THE SITUATION OF ARCHAEOLOGICAL RESEARCH OF MIDDLE AGE. AGRICULTURAL SETTLEMENTS IN THE TERRITORY OF SLOVAKIA

Dušan ČAPLOVIČ – Alojz HABOVŠTIAK

The tradition of archaeological investigation of open medieval settlements of agricultural nature from the end of the early Middle Age, the top and the late Middle Age (9th-15th cent.) in the territory of Slovakia counts no more than 40 years. From the second half of the 1950's onwards, thematically-aimed investigations of open rural settlements have also been carried out. The archaeological investigation of the "archaeology of the Middle Age" was aimed mostly at revealing rural feudal seats, churches and cemeteries. Only marginal attention was paid to dwellings and to the structure and disposition of villages. As examples we can mention the investigations carried out in the lost medieval village of Zalužany in the cadastre of Nemešany, the Spiš region (Polla 1962) and Hurbanovo - Bohatá I. in the south - western Slovakia (Habovštiak 1961). This methodical attitude to field investigation still survives. The interest of archaeologists is aimed mostly at investigation of remnants left after architectonic solitaires or complexes. Among these belong the investigations of the lost village of Miloj in the cadastre of Spišský Hrušov (Polla 1966), Poltár (Hrubec 1971), Svinica near Košice (Čaplovič, D. 1978; 1981), Chľaba near Štúrovo (Hanuliak 1989), Šamorín -Šamot near Bratislava (Hanuliak 1982, 100-101) and Nitrianska Blatnica (Ruttkay, A. 1977). The investigation of agrarian settlements has often formed and still formes only a marginal component in thematic investigation of primeval and early historical settlement. Such were the investigations carried out in the cadastres of Hurbanovo I. - Abadomb (Čaplovič, P. 1965), Chotín (Paulík - Rejholec 1958), Voderady -Slovenská Nová Ves (Mináč 1980) and Komjatice (Točík 1981). The exceptions in the recent period were the investigation of an upland settlement - the lost village of Pavlany - Krigov in the Spiš region (Čaplovič, D. -Javorský 1990, 99-103) and that of a lowland settlement in Bajč, Komárno dist. (Ruttkay, M. 1989; Cheben -Ruttkay, M. 1995). For the present time the decisive information on the layout of medieval agrarian settlements, on the nature of individual dwellings and outbuildings and the life of medieval farmer was brought by the investigations of larger revealed areas situated in the cadastres of the following municipalities: Bajč, Komárno dist. (Fig. 1), Chľaba, Nové Zámky dist., Pavľany - Krigov, Spišská Nová Ves dist. and partly also in Svinica, Košice - Surroundings dist.

As early as the period of the Great Moravian Empire, from the 9th century A.D., the settlements of agrarian character were predominantly concentrated in low and flat areas near water courses or sources of water, as well as on fertile soils. The concentration of settlements can be found not only in the proximity of natural resources, but also near economical and administrative centres like Bratislava, Nitra, Starý Tekov, in the regions of the central course of the river Váh, Košice, Zemplín, Brekov and Michalovce. Finally, the same can be found in some areas of the Central Spiš and Šariš regions, situated further to the north.

During the 9th and 10th centuries it is possible to divide the agrarian settlements according to the nature of their built-up areas to scattered (dispersed) and closed (compact). In the second case the settlements consist of several farms situated in close proximity. The layout of the open settlements of this type was to a considerable extent determined by the morphology of the terrain and by geographical and hydrological conditions. At more developed settlement - not exclusively at that of an agrarian nature - it is possible to see the regular disposition of dwellings in one row, e.g. in Bojnice - Dolné lány, Prievidza dist. (Bialeková 1981).

We mostly speak about so called aggregated settlements, where individual chronologically accordant dwellings are placed irregularly, for example the settlements in Hnojné (Šiška 1964) and Blatné Remety in eastern Slovakia (Budinský-Krička unpublished) and Komjatice in the region of the Nitra river in western Slovakia (Točík 1981).

The dwellings were semi-underground houses of quadrangle layout, post structure and wattle circumferential walls filled with clay. The most typical was a double-slope roof based on two central supporting posts. There probably also existed very simple dwellings whose creation and existence were determined by unstable hydrological situation, frequent drenching and floods, climatic conditions and by the early medieval character of the agriculture. It is difficult to identify them in the soil horizons and in the original subsoil of the early medieval level. In the regions of Slovakia situated further to the north and to the east there are irregular layouts of "dug-in" dwellings known in one of the following municipalities: Spišská Nová Ves, Hrabušice - Spiš reg., Nemcovce - Šariš reg., Blatné Remety, Dvorianky and Trebišov, Zemplín reg. These probably do not represent the traces of dug-out dwellings or semi-underground houses but the remnants of simple ground level dwellings where the traces of overground structural elements are no more discernible today. This type of dwelling is typical by remnants of fireplaces and the above-mentioned irregular dug-out part.

From Slovakia there are known mostly agrarian settlements of lowland character, especially from the period of incorporation of the territory into the Hungarian State and consolidation thereof during the 11th up to the first half of the 13th century. Settlements of upland character in mountainous areas come mostly from the period when the process of settlement in the regions situated further to the north came to its end, i.e. from the second half of the 13th up to the 15th century. The development in a relatively longer time horizon is recorded from the 9th to the 11th century in Bajč, from the end of the 11th to the first half of the 15th century in Svinica and from the 9th to the 16th century with a replacement of settlement in Chlaba (Fig. 2). A. Ruttkay worked out a cartographic picture of the layout of settlements from the times of the decline of the Great Moravian Empire up to the half of the 13th century from historical and geographical points of view. Since this period it is possible to follow the gradual transformation of settlement units into an upper form of settlement- medieval town. A new relationship is being formed. The relationship of open settlements of agrarian character in economic background to fortified sites or territorial and administrative centres is being transformed into the relationship of these settlements to market towns and later to medieval towns and also to castles and monasteries in the 13th-15th centuries. The number of settlements in this period increased from about 2300 to approximately 3500-3800 units (Ruttkay, A. 1985). It is the period of division of settlements, so called disintegration, with the above-mentioned replacement of settlement - completion of settlement of higher, mountainous areas (Fig. 3).

Up to the 14th century, especially scattered forms of settlements are known. These consisted of groups of houses situated in a larger area within the settlement's arable land. Irregular free-standing groups or cluster layout of dwellings throughout large areas respectively, were predominant (Svinica, Voderady - Slovenská Nová Ves, Nitrianska Blatnica, Chľaba).

In southern Slovakia in the microregion of the municipalities of Búč, Komárno dist. and Obid, Nové Zámky dist. two types of agrarian settlements from the period of the 11th-14th centuries were discovered. The first ones were scattered settlements - 9 small settlements from the 11th-12th centuries, lost in the 13th century and the second ones were the settlements which had a church built on a dominant place for several rural settlements (Kravany, Obid and Mužla). These were founded in the 12th-13th centuries. We follow the process which naturally led to the extinction of the scattered settlements (Hanuliak - Kuzma 1983, 394-395). In more mountainous areas situated further to the north, scattered settlements can be found as late as the 13th-14th centuries. A typical model of the development of rural settlement is shown in the microregion of the cadastre of Dvorianky (Čaplovič, D. 1989, 288). It consisted of a gradual replacement of settlement from the 9th century to a new position in the 11th-12th centuries and with further replacement in the 13th century into the lost medieval village of Kinčeš, known from written records. At some settlements from the 11th-12th centuries in the cadastre of Voderady - Slovenská Nová Ves there is a tendency to form a leading front of four or five houses.

Investigated rural setlements of later origin, dated back to the 13th-15th centuries, already show regular forms of dwellings, for example the lost village of Krigov in the cadastre of Pavlany, the Spiš region, where remnants of one-row layout of houses along the road were discerned (Fig. 4).

Classical types of dwellings in the agrarian rural environment are semi-underground houses of regular square layout with post or timber overground structure mostly dated back to the 10th-13th centuries, for example Voderady - Slovenská Nová Ves, Chotín, Bešeňov, Bohatá, Bielovce (Fusek 1986), Spišská Nová Ves, Hrabušice (Čaplovič, D. - Javorský 1990, 78, 87-92), Šarišské Michalany (Šiška - Hajnalová 1983). The

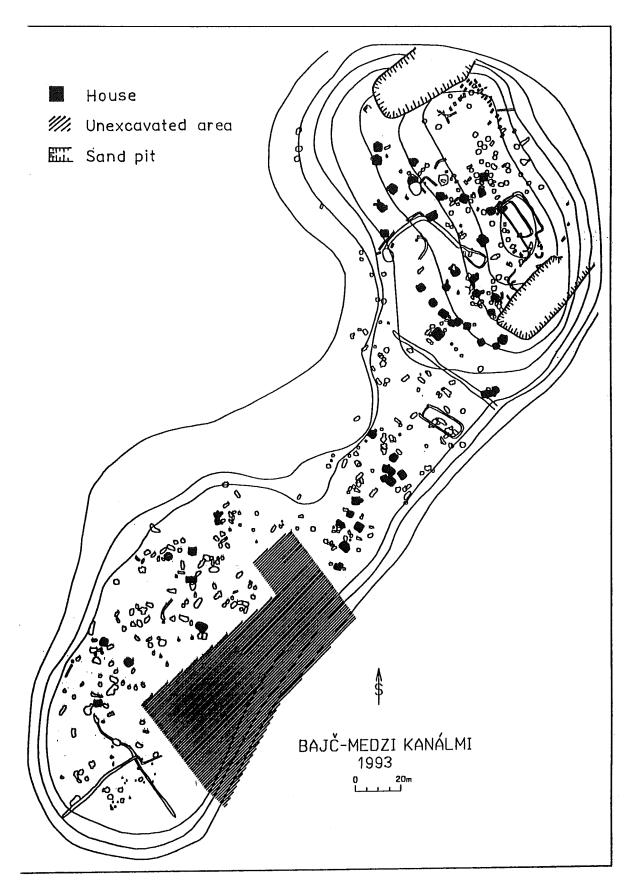


Fig. 1. Bajč. A medieval agrarian site.

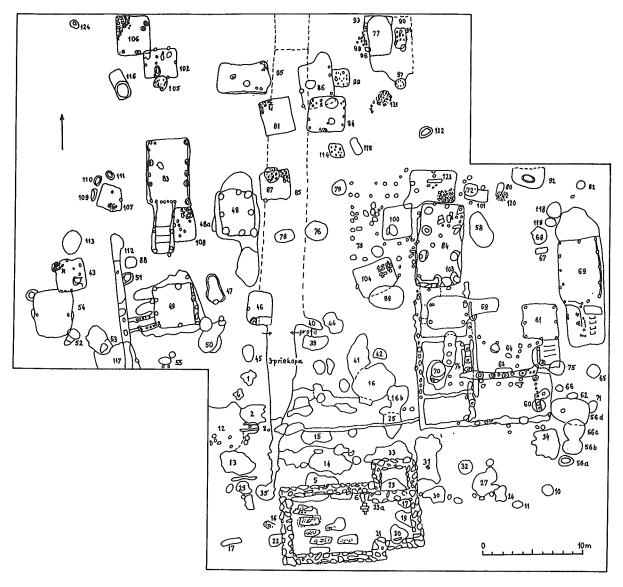


Fig. 2. Chlaba. A medieval site.

dug-out semi-underground houses of rectangular or irregular oval layout had ground level timber structure. In northern regions of Slovakia as well as in eastern Slovakia these types of dwellings are used for the longest time (Pavlany - Krigov, Svinica). Another frequently used type of dwelling in the medieval rural environment were ground level houses with stone underpinning (Nitrianska Blatnica, Pavlany - Krigov, and Spišský Hrušov - Miloj). Among exceptional objects belong the layouts of dwellings from the cadastre of Šamorín - Šamot, dated back to the second half of the 14th-15th centuries (Hanuliak - Zábojník 1980, 193-201). These were light ground level dwellings with conical roof of the tent type which allow us to presume that they were seasonally inhabited even at the end of the top and at the beginning of the late Middle Age. In the rural environment the one-roomed types of dwellings survived for the longest time. The oldest proof of the articulation of the layout of dwellings can be seen in Nitrianska Blatnica. During the 12th century a small room with a mill was added to the ground level timber building.

The transition from one-roomed to multi-roomed dwellings is most markedly visible during the 14th century. From the end of the 13th century however, it is possible to see a new functional element - cellared storage room in Chlaba ($Fig.\ 2$). The best information on the internal disposition and genesis of multi-roomed ground level dwellings with timber structure comes to us from the lost village of Krigov from the 14th-15th centuries in the Spiš region. Typologically there can be discerned a one-roomed, a two-roomed and a multi-roomed house with a stone underpinning. In enclosed yards there were also outbuildings and stone wells ($Fig.\ 4$).

Many medieval agricultural settlements in Slovakia were deserted. The archaeological investigations brought until now 107 lokalities with deserted villages (Fig. 5; Habovštiak 1994, 145). Many of them are uknown in written sources. That is why the contribution of archaeology in the study of the desertion of habitations is fundamental. But to gain the total picture of the course and extent of lost villages, it is necessary to search both kinds of sources - archaeological and historical.

As to investigating the causes for the abandonment of villages, also the science of history can be decisive. For Slovakia it means that especially economic-social factors must be taken into consideration (disintegration and destruction of allodial farming in the 12th and 13th centuries), corrections and changes of structure in the settlements and the concentration of people in the towns (13th-14th centuries), feudal strifes and local wars (13th-17th centuries), unbearable oppression of the people by feudal lords, wars, like the invasion of the Tartars and the wars with the Turks, natural calamities and cholera epidemics (*Habovštiak 1994*, 153).

During the 13th century heavy plough gradually became to be used more and more frequently, which is proved by archaeological finds. The finds of furrows demonstrate the character of medieval fields. They are known at the lost medieval village of Barc - in Tehla, Levice dist. (*Habovštiak 1974*), Nitrianska Blatnica (*Ruttkay, A. 1977*) and Kráľovce - Krnišov, Zvolen dist. where the terrasse fields are known (*Bátora 1977*).

Palaeobotanical analyses of samples of grain, found at the excavations prove that out of cereals, wheat (Triticum sativum), club wheat (Triticum compactum), six-row barley (Hordeum vulgare), two-row barley (Hordeum distichon), rye (Secale cereale), oats (Avena sativa) and millet (Panicum miliaceum) were grown. Hemp (Cannabis sativa), lentil and garden pea (Pisum sativum) were also found in Svinica (Hajnalová 1987).

Agricultural products were stored under simple sheds or in storage holes so called granaries. In Spišská Nová Ves the remnants of wooden planking and iron fittings of a granary roof door were preserved. Hand mills are also frequently found. Different mill stones were kept, impact mills and hand mills were used. Bread ovens were placed outside the dwellings (Svinica, Komjatice, Chľaba). They were also used for drying fruit, fish and other foodstuffs.

At the discovery places from south-western Slovakia (from the 14th century) fruit-growing was documented (*Hajnalová 1987*): apple (*Malus domestica*), pear, plum (*Prunus domestica*), peach (*Persica vulgaris*), cherry, walnut (*Juglans regia*) and wine grape (*Vitis vinifera*).

Analyses of cinders from dwellings in Svinica document that for building overground parts of houses and supporting structures deciduous trees were used: common hornbeam (Carpinus betulus), oak, maple and beech (Fagus silvatica), while linden, common spruce (Picea abies), oak and wood of different coniferous trees was used for heating. In the lost village of Krigov the palaeobotanical analyses of the filling from medieval wells dated back to the end of the 14th century and to the 15th century reveal a wide assortment of wood species and meadow and farm plants that were grown here in relatively extreme positions - in the ele-

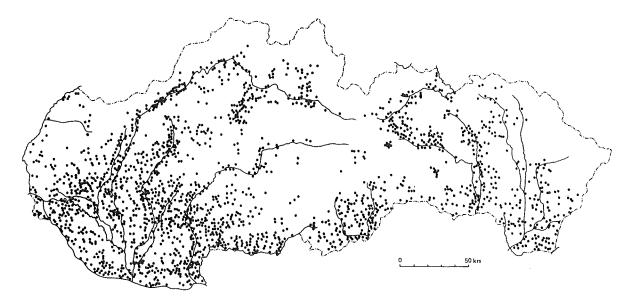


Fig. 3. Settlement of Slovak territory in the 10th - half of the 13th cent. Sites are evidenced by written or material sources. (Worked-out after Ruttkay, A. - Żuk-Olszewski, J.)

vation of 930 meters (3051 ft) above sea level. They were mostly blackthorn or plum, apple or pear, wild cherry (*Prunus avium*), elder (*Sambucus nigra*), blackberry (*Rubus fruticosus*) and raspberry (*Rubus idaeus*). Of trees mostly birch, European silver fir (*Abies alba*) and elm were used. Among farm plants carrot (*Daucus carota subsp. sativus*), different kinds of grasses and also garlic and flax were identified (*Hajnalová 1987*).

The last, but by no means least, important type of information provided by archaeological exavation is the large number of different kinds of everyday use objects. These give us a much better understanding of the life and culture of the inhabitants. Agricultural utensils and their various parts are found relatively rarely. There are symmetrical or asymmetrical plougshares, coulters, the iron parts of harrows, iron edges of wooden spades, hoes and sickle blades. There is some evidence of wine-growing in the form of special knives used originally in harvesting grapes. Broken sherds of medieval pottery form the majority of the finds.

In areas of some medieval villages metallurgy was also practised. At the lokality Gemerský Sad - Somkút, Rožňava dist., at the place of deserted medieval village from the 11th-16th century two iron - melting workshops with relatively well preserved stack furnaces, dated in 11th-12th centuries, in which iron was extracted directly from ore (Füryová et al. 1991, 142-143) were discovered. The rests of similar workshops were also uncovered in the area of agricultural settlement from the 9th-12th centuries in Komjatice-Blatné (Točík 1981).

Iron-slag and the remains of furnaces are found in most of medieval villages, indicating the site of a smithy. The smith's products are commonly found at every excavation in the area of medieval village, and include hinges, locks, keys, structural or building ironwork etc.

The names of some villages suggest that they may have been engaged in some kind of special trade, the main source of their prosperity being handicrafts rather than agriculture (Kučera 1974, 252).

The present results of this archaeological investigation were summarized in A. Habovštiak's monograph (Habovštiak 1985) and study (Čaplovič, D. et al. 1985). They represent the current state of our knowledge which is being gradually widened by partial information provided by the studies on the structure of rural settlement in the mezzoregions of Slovakia, medieval village house, economic background and the life of medieval farmer. The period of early Middle Age (9th-11th cent.) in lowland environment will be presented by publishing the results of the above-mentioned investigations in Bajč and on the lower course of the Žitava

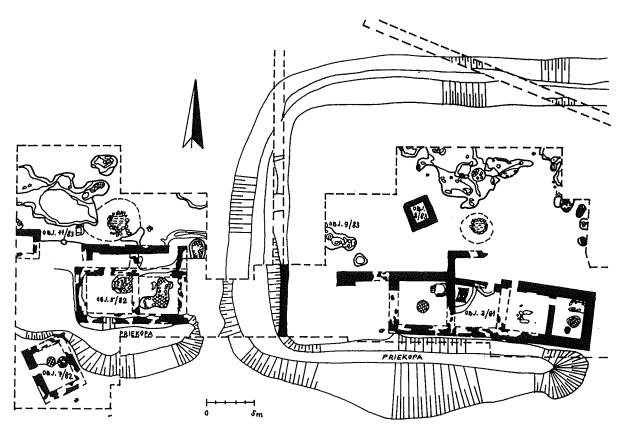


Fig. 4. Pavlany-Krigov. Groundplans of dwellings in a medieval village.

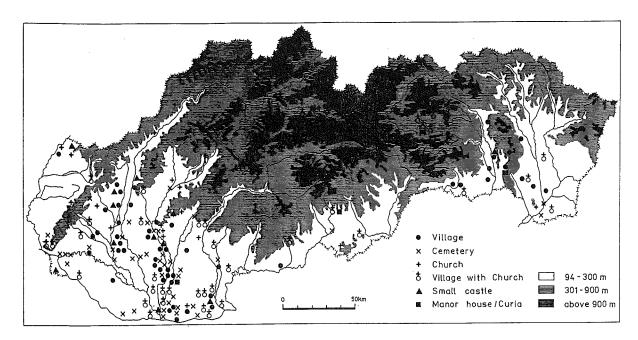


Fig. 5. Archaeological sites of medieval rural settlement in Slovakia.

river, while the period of the top and the beginning of late Middle Age (14th-15th cent.) in upland (mountainous) environment will be presented by publishing the results of the investigation in the lost medieval village of Krigov in Spiš. From the point of view of the future field investigation, our attention should be paid to those microregions, where it is possible to date at least the extinction of a medieval village with a historically shorter period of existence. As an example we can mention the investigation that is being prepared in the settlement on the central course of the Nitra river in Branč - Veľká Ves which ceased to exist forcibly after fire during the 15th century (Ruttkay, M. et al. 1994).

Archaeological investigation has already started to document the settlement of open micro - mezzo - macroregions, which must precede thematically-oriented field investigation, in this case the investigation aimed at agrarian village. It requires an interdisciplinary method of investigation with maximum usage not only of social sciences, but of natural and technical sciences as well. It is also important to observe the vertical and horizontal structurization of studies of the history of medieval agriculture in the period from the 6th up to the 15th-16th centuries.

References

Bátora, J. 1977: Stredoveké polia v Kráľovciach-Krnišove — Fund mittelalterlicher Felder in Kráľovce-Krnišov. Archeologické výskumy a nálezy na Slovensku v roku 1976. Nitra, 46.

Bialeková, D. 1981: Slovanské sídliská v Bojniciach — Slawische Siedlungen in Bojnice, Študijné zvesti Archeologického ústavu SAV 19.5-35.

Budinský-Krička, V. 1988: Slovanské sídlisko v Nemcovciach — Slawische Siedlung in Nemcovce, Študijné zvesti Archeologického ústavu SAV 24, 67-95.

Čaplovič, D. 1978: Archeologický výskum zaniknutej stredovekej dediny vo Svinici, okres Košice-vidiek — Archäologische Untersuchung der mittelalterlichen Dorfwüstung in Svinica, Bezirk Košice-Land, Archaeologia historica 3, Brno, 19-29.

— 1981: Stredoveká dedina vo Svinici a jej význam pre poznanie stredovekého dedinského osídlenia na východnom Slovensku — Das mittelalterliche Dorf in Svinica, Bezirk Košice-Land, und seine Bedeutung für die Erforschung der mittelalterlichen ländlichen Besiedlung in der Ostslowakei, Archaeologia historica 6, Brno, 499-504.

— 1989: Zmeny štruktúry osídlenia v 13. - prvej pol. 14. storočia (Pokus o náčrt modelov v regiónoch Zemplín a Spiš) — Die Strukturänderungen der Besiedlung im 13. und in der ersten Hälfte des 14. Jahrhunderts (Versuch einer Modellskizze in der Regionen Zemplín und Spiš), Archaeologia historica 14, Brno, 281-298.

Čaplovič, D. - Javorský, F. 1990: Najnovšie poznatky o vývoji stredovekého domu na Spiši — Die neuesten Erkenntnisse über den mittelalterlichen Dorfhaus in der Spiš, Nové obzory 31, Košice, 69-122.

- Čaplovič, D. Hajnalová, E. Hanuliak, M. Ruttkay, A. 1985: Stredoveká dedina na Slovensku ako základný fenomém feudálnej ekonomiky Das mittelalterliche Dorf der Slowakei als Grundphänomen der feudalen Ökonomik, Archaeologia historica 10, Brno, 11-25.
- Čaplovič, P. 1965: Včasnostredoveké pohrebisko a sídlisko v Hurbanove Frühmittelalterliches Gräberfeld und Siedlung in Hurbanovo, Slovenská archeológia 12, 237-247.
- Fusek, G. 1986: Záchranný výskum v Bielovciach Rettungsgrabung in Bielovce. Archeologické výskumy a nálezy na Slovensku v roku 1985. Nitra, 83-85.
- Füryová, K. et al. 1991: Začiatky železiarstva vo východnej časti Gemera v stredoveku Beginning of Ironworking in the Eastern Part of Gemer in the Middle Ages, Zborník Slovenského národného múzea 85, Archeológia 1, 107-144.
- Habovštiak, A. 1961: Príspevok k poznaniu našej nížinnej dediny v XI.-XIII. storočí Ein Beitrag zur Erkenntniss unseres Tieflanddorfes im XI.-XIII. Jahrhundert, Slovenská archeológia 9, 451-482.
- 1974: Nález pozostatkov zaniknutých polí v katastri obce Tehla, okr. Levice Fund von Resten vormaliger Felder im Katastergebiet der Gemeinde Tehla, Bezirk Levice, Agrikultúra 12, 13-22.
- 1985: Stredoveká dedina na Slovensku Das mittelalterliche Dorf in der Slowakei. Bratislava.
- 1994: Der Beitrag der Archäologie zur Wüstungsforschung in der Slowakei, Siedlungsforschung. Archäologie Geschichte Geographie 12, 143-153.
- Hajnalová, E. 1987: Výskumná správa (Research Report), No. 11930/1987 and 11958/1987, Archeologický ústav SAV Nitra, Archeobotanické poznatky z lokality Svinica (Archaeobotanical knowledges from the lokality Svinica), manuscript 7 pp., 4 tables, in Archeologický ústav SAV Nitra (unpublished).
- Hanuliak, M. 1982: Osídlenie Žitného ostrova z pohľadu stredovekej archeológie Žitný-Insel Besiedlung aus der Sicht der mittelalterlichen Archäologie, Archaeologia historica 7, Brno, 92-102.
- 1989: Praveké, včasnodejinné a stredoveké osídlenie v Chľabe Urzeitliche, frühgeschichtliche und mittelalterliche Besiedlung in Chľaba, Slovenská archeológia 37, 151-212.
- Hanuliak, M. Kuzma, I. 1983: Výsledky výskumu včasnostredovekého osídlenia v Mužli-Čenkove Die Untersuchungsergebnisse der frühmittelalterlichen Besiedlung in Mužla-Čenkov, Archaeologia historica 8, Brno, 385-397.
- Hanuliak, M. Zábojník, M. 1980: Výskum z obdobia stredoveku na trase sústavy vodných diel na Dunaji Untersuchungen auf der Bautrasse des Systems der Wasserkraftwerke an der Donau, Archaeologia historica 5, Brno, 193-208.
- Hrubec, I. 1971: Výskum zaniknutej dediny Dolný Poltár Grabungen in der Dorfwüstung Dolný Poltár, Archeologické rozhledy 23, 69-79.
- Cheben, I. Ruttkay, M. 1995: Šiesta sezóna záchranného výskumu v Bajči-Medzi kanálmi Sechste Grabungssaison in Bajč-Medzi kanálmi. Archeologické výskumy a nálezy na Slovensku v roku 1993. Nitra, 66-67.
- Javorský, F. 1981: Záchranný výskum románskeho kostola pri Levoči Notgrabung in einer romanischen Kirche bei Levoča, Študijné zvesti Archeologického ústavu SAV 19, 97-112.
- Kučera, M. 1974: Slovensko po páde Veľkej Moravy Die Slowakei nach dem Fall des Großmährischen Reiches. Bratislava.
- Mináč, V. 1980: Zaniknutá stredoveká osada v Slovenskej Novej Vsi-Zelenči Eine mittelalterliche Dorfwüstung in Slovenská Nová Ves-Zeleneč, Archaeologia historica 5, Brno, 209-215.
- Paulík, J. Rejholec, E. 1958: Stredoveké chaty v Chotíne Mittelalterliche Hütte in Chotín, Slovenská archeológia 6, 223-235.
- Polla, B. 1962: Stredoveká zaniknutá osada na Spiši (Zalužany) Eine untergegangene mittelalterliche Siedlung in der Zips (Zalužany). Bratislava.
- 1966: Zaniknutá stredoveká osada Miloj (Výsledky doterajších výskumov) Die verschollene mittelalterliche Siedlung Miloj (Ergebnisse der bisherigen Untersuchungen), Zborník Slovenského národného múzea 60, História 16, Bratislava, 117-160.
- Ruttkay, A. 1977: Výskum zaniknutého včasnostredovekého sídliska, architektúry a pohrebiska pri Nitrianskej Blatnici v roku 1976 Erforschung von frühmittelalterlicher Siedlung, Architektur und Gräberfeld bei Nitrianska Blatnica im Jahre 1976. Archeologické výskumy a nálezy na Slovensku v roku 1976. Nitra, 243-251.
- 1981: Slovenská kultúra dedinských sídlisk na Slovensku vo včasnom a vrcholnom stredoveku na základe archeologických výskumov The building culture of the villages in Slovakia at the beginning and the climax of the Middle Ages on the basic archaeological researches, Lidová stavební kultura 7, Brno, 20-37.
- 1985: Štruktúra osídlenia a dejiny územia Slovenska vo včasnom stredoveku (Príspevok k 1100. výročiu smrti Metoda) Besiedlungsgeschichte und -struktur des Gebietes der Slowakei im Frühmittelalter (Beitrag zum 1100. Todestag Methodes), Študijné zvesti Archeologického ústavu SAV 21, Nitra, 5-25.
- Ruttkay, M. 1989: Výskum stredovekého osídlenia v Bajči Die Erforschung der mittelalterlichen Besiedlung in Bajč, Archaeologia historica 14, Brno, 299-310.
- Ruttkay, M. Cheben, I. Ruttkayová, J. 1994: Výskum stredovekého opevneného sídliska v Branči-Veľkej Vsi Untersuchung der mittelalterlichen befestigten Siedlung in Branč-Veľká Ves (Slowakei), Archaeologia historica 19, Brno, 229-241.
- Šiška, S. 1964: Slovanské sídliskové objekty v Hnojnom, okr. Michalovce Slawische Siedlungsobjekte in Hnojné, Bez. Michalovce, Archeologické rozhledy 16, 379-395, 407-408.
- Šiška, S. Hajnalová, E. 1983: Stredoveké obydlie a depot semien konopy siatej zo Šarišských Michalian Mittelalterliches Wohnobjekt und ein Hanfsamendepotfund aus Šarišské Michalany, Študijné zvesti Archeologického ústavu SAV 20, Nitra, 303-317.
- Točík, A. 1981: Záverečná správa zo záchranného výskumu v Komjaticiach v rokoch 1977 a 1979 Schlußbericht über eine Rettungsgrabung in Komjatice in den Jahren 1977 und 1979, Študijné zvesti Archeologického ústavu SAV 19, Nitra, 139-157.