

production of tools from chunks and concretions using the shaping method. The achieved forms were larger in size. Tool forms included choppers, a side scraper or a fragment of a point (fig. 14.) as well as a unifacial knife. The two methods of production did not overlap, and from the ratio of the two groups of retouched tools it may be seen that the tools produced by shaping in the investigated part of the site may have been used with a higher frequency.

Further evidence was recovered from a site studied in 1998–1999 by K. Sobczyk and V. Sittlív, at ks. Józefa street in Krakow, Zwierzyniec-Salwator. The site lies on the northern incline of the Vistula valley, within the Krakow Gate (Brama Krakowska). Preliminary geological studies determined the presence of three series of deposits: cover loess, silty mud overbank deposit and channel sands (fig. 15.). The terrace containing the lower level (series III) is dated to the early Weichselian or the lower pleniglacial. Series II containing the middle and the upper culture assemblage is dated to the interpleniglacial. Series II was found to contain artefacts from the Upper and the Middle Palaeolithic, referred to as the upper culture level (16 specimens). Authors of research maintain that the artefacts of the upper level formed “ephemeral” or “peripheral” sites with single isolated artefacts—products of flake and blade debitage with a participation of non retouched blanks of Upper and Middle Palaeolithic type. Series III contained two culture levels—the middle (1560 artefacts) and the lower (248 artefacts). The middle complex is being related to the blade technology of Upper Palaeolithic type from the Middle Palaeolithic, while the lower is a Middle Palaeolithic assemblage. Both occurred within sediments of the channel facies. Most probably the river terrace had been formed before the early Weichselian and the lower pleniglacial. The middle horizon represented, according to the authors of research, the remains of a flint workshop or a zone of debitage, and contained numerous blades and a number of tools and blades with traces of use wear. At present this is the largest blade assemblage from the Middle Palaeolithic in Central Europe. Basing on its analysis the authors were able to determine in preliminary manner differences in the methods of core exploitation. Six methods were identified, beginning with unidirectional exploitation, ending in prepared bidirectional cores (fig. 15).<sup>22</sup> The lower complex, having a similar functional significance as the middle level, furnished for the most part flake products with some participation of blade tools and rare tool forms in Middle Palaeolithic context.

Also worth mentioning is the renewed investigation of site Piekary IIa (Okrażek Hill). In 1998–1999—following a break of almost two decades—a survey was carried out, helping to specify in greater detail the quality and duration of blade methods in assemblages of the Middle Palaeolithic.<sup>23</sup> It was established that traces of using these methods are present in three late Middle Palaeolithic layers: 7a (loess with traces of cryoturbation), 7b (sandy loess or loam) and 7c (stratified sands), rather than being contained, as suggested previously, in just one layer. A trench was cut in the vicinity

<sup>21</sup> SITTLIVY et al. 1999a.

<sup>22</sup> SITTLIVY et al. 1999a, 98–99., fig. 23.

<sup>23</sup> SITTLIVY et al. 1999b.