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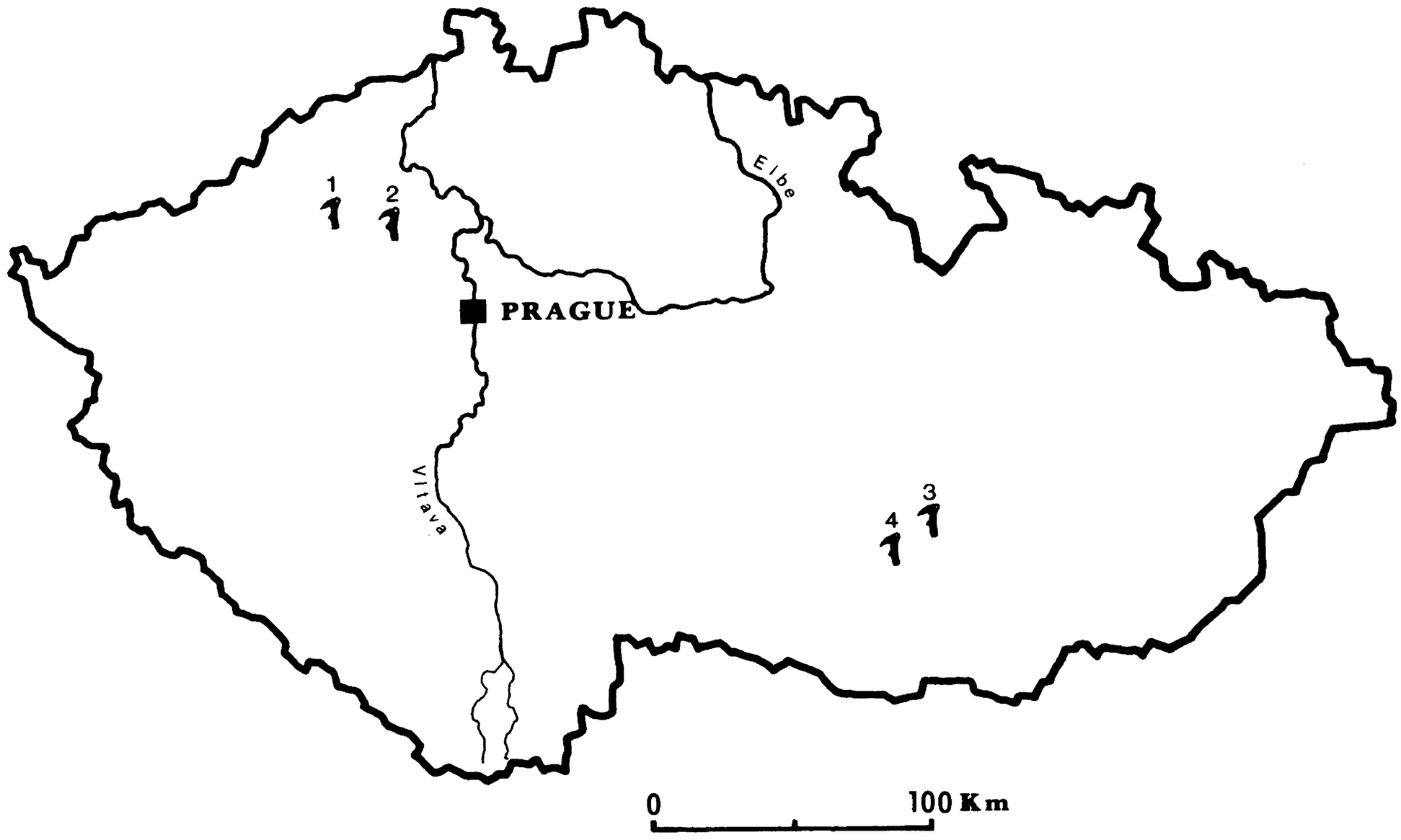

CZ Czech Republic

CZ 1 Tušimice
CZ 2 Bečov
CZ 3 Stránská skála
CZ 4 Krumlovský les

CZ 1 TUŠIMICE NEAR KADAŇ, CHOMUTOV DISTRICT

Jacek Lech and Inna Mateiciucová

The Tušimice quartzite mine was located in north-western Bohemia, in the foreland of the Krušné mountains. Deposits of Tušimice type quartzite were to be found along the right bank of the Lužický stream, in its middle course (Fig. 1). The stream, 12 km long, is a tributary of the Ohře River (Eger River) around which lay the prehistoric settlements of this region. The site was situated in what is now a highly industrialised area of the Czech Republic. The ground and landscape there have been destroyed by, among other things, a lignite mine.

The prehistoric mine was discovered in the early sixties, during the building of the power plant at Tušimice. In 1962 Evžen Neustupný carried out initial rescue operations and published his findings (1963, 1966). Today, this important archaeological site no longer exists. Excavations of other sites in the area were also rescue operations. A comprehensive description of the Tušimice excavations, without the chipped industry, was written later and remains unpublished (Neustupný 1976). The manuscript was used by J. Lech in his work (1981). The transactions of the Third International Symposium on Flint (Maastricht — 24–27 May 1979) included an article by J. Schenk (1981) from Prague devoted to prehistoric flint mining in Czechoslovakia in which the Tušimice mine was also described. A paper on the same subject had not been read at the symposium itself due to the absence of its author. In later years further rescue work was carried out around the Lužický stream. Sites from the Neolithic, Eneolithic and other ages were excavated, giving information about settlements near the mine (Fig. 1) and helping to reconstruct a picture of the environment and of changes in settlement patterns from the Palaeolithic to the Middle Ages (Kyncl 1987; Lech 1987; Neustupný 1987; Smrž 1987). Neustupný gave a palaeo-economic interpretation of the site (1967).

The quartzites in north-west Bohemia form beds up to 1–2 m thick with outcrops of material in the form of large lumps. Their substratum contains a variety of Cretaceous rocks — from clays to marls. Above them are to be found a variety of Tertiary varicoloured tuff. Thus, from the point of view of stratigraphy, the quartzites are considered either as Cretaceous or Tertiary rocks (Přichystal 1985:482). Quartzite of Tušimice type occurs in the mother sandstone rock. The quartzite rock mass consists of fine sand grains cemented together, of a yellowish or, more rarely, whitish or bluish colour.

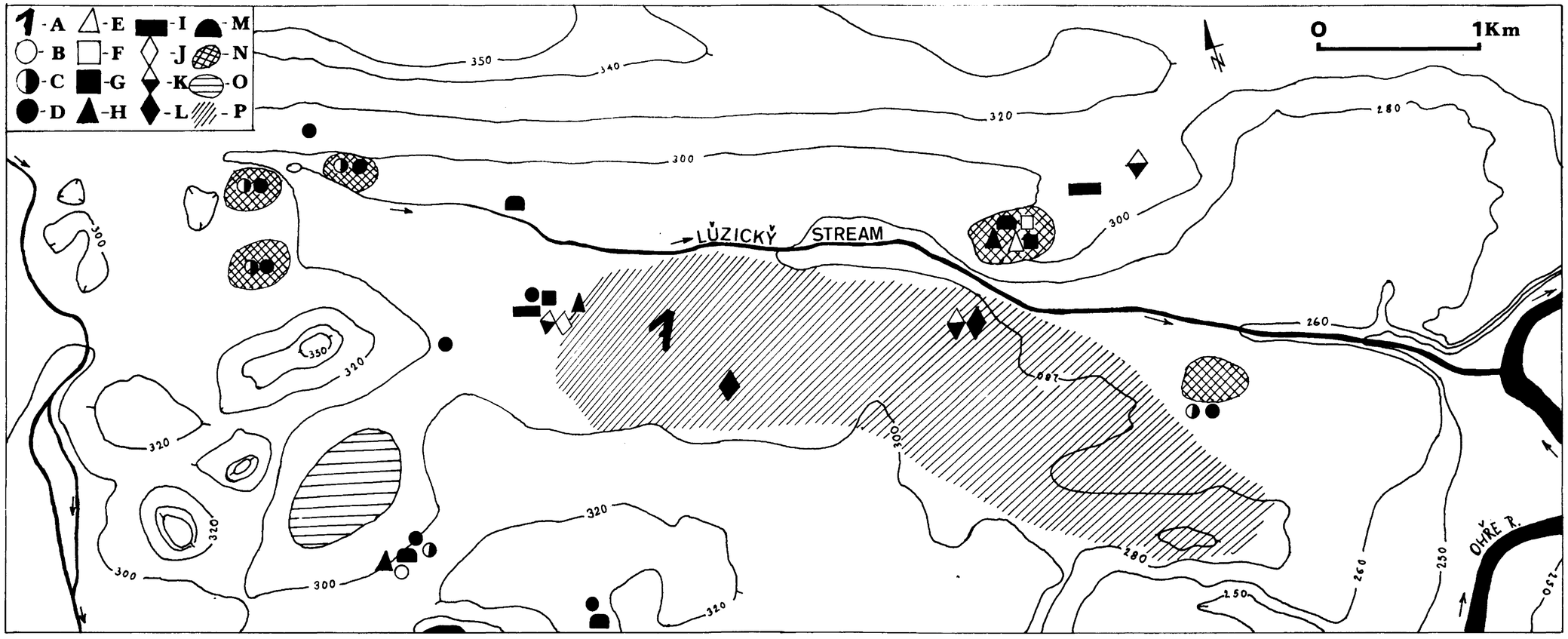

Fig. 1. CZ 1 Tušimice, Chomutov dist. Quartzite mine at Tušimice and settlement microregion of the Lužický stream: a — quartzite mine at Tušimice; b — mesolithic camp; c — Linearbandkeramik Cuture (LBK); d — Stroke-oramented Pottery Culture; e — Baden Culture; f — Řivnáč Culture; g — Globular Amphora Culture; h — Corded Ware Culture; i — Bell Beaker Culture; j — Proto-Únětice Culture; k — Únětice Culture; l — Únětice-Věteřov; m — Tumulus Culture (*Hügelgräber Kultur*); n — settlement; o — prehistoric lake; p — deposit of the Tušimice quartzite.

The mine field at Tušimice covered an area of 0.5 ha. According to Neustupný (1963) there were tens of exploitation pits and shafts, the mouths of which sometimes vintercut. Some of the shafts were spaced at regular intervals. The mouths of the pits and shafts were irregular in shape with a diameter between 2 and 5 m. They were sunk through a layer of clay and silt, which could be less than 1 or more than 2 m thick, to reach the layer of sandstone containing quartzite nodules. Exploitation pit no. 3 was about 2.5 m deep with a mouth width of about 4.9 m, while the nearby shaft no. 5 (Fig. 2) was approx. 3.25 m deep with a mouth width of about 2.25 m (Neustupný 1963, 1976). Exploitation pit no. 4 was 2.1 m deep and approx. 3.6 m

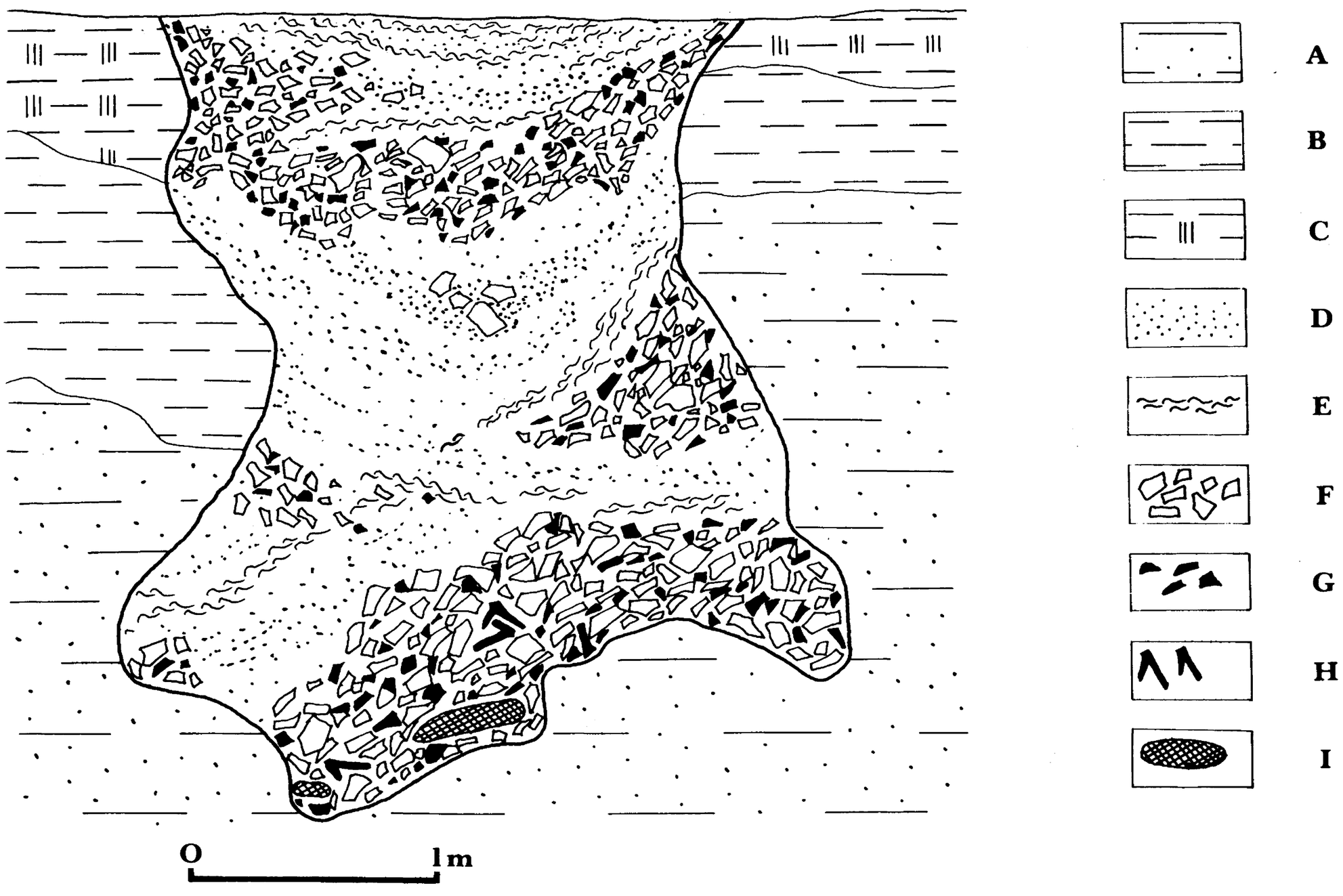

Fig. 2. CZ 1 Tušimice, Chomutov dist. Section of the shaft no. 5: a — mother sandstone with quartzite nodules; b — grey, brown and yellow clays; c — black silt; d — clays in secondary position in filling of the shaft; e — silt in secondary position in filling of the shaft; f — sandstone rubble; g — quartzite industrial waste; h — antler picks; i — hearths. After E. Neustupný.

wide. The shafts often had side workings — niches and galleries. Initially a narrow and fairly high gallery was cut which was then widened to about 3 m, leaving waste rock in the exploited upper part (Fig. 3). Some of the shafts were joined by galleries 3–5 m long and 75–100 cm high. Exploitation units were sunk using antler picks. Several were found in the rubble at the bottom of the pits. For the sandstone hammers were used which, according to Neustupný (1963:3), did not

have handles. Traces of hammer use were found on the walls and roof of gallery no. 1 (Fig. 3) in which some unburnt wood was also discovered (Neustupný 1963:2). When a quartzite concretion was found, a deep furrow was carved around to partly separate it from the bed rock, then the fragment was struck from the side to detach it. Using this method the concretions in the walls and ceiling were never removed as a whole. One of the more interesting finds were the remains of a fireplace in the rubble, some 15 cm above the bottom of shaft no. 5 (Fig. 2). Since no traces of fire were found on the rocks, Neustupný (1963:2) believes that it served to warm the miners during colder periods and not to extract quartzite from sandstone.

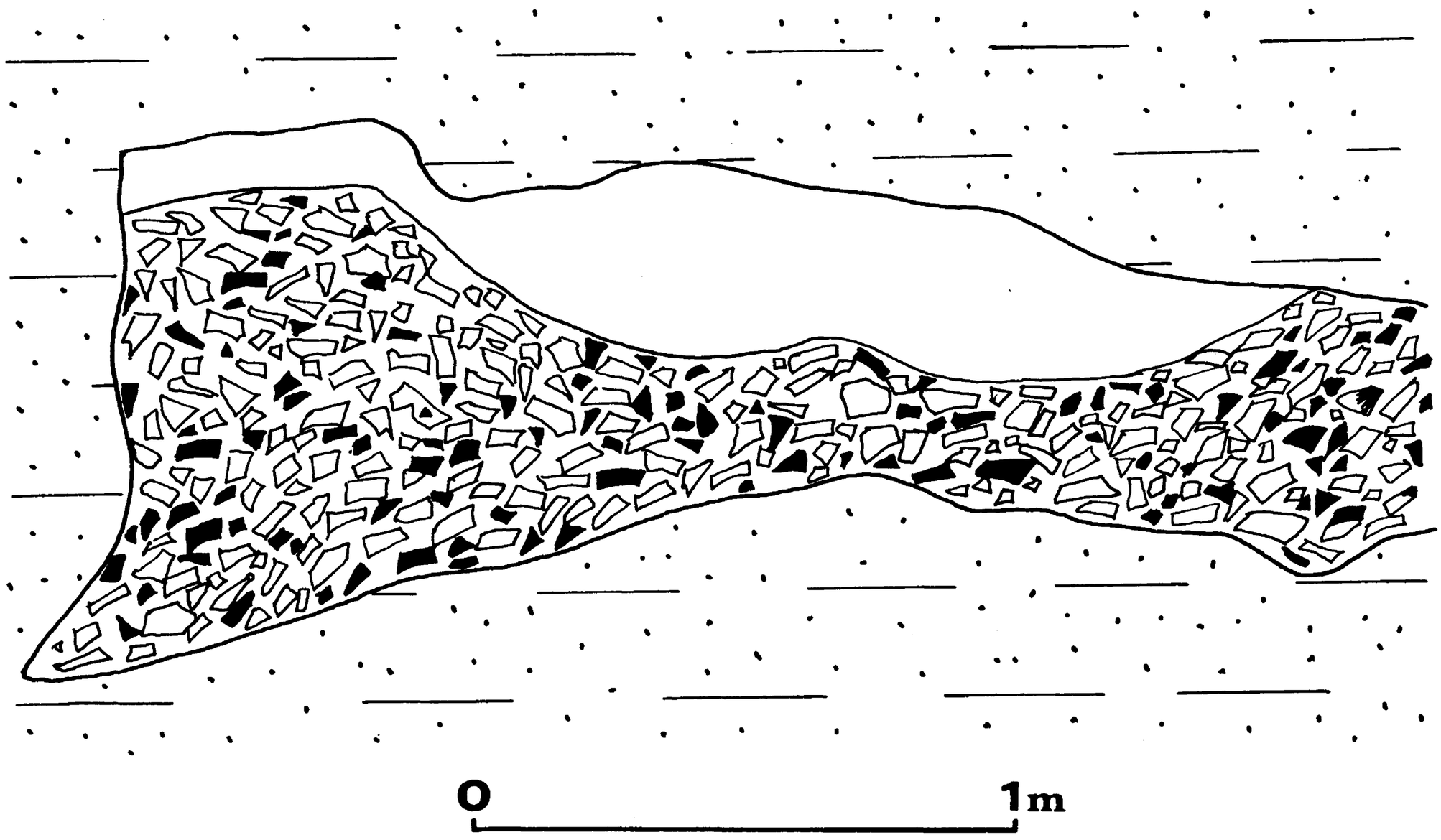

Fig. 3. CZ 1 Tušimice, Chomutov dist. Section through the gallery No 1. After E. Neustupný. For explanation see Fig. 2.

Fireplaces were also found elsewhere. Since numerous flakes and quartzite fragments occured in the galleries and exploitation units among the sandstone rubble, Neustupný thinks that the initial working of the quartzite was carried out underground in the galleries and at the bottom of the shafts. The partly worked pieces were then brought to the surface.

The Tušimice type quartzite was rarely used by the hunter-gatherer communities of the early Holocene, though it may have been mined in this period at another site of the Lužický stream microregion known as the Kadaň-Jezerka site (Vencl 1971:93; Smrž 1987:608–10). Exploitation probably began in the Linearbandkeramik Culture period and lasted through the Stroke-ornamented Pottery Culture and the Eneolithic.

The few pottery sherds found in the mine should probably be attributed to the Neolithic Stroke-ornamented Pottery Culture and the Eneolithic Řivnáč Culture (Neustupný 1963:3, 1966; Pleiner ed. 1978:271; Lech 1987:104–6; Smrž 1987:608–10). This view is supported by the only available radiocarbon date, obtained from charcoal found in the remains of a fireplace in shaft no. 5: Bln-239 2818 ± 100 bc (Kohl and Quitta 1966:38). This date indicates that shaft no. 5 can probably be attributed to the TRB Culture. It is very close to the date Bln-482 2980±80 bc obtained for material from a site belonging to the Baalberg group of the TRB Culture in Postoloprty on the Ohře River, 25 km east of the mine.

Settlements in the Lužický stream microregion first appeared in the Palaeolithic and Mesolithic. Later the area was inhabited by farming communities using Tušimice type quartzite, from the Linearbandkeramik Culture to the Tumulus Culture (*Hügelgräber Kultur*) in the Middle Bronze Age (Lech 1987:103–14; Smrž 1987:608). In the Neolithic there were two regions of settlement here, about 5 km apart. One, along the upper course of the stream, covered an area of 30–35 ha. The other lay lower down the stream and was more compact, spreading over an area of 12 ha (Fig. 1). It may be assumed that both these areas were at least in part settled at the same time. During the older and middle period of the Eneolithic the area was sparsely populated but there was a more permanent settlement on an upland promontory in the middle course of the stream. The local Tušimice type quartzite was commonly used (Smrž 1987:608–10). In the Mesolithic Tušimice type quartzite was used mainly in north-west Bohemia, rarely extending beyond this area (Vencl 1990:238–9). With the appearance of permanent farming cultures along the Lužický stream it began to be distributed to other regions. In the Neolithic it was exported on a small scale south to the Pilsen region, south-east to the Prague region and to the Bylany settlements, Kutná Hora district (from 0.9 to 2 per cent — J. Lech 1989) and east to the Hradec Králové region. In the Eneolithic it reached central and south Moravia, about 280 km from the mine (*e.g.*, Vyškov-Dědice — Cihelna site; Grešlove Mýto, Znojmo dist.; Bořitov, Blansko dist.). Since the Bavarian tabular striped hornstone and *Plattensilex* reached as far east as Moravia, it is to be expected that Tušimice type quartzite will be found in the Neolithic and Eneolithic chipped inventories in eastern Germany. The favourable conditions for farming in the Lužický stream microregion, loess covered by black-earth, meant that agriculture and animal breeding could be the bases of the economy. The spread of Tušimice quartzite to other regions suggests that its mining contributed to the persistence of the settlements in the microregion (Lech 1987:104–6; Smrž 1987:607).

Translated by Alicja Petrus-Zagroba

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