise from the houses to the boundary of the cadastral area. Zaborski[14] classifies them as "round row villages" (Runde Reihendörfer). Láznička[15] names these settlements "forest-green villages" and regards them as a transitional type to the row villages. Villages of this type in the thesis area are remarkably well developed in the parts of Českomoravská and Drahanská vrchovina. They have been classified as a transition between the round village and row village.

However, there are also areas of typical round villages, which tie into the region of old settlements around Benešov and Vlaším(south-east of Praha), near Třeboň, Prachatice and Jindřichův Hradec in southern Bohemia and in southern Moravia, west of Moravské Budějovice. Here the decision was not easily reached, because some of the villages could be classified as hamlets with a square, some as spindle-type villages.

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13 Hide (hist.) = measure of land, as much as would support one free family.

14 B. Zaborski, op. cit., p. 41.

15 Z. Láznička, op. cit., p. 20.

J. Brunhes[16] presents interesting aerial photographs of round villages in Bohemia as examples of "villages in a clearing", with houses arranged around a central meadow, and agricultural lots radiating around. One of them, the village Fleissheim near Vyšší Brod, in southern Bohemia, was classified on sheet 4552 as a round village, but is included on Map 1 in the region of rundlings. Schönborn, the other village mentioned by Brunhes, was found on the sheet 4354; it has the Czech name of Nová Ves and is included on Map 1 in a small region of round villages near Jindřichův Hradec in southern Bohemia.

c) Spindle-type village (= Angerdorf = owalnica = vřetenovka). - This name identifies a village of a spindle.form with two convex streets, the lengths of which differ greatly. A village green (náves = Anger), which in earlier times served as a cattleyard as well as a marketing and meeting place, provides space for a pond, church, school or other public buildings, constructed later. Sometimes a creek flows through the centre of the village; usually, all roads converge towards the village green. Spindle-type villages are often situated in basins, but are also found on plains and on fairly elevated places. It would seem, therefore, that they are not dependent upon geographical factors, but form a transition between the rundling and street village types.

Zaborski[17] supports this opinion by pointing to the distribution of this type between the regions of rundlings and street villages in Poland.

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16 J. Brunhes, Human Geography, London, Harrap, 1952, Plate XXI, Fig. 61, 62.

17 B. Zaborski, op. cit., p. 45-48.

He includes the spindle-type village into the group of old settlement. On the other hand, Radig[18] places this type in the group of younger settlements, developed in the 13th and 14th centuries as a transitional form between the village with round shaped village green and the street village type. Říkovský[19] mentions the spindle-type only superficially and includes it in the group of green villages (vsi návesní). He stresses the fact that the shape of the village green underwent many changes during its evolution, and that often the village could finally attain the character of the multistreet village.

Láznička[20] does not seem to evaluate the significance of this type. He includes the spindle-type villages in the group of "návesní silnicovky" (=Strassenangerdorf = village with an elongated square), and states that in the group of "návesních silnicovek" are placed also villages with a spindle-type village green - the so-called "oválnice, vřetenovky", and villages with the elongated, narrow, triangular market place. These two variants frequently occur in Czech lands as well as in Slovakia. Division of the land is in either the open-field type or its variant the "Gelängeflur", where the fields, divided in the long, parallel stripes are adjacent to the respective farmstead. Some objections could be raised against the concepts of Říkovský and Láznička. The spindle-type village

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18 W. Radig, op. cit., p. 97.

19 F. Říkovský, op. cit., p. 81.

20 Z. Láznička, "Typy venkovského osídlení v Československu", Acta Academiae Scientiarum Cechoslovenicae Basis Brunensis, Vol. 28, No. 3, 1956, p. 109.

is a distinctive type and should be treated separately. It is true, however, that in many cases the form of a village green is not perfectly oval and resembles a triangle or a long, narrow rectangle, a fact which causes certain difficulties in classification. Nevertheless, the rural settlements, classified in the study area as type B, prevalently show all the characteristics of the spindle-type village.

The spindle-type village occurs very frequently in the territory under discussion. There are considerably large areas in western and southwestern Bohemia from Mariánské Lázně up to Domažlice. Here this type borders on regions of rundlings and multistreet villages to the east, and on hamlets and row villages to the west. In central Bohemia there are large areas around Mělník and Rakovník, mainly bordering on the regions, which include other types of group I. Smaller areas of the spindle-type village are also found near Blatná and Vlašim.

The largest, compact region stretches from České Budějovice, through Českomoravská vrchovina up to Moravské Budějovice. (The villages around Třeboň showing ponds in the middle of the village green are typical). This large area of spindle-type villages stretches beyond the boundary of Czechoslovakia into Austria, south of the river Thaya (Dyje). It is bordered on the eastern side by an extensive region of street villages. The spindle-type also occurs in Moravské Slovácko near Uherský Brod and Hustopeče and in Slovakia around Piešťany.

d) Street village (Strassendorf = Silniční ves = ulicówka). - The street village is characterized by buildings massed together on both sides of a street, road, or river, usually 1/2 - 2 km long. The street may be

straight or winding. The density of the houses distinguishes this type from other types of street villages, which are of a later origin, such as chain villages and row villages.

The division of the fields by the street villages may be of the "Gewannflur" type, found especially in Southern Moravia and Slovakia, but "Blockgewannflur" and even "Blockflur" division are not unusual, especially by street villages of a less typical form.

Opinions concerning the origin of street village are very different. Many geographers and historians did not deal with a street village as a separate type, not distinguishing it from types F and G. (Lencewicz, Missalek, Mielke).[21] Meitzen believed in the Slavic origin of street villages, Schlüter admitted this possibility, but favoured the concept that it is a German colonization form.

Zaborski[22] compares the occurrence of street villages in different countries of Europe, Africa and Asia and is of the opinion that they can hardly be considered of pure Slavic origin.

Říkovský[23] is of the same opinion, and believes that it is a type which was developed simultaneously in various territories under different economic conditions. Originally, the street village was not large, but its growth at both entrances of the village could alter its size considerably, without changing its original form. Archaeological finds near Uherské

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21 B. Zaborski, op. cit., p. 50.

22 B. Zaborski, op. cit., p. 48-54.

23 F. Říkovský, op. cit., p. 71.

Hradiště (Moravia) and Poděbrady (Bohemia) prove that the street village was known in Czech lands before the German colonization. However, Říkovský suggests that its occurrence, especially in Moravia, is associated with the types used by German colonization.

Street villages in the study area. - This type is not very common in Bohemia. There is one small region in southern Bohemia near Strakonice and three larger ones on the plain of Polabí near Poděbrady, Hradec Králové and Jaroměř. In Moravia their occurrence is more significant. The largest region is found in the tectonic depression of the Bohemian Massif - Gate of Třebová - Boskovice. The region reaches south, to Slavkov (Austerlitz). The "Gate" region is thickly populated, as the soils are reasonably productive; here also, opportunities for transit trade in medieval times were very favourable. The other two regions of street villages, though not as extensive, are found near Hodonín in the Morava Basin - the area of late Tertiary deposits, and also between Přerov and Holešov in the fertile plain of Haná. The occurrence of the street village in that part of Slovakia, which is shown on the map, is in the valley of the rivers Váh and Nitra.

In the part of Poland included in this study, there are street villages in the alluvial valleys of the tributaries of the Odra river. There are also two smaller areas of street villages in Lower Austria, near the cities of Hollabrunn and Mistelbach. It should be noted that the street villages occur in areas of old settlements and are mostly surrounded by fork and ladder-type, multistreet and spindle-type villages.

It has to be stated that in the above-mentioned areas a variant of

street village occurs. It is a street village, accessible only from one side, the other outlet being blocked by buildings. This end is usually widened into a small, slightly rounded market place. Říkovský[24] calls this type "ulicovka" (= Gassendorf), Láznička[25] "ulicovka" (= Gassendorf = Sackgassendorf = village en rue). They both stress that in this type the road, around which the houses are accumulated, is not a through traffic-serving line, but is only of local importance. In the study area "ulicovky" are included in the regions of street villages.

e) Multistreet village (= Haufendorf = wieś wielodrożna = ves hromadná = village massé). - The multistreet village is a village which presents a compact form of settlement with houses irregularly distributed along many, very often winding, roads. The built-up blocks are of different sizes and often of a polygonic form. In most cases, the fields show the typical "Gewannflur" division.

The multistreet village is a very common type of rural settlement in Europe. It occurs in southern Scandinavia, England, France, Germany, Poland, Czechoslovakia, Hungary (Alföld), Italy, Balkanic Peninsula, Rumania, Ukraine and elsewhere.

This type of irregular nucleated village is very old, and many theories have been advanced concerning its origin. As it is typically developed between the rivers Elbe and Weser, this area was the first to be subjected to the study of multistreet villages by many authors. Because

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24 F. Říkovský, op. cit., p. 72.

25 Z. Láznička, op. cit., p. 107.

of the typical Gewannflur, most German authors defend the theory that it is a specific type of rural settlement of old Germanic tribes, which developed in areas where land has been free from forest since Neolithic times.

Meitzen's[26] opinion is that the groundplan of the old Germanic multistreet villages was created directly in their compact form, due to some characteristic features of pastoral husbandry and cultivation of fields practiced by Germanic tribes. Schlüter[27] claims that they developed from smaller villages with a square or isolated houses (Einzelhöfe), but also defends the idea of their Germanic origin.

Zaborski[28] feels, however, that the multistreet village occurs in Middle Europe in open lands, which have been settled areas since prehistoric times, and not only in areas of old Germanic settlements. Bujak[29] in his critique of H. Praesent (Besiedlung und Bevölkerung - Handbuch von Polen, Berlin 1917) writes that these villages are a heritage of all Indo-European people, perhaps a cultural product of all mankind.

Říkovský[30] presents the opinion that no theory concerning the origin of these villages can be accepted as absolutely correct. According

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26 A. Meitzen, Siedlungen u. Agrarwesen der West-und Ostgermanen, der Kelten, Römer and Slaven, 3 Vols. and Atlas, Berlin, 1895.

27 O. Schlüter, op. cit.

28 B. Zaborski, op. cit., p. 57.

29 F. Bujak, "Critique of H. Praesent, "Kwartalnik Historyczny, Vol. 33, 1919, p. 61-70.

30 F. Říkovský, op. cit., p. 58.

to their distribution it would seem that their groundplan was not transferred to different regions as a whole. It is likely that it was developed by the irregular growth of more simple, locally different settlementary units, which converged their forms during the period of their evolution.

Of similar opinion is also M. Stadler,[31] who brings as an example the changes of the ground plan of village Kunovice in Wallachia, eastern Moravia. She shows how this settlement - originally a hamlet with a square - acquired the character of an agglomerated, multistreet village, when the village green was built up and new homesteads were added on the periphery of the village during the cottage colonization in the 17th century.

Multistreet village in the study area. - The survey of the occurrence of the multistreet village in the area of our study shows that in western Bohemia there are numerous regions of smaller sizes, some reaching past the boundary into Germany (Lands of Bavaria and Upper Saxony). There is also a continuous strip of multistreet villages in the north-south direction from the rift valley of the river Ohře (Eger) to the Šumava Mountains in the south. The villages of these areas are actually a variant of the multistreet village, which is called "hromadná cestná ves" (Haufenwegedorf) by Láznička.[32] This type developed by a gradual, not planned build-up, along numerous irregular winding roads and seems to be the common type in industrialized regions of Bohemia. In this

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31 M. Stadler, "Kunovice na Valašsku" Sborník Československé Společnosti Zeměpisné, Vol. 60, No. 1, p. 30-35.

32 Z. Láznička, op. cit., p. 116.

thesis it is not considered as a single type, and is included in the regions of multistreet village on Map 1.

Another large region is found in central Bohemia, stretching from Žatec to Hradec Králové. In southeastern Bohemia, near Vlašim, Milevsko, Vodňany and Třeboň also occur regions of multistreet villages.

In Silesia between the rivers Odra, Opava and Nysa, and bordering on regions of street and fork and ladder-type villages on one side and chain villages on the other, are three regions of the above-mentioned type. Fourteen regions are dispersed through practically all the territory of Moravia, from the Moravian Heights across the Moravian Depression, to the White Carpathians. In western Slovakia there are two regions near spa Piešťany on the river Váh and near Priviedza on the river Nitra. In Austria, near Hollabrunn, typical multistreet villages are also found.

If we compare the distribution of multistreet villages in the study area with the maps of the prehistoric and historic settlements (Maps 6-12), we find that the occurrence of this type coincides very closely with the areas of cultivated steppe.

f) Loose multistreet village (= Haufendorf - forme moins serrée). - This type is actually a transition between the multistreet village and scattered farmsteads. It has a much less aggregated ground-plan and seems to be dependent on physiographic factors. Zaborski[33] points out that this type of rural settlement occurs often in Rumania,

33 B. Zaborski, op. cit., p. 62.

and in Poland, where loose multistreet villages are found in larger extent between the Carpathian Mountains and Podolie. Therefore, he considers the possibility that they were influenced by the neighbouring Rumanian villages.

Loose multistreet villages in Bohemia. - In the area of this study three smaller regions are found in northwestern Bohemia, in the Krušné Hory (Ore Mountains). A few smaller regions border on the zone of multistreet villages in eastern and southeastern Bohemia, between Plzeň and Písek, and on the slopes of Klatovské Předhoří. Similar types occur west of Moravian Heights near Hlinsko and Havlíčkův Brod.

g) Fork and ladder-type village (= Kettendorf = widlica). - The fork and ladder-type village is a transition between the multistreet and the street village. A typical village of this type is characterized by two nearly parallel streets, connected with one or more short crossroads, showing the form of a fork or a ladder. Another example of this type is a village in which two street villages plainly cross each other, and cannot be classified as a multistreet village or as a street village. Of the previously mentioned authors but Zaborski[34] classifies this form as a separate type. Láznička[35] mentions them as a more complicated type of street village and calls them "typ žebřový, a křížový", and includes them in the group of street villages.

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34 B. Zaborski, op. cit., p. 63-64.

35 Z. Láznička, op. cit., p. 106.

However, the fork and ladder-type villages are classified in this study as a separate type, because there is a distinct difference between them and the street and multistreet villages. They form large and compact regions in the Bohemian lands, coinciding with the early settled areas, free from forest.

Occurrence of fork and ladder-type in Bohemia and Moravia-Silesia. - There are fourteen smaller regions of this type between Praha, Plzeň and České Budějovice, bordering prevalently on the zone of multistreet villages and hamlets. The more prominent occurrence is found between Praha and Pardubice in the plain of Polabí. The region around Poděbrady, embedded between the zones of street and multistreet villages is a typical area of this type.

In the Upper Silesian basin (Ostrava-Karvinná) the fork and ladder-types are approximately as extensive as the multistreet villages. A continuous strip of fork and ladder-type stretches past the boundary of Czechoslovakia into Poland, bordered on one side by chain villages and by street villages on the other.

The largest compact area is found on Moravian territory. It stretches from Zabřeh to Břeclav in the north-south and from Velká Bíteš to Hranice and Uherský Brod in a west-east direction; it covers the predominant part of the western, central and southern Moravia, including the valleys of rivers Morava, Bečva, Svratka, Jihlava, Olšava and their tributaries. This region reaches south into Austrian territory, thus forming a continuous area of fork and ladder-type villages, which also extends further east to Slovakia (Myjava Valley). There is also a

continuous zone of this type of rural settlement in Slovakia, in the valleys of the river Váh and further east, near Žilina and Nitra.

In all the above-mentioned regions the fork and ladder-type is intermingled with the street and multistreet types of village.

B. Rural Settlements of Group II.

The types of villages belonging to this group cover extensive areas in Bohemia, Moravia-Silesia and the neighbouring countries. Their varied forms and functions as well as their distribution within specific areas have aroused great interest among settlement geographers.

a) Chain village (Waldhufendorf = łańcuchówka = lesní lanová ves). - The chain village, recognized by all authors as a colonization form of German origin, can be distinguished by the following characteristics:

i) The village consists of two long rows of houses, which are built along the main street and are situated not too close to each other.

ii) The main street, usually slightly winding, runs through areas originally covered by forest, which were later cleared and cultivated.

iii) The village, resembling a loose-lying chain, may measure several km in length.

iv) Fieldstrips (= Hufen = lány) are located perpendicularly to the main street, which is the axis of the village. These are divided from each other by the parallel sideroads, also perpendicular to the main street. The farmsteads are located at the head of the fields

belonging to the respective farmers.

Chain villages are usually found in the highlands, where they follow the mountain or river valleys, stretching as long, narrow belts at their floor or on the river banks. The following of river valleys enabled the colonists to penetrate deeply into the forest which had to be cleared. In some cases, especially at the higher-placed watersheds, the remains of the former forest wilderness can still be seen as a densely forested area. It has to be stressed that the fear of floods prevented the settlers from locating the villages in the lower parts of narrow valleys.

The chain villages are not only restricted to the mountainous regions; they are found also in fertile plains. The fieldstrips in this case are usually of a shorter length.

In this thesis three types of chain villages are distinguished:

type F^1 - chain village with all the above-mentioned characteristics.

type F^2 - chain village less typical, where the characteristic parallel sideroads are not so prominent.

type F^3 - chain village developed, where the buildings follow not only the axis of the valley, but are also spread on the gently rising slopes of the valley.

The distinction between the typical chain village and its variants is not always evident; all three types intermingle greatly and their regions border on each other.

Chain villages in Bohemian lands. - All three kinds of chain villages are developed typically in large, compact areas from Krušné Hory

(Ore Mountains) through Hory Lužické (Lausitz Gebirge) and Krkonoše (Giant Mountains) in Bohemia, Jeseníky (Gesenke) and the Beskyd Mountains in Moravia-Silesia, reaching past the state boundary into Germany and Poland. Another compact region covers the area on the Bohemian-Moravian border in the Moravian Heights.

Smaller isolated islands of chain villages occur in southern Bohemia near České Budějovice and near Jindřichův Hradec, being situated on a plain and showing fieldstrips of shorter lengths.

Another isolated region is found in the hills of the southern part of the Moravian Heights near Havlíčkův Brod and Jihlava, an area of German colonization. The occurrence of chain villages (all three types), in the Moravian plains of Úval Hornomoravský near Litovel and Úval Oderský (Hranice, Mor. Ostrava, Orlová) and near Holešov in the plains of Haná, is remarkable, proving again that the chain village is not restricted to the highlands only, for which it is, with all its characteristics, very suitable. When it became a popular type of rural settlement in the Middle Ages, it was transferred in its form into the above-mentioned plains, which had been cleared from forests after 1200 A. D. It is surrounded here by villages of older origin with a concentrated ground plan.

In northwestern Slovakia, chain villages coincide with mountainous regions and form regions of considerable extent between Čadca, Trenčín and Banská Bystrica.

b) Row village - loosely built (Reihendorf - Rzędówka - ves řadová). - The houses in the loosely built row village are situated on

one or both sides of a street at different distances. The villages usually reach a considerable length, one quarter to a few miles. The appearance of the loose row village was sometimes changed during the development of the settlement. As new houses were added between the original buildings and the empty areas were gradually built up, the ground plan resembled that of the street village. Sometimes, even the empty space between the two rows of houses was filled in with new buildings, so that even a slight resemblance to the clustered type of settlement occurs.

The row village is also a much discussed type in literature about rural settlements. According to their origin and appearance several variants of row villages are distinguished. They have one common significant phenomenon, that is, their occurrence appears prevalently in areas of younger settlements. The loosely built row village is often described as a type of colonization form, which gives the advantage of placing farmsteads close to the fields of the owner.

Zaborski[36] describes a special variant of this village - Dutch row village (Marshhufendorf - "holendry"), which originally came from the marshlands of Holland, and was often called "Veenvillage" or "Veenkolony". This type of village developed in Poland in the 16-18th century, in the delta and along the Vistula and Odra rivers, and in swampy areas or at the rims of marshy valleys. The roads were usually constructed on the embankments. The occurrence of the loosely built row villages in the above-mentioned region was influenced by the

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36 B. Zaborski, op. cit., p. 73-76.

Dutch and Lower-German (Niederdeutsch) colonization, which also introduced this type of rural settlements in western and central Poland, where the row villages cover a large and compact area. Here, the Lower-German colonists had to clear the extensive forests, in spite of the fact that they had not been accustomed to this kind of colonization technique.

A typical loosely built row village of Poland, which occurs in Volhynia, is described by Zaborski[37] as of a very late origin (18-19th century) being in connection with parcelling of the land and consolidation of the fields.

Láznička[38] as well as Říkovský[39] do not distinguish clearly enough between row villages and chain villages. They both mention a variant of a row village - the "short row village" (krátká řadová ves), which developed in Bohemian lands from the second half of the 17th to the beginning of the 19th century. They explain its origin by the introduction of the economic balance which tried to bring the settlers into the narrow, sometimes steep valleys of the highlands, because the more convenient areas of fertile plains had already been settled and densely populated many centuries before. The farmers of this short row village were often restricted to small pieces of land. Sometimes they did not have any land at all, only gardens. These two authors also classify the scattered farmsteads in Moravian Wallachia as "Wallachian row

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37 B. Zaborski, op. cit., p. 73.

38 Z. Láznička, op. cit., p. 45-47.

39 F. Říkovský, op. cit., p. 78-79.

villages" = (Valašské vsi řadové).

Row villages in area of the study. - The typical loosely built row village, the type of "Hollandish row village" and Láznička's "short row village" are all included in the regions of row villages.

In Bohemia, the row villages form many islands in the whole western part of the territory from Krušné Hory (Ore Mountains) to the Šumava Mountains, occurring in the areas of both old and young settlements. A more compact region is found in southern Bohemia, where they could be considered a variant of the "Hollandish" type, described above. In northeastern Bohemia, there is also a larger region near Mnichovo Hradiště in the Piedmont of the Krkonoše (Giant Mountains). Further east is another region, where the row villages are intermingled with chain villages, occurring approximately in the same density. In the piedmont of Orlické Hory they again form a compact region. Another strip in a north-south direction reaches from Jeseníky in Silesia, through Bruntál to Hranice. Some of these row villages could be classified as "short row villages". Around Frýdek-Místek, the row villages are found again.

They also occur in the regions of Moravian Heights and along the Moravian-Slovak border, where they reach past the boundary into western Slovakia. Here they are intermixed with scattered farmsteads and chain villages. Typical is a region of row villages around Zlín (Gottwaldov) in the southeastern part of Moravia in the valley of the river Dřevnice and its tributaries.

c) Regular village. - This type of village has either a ground plan in the form of a geometrical figure (pentagon, quadrangle, hexagon), or its local roads cross each other in a regular, geometric grid. Only a few authors have studied the relevance of this rural settlement closely. The regular village is still a characteristic type of the Hungarian and Rumanian plains. These areas have been reconstructed and recolonized in the 18th and 19th century, after they suffered destruction during the Turkish invasion and occupation. The new settlements are strikingly different from the old villages which grew spontaneously without any direction from a planner or surveyor. Zaborski[40] investigated the occurrence of regular villages on the territory of Poland and found them near Drohobycz.

The number of regular villages in Bohemia and Moravia is very small, and they do not play an important role in the picture of rural settlements on Map 1. A small region is found west of Praha, where it is embedded between a compact area of multistreet villages. Few regular villages occur in south Moravia near Hodonín; these villages (Josefov, Terezín, Prušánky), in which the local roads cross each other perpendicularly, are only small settlements. Without historic material at hand, they could easily be classified as fork and ladder-type. They have been established during the Josephinian reforms (1780-1792).

Láznička[41] and Říkovský[42] mention villages with an exact

41 Z. Láznička, op. cit., p. 113.

42 F. Říkovský, op. cit., p. 72.

geometrical ground plan and also geometrical division of the fields (parcelled blocks). They use the name of "Raab's villages" (vsi rabisační) for them, but according to their ground plan they classify them as street or multistreet villages or villages with a square. They do not consider this type to be of great importance in the entire picture of rural habitations in Bohemian lands.

C. Rural Settlements of Group III.

In this thesis three different types of hamlets are distinguished:

a) Hamlet (= Weiler = przysiółek bezkształtny = víska). - A hamlet consists of a small, isolated group of houses. Very often it could be mistaken for a small multistreet village, except for the fact that a hamlet has straight roads while a multistreet village has winding local roads. The houses are not grouped around a square, but along two or more roads, which often cross each other. Therefore, this kind of a small village can be considered a "hamlet of an irregular form".

b) Street hamlet (Strassenweiler = przysiółek ulicowy). - The street hamlet is a transition between the hamlet and the street village, which consists of single very short street of houses. The shortness of the street distinguishes it from the street village. Some authors use the name "short street village" instead of "street hamlet".

c) Hamlet with a square (Platzdorf = prz. placowy). - A hamlet with a square has the houses grouped together around a small market place, which has different forms (oval, square, or polygon). It may be considered a transitional form between the hamlet and the rundling.

Different opinions concerning hamlets. - Hamlets and their variants occur in southern Germany (where they are known from the time of Charlemagne), and in Austria, Yougoslavia, Rumania, Czechoslovakia, Poland, U.S.S.R. and other countries. Opinions of geographers and historians concerning this type of rural settlement differ greatly. Many authors agree that the hamlet is as characteristic of hills and foothills as the village is of the plains. Nevertheless, many changes of the economic order tend to modify this delimitation established only on a geographical basis.

Zaborski's map shows hamlets of all three forms in Pomerania, hamlets and street hamlets in the Vilna district. Here they seem to be dependent on the hilly landscape and the occurrence of water. They possibly developed from isolated farmsteads. However, they are also found more to the south in flat lands. It can be explained as follows: the population, which acquired the habit of small settlements, transferred this form further during its migration to the new surroundings.

Zaborski[43] is of the opinion that history is also reflected in the occurrence of hamlets in Mazovia and Podlachia. Their origin can be considered as of a military nature. The inhabitants of these regions, settled in the neighbourhood of Prussia and Lithuania and were obliged to defend the frontiers. As a reward, they were often promoted to the ranks of lower nobility. The hamlets inhabited by them are called "Kleinadelige Weiler" (small nobility hamlets). The land belonging to

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43 B. Zaborski, op. cit., p. 79.

the landlord was divided into long strips which were repeatedly parcelled into narrower pieces. When these became too narrow, crosswise division took place. The hamlets' market square likely developed from the large farm-yard of the original estate which was gradually divided among the inheritors.

Říkovský[44] also considers hamlets as a transitional type between the scattered farmsteads and multistreet village. He believes that they developed in different countries under different economic conditions and during different periods of time.

Láznička[45] agrees with the opinion of Říkovský. He emphasizes two characteristics of hamlets: their small size (3-10 houses) and the fact that there is nearly always an absence of buildings like churches, schools, post offices, etc. According to his opinion many hamlets in the Šumava Mountains and Moravian Heights regions developed during the industrialization of Czech lands - hence their function is of an industrial nature.

These two authors do not distinguish the three above-mentioned variants of hamlets and deal with a hamlet as a single type.

Hamlets in Bohemian lands. - Most of the hamlets in the territory under study have existed since the time of the East-German colonication, although there are many from a much later date.

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44 F. Říkovský, op. cit., p. 68.

45 Z. Láznička, op. cit., p. 117.

In the areas of old settlements they probably developed from isolated farmsteads by the gradual division of one man's property. The double names of some hamlets support this opinion, i.e., Zderadiny, Zderadinky, Hrochovy Zderadiny (on sheet 4054, SW of Kutná Hora). The names Zderadinky (or small Zderadiny) and Hrochovy Zderadiny (or Hroch's Zderadiny) clearly suggest that they originated from the former property of Zderad, when it was divided among his heirs.

The hamlets also originated in areas densely covered by forest. They either developed from scattered farmsteads or from the unplanned colonization of smaller agricultural groups.

Hamlets on Map 1. - Hamlets, and hamlets with a square, cover large areas in western, southern and eastern Bohemia, mainly in the hilly terrain of the Bohemian Massif. The regions of hamlets in western and southwestern Bohemia have their continuation in Germany. The areas of all three variants are adjacent to each other and their boundaries are difficult to distinguish because the types are greatly intermingled. The street hamlets are less numerous; they form small compact regions near Domažlice, Ústí n. Labem and Mladá Boleslav.

The origin of numerous hamlets in the Šumava Mountains, especially those in the areas of Domažlice and Tachov, can be explained by strategic purposes - their original function was a defensive one. Here, in the early Middle Ages, was the settlement area of the Chod tribe. The Chods were then considered the guard of the frontier against repeated German aggressions, and were therefore endowed with many privileges from the Bohemian Kings. The hamlets of the Chod territory

could be called the "small nobility hamlets" (Kleinadelige Weiler).

In Moravia, hamlets are much less numerous. Small regions of all three types are found in the Moravian Heights, near Třebíč and Bystřice nad Pernštýnem and also in the Moravian plains near Kojetín and Litovel. In Slovakia, hamlets border on large regions of scattered farmsteads in the mountainous terrain of Bílé Karpaty.

D. Rural Settlements of Group IV.

The types of rural establishments belonging to this group, played an important part in the rural economy of Czech lands for many centuries.

a) Scattered farmsteads (Einzelhöfe = Einödhöfe = samotové dvorce). - Scattered farmsteads are dispersed, isolated farmhouses, very often situated at great distances from each other and connected by small by-roads. The roads are not flanked by houses, even at the junctions. Fields and pastures spread around each respective farmhouse in several sections, indicating individual ownership.

The scattered homesteads sometimes form an administrative unit which can be called a dispersed village (= village dispersé = Einzelhofdorf = wieś samotnicza = dvorcová ves). This type of dispersed settlements is widespread in Europe. Isolated farmsteads are quite common in numerous large areas of Ireland, Scotland, Wales, Cornwall, France, Germany, Scandinavia, Poland and the Danubian countries.

Opinions about the origin of scattered farmsteads. - Although A. Meitzen[46] believed that this type is a national characteristic of the Celtic people, nevertheless, he admitted that the "Einzelhöfe" in the Alps and Scandinavia were founded by other ethnic groups and explained their occurrence here by the dependence on physiographic conditions.

Gradmann[47] stated that dispersed settlements originated as a result of modern reforms such as the introduction of the enclosure and the consolidation of the fields. Therefore, he considered them as a settlement of younger origin. Their occurrence in Württemberg, especially in the regions with typical post-glacial features and considerable diversity of relief, was accompanied by the mode of life in which dairying played an important role.

Radig[48] considers "Einzelhof" as a very old settlement form, possibly a prototype of all settlements. He does not accept the idea of its Celtic origin, but explains its existence as an expression of the evolution of the individual ownership in human society.

Zaborski[49] presents a thorough survey of the distribution and origin of scattered farmsteads in Poland, where they are a widespread form of settlement and are found in practically every part of the country.

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46 A. Meitzen, op. cit., (Siedlungen u. Agrarwesen.....).

47 R. Gradmann, Das ländliche Siedlungswesen des Königreichs Württemberg, Stuttgart, Forschungen z. deutschen Landes-u. Volkskunde, 1913, Vol. 21 (map).

48 W. Radig, op. cit., p. 90-93.

49 B. Zaborski, op. cit., p. 84-93.

He considers them as settlements of younger origin.

The scattered farmsteads of Pomerania developed mostly in the 19th century mainly after the abolition of serfdom. In the province of Poznań the farmers often abandoned nucleated villages and settled in the middle of their remote fields in scattered houses - "pustkowie". This was facilitated by the fact that log houses and other wooden structures, which were a very common habitation form of the North European Plain, could be very easily dismantled and transported from their original place in the village to the new location. However, most of the scattered settlements in the province of Poznań also developed in the 19th century as a result of the agricultural reform.

Zaborski associates the scattered farmsteads around Suwalki and Wilna with the hilly topography of this region. The "kutors" (Vorwerke) in Polesie, around Pripet river, developed as settlements of farmers who left the nucleus of the village with the purpose of cultivating the badly drained areas of remote swamps and gain additional farming and grazing land. The dispersed farm settlements in Wolhynia owe their origin to the Mazovian, German and Czech colonization.

In the West Carpathians are scattered homesteads often situated on the watersheds in the neighbourhood of chain villages, which mainly occupy the mountain valleys. In the East Carpathians with very sparse population and extensive pasture land, they are limited to the basin of the river Pruth (Land of Huzuls). The arable land here occupies only 10% of the total area. North of here, in the basin of the river Dniester, transitional forms between the scattered farmsteads and loose

multistreet village are formed.

Říkovský[50] and Láznička[51] regard scattered farmsteads of Czechoslovakia as a form of young settlements, developed between the 15th and 19th centuries. They believe that their dispersion was conditioned by mountainous terrain and the efforts of the ruling nobility to increase the income by distributing uncultivated or forested land to the peasant serfs.

Farming, sometimes combined with handicraft occupation, and livestock production, formed the economic basis of these settlements. In modern times dispersed homesteads are also found in connection with the development of industrial centres (i.e., in Moravská Ostrava region).

The names of single farmsteads, respectively dispersed villages often carry the name

1. of its founder (i.e., Košuti, Pavlíci, U Hodulů) Bergrovy domky
2. of the occupation of the settlers (Sklenářice, Perníky, Tkalce)
3. of the typical features of the landscape (Jestřábí, Chvojiny).

Scattered farmsteads in the area of this study. - Rural settlements in Czechoslovakia are represented mainly by villages. Nevertheless, scattered farmsteads cover extensive areas in the mountain

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50 F. Říkovský, op. cit., p. 92-97.

51 Z. Láznička, op. cit., p. 117-118.

regions of the country. They are more numerous in Slovakia than in Bohemia and Moravia-Silesia.

Czech lands were carrying largely the cost of the struggle of the Habsburg Empire with the Turks in the 17th and early 18th centuries, both in money and conscripts. This prevented quick recovery from the earlier wars, especially for the conscripted peasants. Therefore, the creation of scattered farmsteads offered a big opportunity to stimulate the farming production and increase of population.

The regions of scattered farmsteads in Bohemia form a narrow crescent from the southern part of the country through Šumava Mountains to the northwestern rim of Bohemia, Krušné Hory. In the northeastern part, two larger areas of these settlements are found in Orlické Hory and Krkonoše.

The functional changes of the numerous scattered farmsteads in Krkonoše, an agriculturally poor district, deserve special attention. Here the mountain meadows are found at heights up to 4900'. The grass is not very nutritious, but can support livestock. In spite of the absence of alpine herding in Bohemia, the pastoral life of the Krkonoše region in the first half of the 19th century was at its peak. However, the excessive deforestation resulted in the prohibition of forest grazing by the government in 1866. This may be regarded as a turning point in the pastoral life of the local inhabitants. The pure stock-raising economy ceased to be productive, the depopulation and the downward movement of dwellings towards the large village in the valley followed. Scattered homesteads, which remained, were often changed from herdsman houses (salaše)

into "chalets" (horské boudy), due to the increase in tourist trade in the 20th century. Many of them still carry the name of their founder, i.e., Karlovy Boudy, Dolské Boudy, etc.

Scattered farms form a wide strip on the Moravian-Slovak frontier, from Myjava through the beech-covered slopes of the White Carpathians and Javorníky. They continue further northeast in Moravian-Silesian and Western (Slovakian) Beskyds. In these areas they occur in the close neighbourhood of chain and row villages. In Moravia they are known as "kopanice" or "lázy".

Other extensive areas of scattered farmsteads are situated east of Váh Valley on the slopes of Tribec and Fatra Mountains. They are also a typical form of settlement in the Slovak Ore Mountains.

The occurrence of the dispersed settlements in the eastern part of Czechoslovakia suggests a close connection with the great Wallach pastoral migration from the Lower Danube through the Carpathian arc, which affected the Slovak and East-Moravian hill country in the 15th, 16th and 17th centuries.

The pastoral character of the original settlers was gradually changed by the influence of Slav agriculturists from the adjacent valleys. Mixed farming and forestry of a primitive kind was developed. The alpine grazing was preserved only at the highest elevations. Here the pastoral economy remained little changed from its original form. The inhabitants of the eastern part of Moravia between Valašské Meziříčí and the Beskyd Mountains (known as Valašsko), preserved their own costumes and traditions and special dialect until the 20th century.

In the part of Lower Austria, shown on Map 1, there are two regions of scattered farmsteads around the Zwettl river. This region is a forested extension of the Bohemian Plateau, with very poor soils and has an elevation of about 2000 feet. Herding, wood cutting and hill country farming are the main activities of the people inhabiting this area.

b) Estate (Manor = Gutshof = velkostatkářský dvůr). - Estates represent an individual type of dispersed settlements (samotový sídelní typ). They are usually built in the form of a square, covering a considerable area which includes living quarters of the owner, of the workers employed on the manor (deputátníci) and the utility buildings as well. The area covered by buildings is in proportion to the extent of the fields belonging to the estate. These are divided in very regular sections (Gutsblockflur).

Estates occur in the entire territory of Bohemia and Moravia-Silesia, in areas of both old and young settlements, their distribution being dependent on the development of the agricultural economy of the great land-owners during several centuries.

Historical development of estates in Bohemian lands. - The large estates began to develop on Bohemian and Moravian territory from the 16th century, as a result of the growing political power of the Czech aristocracy. The concentration of the land property had been effected especially after the loss of political liberty by the Czech nation in the Battle of the Bílá Hora (White Mountain) in 1620. At this time, the property of more than 500 Czech aristocrats was confiscated so as to increase the landed property of that part of the nobility (mostly of foreign

origin), who had fought in the ranks of the Habsburgs.

Thus, latifundia (estates of over 1000 hectares = approx. 2500 acres) had not been formed in free competition for the land, but as a result of political power, which was represented by the aristocracy, the Church or the Crown.[52]

In the 17th century the relative importance of the landowners increased tremendously, because the development of the economic situation opened northwestern European markets for the import of grain. The same century brought a decline in the prosperity of the towns, caused by the depression of industry during the period of the Thirty Years War (1618-48). Peasants were not able to buy and own land freely and suffered humiliation and hardships as serfs. In general, the same development took place in Slovakia. This country was reoccupied by the Habsburgs and united with Hungary after the defeat of the Ottoman Empire at Vienna in 1683.

A distinct improvement in the material prosperity of the Czechs occurred during the later part of the 18th century under the enlightened rule of Maria Theresa and Joseph II. The economic position of the serfs was eased, the policy of personal freedom and of improved farming followed. Nevertheless, the obligations of the peasant as tiller and tenant of the soil and as a taxpayer remained, even though his burdens in this respect were diminished at the expense of the landlord; many

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52 V. Brdlík, A Short Survey of Agriculture in Czechoslovakia, Praha, Institute of Agricultural Accountancy and Economics of the Czechoslovak Republik, 1938, p. 20.

large manors broke up into small estates.

Unfortunately, the reign of these two monarchs was also marked by strenuous policy of Germanization in schools, government and church. This led to a great national revival of Czechs and Slovaks, which was growing rapidly in the first half of the 19th century and culminated in the revolution of 1848. The Czech political leaders presented to the Habsburg government at Vienna a petition which included:

1. demands for the equality of the Czech and German languages in Bohemia and Moravia-Silesia
2. the convocation of a General Diet to represent the lands of the Bohemian Crown
3. the drastic reform of the land-laws.

The Czech gesture was simultaneous with the development of the revolution in Hungary and Italy. But Radecky's military successes in Italy and the crushing of the revolution in Hungary (with the military aid of czarist Russia) supported the Habsburgs' resentment to the Czech political and national demands.

However, the one advance for the Czechs after the great effort of 1848 was an important step in agrarian reform, the abolition of the "corvée" or obligatory services. Since then the position of Czech peasants has gradually improved. Rapid industrialization in the Historic Lands also played an important role, because it relieved the pressure of the farmers on the land.

The strength and prosperity of Czech peasants in the pre-1914 period can be measured by the position of the Agrarian Party and the

co-operative societies for the benefit of the small farmers. By 1908 there were forty-five Agrarian deputies in the Diet at Prague and five in the Imperial Diet at Vienna.

The whole territory of Bohemia and Moravia-Silesia within the Habsburg Empire was 30,624 square miles and of that 12,500,000 acres (63%) were farming land. Of this farming land approximately 10,750,000 acres (86%) were owned and operated by small farmers and in addition 750,000 acres (6%) were rented and cultivated by them. In the three provinces there were listed 176,942 farms of five to twelve acres and 103,592 farms of twelve to fifty acres.[53] In spite of the evident strength of Czech small landownership, the remaining latifundia in the Historic Provinces were a grievance to the majority of the people. They were largely owned by an alien nobility and worked by hired labour "deputátníci" and tenant farmers.

After the collapse of the Central Powers in 1918, the dissolution of the Austro-Hungarian Empire followed and the Czechoslovak State, a democratic republic under an elected president, T. G. Masaryk, was formed.

The new government in Prague gave way to the general demand of the Czechs for land reform. The process of redistribution took a period of 18 years. The Land Office was created and a series of Agrarian Laws was put into effect. These dealt with:

a) maximum legal size of estates

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53 H. Wanklyn, Czechoslovakia, London, Philip, 1954, p. 230.

b) precedents for recipients of land

c) compensation law for the former owners of expropriated land.

Table IV[54] shows the individual size groups of agricultural establishments in Czechoslovakia in 1930. Brdlík[55] stresses the fact that many large estates had not entirely disappeared by the introduction of land reform. In order to preserve historically valuable buildings, parks, etc., much more than the legal maximum (of 250 hectares = 618 acres) was left to some holders.

Estates in the study area. - Estates are distributed throughout the area of our study, but their density varies greatly. They are not as numerous in the mountain fringes of Czech lands as in the fertile and agriculturally rich areas.

On Map 1 the areas, where the occurrence of estates is significant, are marked with diagonal lines of colour 503. This overlaps the basic colour, which represents the predominant type of villages in each respective area. In Bohemia the estates occur mainly in the areas of hamlets with a square, in Moravia mostly in the regions of street, fork and ladder, and spindle-type villages; in Slovakia near spa Piešťany in the region of street villages.

In the part of Poland which is shown on Map 1, a great number of estates occurs west of Racibórz on the river Odra and around Zgorzelec

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54 V. Brdlík, op. cit., p. 19.

55 Idem, ibid., p. 20.

Table IV. -

Individual Size Groups of Agricultural Establishments in Czechoslovakia in 1930.

Size group	Number of establishments absolute	Number of establishments in %	Area in hectares	Area in %
0 -- 2 hectares*	753,542	45.9	647,406	7.6
2 -- 5 hectares	444,099	27.1	1,587,952	18.8
5 -- 20 hectares	391,926	23.9	3,943,102	46.5
20 -- 100 hectares	46,667	2.8	1,448,652	17.1
over -- 100 hectares	5,075	0.3	848,598	10.0
Total -------	1,641,309	100.0	8,475,710	100.0

*1 hectare = 2,471 acres

(Görlitz) on the river Nysa Łużycka (Lausitzer Neisse).

Compact regions of estates are not found frequently in the area of this study. In western Bohemia they prevail in the region south of Domažlice, in southern Bohemia near Vodňany and Tábor, in Central Bohemia near Rakovník and south of Mladá Boleslav, and in southern Moravia near Židlochovice.

3. Castles and Fortress Castles in Bohemia and Moravia-Silesia.

The map which accompanies this thesis shows the most important castles, monasteries, large and minor fortress castles or their ruins, which occur on the territory of Bohemia, Moravia-Silesia and western part of Slovakia, which is also included in the study. They played an important role in the historical, social and economic evolution of these lands and their direct connection with the evolution of rural settlements is evident. The study "Mapa hradů a zámků Československé republiky"[56] served as a guide and its symbols were also used for the representation of the above-mentioned features on our map. These castles, monasteries and fortress castles are the finest monuments of Romanesque, early or late Gothic, Renaissance and Baroque architecture in Bohemian lands, and are a typical feature of the Czech landscape.

a) Staroslovanská hradiště (= Ringburgen). - Some of them were founded as early as at the time of first Slave settlements in Bohemia and Moravia-Silesia. They have been built for defensive

56 Czechoslovakia, Ústřední Správa Geodesie a Kartografie, Mapa hradů a zámků Československé republiky, Praha, 1959, 80 p.

purposes by Czech princes and gentry and situated very often on the promontories within the river meanders. Their outermost protection was a wide deep moat; the earth thrown up and inward from the moat formed a mound into which were sunk square posts, bound together to form a continuous stockade. Across the moat a drawbridge led up to an iron gate, which protected a massive door in the castle wall. In the centre of this enclosure was placed the house of the master, which in most cases had a form of a large square tower; around it, chapel, storehouses, laundry, servants' lodgings, etc., were situated. The building material was originally wood, and by the 12th century - stone. Ruins of castles Prácheň, southeast of Plzeň, Přimda, near Tachov, and many others are fine examples of early Romanesque architecture in Czech lands.

Around these early fortress castles, peasants, free, half free or serfs, built their villages, living not in isolated homesteads, but for safety's sake close together within the walls of settlements. They paid their lords an annual rent in products, labour or money for military protection. Sometimes the lord was a bishop or abbot and large monasteries provided military defense for the surrounding villages. Then the peasants paid an annual tithe or tenth of their production to the Church.

b) Gothic castles. - From the middle of the 13th century Gothic castles were constructed from impregnable stones and with heavy fortifications and became military bases for the nobleman's power against the enemy, sometimes his own king or tenants. The inaccessibility of these castles was stressed, as they are usually found on steep hills or cliffs, but sometimes they were built in the plain, by the rivers

or ponds, which also offered protection. New settlements developed around these Gothic castles inhabited by craftsmen, merchants and peasants. Many monuments in Gothic style are scattered throughout the whole studied territory. The most beautiful structure of Gothic Prague is St. Vitus' Cathedral, which dominates the massive group of "Pražský hrad" (Prague Castle) buildings.

To keep the peasants on the land and to make their labour profitable to himself, the noble commuted the old feudal dues for money payments, sold freedom to serfs who could pay for it, leased more of the land to free peasants for a money rental and hired free labour for the workshops on his estate.

c) Renaissance castles. - From the beginning of the 16th century, with the arrival of new Renaissance culture and changes of social and economic conditions, the medieval, inaccessible castles began to lose their importance. Devaluation of the silver currency took place, because the oversea discoveries opened the new rich sources of silver. The money payments which the Renaissance nobleman received from the peasants were simply not sufficient. He was obliged to establish estates (poplužní dvory) on his property and improve agricultural technique considerably. Therefore, it was more to his advantage to abandon the inaccessible Gothic castles and to build Renaissance castles (in a new horizontal style) close to his estates and villages. The castles of Lovosice, Zákupy, Přerov, Kvasice and Krnov are only a few examples of the beautiful Renaissance buildings on the territory of Bohemia and Moravia-Silesia.

d) Baroque castles. - The 17th and 18th centuries produced imposing castles and palaces of Baroque architecture, erected mostly by the new foreign-born aristocracy. The castles at Doksy, Hořín, Hroby (Bohemia) and Holešov, Hodonín, Uherský Brod (Moravia) are imposing monuments of this period. Baroque Prague of innumerable palaces, churches and statues is best represented by the Church of St. Nicolas, completed in 1711 by Christopher Dientzenhofer.

The aristocracy of the 19th century did not change the basic Baroque castle, but often rebuilt them in pseudo-classic or pseudo-Gothic styles. The historical evolution of castles ended in the revolutionary year 1848, which brought important changes for all nations of Central Europe.

CHAPTER IV

MAPS REPRESENTING THE TYPES AND DISTRIBUTION OF RURAL SETTLEMENTS

Although the problems of human establishments have been of great interest to geographers and historians since early times, the more complex studies concerning their origin, types and distribution are of a fairly recent date. Consequently, the survey of the types of villages in many countries is incomplete and maps, representing their distribution are comparatively few.

1. Maps of Rural Settlements in Europe.

Most of the existing maps of European countries showing the types of rural settlements, are of a small scale and therefore considerably generalized. The territory is usually divided into regions, showing the type of village predominant in each respective area. Therefore, many types which occur as a minority, disappear from the map completely. Nevertheless each of these cartographic sources is of great importance for the study of the settlement geography.

a) Small scale maps. - From among the small scale maps, dealing with the problems and distribution of rural settlements in Europe, the following merit special mention:

i) O. Schlüter's[1] map, dealing with rural settlements of Central Europe. The map has a very small scale (1:12, 000, 000);

ii) G. Prinz's[2] map, representing the distribution of villages in Hungary before the First World War, (scale 1:4, 000, 000);

iii) S. Lencewicz's[3] map of rural settlements in Poland, at a scale of 1:5, 000, 000;

iv) J. Cvijić's[4] map of the settlements in the Balkan Peninsula, very much generalized (scale 1:10, 000, 000), nevertheless important for the study of settlement geography.

H. Thorpe's[5] map, "Rural settlements with greens on the North European Plain", deserves special attention. The scale of the map (1 inch to 200 miles approx.) indicates that it is highly generalized. Thorpe himself considers the map as essentially provisional. As the title indicates, the author deals only with green villages, and his classification is based on present-day form of rural settlements. He distinguishes three major groups of green villages:

1. circular forms

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1 O. Schlüter, "Die Formen der ländlichen Siedlungen", Geogr. Zeitschrift, 1900, p. 248-262.

2 G. Prinz, "Magyarország Településformái, Magyar Földrajzi Ertekezések, III, Budapest, 1922.

3 S. Lencewicz, Kurs Geografji Polski, Warszawa, 1922, p. 290-296, Map p. 291.

4 J. Cvijić, La péninsule Balcanique, Paris, 1918, Chapter XVI.

5 H. Thorpe, "The Green Village as a Distinctive Form of Settlement on the North European Plain", Bulletin de la Société Belge d'Etudes Géographiques, Vol. 30, No. 1, 1961, p. 93-134, Map p. 95.

2. rectangular forms

3. triangular forms

4. open or incomplete forms.

According to his classification, the Rundling and Sackgassendorf are the "circular forms". The Broad Green Village (=Platzdorf = Fortadorf = Forteby) and the Street-Green Village (= Spindle-type = Angerdorf) belong to "rectangular forms". Villages with triangular greens - "triangular forms" - which seldom are found as regional clusters are treated by Thorpe "merely as misshapen rectangular and circular forms".[6] In the group of "open or incomplete forms" he includes the following:

i) Brink settlements of Holland, which contain "one or more open spaces of varied shape, but seldom does the grassy area with its present scatter of trees form a nucleus for the settlement".[7]

ii) L'habitat de rejet[8] of Belgium - settlements of loosely grouped farmsteads which developed on old waste around an open green (often a triangle) and in their early stages had a strong pastoral economy, associated with the rights of common grazing and the taking of timber and peat for fuel. As population grew the use of arable land increased and was often regulated by the community as a whole.

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6 H. Thorpe, op. cit., p. 108.

7 Idem, ibid., p. 109.

8 Idem, ibid., p. 111.

iii) Marginal or peripheral greens.[9] - Villages and hamlets of this group, which Thorpe finds in northeast England, have an open green (sometimes two or more) on the periphery of the settlement. He also includes in this group former street-green villages, "whose strip of green along the street had been enclosed as front gardens".[10]

The method of hachuring was used for the cartographic representation of the above-mentioned types on his map. Comparing Thorpe's distribution of the "green villages" with the map of rural settlements of Bohemia and Moravia-Silesia (Map 1) we can find only an approximate coincidence. Thorpe shows the occurrence of circular and rectangular forms as a continuous, crescent shaped belt, reaching from northwestern to southwestern Bohemia, continuing further west and north along the Main, Saale and Elbe rivers. Due to the extensive generalization, the types of chain and row villages, which are numerous in the above-mentioned area, disappear completely.

Zaborski's[11] maps of rural settlements in Poland and Central Europe deserve special attention. The map "Rozmieszczenie typów wsi w Polsce" shows the distribution of the types of villages in Poland in 1926, and although at a scale of 1:2,765,000, it is the first map of rural settlement in Poland done at a comparatively large scale. It is

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9 Idem, ibid., p. 112-115.

10 Idem, ibid., p. 112.

11 B. Zaborski, Über Dorfformen in Polen und ihre Verbreitung (O kształtach wsi w Polsce i ich rozmieszczeniu), Wrocław, Osteuropa-Institut, 1930, 112 p.

generalized only to a degree so as not to distort the true picture of the distribution of the various types of villages. Sixteen different types of rural settlements are presented. Regions are outlined where one of the types predominates and are shown by a colour chosen for the respective type. The types which are not too widespread, but nevertheless of special importance (rundling, round village, regular village, village with a square), are not shown in colour, but with special symbols. The map gives a very clear picture of the distribution of the village forms, and it was an important guide for preparing the map of rural settlements in Bohemia and Moravia-Silesia, presented in this study.

Zaborski's[12] other map "Rozmieszczenie typów wsi w Europie środkowej na początku XIX w." in spite of the small scale of 1:12,000,000 very clearly shows the distribution of the types of villages in Central Europe at the beginning of the 19th century and in Lithuania and Estonia at the end of the 19th century. The comparison of these two maps illustrates to what degree the forms of rural settlements changed due to the economic and social reforms of the 19th century.

b) Maps of larger scale. - There are also some maps of larger scale, which usually deal with a smaller territory and therefore can give a more detailed and precise picture of the occurrence and distribution of the settlements. In these maps a symbol system is usually used to represent the different types. As an example can be mentioned the

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12 B. Zaborski, op. cit.

map of M. Biskup[13] (scale 1:300,000) which presents the number and extent of rural settlements based on Polish law in Pomorze Gdanskie in the first half of the 15th century, when the domination of the Teutonic Knights in that area was on a decline. The author distinguishes three basic types of settlements, belonging to three different kinds of owners:

1. Settlements forming the property of the Teutonic Order
2. Settlements forming the property of the gentry (subject to either Polish or German laws)
3. Settlements belonging to Church institutions - mainly cloisters.

On the map all settlements are shown, being represented with different symbols.

Another example is the map of M. Kiełczewska-Zaleska "Mapa kształtów wsi Pomorza Gdańskiego wzmiankowanych w końcu XV w."[14] which deals with the plans of villages of Pomorze Gdanskie at the end of the 15th century. The author selects fifteen different types of rural settlements which are shown by use of different symbols. The map (scale 1:300,000) gives a clear and detailed picture of the distribution of villages and it is not overcrowded with symbols.

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13 M. Biskup, "Osady na prawie polskim na Pomorzu Gdańskim w pierwszej połowie XV wieku", Prace Geograficzne, No. 5, 1956, p. 181-224.

14 M. Kiełczewska Zaleska, "O powstaniu i przeobrażaniu kształtów wsi Pomorza Gdańskiego", Prace Geograficzne, No. 5, 1956, p. 9-178.

The map of A. Klaar "Formen der bäuerlichen Siedlungen in Niederösterreich" (scale 1:500,000)[15] presents seventeen different types of villages, also represented by a symbol system. In addition, the author indicates the areas of dispersed settlements with vertical lines, and the areas with scattered farmsteads of more recent origin with dotted horizontal lines. Although this map gives a detailed picture of the distribution of rural settlements in that area, nevertheless it seems to be heavily burdened with numerous symbols.

2. Maps of Rural Settlements in Czechoslovakia.

As already mentioned, the maps dealing with this problem are very rare. Láznička[16] was the first Czech geographer who undertook the laborious task of presenting a map which shows the distribution of different types of villages on the whole territory of Czechoslovakia. He chose the hachuring method for its cartographic representation.

His map of rural settlements in Moravia "Typy rolnických vsí na Moravě" at a scale of 1:750,000 shows six different types of villages, each one being represented by different hachuring symbols (horizontal, vertical and diagonal lines, full or intermittent).

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15 Verein für Landeskunde von Niederösterreich und Wien, Atlas von Niederösterreich, Wien, Freytag - Berndt, 1952, 20 maps.

16 Z. Láznička, Typy venkovského osídlení na Moravě, Brno, Československá Společnost Zeměpisná, 1946, 57 p.

---------, "Typy venkovského osídlení v Československu", Acta Academiae Scientiarum Cechoslovenicae Basis Brunensis, Vol. 28, No. 3, 1956, p. 95-134.

He mentions two other maps, which he used as sources in the preparation of his work: Maydell's[17] "Die Siedlungsformen Mährens" and Klaar's[18] "Die Siedlungsformenkarte der Reichsgaue Wien, Kärnten, Niederdonau, Oberdonau etc".

In the legend of Láznička's map a short description of the characteristic field division is added to each type of rural settlement so that the map represents very roughly the distribution of the fields.

It seems that the generalization of his map was too extreme. By showing - hamlets with a square, spindle-type villages, street and multistreet villages with field divisions of "Gewannflur", "Blockgewannflur", "Blockflur" and "Gelangeflur" as one type, using the same symbol for all of them, he distorts to a certain degree the true picture of the distribution of the rural settlements and their field divisions.

Láznička's[19] second map "Typy venkovského osídlení v Československu" (Types of rural settlements in Czechoslovakia), covers the whole territory of the state except the Carpathian Ruthenia, which was annexed by the Soviet Union in June, 1945.

As he mentions there were only a few cartographic sources available as a basis for his work: Doberský's[20] map "Settlements of

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17 K. Maydell, "Die Siedlungsformen Mährens", Böhmen u. Mähren, 1940, p. 242.

18 A. Klaar, "Die Siedlungsformenkarte der Reichsgaue Wien... etc.", Wien, 1942.

19 Z. Láznička, op. cit., p. 126.

20 J. Doberský, "Osídlení severovýchodních Čech" Sborník Československé Společnosti Zeměpisné, 1956, p. 26, 91.

northeastern Bohemia", which covers only a part of Bohemia; for the territory of Moravia, Láznička used his own, previously-mentioned map. For Slovakia he could compare his study with the Prinz's[21] map and Fekete's work.

Láznička distinguishes eight different types of villages in his map, using again the system of hachuring for their cartographic representation, as on his map of Moravia. Intermingling of different types is shown by the overlapping of different hachuring symbols. The map also shows the outline of areas of old settlements on the Czechoslovakian territory. Both Láznička's maps are very valuable contributions to research in the field of settlement geography.

Fekete's[22] map "Typy viedieckého osídlenia na Slovensku" presents the distribution of different types of villages in Slovakia. The map was originally made at a scale of 1:400, 000, and different symbols used for each type of village. Fekete distinguishes twelve different types of rural settlements and uses the following principles for their representation: where more types in one region are intermixed, each one is shown with its respective symbol; in regions where a single type is clearly predominant only one corresponding symbol is shown. Regions of scattered farmsteads appear as heavily dotted areas.

Fekete's map is not too generalized and it is an important

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21 G. Prinz, "Die Siedlungsformen Ungarns", Ungar, Jahrbücher, Vol. 4, Berlin 1924, p. 127, 335.

22 S. Fekete, "Siedlungsformenkarte der Slowakei", Geographica Helvetica, Vol. 3, No. 1, 1948, p. 114-117.

contribution to the research on rural settlements. Nevertheless, in the areas where more types intermingle, the overcrowded symbols give the impression of an extreme accumulation.

3. Map of Bohemia and Moravia-Silesia, Showing the Distribution of the Types of Rural Settlements.

The map which accompanies this study shows the distribution of rural settlements on the territories of Bohemia and Moravia-Silesia and also the adjacent parts of Slovakia, Poland, Austria, West and East Germany.

Rural settlement, as does every geographical phenomenon, possesses a spatial dimension. It includes not only the ground plan of the village, but the fields and field roads as well. A map showing the distribution of rural settlements should avoid the representation of types by symbols only, and leave empty, unmarked spaces between them. The method of colour patch, by which the areas of different types are outlined and coloured by corresponding colour, seems to be the most appropriate.

a) Method used for the map of rural settlements in this study. - The scale of the presented map is 1:750,000. For the base the sheets B^1, B^2, C^1, C^2, C^3 from the "General Map of Middle Europe" were used. These maps, published by Bundesamt fur Eich-und Vermessungswesen in Wien (formerly by the Austrian Kartographisches Institut) and Vojenský zeměpisný ústav in Praha, are made in a Bonne projection at a scale of 1:750,000.

On this base map the grid of the degrees of latitude, at the interval of 15 minutes, and of the degrees of longitude, at the interval of 30 minutes, was constructed. The meridians shown are based on Ferro, which is $17^{o}39^{'}57''$ west of Greenwich. In this way the area of study was divided into 113 trapezoids, each one corresponding to one sheet of the "Spezialkarte" at a scale of 1:75, 000.

All these sheets were available for the study and were subjected to close examination. According to the classification of rural settlements, used in the thesis presented, every village, hamlet, scattered farmstead and estate was marked on each sheet by a colour chosen for the respective type.

Aftewards, the generalization was done, so that the regions were outlined and marked with the number of the corresponding colour of the prevailing type of settlement. The generalization was done only to such a degree that the types which are in the minority in certain regions, are also shown as small regions, especially where the rundlings, round villages, regular villages and estates are concerned.

These outlined regions were transferred from the special maps onto the base map and filled in with a corresponding colour. The map presents seventeen various types of rural settlements, each one shown with a different colour.

In areas where two prevailing types intermingle to such a degree that the outline of each type was not practically possible, the colour of the predominant type is used as a base for the area in question and the other significant type is represented by differently coloured diagonal

lines, which overlap the basic colour. When the intermixed types occur in approximately the same density, diagonal lines of the same width of the two corresponding colours are used.

Scattered farmsteads, which occur mostly in forested areas and regions of the chain villages, are shown as dots of the colour chosen for scattered farmsteads. The internationally known spas, the seasonal activity of which is important for the economy of the country, are also represented on the map. Larger forested areas, especially in the higher mountains bordering the Czech lands, where the rural settlements are very rare if not practically missing, are also outlined and shown with a grey colour.

The map was done independently of Láznička's[23] study, therefore the comparison of both maps presents some interesting results. The differences, which occur in the above-mentioned maps, are caused mainly by the use of different criteria according to which the types were selected, and different methods used for their representation and distribution. These factors were discussed in the previous paragraphs of this thesis. The fact that Láznička's map is generalized to a much greater degree than the presented map of Bohemia and Moravia-Silesia plays also an important role.

Most significant is the close similarity in the representation of the types of old settlements on both maps. Láznička's outline of the area with these types (Map 13), coincides approximately with the

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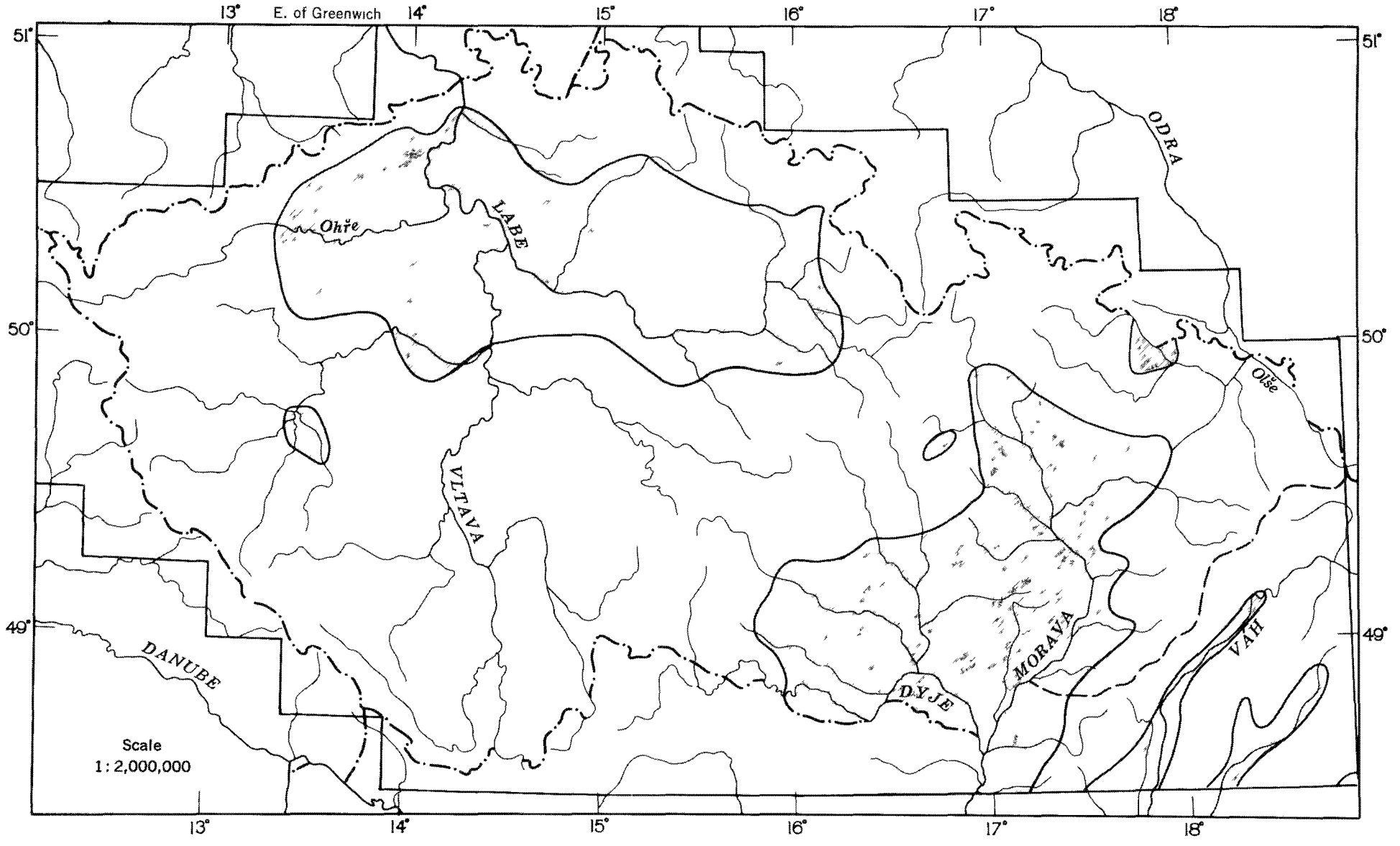
23 Z. Láznička, op. cit.



BOHEMIA AND MORAVIA-SILESIA

Areas of old settlements as recognized by Z. Láznička...

Limits of Area Studied .....

Map 13.

occurrence of rundlings, round villages, fork and ladder-type, street, multistreet and spindle-type villages on Map 1. According to the classification applied in this study they belong to Group I, which includes the types of old settlements.

b) Comparison of the distribution of rural settlements in the neighbouring territories. - Map 1 extends past the state boundaries of Bohemia and Moravia-Silesia, covering the adjacent areas of the neighbouring countries. It clearly shows that the regions of different types of villages reach from one country into the other, regardless of the political divisions. For some areas the maps of other authors, dealing with the same problem, are available for comparison; in other sections the presented map is the only source.

i) Poland. - Zaborski's[24] map of the rural settlements, representing Poland in its pre-1945 boundaries, shares only a small part of territory with the map presented in this study. Nevertheless, it can be observed that the regions of chain villages and scattered farmsteads in the Carpathians, as well as the regions of fork and ladder-type and multistreet villages between Moravská Ostrava and Racibórz, are not interrupted by the state boundary. On the contrary, they continue as unbroken units from Moravian-Silesian territory into Poland.

No recently published map of rural settlements in Poland was available during the research done for this study. Nevertheless, the extension of the map of Bohemia and Moravia-Silesia past the state

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24 B. Zaborski, op. cit.

boundary shows the distribution of rural settlements in the neighbouring part of Polish Silesia. There are extensive regions with prevailing chain villages (typical, less typical and developed) on both sides of the Sudetes ranges. It was possible to confirm this observation by a comparison with Zaborski's map of rural settlements in Central Europe at the beginning of the 19th century,[25] which also shows the wide belt of chain villages (Waldhufendörfer) along both sides of the mountainous Bohemian border.

ii) Slovakia. - Extension of Map 1 also presents the distribution of rural settlements in western and northwestern Slovakia - territory adjacent to Moravian-Silesian border. The Little Carpathians, White Carpathians, Javorníky and Beskyd ranges seem to be no barrier to the spreading of the same types of settlements across the border. On both sides of these highlands, in Moravia-Silesia as well as in Slovakia stretch continuous regions of chain villages, scattered farmsteads and row villages. In the south, where the Morava river forms the Czech-Slovak boundary, the fork and ladder-type villages are predominant, forming an extensive region, which reaches from "Moravské Slovácko"[26] into Slovakia and Austria.

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25 Idem, ibid.

26 The name of Moravské Slovácko is often given to the south-eastern part of Moravia. Here, the inhabitants preserved their characteristic folklore, expressed in a wide variety of folk costumes, embroidery, domestic architecture, painting, ceramics, music, song and dances. Every village of this region has its own colorful character.

Comparing the part of Slovakia represented on Map 1 with Fekete's[27] study, only slight variations in the distribution of rural settlements on both maps can be found. They are again due to a different method of representation and a different classification. Fekete does not distinguish the fork and ladder-type villages as a separate type. Consequently, the large regions of this type which occur around Myjava and in the valley of the river Váh, are represented on his map as areas with prevailing multistreet villages.

iii) Austria. - The discussed map of Bohemia and Moravia-Silesia also includes the northern part of Austria, extending from Czechoslovakian border to the 48°30'N. latitude. Its western part, a forested and mountainous country known as Upper Austria, is characterized by row villages, scattered farmsteads and hamlets. These types form continuous regions, which reach from southern Bohemia into Austrian territory.

Further east - in the part of Lower Austria - in the valley of river Thaya the spindle-type, intermingled with street villages, is predominant. It is a continuation of an extensive region of spindle-type villages, extending from Bohemia and Moravia past the state boundaries into Austria. Further south, around the city Horn, hamlets, street hamlets and hamlets with a square, are the prevailing types of rural settlements.

In the Vienna Basin, which is a loess and alluvium-covered

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27 S. Fekete, op. cit., p. 115.

southward continuation of the Moravian depression with rich, farming lands, the fork and ladder-type villages form a compact area. This region is also an extension of the same types of rural settlements which prevalently occur in the fertile Moravian lowlands. In Austria, as well as in Moravia-Silesia the fork and ladder-type villages intermingle with street and multistreet villages. There are quite extensive regions of multistreet villages around Hollabrunn and Mistelbach.

By comparing the distribution of rural settlements on the map of Bohemia and Moravia-Silesia with Klaar's map[28] of "Formen der bäuerlichen Siedlungen in Niederösterreich" (scale 1:500,000), the following conclusions were reached:

1. The occurrence of row villages and scattered farmsteads coincides very closely on both maps.

2. The extension of the area with younger settlements follows nearly the same line.

3. Nevertheless, some differences can be noted. For example, the region with fork and ladder-type villages on the map of Bohemia and Moravia-Silesia is much more compact than the one on Klaar's map. This is due mostly to the different classification used by both authors and also to the larger degree of generalization of the map presented in this study which, covering a much larger territory, is made at a smaller scale.

iv) Germany. - The map of the types of rural settlements

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28 Atlas von Niederösterreich, op. cit., Map 1.

dealing with German territory only, was not available. Nevertheless, extension of the map of Bohemia and Moravia-Silesia past the Czechoslovakian state boundary into Germany, offers at least a picture of the distribution of rural settlements in the narrow frontier belt of East and West Germany.

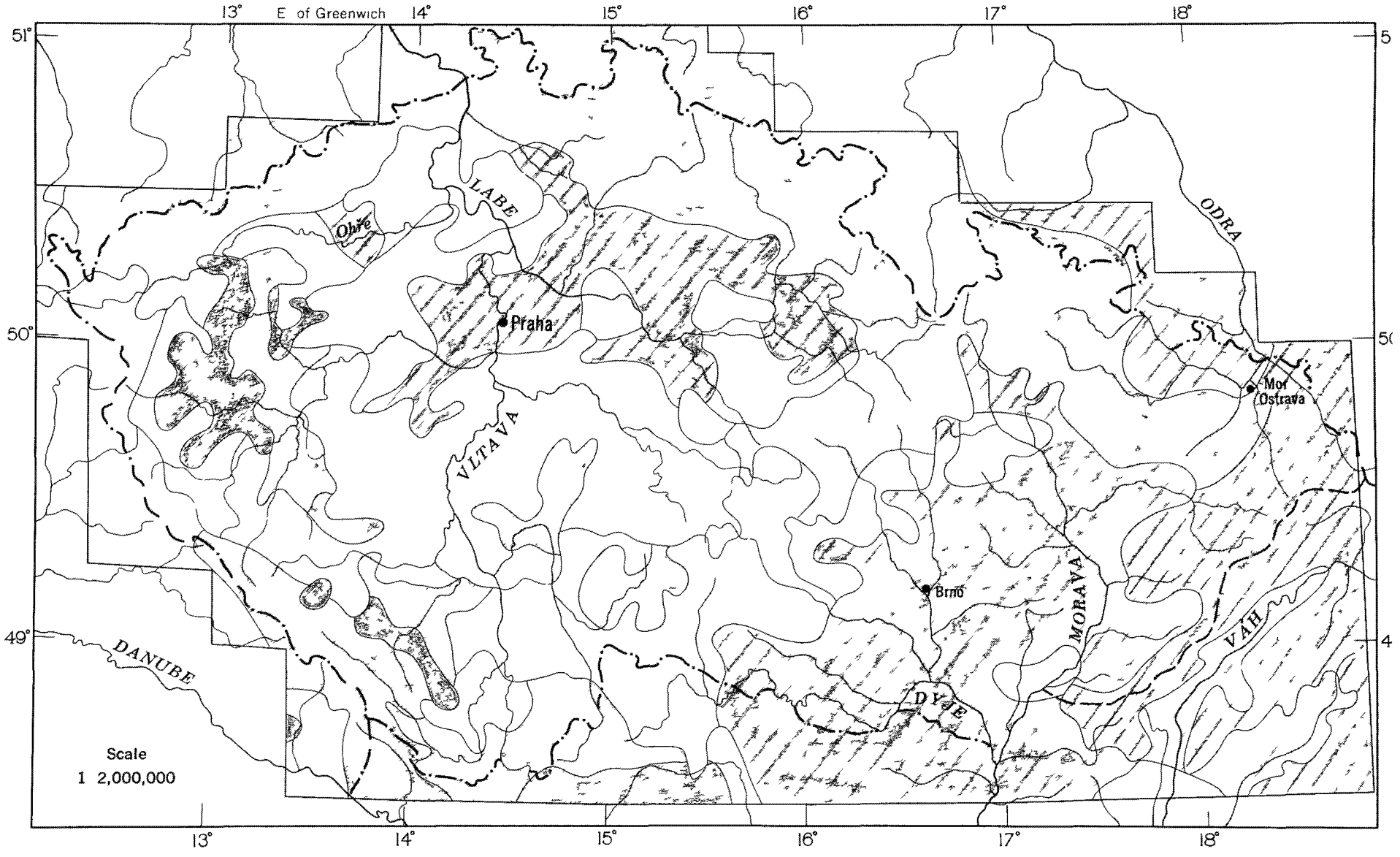
The southwestern mountain frontier of Bohemia consists of Šumava Mountains and Bohemian Forest, heavily forested mountainous ranges, parallel to the Bayerischer Wald, which lies beyond the frontier in West Germany (Bavaria). The map presents here a mosaic of smaller regions, showing the occurrence of scattered farmsteads, hamlets and chain villages, which are the predominant types, reaching from one territory into the other. Here and there also are found small regions with prevailing fork and ladder-type and multistreet villages, but these are in a definite minority.

In the northwest, the borderland between Bohemia and East Germany is formed by the impressive Krušné Hory (Ore Mountains). Although the communication across the Krušné Hory was difficult in medieval times, the pattern of the rural settlements is the same on both sides of the mountainous ranges. There are extensive regions of chain villages (typical, less typical and developed) interrupted by occurrence of row villages and to a smaller degree by scattered farmsteads.

The sandstone highlands of picturesque Lužické hory (Lausitz Gebirge) divide northern Bohemia from the Upper Lusatian part of Germany. Here, large regions of chain villages and hamlets represent the types of rural settlements in both countries.

It has to be stressed that the map which is presented in this study, was prepared independently of the maps of other authors concerned with the same problems. The results of the comparison with their works reveal certain differences (discussed in the previous paragraphs), which can be explained by different methods and approaches used in the research.

Map 1 also served as a source for the compilation of a "Synthetic map of the types of rural settlements in Bohemia and Moravia-Silesia", presented in this study (Map 14). The latter was generalized to a greater extent; however, it still gives a clear picture of the main types of villages in Czech lands and parts of the adjacent territories.



BOHEMIA AND MORAVIA-SILESIA

Synthetic map of the types of rural settlements

Limits of Area Studied

Map 14.

Predominant types

- A Rundling
- B Spindle type
- C Street village
- D & E Multistreet & Fork and Ladder type
- F & G Chain village and Row village
- I, J & K Hamlets
- L Scattered farmsteads

CHAPTER V

INFLUENCE OF GEOGRAPHICAL AND SOCIAL FACTORS ON THE RURAL SETTLEMENTS

1. Influence of Geographical Factors on Rural Settlements.

Each human settlement is a result of social processes which take place in a particular epoch and in certain conditions of natural environment. Therefore, great attention should be paid to the main factors, such as the physiographic and the social.

The relationship between the natural vegetation cover and the old settlements has previously been discussed. In open, cultivated areas, the settlers chose the settling places which seemed to be the most favourable for them in every respect. Relief, water and soil types were certainly of undisputable importance.

a) Relationship to soil. - For the primitive type of farming in Neolithic and early historic times, the heavy loamy soils were not too suitable. The settlers naturally preferred types of soils which required less effort for cultivation, such as chernozems, loess and sandy soils.

Some geographers (e.g., Ratzel, Brunhes) are of the opinion that the regions with fertile soils are characterized by the types of nucleated, condensed villages, whereas the poor, especially mountain soils, are covered with dispersed settlements. Others, as Gradmann, Láznička, Říkovský, Zaborski, are against the overemphasizing of the

influence of soil types on the shape of rural settlements. It is felt here that it would be of great interest to compare the extent of different types of villages in Bohemia and Moravia-Silesia (Maps 1 and 14) with the territorial extension of soil types (Map 5).

The most fertile soils are found in the Bohemian and Moravian lowlands - areas of degraded chernozem soil formed on loess - and strips of alluvium in the valleys of the Labe, Morava and Dyje rivers. In Bohemia the area is south and west of the Labe, between Litoměřice in the north and Čáslav in the east. In Moravia these fertile soils form a triangle between Brno, Olomouc and Břeclav. Maps 1 and 14 show that in the above-mentioned areas the street, multistreet, spindle-type and fork and ladder-type villages are predominant. The fact that the street and fork and ladder-type villages also occur in the alluvium of the Upper Odra valley cannot be overlooked.

The areas of degraded chernozems are surrounded by an irregular belt of brown forest soils, which in Bohemia as well as Moravia, extend up the river valleys, penetrating the belt of podzols. This is noticeable mainly in the Vltava, Berounka, Ohře, Svratka and Svitava valleys. These areas coincide approximately with the occurrence of the nucleated types, also including rundlings and round villages. Hamlets with a square are very numerous mainly in the Bohemian territory.

Podzols cover large areas in Bohemia, the periphery of Moravia and a greater part of Silesia, and coincide approximately with the areas of prevailing hamlets, chain and row villages on the maps of rural settlements of Bohemia and Moravia-Silesia.

The higher parts of the bordering highlands in Bohemia show an almost continuous ring of poor mountain soils. These also occur at intervals on the main ridges of the Moravian Heights and White Carpathians. These regions, when settled at all, show mainly the types of row villages, some chain villages and scattered farmsteads, the latter especially typical in the White Carpathians.

b) Relationship to water and landscape. - Water and landscape are other factors which played a very important role in shaping the plans of villages, and in influencing their topographic position. It is very difficult to deal separately with these influential factors which are interrelated very closely.

It is a general rule for the rural settlements of Central Europe to be found in the proximity of a river or a stream. For this reason the peasants preferred to build their settlements in the valleys, hollows and lower parts of the slopes, to be near flowing water. To the contrary, in the marshy regions, settlements spread on highly elevated, flat topped hills. In the lower parts of the "thalwegs" the violent floods of unembanked rivers acted in restraint of settlements. This often brought the human habitation to the river terraces, always above the flood danger level.

Generally, the approximate relationship of the settlements to water and landscape can be expressed as follows: the old settlements with an agglomerated ground plan show an inclination to settle in the possibly lowest flat lands; multistreet, street, and fork and ladder-type villages are the most frequent types. However, they are always situated

above the wet grounds and flood danger level. The place, most suitable for settlements is often a level, elongated belt, which forms the boundary between the wet grounds and the plateau. When this narrow belt occurs around a lake or on a river meander, circular or spindle-type villages often develop.

In hilly and mountainous land, rich in springs, it is not necessary for human settlements to concentrate; here, other types of villages, such as hamlets, loose multistreet villages, row villages and scattered farmsteads are quite common. These belong to the young settlements.

The distribution of villages in Czech lands confirms roughly the above-mentioned conclusions. The pattern of human settlements is striking; the grouping of large villages on the rich plains of Bohemia and Moravia-Silesia and the isolation and dispersal of dwellings in the Šumava, Ore Mountains, Krkonoše and White Carpathians can be observed.

Between these two extreme types there occur the intermediate types such as hamlets, which are very frequent, especially in the hilly terrains of central Bohemia. Another type, the chain village, is also frequently found in the bordering highlands of Bohemia and Moravia-Silesia. These chain villages partly resemble the street villages with their elongated plan, but belong to the group of younger settlements, being introduced to Czech lands first in the 12th century with the German colonization.

Even though particular types of villages are predominant in certain physiographic regions, no one part of the territory possesses a single type of settlement; the settlements arise most frequently from

the association of many different factors.

c) Relationship to sun and wind. - The influence of these factors on human settlements although not so striking, nevertheless cannot be overlooked - especially in the mountainous regions.

> In all European countries man seeks the sun, and the house is, if possible, oriented to receive the rays of the rising sun. But though single houses (...) can and do almost all of them turn toward the sun, the problem is not quite the same, when the houses are built in groups; here the street or road often plays the decisive part and the house faces the highway - road or street - instead of the sun.[1]

To the contrary, in the regions of scattered farmsteads, there is a remarkable difference in the distribution of the dwellings between the sunny and shady side of the slopes, even if they are of almost equal steepness. The slopes, which are more exposed to the sun, are usually more densely settled.

The slopes exposed to frequent heavy winds are not favourable to human habitation. To obtain protection against this undesirable factor, man often settled in the kettle-shaped hollows (Schlüter's "Nestlage") or in the side-valleys.

All these examples seem to demonstrate the fact that the distribution of different types of rural settlements is influenced to a certain degree by the region itself. Nevertheless, it would not be correct to make a general classification dependent upon physiographic factors only.

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1 J. Brunhes, Human Geography, London, Harrap, 1952, p. 63.

2. Influence of Social Factors on Rural Settlements.

The rural settlements are literally the work of men; consequently the strictly human factors, which affect their location and type, are of great importance. Europe - and Central Europe especially - offers a very complex picture of rural habitations; forms, which are expressions of social and sometimes even ethnic differences are here often found side by side.

a) Influence of tradition and social organization. - In long sequence of historical events, human establishments succeeded in altering natural conditions. Heights have been terraced, wet ground drained, deciduous and later coniferous forests cleared. Even the mountain slopes have been exploited for pastoral purposes. Each of these conquests induced new agricultural methods and special types of rural economy.

Necessity for cooperation, such as driving of wells and preparation of the environment to make it favourable to crops, led to concentration of farm houses and thus the nucleated village, the only common meeting ground of the cultivators, was formed.

These clustered villages were not created everywhere. Where dissected topography and abundance of springs occurred, and it was not necessary to collect in groups, habitations scattered. The groups of inhabitants consisted either of a single family, or a few neighbours, often connected by family ties. An entirely different type of agriculture, characterized by tiny fields with diversity of crops and another mode of

life, semi-agricultural and semi-pastoral, distinguishes these scattered settlements from clustered (condensed) villages.

Their mode of life is usually deeply rooted and is as much a matter of environment as of manners and customs. Some settlement geographers, as P. Vidal de la Blache,[2] stress its tenacity and connection with the social conceptions of certain ethnic groups. Scattered farmsteads of Valašsko in Moravia and the individual character of their inhabitants can confirm his opinion to a certain degree.

i) Rights of inheritance. - Practice and rules of dividing the land between the heirs certainly were not without influence on the development of villages.

If all children were entitled to be heirs, the hamlets may have developed from isolated farmsteads. On the contrary, if only the oldest son could become a heir, then the original form of rural settlement might have been preserved.

ii) Size of agricultural establishments. - It seems natural that the owners of larger agricultural establishments were more inclined to dispersed forms of settlements than those with smaller land property. In case the inhabitants of a village were only small landowners, the accumulation of the farm buildings usually took place.

iii) Pattern of the fields. - The pattern of fields belonging to one village was another important factor. Scattered farmsteads often

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2 P. Vidal de la Blache, Principles of Human Geography, London, Constable, 1926, p. 302.

occurred where the land property of the owner was concentrated in one closed block (Blockflur). The owner frequently settled in the middle of his fields, often on an elevated place, to have the opportunity to overlook all his property.

To the contrary, by the concentric arrangement of fields, when the parcels radiated in long bands from one focus - the clustered settlement - every farmer of this type of a village was naturally situated close to his fields.

b) Influence of roads. - Every human establishment, even a very small one, is accompanied by some signs of communication - roads of different type. Some authors, as for example Brunhes,[3] greatly emphasize the influence of roads on the origin and development of human establishments. Others, as Vidal de la Blache,[4] Říkovský,[5] Zaborski,[6] are of the opinion that the roads helped to create cities, but did not have, especially in old times, the same influence on the origin of smaller human establishments, mainly those which are primarily resulting from agricultural activity.

From the study of cartographic material, it is nearly impossible to recognize whether the village originated on the primarily constructed

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3 J. Brunhes, op. cit., p. 55-58.

4 P. Vidal de la Blache, op. cit., p. 279-281.

5 F. Říkovský, Základy k sídelnímu zeměpisu Česko-Slovenska, Brno, Československá Společnost Zeměpisná, 1939, p. 103.

6 B. Zaborski, Über Dorfformen... (O kształtach wsi w Polsce i ich rozmieszczeniu), Wrocław, Osteuropa-Institut, 1930, p. 32.

road or vice versa. Only in cases where the road leads to one settlement and ends there, as in the case of "Sackgassendorf", is it possible to decide without hesitation that the road originated secondarily.

Regarding the territory of Bohemia and Moravia-Silesia, it must be kept in mind that the greatest part of human settlements there originated in the early Middle Ages, when very many villages were more or less self-supporting economic units, distributed quite independently of the lines of communication. These villages communicated with one another by means of paths. Later the roads were added, in order to provide connections with the outside world.

Nevertheless, roads also helped to create villages. This applies mostly to the types of younger settlements - especially row villages and chain villages. A large number of these types follows the communication roads in the area of this study. In these cases, both phenomena - the village as well as the road - are influenced by physiographic conditions, which appear to be most advantageous along the valley line.

c) Influence of the need for security and defence. - The consideration of defence and protection was also an important factor in the establishment of rural settlements. Their inhabitants used different means to protect their lives and property from the attacks of wild animals, robbers, hostile neighbouring tribes, etc. The leaders of the tribes, primarily concerned with self-defence, built their fortresses, and later castles, usually on elevated, not easily accessible places, useful for observation and defence.

The villagers, on the other hand, had to settle in clustered settlements for their protection. In order to resist the enemy most effectively, many villages especially during the Middle Ages, were surrounded by walls and moats and usually had only one entrance.

Nevertheless, some villages sought protection, as the chiefs of the tribes did, on steep rocks or cliffs, preferring their safety to the easy access and proximity of the fields (Schutzlage).

In the area of the study, there are some villages with this protective position. According to Říkovský,[7] they developed from Celtic and Old-Slavic "Ringburgen" - fortified settlements. We can mention as an example of these villages, positioned on the cliff of a river the settlements of Blučina (sheet 4357) on the river Cézava, Obřany near Brno on the river Svratka (sheet 4357) and Bořeň near Bílina. In some cases, small fortresses of the later origin also developed into villages preserving their original defensive position. Not only steep mounds appealed to men seeking for means of defence and fortification. The position of a settlement in river meanders also could be regarded as of a similar protective character.

Sometimes the form of the ground plan would indicate a defensive function of rural settlement. The ground plans of rundlings, round villages and to a certain degree of spindle-type and green villages, the characteristics of which were discussed previously, apparently served this specific purpose in early times.

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7 F. Říkovský, op. cit., p. 102.

Some authors, as De Martonne[8] and M. Lefèvre,[9] defend the opinion that not only the types with concentrated ground plan were suitable for the defense of a village. To the contrary, the inhabitants sometimes preferred to settle in scattered houses, when possible, hidden in a forest and far from communication routes, to diminish the possibility of enemy attacks.

d) Relationship between the form and position of a village. - Certain dependence between a position of rural settlement and its form and concentration or dispersion of the ground plan occurs very often, even though it is not always necessary.

The chain villages, for example, are mostly found in the river or mountain valleys, the axis of the village following the valley line, along which the forest was cleared (Waldrodungslinie). If the clearing of woodland occurred in a plain, the chain village developed along the given "Waldrodungslinie", which could have been planned anywhere. Consequently, the axis of such a chain village is not parallel to the valley. Similar variations occur quite often when one of the characteristic features of a certain type of rural settlement is missing, because of its different position.

e) Influence of agricultural reforms. - The influence of agricultural reforms in Czech lands on the change of the ground plan of some villages and on the origin of new ones was considerable.

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8 E. de Martonne, La Valachie, Paris, 1902.

9 M. Lefèvre, L'habitat rural en Belgique, Bibliothèque du séminaire de Géographie de l'Université de Louvain, Liège 1926.

During the 18th century Czechs were involved in the Habsburg-Hohenzollern struggle and the inhabitants of Bohemia and Moravia-Silesia were for the most part carrying the burdens of the war, both in money and conscripts. The loss of greater part of Silesia meant considerable decline in the revenue of the Habsburg dynasty and gave Prussia important economic resources. The Empress Maria Theresa needed an increased army and greater income to face the threat of Frederick the Great. These circumstances led her and her successor Joseph II to many administrative, economic and social reforms.

i) Parcelling of the land. - The year 1753 brought the edict which recommended the division of large farms between the members of the family. It also gave permission to build new houses on the municipal, dominical, or on the ecclesiastical property. The new small landholders could obtain, in addition to this, barren land for cultivation and consequently increase the revenue of the landlords and the Crown as new prospective taxpayers.

Parcelling of the land took place and assumed considerable dimensions. These changes are visible in the new cadastre - "Recalculationes landes catastrum de anno 1756," which was supposed to ascertain the new revenue basis for the Crown.[10] The peasants were obliged to pay 42% of their yield as contribution. This heavy financial burden, accompanied by oppression of personal and religious freedom

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10 J. Dobersky, "From the Tri-Fallow System to Cultivation in Common of the Unified Agricultural Co-Operative at Dobré", Sborník Československé Společnosti Zeměpisné, Vol. 55, No. 3-4, 1950, p. 155.

led to the Peasant Revolt of 1775 in Bohemia, which was a signal for economic and social reforms and also for religious toleration, which Joseph II introduced in 1781.

The legal and economic positions of the peasants were eased and their burdens reduced at the cost of the big landowners. The parcelling continued even on a greater scale according to the so-called Raab's system. As a result, original ground plans of many villages were changed, new houses were built on the village greens, many isolated agricultural units originated and also new villages were established. Some of them had a loose ground plan, as the loose row villages, but often the new farms were built in a short row, close together ("Ansiedlungsreihen") with parcelled fields radiating behind their back-yards and resembling the street villages in their ground plan.

Consequently, the Stable Cadastre (Stabilní Katastr) of 1840 shows many changes in comparison with the Josephinian Cadastre of 1756 and so-called Theresian Cadastre of 1719.

After the abolishing of serfdom in 1848 the parcelling of the land continued and many small and medium size farms originated. This process is often called "cottage colonization". The pattern of fields was changed, being characterized by a strikingly regular scheme, with even, prevalently parallel land strips. When the parcelling occurred in a chain village, the "Hufen"[11] were usually divided crosswise in short lots.

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11 Hufe = virgate, a varying measure of land.

The parcelling of fields was well suited for the form of the three-field system, wherein the field rotation was:- fallow for the first year, winter crop for the second year and spring crop for the third year.

With the introduction of new crops in the 18th and 19th centuries such as potatoes, sugar beet and clover, demand of more efficient farming increased and some steps were taken in better selection of crop and more rational rotation. The scattering of the pieces of land of one owner over the area of the village fields ("Gemengelage") was not considered desirable, because it did not permit the efficient utilization of the land. As the result of this new evolution in the agricultural economy the consolidation of the fields took place. The inhabitants of a village agreed to unite all the cultivated fields in the community into a whole and then re-distribute the land in order to give the farmers contiguous fields, when possible, near their homesteads.

ii) Consolidation of the fields. - By this new arrangement of the fields (which is called "Einödeflur" in German, "plužina scelená" in Czech), the former field boundaries disappeared being plowed over. The former land holding of every farming unit was newly measured by land surveyors, and every farmer received land divided only in one or a few larger pieces. These consolidated blocks of fields had a rectangular form with the ratio of the length to the width ranging from 3:1 to 9:1 - a form which corresponded most favourably to the intensive farming system of the crop rotation.[12]

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12 F. Říkovský, op. cit., p. 68.

These consolidated fields often resemble the "Blockflur", but can be distinguished from it by the extreme regularity of the field blocks. With these agricultural changes the new arrangements of field roads occurred and many farm houses were transferred from the village in the middle of the newly consolidated fields. Thus, many isolated farmsteads and hamlets originated as a result of this reform.

This process of consolidation of the fields or "Kommassation" started in Bohemia and Moravia-Silesia in the 19th century under the Habsburg government and continued, after the detachment of Czechoslovakia from Austria during the period between 1918-1939.

iii) Changes in the village of Dobré, introduced by the agricultural reforms[13]. - By the example of the village of Dobré, it is possible to follow the changes, which this settlement underwent during the last eight centuries. The village, situated at the piedmont of Orlické Hory (Sheet 3856, SE corner), was established in the period of 1157-1250. At that time the new techniques of the German colonists influenced the forms of rural settlements of Czech lands. According to the urbarium of 1542, twenty-five houses were arranged around a free, spindle-shaped green. The fields radiated in fanlike strips behind the backyards of the holdings. According to the tax-roll of 1654 the village had 32 houses with 242 inhabitants. The village green was still not built over.

After the parcelling, which took place in the 18th century, the

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12 F. Říkovský, op. cit., p. 68.

larger farms were divided and new houses were built on the village green. In 1787 Dobré had already 67 houses. The parcelling continued and according to the Cadastre of 1840 the village proper had 88 houses and three new small villages developed on the village fields as a result of dividing larger farming units among the members of their families. The names of these villages are: Chmeliště, Petrovice and Živina. In 1930 Dobré had 146 houses and 654 inhabitants. On the "Spezialkarte" which dates from 1938, Dobré was classified as a chain village less typical, and the three above-mentioned, adjacent villages as hamlets.

Author Doberský also describes the newest changes, which took place after World War II, especially in 1949, when the Communist Party took over power in Czechoslovakia, as shown in the following quotation:

> In 1949 a unified agricultural co-operative was formed here, (...) and it was decided to sow in common on the basis of an economico-technical arrangement of the soil, when after plowing over the landmarks eight blocks with common sowing were formed.[14]

The drawings which accompany his article show that the division of the fields consequently changed into a completely different pattern, but the shape of the plan of the village was not affected.

3. Growth and Changes of Rural Settlements.

After a discussion how the agricultural reforms influenced the forms of rural settlements, it seems to be necessary to mention how the possibilities of providing for expanding population varied according

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14 J. Doberský, op. cit., p. 167.

to the type of the village. A village is a unit, developed on a certain economic-social basis, which influences the possibility of its growth. This possibility depends on the occupation of the village inhabitants, the economic structure of the settlement and the legal position of the land holders.

In rural settlements, the limited territory of village fields admits only a certain number of agricultural establishments, the individual arrangement of which forms different shapes of the ground plan of these settlements.

If during its evolution the agricultural character of a village is preserved, the possibilities of radical changes of its ground plan are only limited. Nevertheless, the changes take place due to the growth of the population and changing economic and political conditions. The previously discussed "cottage colonization", for example, changed the original pattern of rural settlements considerably.

The building of new houses in the village depends largely on the extent of the space available for the expansion. This can be found either on the village green or on the periphery of the rural settlement. Therefore, the changes of the original ground plans vary greatly according to the different types of settlements.

In the case of street villages, the new homesteads could have been placed along the axis of the street and also along the "back lane"[15]

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15 H. Thorpe, "The Green Village as a Distinctive Form of Settlement on the North European Plain", Bulletin de la Société Belge d'Etudes Géographiques, Vol. 30, No. 1, 1961, p. 122-124.

or along any road entering the village at right angles to the main street. As this process continued, the original street village often assumed the form of a fork and ladder-type.

The villages with loose or dispersed ground plan - chain villages or loosely built row villages - offered the opportunity to build up the empty spaces between the original homesteads. On the contrary, when the nucleated villages were faced with the problem of accommodating new houses, some problems arose. Clearly defined, circular, spindle-type or square shaped village greens imposed certain restrictions on the expansion of a village. The inhabitants of the houses which fronted the green were not too anxious to share their privileged position with the newcomers. In spite of this, some settlements permitted new houses to be built on the village green, as mentioned for the village of Dobré, or enlarged the square itself, which was not an easy task, because of the rebuilding involved. Much more often peripheral development took place.

4. Urbanization and Industrialization of Czech Lands.

The village industries of old times were nearly without influence on the normal growth of villages and changes of their types. To the contrary, the development of urban and industrial life in medieval and modern times had a more substantial influence, by largely changing the way of life of many rural settlements. Many farmers and their family members became industrial workers and farming was only their part-time occupation.

a) Urbanization. - On the densely populated plains of the Labe and Morava basins, settled since prehistoric times, numerous large old settlements fused into centres of trade and commercial activities. These were the nuclei of old Czech evolutional towns which were developed long before the foundation of those introduced by German colonization.

Old centres of the mining and processing of silver, gold and iron on the territory of Bohemia[16] were also well known to medieval traders prior to the arrival of German immigrants. Names such as Ruda (Czech expression for ore), Rudka, Rudice, Hamry (Czech expression for forge), which are often found in the area of this study, indicate the primarily mining function of these settlements.

With the increasing German immigration, starting in the 12th century, many new mining centres - sometimes fortified villages, but mainly towns - developed. German colonists, especially these from Saxony, brought with them new techniques for mining and processing the ores. As a result, in the early 13th century the Germans in Bohemian lands had almost a monopoly on mining as an occupation.

Since the interests of the German newcomers were mainly industrial and commercial, their colonization created a dense net of newly founded towns in Bohemia and Moravia-Silesia. Their inhabitants controlled their affairs according to the "ius Teutonicum", which was different from the customary law of the Czechs and later became the basis

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16 Silver was mainly mined at Příbram in central Bohemia, gold at Jílové near Praha and in Kašperské Hory on the inner slopes of Šumava Mountains, iron near Praha and Beroun, in central Bohemia.

of the commercial law of Czech lands. The towns began to grow in influence and importance, especially when encouraged by the Czech kings of the Přemyslid dynasty, who often used the German towns people to strengthen their authority against the Czech aristocracy.

The urbanization of Bohemian lands stimulated the process of clearing the woodland for new settlements and farming. New types of rural settlements developed in the outer rim of Bohemia and Moravia-Silesia, which was penetrated by new settlers along the mountainous and river valleys. This complicated process of settlement development on the Czech-German frontier during the medieval times was previously discussed in the paragraph on German colonization (Chapter II).

b) Pre-industrialization from 15th - 18th century. - Before the Battle of White Mountain the Kingdom of Bohemia was one of the richest countries in Central Europe. In the 15th century the agricultural - industrial character of Bohemia and Moravia-Silesia began to take form.[17] Around the year 1500 the glass vessels were manufactured on the inner slopes of Šumava and Krkonoše Mountains, where arenaceous quartz is found. Bohemian glass soon gained a fine reputation throughout Europe as did the porcelain and china of the Karlovy Vary.

In spite of the devastation which resulted from the Thirty Years' War, the Czech lands remained the richest source of revenue which the Habsburg dynasty possessed in the 17th and 18th centuries. This income was used to promote the dynastic ambitions in Italy and to reconquer

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17 H. Wanklyn, Czechoslovakia, London, Philip, 1954, p. 262.

Hungary from the Turks. The immense revenue needed for these purposes was raised by heavy financial oppression of the Czechs. It also led, through a series of royal patents, to the complete enserfment of Czech peasants towards the end of the 17th century.

The conditions which forced Maria Theresa and Joseph II to the agricultural reforms and the influence of these on the rural settlements of Bohemia and Moravia-Silesia were previously discussed. Beside these reforms, the two monarchs also encouraged commerce and industry.

Joseph II abolished all internal tolls in the Bohemian and Austrian lands and tried, although without great success, to create a customs unit out of all Czech, Austrian and Hungarian lands. The glass and porcelain industries were energetically developed and simultaneously textile manufactures, especially in the peripheral regions of Czech lands, began to grow rapidly. Consequently, the material prosperity of Bohemia and Moravia-Silesia considerably increased.

c) The industrial growth in the 19th century. - Toward the end of the 19th century the industrial evolution of Czech lands, as elsewhere in Central and Western Europe, entered upon a new phase. The importance of some old mining towns, for example of Kutná Hora, had greatly decayed by that time, but many old traditional enterprises assumed new, pronounced importance and numerous new industries developed.

The concentration of industrial enterprises in Bohemia and Moravia-Silesia under the Austro-Hungarian rule was striking; these countries acquired by now a pronounced industrial-agricultural

character. The heavy, chemical, textile, glass and china industries, as well as the agricultural industry, grew and expanded tremendously. This was caused by the tradition of skilled labour and a variety of easily accessible raw materials. The rich coal and lignite fields of Bohemia and Moravia-Silesia and the traditional iron mining were the basis for the industrial prosperity of Czech lands in modern history. The industrial and economic activity of modern times was also actively supported by the growth of the railways and modern traffic routes.

d) Industrial development after the First World War. - The industrial development of Bohemia and Moravia-Silesia after 1918 was extremely interesting. The Czechs had to adapt their traditional economy to a new state - Czechoslovakia - and to many other changes, which occurred in Central Europe. Nevertheless, the industrial economy was re-adjusted and balanced upon a basis of vigorous export trade. Textile, porcelain and glass manufactures suffered certain losses, but new features of industries were introduced. The automobile, electric equipment, leather and shoe industries (Thomas Bata) marked rapid and vigorous growth. The agricultural industry also occupied an important place in the new state as a result of highly advanced agriculture; this was organized on the basis of private enterprise, the bulk of the agricultural establishments being formed mainly by small and medium-sized farms (up to 50 acres).

e) Influence of the new economic development on the evolution of the villages. - The invasion of industrialization and the dense network of modern communications disturbed the former balanced evolution of

the towns much more than that of the villages.

The changes which were induced by these new factors are remarkable only in these rural settlements which have been under their direct influence, i.e., in the neighbourhood of an industrial centre or situated directly on the new traffic line.

Nevertheless, in these cases the changes of the ground plan were greatly conditioned by the original type of the settlement; in some villages the new houses were erected on the village green, but much more often the growth of the village occurred on the periphery of the settlement.

While the value of the arable land as such was depreciating, its potential value as a future construction site was largely increasing. This also led to the gradual division of the fields and their annexation as new building lots to the original ground plan of villages, which in this way slowly acquired the characteristics of future suburbs.

It needs to be stressed again that the rural settlements, remote from industrial centres, were surprisingly little disturbed; their ground plans preserved the original form, untouched by radical changes.

5. Recent Political Events and Their Effect on Rural Settlements in Bohemia and Moravia-Silesia.[18]

a) Political development 1918-1948. - The land reform which followed the formation of the republic in 1918, took land from the large

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18 Data taken from W. Horbaly, Agricultural Conditions in Czechoslovakia, 1950, The University of Chicago, Illinois, Department of Geography, 1951, 104 p.

land owners and divided it into smaller holdings; this process was not yet fully completed by the year 1938.

The history of the Czech nation, and consequently of Czech farming, since 1938 is marked by many sad events. It began with the seizure of the Czech farming properties in the borderlands, ceded to Germany by the Munich agreement and the forcible evacuation of the Czech owners in favor of German settlers. After March 1939, when Bohemia and Moravia-Silesia were occupied by Germans, the farms affected in this manner were those in the bordering highlands, but also in the plains of southern Moravia. The German exploitation of Czech farming land and forests was ruthless.

In 1945, following the war, another land reform bill was implemented. The land and property of Germans, Hungarians and collaborators were confiscated and redistributed regardless of the size of the holdings. The newly formed farm units were mainly 20-30 acres in size and mostly in contiguous parcels; the size of farms in border regions of the Czechoslovak state, was usually much larger.

It is certain that the new farming policy was faced with many problems. Not only the restoration of soil, crop yields and livestock, but also the large-scale population movement, which followed the evacuation of the former German minority from Czechoslovakia. The outward movement of Czech farmers to the border regions was naturally felt on the farms in the central lowlands where the acute labour shortage occurred. In spite of this, many settlements in the former "Sudetenland" remained partly unoccupied and many scattered farmsteads were

abandoned.

The communist regime ascended to power in Czechoslovakia in February 1948 and agriculture again underwent many changes in its political, economic and social structure. In February, 1950, the Communist Party presented the plan for the formation of Unified Agricultural Cooperatives (collectives), (Jednotná Zemědělská Družstva), State Farms (sovkhozes) and State Machinery Stations.

This meant the elimination of the larger and upper-middle class farmers throughout the republic and collectivization of small and middle sized farms. The large estates had all been liquidated previously by the land reform, immediately following the Second World War. Resistance against the forming of collevtive farms was great; however, since it required only five members to start a Unified Agricultural Cooperative, these were initiated everywhere even in the face of popular opposition. In 1962 collectivization affected over 90 percent of the arable land.[19] The regime tries to eliminate even the small remainder of private farming, which now is mostly limited to small plots of collective members, although these small private units provide a considerable share of the marketed agricultural products.

b) Changes of rural settlements after collectivization. - Enough material is not available to examine to what degree the political development after the Second World War affected the types of village ground plans. However, it can be assumed that the political events did not

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19 American Geographical Society, "Czechoslovakia", Focus, Vol. 12, No. 7, 1962, 5 p.

change the form of villages too much until the introduction of collectivization, when the over-all government planning and control took place.

J. Doberský[20] calls in his work for a building-up and reconstruction of the villages "in the spirit of new development of Czechoslovakia's economy". He points out the importance of the village ground plan and is of the opinion that for this reconstruction the rural settlements with a village green of any form, but especially the type of rundlings, are much more suitable than the street, or any elongated, villages. He proposes a type of regular village, with a large rounded or rectangular village green, where the parcels for the homesteads of all members of the collective would be the same size. In front of the houses, facing the village green, gardens are planned. In the centre of the village green, the public buildings, school, post office, club house, etc. would be built. The main road should be constructed along the village green in the front of the gardens as not to disturb the function of the village square. Playgrounds and swimming pool should also be placed in the vicinity of the village.

M. Blažek[21] describes the adjustment of settlements in the district of Toužim in the region of Karlovy Vary after 1945. He emphasizes that the district was characterized by relative rural overpopulation and

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20 J. Doberský, "Úkoly sídelního zeměpisu ve výstavbě naší nové vesnice", Sborník Československé Společnosti Zeměpisné, Vol. 57, 1953, p. 82-86.

21 M. Blažek, "Dosídlování Toužimska", Sborník Československé Společnosti Zeměpisné, Vol. 60, No. 4, 1955, p. 264-270.

no larger towns and industry. The settling of the district after 1945 started from the original distribution of the settlements, but a considerable number of houses owned by small agriculturalists and artisans remained unused. He proposes the selection of centres, which possess "the best conditions for the enlargement of their economic area and in which the mechanization of work can be fully applied".[22] Best suited for this purpose are the larger villages, which are better equipped with cultural and other amenities, and the villages near the towns. He concludes that the total number of villages has to be decreased and isolated dwellings have to be abandoned.

On the map of rural settlements presented in this study, the district of Toužim (Sheet 3950) is marked as a region of predominant rundlings, spindle-type, multistreet villages and some hamlets; north and west of Toužim the regions of row and chain villages are found.

It is not known to what degree the pattern of rural settlements of that district was changed. If the proposed changes, according to the above-mentioned plan took place, then the liquidation of some villages, especially the smaller ones, the concentration of the inhabitants and the formation of large units of agriculture, may be anticipated.

6. Joint Influence of Geographical and Social Factors on Rural Settlements.

Although site, type and distribution of rural settlements are to a certain extent influenced by the physiographic conditions, especially

22 M. Blažek, et al., op. cit., p. 270.

when all or nearly all factors necessary for the development of a settlement are present, they reflect to a large degree human selectivity from varied natural conditions.

The human element was capable of overcoming the unfavourable conditions, modifying its environment and adapting itself to varied geographical regions in respect of water supply, climate, vegetation cover and different land forms. Because of the variability of human needs, the relations between the natural factors and the variable human element were continually changing.

Many intriguing problems which surround the distribution, the origins of the village types and their associated field system may be explained by the aptitude of the people themselves and the way in which they were socially, economically and politically organized.

SUMMARY AND CONCLUSIONS

The complex pattern of the types of rural settlements and their distribution in Bohemia and Moravia-Silesia, the home of the Czechs, suggests that a complicated evolution of the habitation had taken place. From maps presented in this study some interesting conclusions can be derived.

The regions of western and central Bohemia, and those of central and southern Moravia, are mainly characterized by nucleated settlements, such as rundlings, street, multistreet, spindle, fork and ladder-type villages. These areas, marked by low rainfall, good soils and easy slope gradients, were very well suited to the rudimentary agricultural techniques of early settlers. Archaeological findings of different periods produce enough evidence to show that these regions, free of heavy woodlands, have been continuously settled since Neolithic times. The Slavic settlement of these areas was completed during the sixth century A.D.

In the bordering highlands of the Šumava, Krušné hory, Krkonoše, Jeseníky, White Carpathians and Javorníky Mountains, as well as in the Českomoravská vrchovina, chain villages, row villages and scattered farmsteads present the predominant types of rural settlements. These regions, also called areas of younger settlements, were colonized from the 12th century A.D. when settlers began to clear the dense forest for cultivation and grazing. These settlement types, with loose or even dispersed ground plan, are the results of habitation techniques brought to Czech countries by German colonists during the

latter part of the Middle Ages.

However, the typological picture of rural settlements in Bohemia and Moravia-Silesia does not show such unity everywhere. The nucleated and dispersed settlements are often found side by side in both, areas of old, and of young settlements. Areas of transitional types are found between the main regions of the agglomerated and dispersed settlements. These types are hamlets, which in Bohemia, especially, cover extensive areas.

A comparison of village types in the Czech lands with those of the neighbouring territories reveals a striking typological similarity. Regions of identical types extend from one territory into another, regardless of political boundaries. Only in part of Silesia near Krnov, does the state boundary coincide with the boundary of chain villages separating them from the Głubczyce and Otmuchów regions of the old nucleated settlements in Poland. Here they extend into the area of multistreet villages around Opava and Mor. Ostrava in Moravia-Silesia.

It must be remembered that the present typological pattern of rural settlements represents a considerable modification of earlier conditions. Several changes were due to the growth in population and to the influence of various political and economic factors. The original homesteads and hamlets occasionally grew into nucleated villages, although often the original street villages assumed fork and ladder-type forms. As a result of agricultural reforms in the 18th and 19th centuries, many nucleated villages broke up into small dispersed units which moved out into the middle of the fields. Some hamlets also

developed as a result of the industrialization of Czech lands in the 19th century.

Hence, it may be said that the types of rural settlements were strongly influenced by a number of geographical, historical and political factors; and these are responsible for the present complex typological picture of rural settlements and their distribution in Bohemia and Moravia-Silesia today.

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ABSTRACT OF

Types of Plans of Rural Settlements in Bohemia and Moravia-Silesia. A study in Human Geography[1]

This study surveys the types of rural settlements in Bohemia and Moravia-Silesia as well as in parts of the adjacent neighbouring territories. It uses the geometric-genetic method and considers the ground plan of the village, the system of side roads, the system of field divisions among owners, and the historical development of the settlement.

Based on the study of available literature and on a detailed analysis of topographic maps (1:75,000 and 1:25,000) covering the territory of Bohemia and Moravia-Silesia, seventeen different types of rural settlements are recognized which are divided into four groups:

Group I consists of rundlings, round, spindle-type, street, multistreet, fork and ladder-type villages. They are the "old settlements" which originated before 1200 A.D., prior to the German colonization, and are characterized by agglomerated houses and fields usually divided into several, repeatedly parcelled, blocks.

Group II includes different types of chain and row villages. They are characterized by a loose ground plan and very often by typical parallel sideroads which divide the fields belonging to each respective farmstead. In the terminology of settlement geography they belong to the

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1 G. Mizerovsky, M.A. thesis presented to the Institute of Geography of the University of Ottawa, Ontario, September 1963, x-159 p.

"young settlements", since they originated after 1200 A.D. as a result of new habitation techniques.

Group III is comprised of hamlets, a transitional form between the village and dispersed farmsteads.

Group IV includes scattered farmsteads, mainly found in the bordering highlands of Bohemia and Moravia-Silesia; and estates which represent an individual type of dispersed settlements and are found throughout the entire territory of the Czech lands.

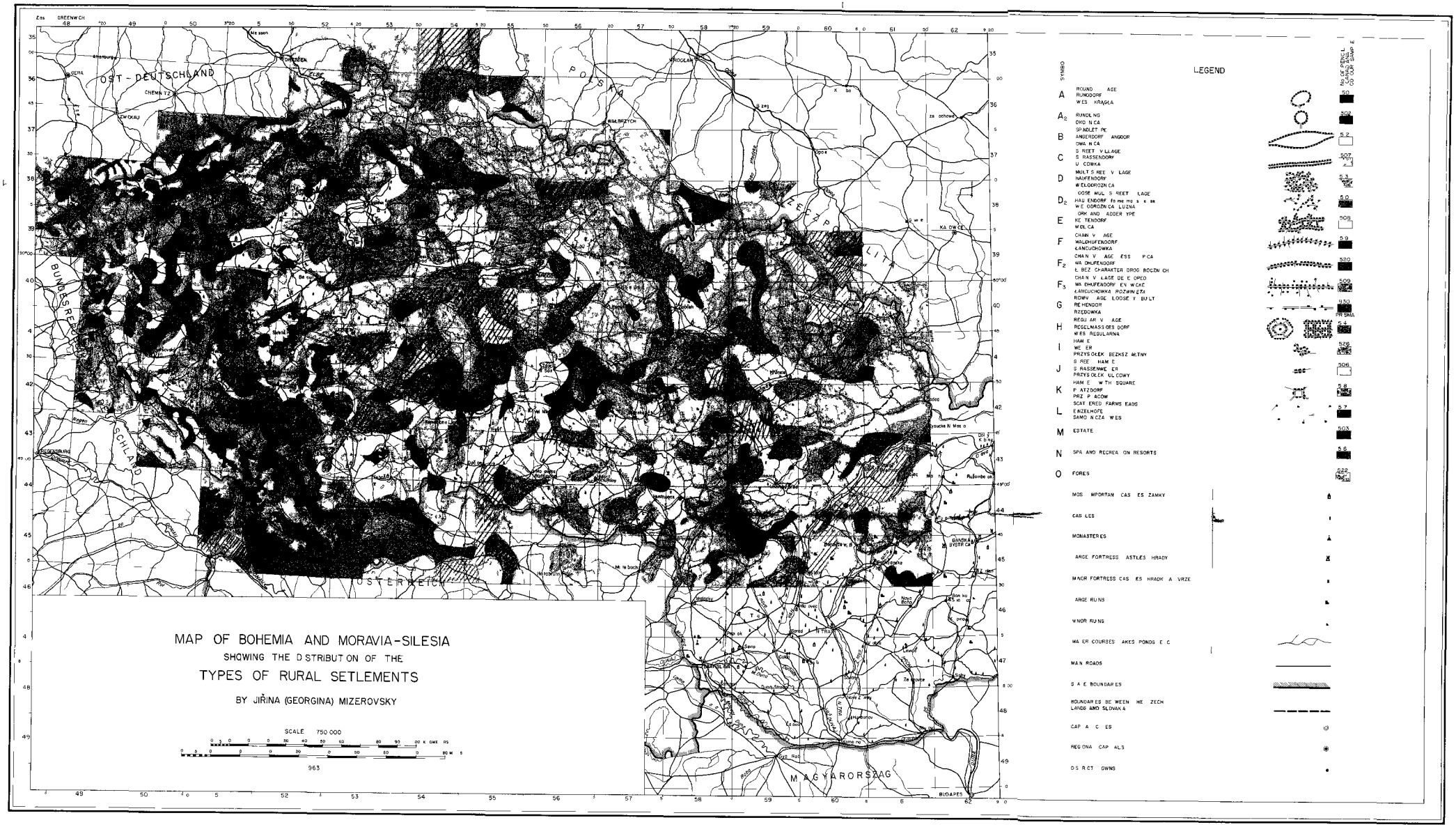
The distribution of the four groups of settlement types is represented by two maps of rural settlements: a detailed analytical map at a scale 1:750,000, and a more generalized map at a scale 1:2,000,000. Twelve additional maps showing the physical features and the areas of prehistoric and early historic settlements are also included.

The most significant areas on a regional basis are:

a) the regions of central and western Bohemia and of the Moravian basin where the settlements of Group I are the predominant types;

b) the regions of chain villages, row villages and scattered farmsteads of the bordering highlands of Bohemia and Moravia-Silesia.

Other parts of the territory show a considerable disunity of the typological picture, reflecting the complex social and historic processes of many epochs which influenced the evolution of rural settlements.



MAP OF BOHEMIA AND MORAVIA-SILESIA

SHOWING THE D STRIBUT ON OF THE

TYPES OF RURAL SETLEMENTS

BY JIŘINA (GEORGINA) MIZEROVSKY

SCALE 750 000

963

LEGEND

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C	S REET V LLAGE S RASSENDORF U CDWKA	507
D	MULT S REE V LAGE HAUFENDORF W ELODROZN CA	5 4
D_{10}	ODSE MUL S REET LAGE HAU ENDORF fo me mo s k as W E ODROZN CA LUZNA	5 0
E	ORF AND ADDER YPE KE TENDORF W DL CA	508
F	CHAN V AGE WALDHUFENDORF ŁAŃCUCHÓWKA	5 9
F_2	CHAN V AGE ESS PCA WA DHUFENDORF L BEZ CHARAKTER DROG BOCZN CH	520
F_3	CHAN V LAGE DE E OPED WA DHUFENDORF EN W CKE ŁAŃCUCHÓWKA ROZWINIĘTA	509
G	ROWV AGE LOOSE Y BU LT RE HENDOR RZĘDÓWKA	530 PR SMA
H	REGU AR V AGE REGELMASSGES DORF W ES REGULARNA	5 3
I	HAM E WE ER PRZYSŁUPEK BEZKSZ AŁTNY	526
J	S REE HAM E S RASSENWE ER PRZYSŁUPEK UL COWY	506
K	HAM E W TH SQUARE P ATZDORF PRZ P ACOW	5 8
L	SCAT ERED FARMS EADS E NZELHOFE SAMO N CZA WES	5 7
M	ESTATE	503
N	SPA AND RECREA ON RESORTS	5 5
O	FORES	522

MOS MPORTAN CAS ES ZAMKY

CAS LES

MONASTERES

ARGE FORTRESS ASTLES HRADY

MNOR FORTRESS CAS ES HRADK A VRZE

ARGE RUNS

MNOR RUNS

WA ER COURSES AKES PONDS E C

MA N ROADS

S A E BOUNDA R ES

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