

Neolithic flint mine and workshops at Saspów, near Cracow

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SUMMARY

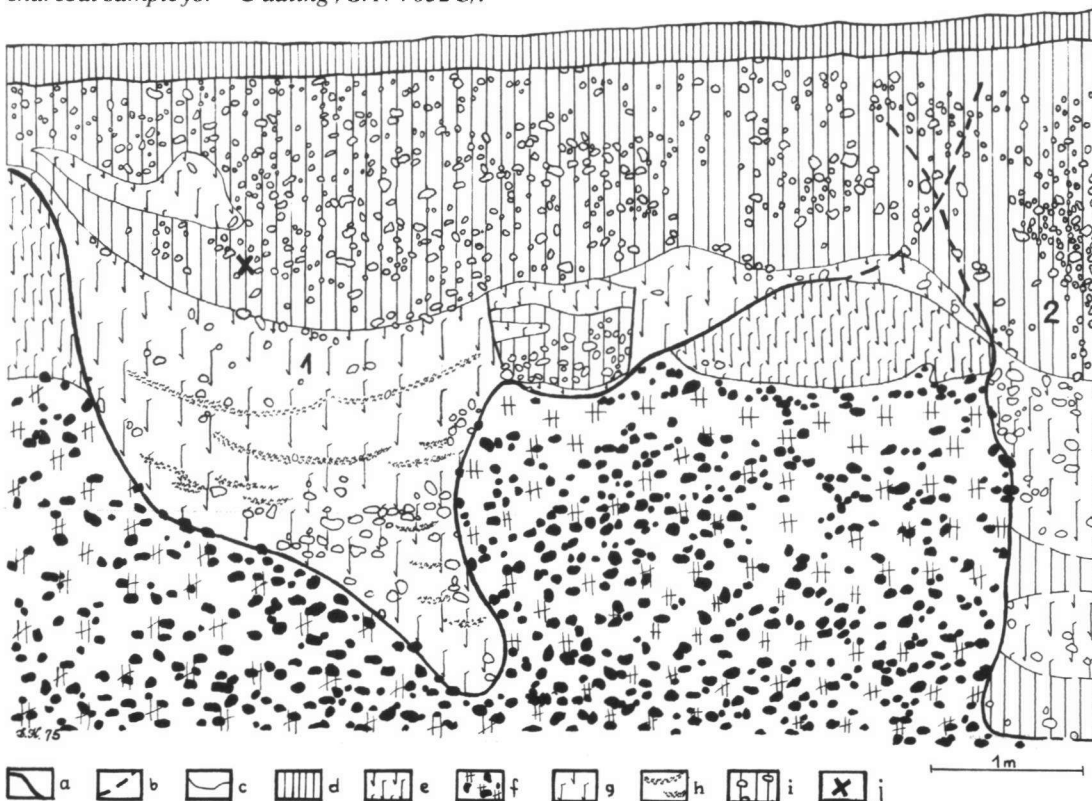
In the mine of Saspów flint was extracted out of karstic clay from pits-shafts 4-5 m. deep. The mine dating from the second half of the fourth millennium B.C. [^{14}C], is connected with the communities of the Lengyel-Polgar Cultural Complex / the late Danubian /. The various phases of flint processing in order to obtain blade blanks are ascertained by analysis of the examined workshop assemblages.

The flint mine of Saspów is situated in Cracow Upland, approx. 25 km north-west of Cracow. It chiefly consists of Upper-Jurassic Limestones and sediments resulting from their weathering. In the Last Glaciation they were to a large extent covered with loess.

The mine

Flint exploitation may be studied on the grounds of ten shafts discovered during the salvage excavation seasons 1970-73. The top parts of those objects were oval. The shaft No 1 had in its top part the diameter of 8 m., being the longer one and a diameter of 5 m. a shorter one. This leads us to conclusion that shaft sinking was started on a relatively large area. At the depth of 2 m. - 2.5 m., as soon as ceiling of karstic clay layer was reached, the sinking surface was reduced /fig. 1/. Consequently a kind of step was formed, a platform permitting to lift raw material and waste out to the ground. Going up and down, as well as transporting the flint and clay, were effected that way. The shafts entered the flint-bearing layer to a depth of 2-3 m., lesser depths were rather exceptional. Generally speaking, the Saspów shafts are 4-5 m. deep, with the top part diameter oscillating in most cases between 6 and 4 m. The data in hand point at the possibility of existence at Saspów of as much as some thousand exploitation units.

Fig. 1 Cross-section of Schaft No 1 and portion of Schaft No. 2. a - shaft walls; b - reconstructed shaft walls; c - limits of layers; d - soil and subsoil; e - loess; f - karstic clay with flint nodules; g - loess till with artifacts, flint nodules and fragments; h - grey-bluish loess loam; i - karstic clay with loess, artifacts, flint nodules and fragments; j - location of collected charcoal sample for ^{14}C dating /GrN-7052C/.

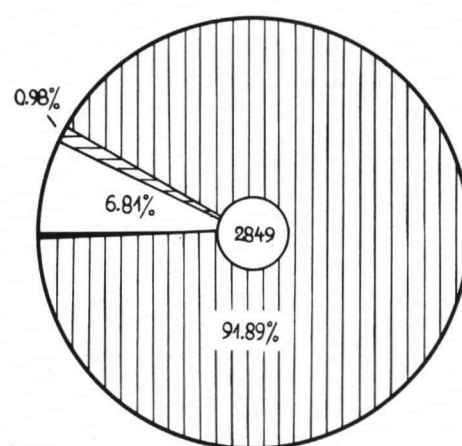
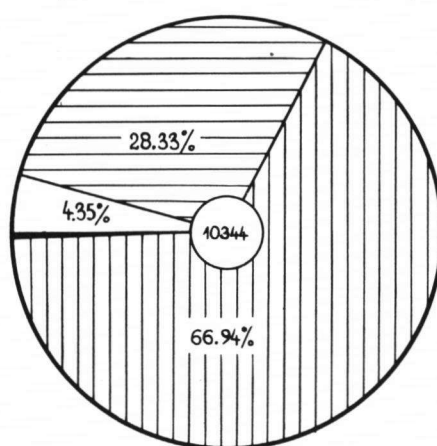
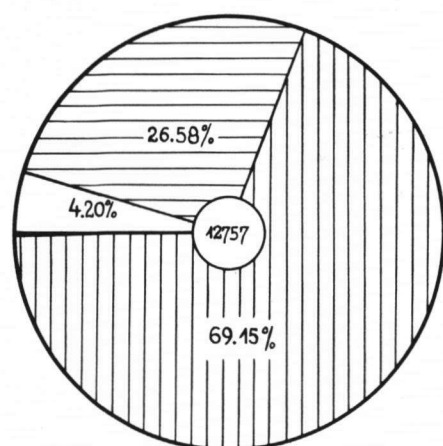


Flint workshops

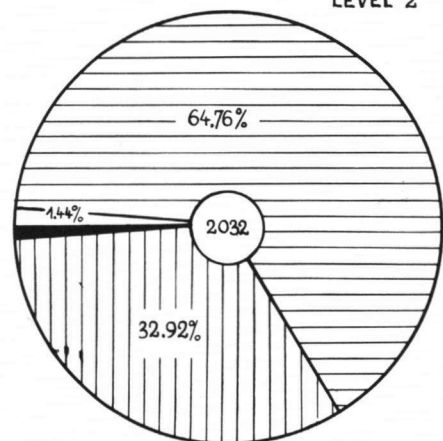
The extracted raw material was processed in order to obtain blade blanks, and in some cases, to much a lesser extent, in order to obtain flake blanks. Besides blades pre-cores were also removed from the mine area and possibly natural nodules. All the assemblages analysed until now are remains of various stages of activities which aimed at obtaining blades.

I divided the whole of the flint material into four inventory groups: 1/ nodules, pre-cores and cores, 2/ blades and blade fragments, 3/ flakes and waste, 4/ tools. In this paper I should like to determine the main structural attributes of the singled out workshop assemblages. In my considerations I am basing on the analyses of six flint assemblages from the Lengyel-Polgar Cultural Complex /fig. 2/. The three first assemblages are remains of flint workshops of short duration, situated in the mine area /fig. 2 - I, II, III/. The assemblage from Level 2 of the cave 'Under the Church' at Saspów is also connected with the mine /fig. 2 - IV/. Moreover, in order to complete the set of assemblage kinds, I also took in consideration two assemblages originating from settlements. Materials from Pit 1 of the site Pleszów II represent a flint workshop situated in that settlement and working on the raw material transported there /fig. 2 - V/. Materials from site Babia Góra at Iwanowice represent production wastes which come from 18 pits /fig. 2 - VI/. A considerable quantity of flint found at Iwanowice originated from the mine of Saspów.

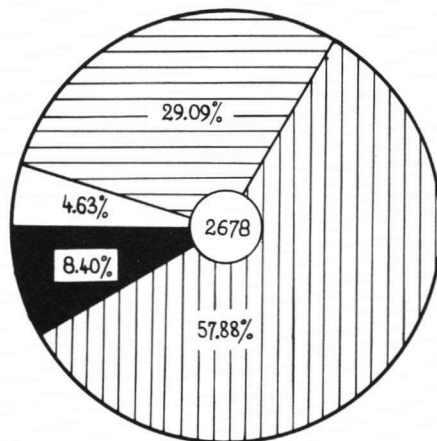
The Workshop 1 and 3/1960, as well the assemblage from cave 'Under the Church', confirm the fact that selected and partly altered blades were removed from the mine area and transported to the settlements. On the other hand, materials from Pleszów and the settlement of Iwanowice, in context of the pre-cores workshop 1/1971 at Saspów, point at the fact that pre-cores were also removed from mines. Single natural nodules found in settlements also undoubtedly were objects of transport. The settlement of Iwanowice is situated at approx. 15 km from the Saspów mine, and the settlement of Pleszów at approx. 20 km from the area of the origin of raw material. Analysis of some flint assemblages from the deposits proves that the selected and altered blade blanks were often prepared for long distance transport. Basing on the results of analyses of Workshop 1 and 3/1960, it is possible to tell, that the



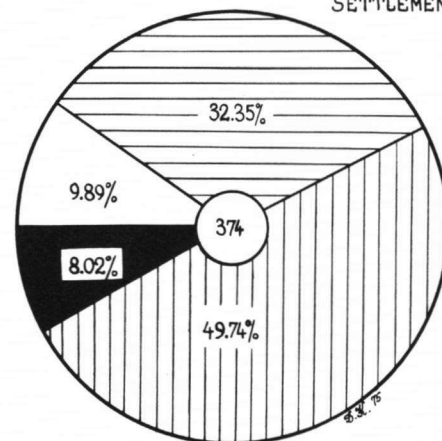
IV. SĄSPÓW, CAVE „UNDER THE CHURCH” WORKSHOP LEVEL 2



V. KRAKÓW - PLESZÓW II, WORKSHOP-PIT 1



VI. JWANOWICE, DISTRICT MIECHÓW SETTLEMENT



□ NODULES, PRE-CORES AND CORES

▨ BLADES AND BLADE FRAGMENTS

▤ FLAKES AND WASTE

■ TOOLS

numbers of approximately 3500-4000 blades constitute the same module of value for both workshops. Ergo, the knappers must have obviously used the same categories of production size.

Chronology

The flint mine of Saspów was exploited by communities of the Lengyel-Polgar Cultural Complex /younger 'Danubian', first of all by the groups of Pleszów and of Modlnica, which developed in the upper Vistula catchment area. According to the ^{14}C chronology, the main exploitation period occurred during the second half of the IVth millennium B.C. The first ^{14}C date obtained for the Saspów flint mine on the grounds of charcoal sample collected in the top part of the Shaft No 1/ fig. 1/, GrN - 7052C, 3375 ± 90 B.C. ascertains the conclusions resulting from the material analysis.

Rudiments of flint mining among the early agricultural communities of Central Europe

Until the discovery of the flint mine of Saspów, appearance and development of flint mining among the early agricultural communities of Vistula and Oder basin were thought to be linked with the Funnel Beaker Culture. They were considered a sign pointing at earlier Mesolithic traditions, local and south-Scandinavian ones. At the same time the lack was emphasized of flint mining among the communities of 'Danubian' cultures. The discoveries effected at Saspów, as well as the simultaneously carried on investigations on flint assemblages originating from mine and settlements, point at an earlier and independent genesis of flint mining in Little Poland, in the circle of the 'Danubian' Cultures. Mass processing of mine flint at Olszanica, a large settlement of Linear Pottery Culture / Danubian I /

Fig. 2 Basic quantitative structure of workshop assemblages mentioned in the text.

in the south-east border of the Cracow Upland, is an essential argument in favour of flint mining development in the circle of the Linear Pottery culture, as far back as in the second half of the Vth millennium B.C. Taking in consideration the wide westward and northward spread of the Linear Pottery Culture, and the assumption that the Michelsberg Culture, in all probability, is but a local sequel of the Rössen Culture, attention should be paid in our further investigations to the possibility of connection between the beginnings of flint mining in north-west Europe and the tradition of Danubian communities.

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