I

INTRODUCTION

by

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The existence of paleolithic sites in the Middle Danube region has been known since the 1880's. But it is Szombathy's discovery of the Willendorf figurine which brought the Wachau to the attention of prehistorians in 1911. By the 1930's a number of sites had been recorded and investigated by Bayer and others. Among the most notable sites were the Gudenus cave, a deep shelter which contained Mousterian and Magdalenian levels, and a series of open-air localities where archaeological levels attributed to the Aurignacian and the Gravettian were found stratified within series of loess deposits. A better understanding of the region's stratigraphical sequence and cultural developments resulted from new field work conducted in the 50's in parts of the open-air sites that early excavations had left intact (Fig.I-1), especially Willendorf (Felgenhauer, 1956-59), Aggsbach (Felgenhauer, 1953), and Kamegg (Brandtner, 1955).

Largely as a result of the work completed during the 1950's, the relatively long stratigraphical sequence of Willendorf emerged as the model and reference upon which the regional archaeological sequence was built. The earliest occupation at Willendorf II (level 1) was attributed to a poorly defined, early Upper Paleolithic phase with an estimated date around 40,000 BP and the most recent (Willendorf I and II, level 9) was identified as a Gravettian phase characterized by the presence of shoulder points now dated at 25,000 BP. Other sites were integrated within the time bracket provided by the Willendorf sequence. The time span of some 15,000 years that the Willendorf sequence encompasses was interpreted as the period of Paleolithic prehistory during which the region had been regularly occupied by human groups. The extreme scarcity of archaeological materials attributable to earlier Mousterian phases or to later Epigravettian or Magdalenian phases was taken as an indication that, during most of the Middle and Late Pleistocene, the region had been either intermittently traveled by groups of hunters seeking shelter in the caves of the Bohemian Plateau, like the Gudenus Cave, or completely void of human populations. The generally accepted view was that the northwest corner of the Central European Basin, including the Wachau and the Weinviertel (Lower Austria), had been, for a limited 10,000 to 15,000 year period of the Interpleniglacial, part of a broad cultural area that included Moravia and Slovakia and extended into southern Poland. While accepting this general framework, a number of prehistorians raised questions concerning the nature and origin of the earliest Upper Paleolithic horizons (Hahn, 1977) and stressed that lack of evidence clouded the interpretation of the last phases of the Gravettian (Otte 1984).

The University of Kansas project was initiated in 1981 with the objective of investigating new or poorly known sites in order to elucidate questions related to the peopling of the area during time periods not represented by the Willendorf sequence. Grubgraben was selected following a field season at the site of Kamegg in 1984 and a series of tests and a survey done in 1985. The site offered the most favorable

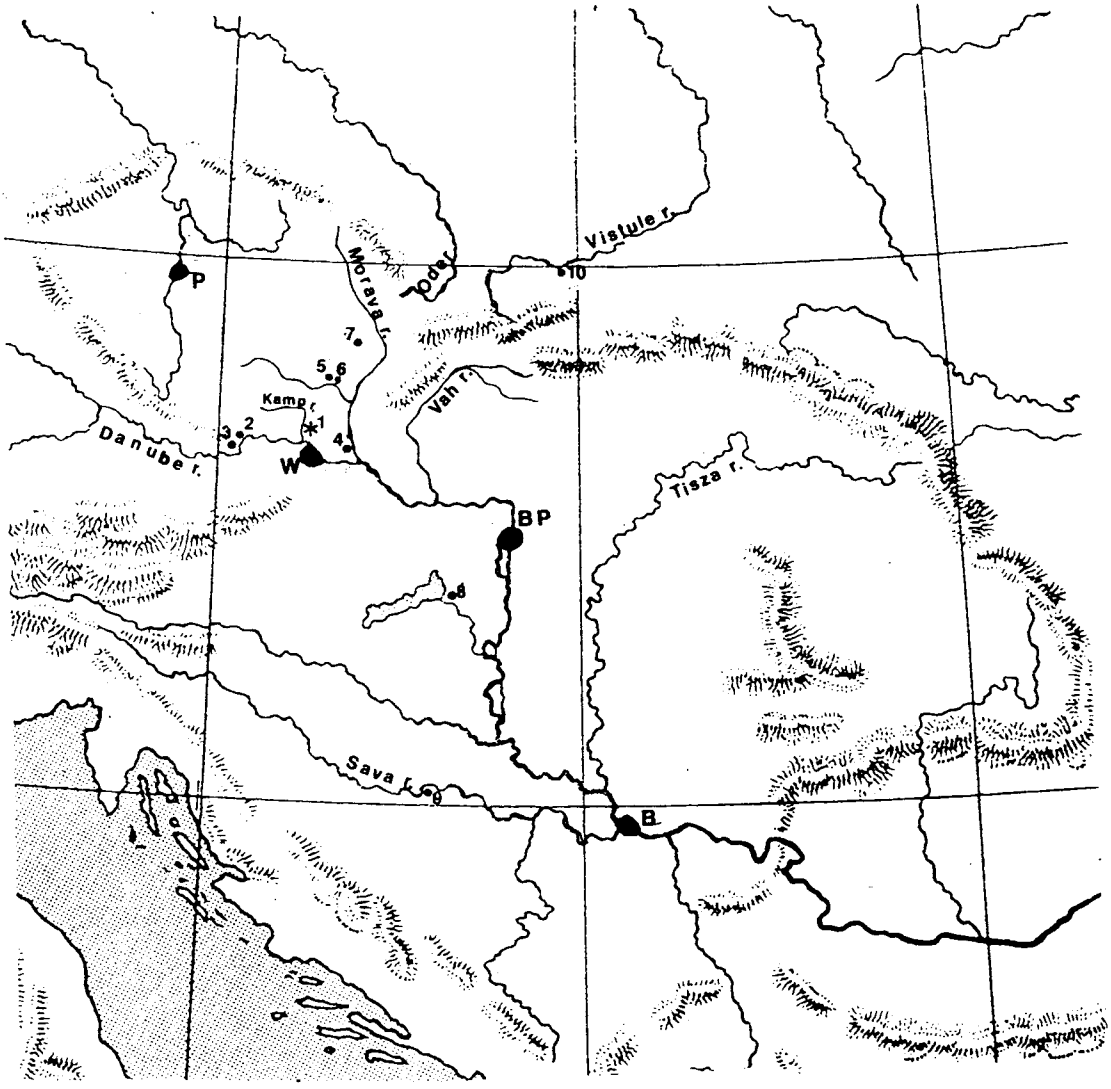

Fig. I-1 Map of Central Europe showing the location of : 1, Grubgraben (A); 2, Willendorf (A); 3, Aggsbach (A); 4, Stillfried (A); G, Pavlov (cZ); 6, Dolni Vestonice (cZ); 7,Stranska Skala (CZ); 8, Sagvar(H); 9, Kadar (Yu); 10, Spadzista (P). P, Prague, W, Vienna, BP, Budapest, B, Beograd.

conditions. It contained a long stratigraphical sequence and a series of archaeological levels which appeared to be in place. Bone preservation was good. And furthermore, the archaeological levels were relatively accessible as the loess cover above the topmost level was no more than 1m to 1.5 meter thick.

The first two seasons of excavations have contributed a body of new data. First and foremost, the discovery of a series of Epigravettian levels posterior to 19,000 BP demonstrated that there were times during the last glacial advance when the area offered sufficient natural resources to sustain groups of Paleolithic hunters. The chronological placement of the Grubgraben sequence based on archaeological and sedimentological data is corroborated by the date of 18,980 obtained from bone collagen by the University of Arizona accelerator for one of the archaeological levels (AL4). Several more dates ranging between 18,600 and 18,200 obtained by conventional methods at the Louvain laboratory confirmed the attribution of the main complex of archaeological levels (AL2-AL4) to a time period corresponding to the last Glacial maximum.

The first objective of the 1986 and 1987 excavations was to arrive at a detailed understanding of climatic and environmental changes. Contrasting environmental data obtained from archaeological levels to those derived from culturally sterile levels, it would become possible to gain an understanding of the conditions necessary for human groups equipped with an Epigravettian technology to survive, even flourish under severe conditions. Several sections of this report are devoted to the discussion of research conducted with that goal in mind: Haesaerts' study of the graben stratigraphy and sedimentology which arrives at a revised interpretation of the regional sequence and outlines the factors that contributed to making the locality attractive to paleolithic groups (chapter III) and Pawlikowsky's analyses of the morphology and mineral content of the loess deposits which complement and corroborate the sedimentological study (chapter IV).

A second and equally important goal was to investigate the adaptability of paleolithic hunting economies in response to climatic changes. Logan's study contrasts the Grubgraben faunal record to that of Willendorf, pointing out the probable effect of increasingly severe conditions on animal populations and looking for changes in hunting patterns. In addition, he presents hypotheses concerning butchering practices and seasonality of human occupation at the site (chapter VI).

The study of the artifact assemblages was oriented toward the study of raw material economy. Pawlikowski reports the negative results of a survey of raw material sources conducted in Lower Austria and establishes the probability of the long distance origins of some of the flints and radiolarites present in the Grubgraben assemblages (chapter VII). Differentiated use that Epigravettian tool makers made of the various categories of raw materials is documented in chapter VIII. The last section details some of the technological and typological characteristics of the epigravettian industries as they relate to raw material selection (chapter IX).

The Grubgraben is a ravine cut at the very edge of the Bohemian Plateau. It drains into the Kamp River at the point where its valley widens and bends to the east before reaching the Danube Valley. The slopes of the Heiligenstein to the west and the Geissberg to the east afford some protection to the ravine floor (Fig. III-1). Widely opened to the south, the ravine offers a wide view of the Kamp Valley and beyond (Fig I-2 and 3). An ecotone situation created by proximity to the river, access to the plateau and to the Danube Valley is another element that may have entered into the selection of the site by paleolithic hunters . A sunken farm road has cut a deep channel (graben) through the loess deposits that fill the ravine floor and cover the slopes. Bones and lithic pieces have eroded from the graben wall and for a long time, professional and amateurs archaeologists have known the existence of the site and collected artifacts from the graben floor (see Chapter II). The profile cleared in 1985 on the west side of

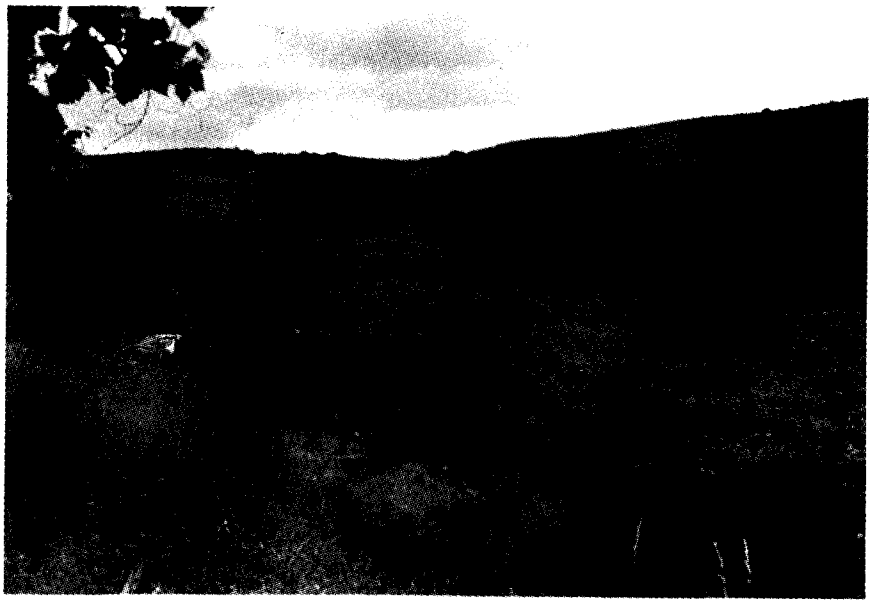

Fig. I-2 View of the Grubgraben, from the southwest, with the Zwettl vineyard in the foreground and the terraced slopes of the Geissberg behind.

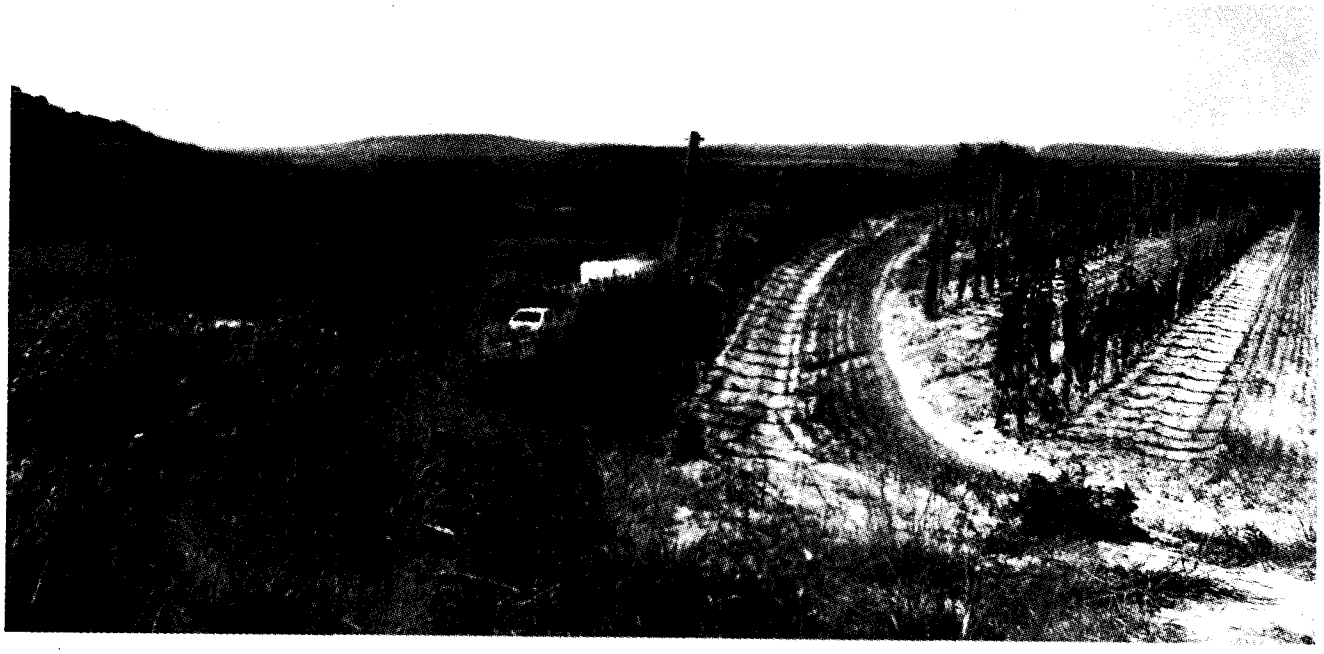

Fig. I-3 View of the Grubgraben taken from the upper vineyard on the slope of the Heiligenstein. The Zwettl vineyard and the slope of the Geissberg are in the foreground; in the distance, the Kamp valley and the low hills that form the interfluve between it and the Danube Valley barely visible in the upper left of the picture. The tent covers the excavations.

the graben (Fig.I-4, Tr85) cut through a thick accumulation of bones and artifacts which continues under the upper vineyard where it is buried under 7 or 8 meters of loess. East of the graben, in the Zwettl Abbey vineyard, archaeological levels are more accessible as the loess cover has been sectioned by terracing when the vineyard was planted.

The main excavation block included a 12m long and 2 m wide trench widened to 4.5m in a 6 m long section to form a 36 m2 surface area. The trench paralleled the graben where sedimentary units reached maximum thickness. Two additional test-pits (TP85 and TP86) located at the northern and southern ends of the vineyard served to evaluate variations in the stratigraphical sequence along the graben long axis and helped determine the extension of the site. Systematic coring by way of a hand held auger determined the extent of archaeological deposits within the Zwettl vineyard.

In the main block, excavations reached a depth of 2.5 m below the ground surface. Five archaeological levels were identified and excavated, exposing a number of features and stone structures (cf. Chapter V). The site owes a great deal of its interest to the presence of stone pavements, hearths, butchering areas and workshops which provide some understanding of the internal variability and organization of Epigravettian campsites. These data put together with hypothesis concerning seasonality of occupation provided by faunal analysis and territoriality derived from the study of raw materials origins contribute the elements for a reconstruction of settlement patterns in Central Europe during the last Glacial maximum.

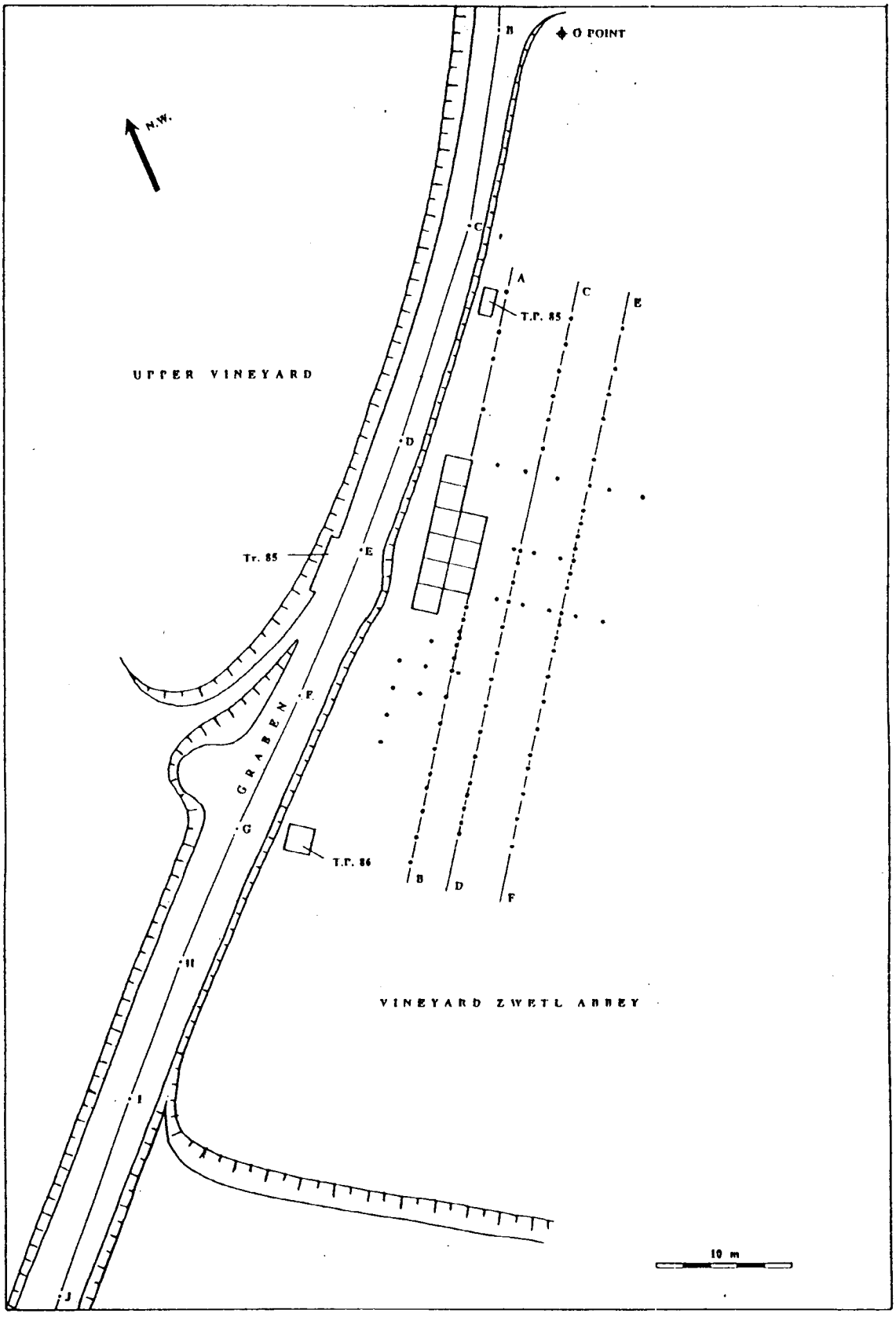

Fig. I-4 Map showing the location of the upper vineyard, the sunken road (graben) and, in the Zwettl vineyard, the excavation trench and test-pits.