MORE ON THE STATE OF ART OF HUNGARIAN OBSIDIANS•

TOVÁBBI ADATOK A MAGYARORSZÁGI OBSZIDIÁNOK KUTATÁSÁRÓL

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Abstract

Obsidian was known and used on the territory of present-day Hungary since the Middle Palaeolithic period. The raw material sources are located on the territory of the Tokaj-Prešov Mountains. They are known in international archaeometrical literature as Carpathian 1 (Slovakian) and Carpathian 2 (Hungarian) types. All of the obsidian artefacts found on archaeological sites can be assigned, macroscopically, to these categories; this is also corroborated by the analytical studies performed so far (see in details in the study of Kasztovszky & Přichystal in the same volume.). Carpathian 3 (Transcarpathian) obsidian and the other obsidian types from the Mediterranean region has not been spotted on Hungarian archaeological sites as yet. The paper briefly summarizes archaeological data on the distribution and use of obsidian in Hungary, with an extensive list of technical literature.

Kivonat

Hazánk területén az őskőkortól ismerték és használták az obszidiánt. A nyersanyagforrások a Tokaj-Eperjesi hegység területén találhatók, ezeket a nemzetközi kutatás kárpáti 1 (szlovákiai), illetve kárpáti 2 (magyarországi) obszidiánok néven különíti el. A mai Magyarország területéről származó valamennyi obszidián makroszkóposan ezekhez a forrásokhoz köthető, amit az eddigi analitikai eredmények (részletesen ld. Kasztovszky & Přichystal tanulmányát, jelen kötetben) is megerősítenek. A kárpáti 3 (kárpátaljai) obszidián Magyarország területéről eddig még nem került elő, ahogy a mediterrán régió többi obszidián változata sem.
A tanulmány röviden összefoglalja az obszidián használatára vonatkozó régészeti adatokat és a legfontosabb szakirodalmat.

KEYWORDS: OBSIDIAN, PREHISTORY, HUNGARY, "CARPATHIAN" OBSIDIAN

KULCSSZAVAK: OBSZIDIÁN, ŐSKOR, MAGYARORSZÁG, "KÁRPÁTI" OBSZIDIÁN

Introduction

Hungarian obsidian has been in the focus of both archaeological and geological attention for a long time. The 'pioneering fathers' of Hungarian archaeology and geology (notably, Flóris Rómer and József Szabó) dedicated special attention to the problem. It is of symbolic significance, that the leading periodical of Hungarian archaeology, founded by Rómer and active till our times (i.e. Archaeológiai Értesítő), consecrated space and attention for the subject in the very first volume of the periodical (Rómer 1868a, 1868b) as well as other early communications on Hungarian chipped stone industry (Rómer 1867).

Obsidian played a central role on the first and so far, only World archaeological conference and related exhibition held in Hungary (VIII-ième Congrès International d'Anthropologie et d'Archéologie Préhistoriques, Budapest 1876., Rómer ed.1878); for this occasion, Rómer constructed the first distribution map on what we call today Carpathian obsidian (Rómer 1878; accessible as Appendix 1. for Biró 2005).

The archaeological interest was fortunately coupled by regional geological studies. Exploration of the Tokaj obsidian sources and related volcanic events were described by J. Szabó (1867, 1878) and one generation of researchers later, by Gy. Szádeczky (1887).

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All these studies took place in the framework of the Austro-Hungarian monarchy, where all the sources we call today Carpathian obsidians, and most of the distribution area were under the umbrella of the same political entity.

State of art - efforts and difficulties

Theoretically, changes in the World politics should not influence the objectivity of scientific research. Practically, however, the new states emerging after the closing of the World War I. started to develop their own research strategies, backed up by disciplines on their native languages (summaries produced time-to-time in some of the scientific '*lingua franca*' of their age). Thus the information we have become segmented and uneven. Valuable regional summaries and details have been published (Kostrewski 1930, Roska 1934, Janšák 1935, Kulczycka & Kozłowski 1960, Comşa 1969. Paunescu 1970) but the unity of information that characterised the research of Rómer's times was lost.

Personally, I had the occasion of compiling several distribution maps; overall distribution by technical literature mainly (Biró 1981), Palaeolithic distribution on the basis of museum material (the Hungarian National Museum and the Herman Ottó Museum, Miskolc; Biró 1984) later incorporating analytical studies (Biró 2004, 2006).

In the most recent summary, written on the occasion of the Japanese workshop initiated by Akira Ono (Yamada & Ono eds. 2014, Biró 2014a), I was trying to include all information at hand. This effort comprised, apart from former resources, HNM inventory data, my personal lithic reference database and an admittedly deficient selection of the lithic study papers.

The first effort to interpret the dataset was on the UISPP 4th commission meeting in Budapest, 2009 when I tried to plot coordinates of sites in relation to sources by archaeological periods and calculate distances and directions for the archaeological spreading of obsidians (Biró 2009, unpublished). As a result of the analysis, I could see the weaknesses of my approach.

1, there is a strong bias towards 'home data',

2, data quality is very uneven due to several reasons - collection strategy, lithic analysis coverage, chronological precision etc.

I tried to solve the problem by mapping only a fraction of the information. I hope that the current efforts, published in the actual volume of AM and hopefully presented by researchers on the IOC-2019 conference will essentially contribute to a more complete image on the use of Carpathian obsidians, in general.

State of art - as it seems today from Hungary

Carpathian obsidian is a rather awkward name for the obsidians in the Carpathian Basin - none of them in the Carpathian Mts., none of them of Carpathian geological age (Biró et al. 2000, Szepesi et al. 2018). As international obsidian research adopted the name since Renfrew et al. (1965), it is better to use because people know the term and what it implies.

Palaeolithic period (Fig. 1.)

The use of Carpathian obsidians started latest in the Middle Palaeolithic. Around the Carpathian 3 sources, we can suppose even more ancient use (Ryzhov 2014, 2018). Carpathian 3 obsidian, however, is not known so far from Hungarian sites, either Palaeolithic or Prehistoric context.

In Hungary, the earliest known pieces of archaeological obsidian came forth from the Subalyuk cave (near Cserépfalu), already described in the site monograph (Bartucz et al. 1939, Kadić 1939, Vendl 1939). The site is approximately 100 km from the obsidian source region. Recent finds from Legénd 200 km from the sources, Markó & Péntek (2003-2004, Biró et al. 2005) justified not only the extended regional use of the material, but yielded all important Carpathian 1 and 2 obsidian phenotypes (even mahogany obsidian!).

This proves the excellent regional knowledge of the source areas, even at a distance of 200 km from source to site. The mechanism for obsidian transfer can only be hypothetically studied in this period.

The Early Upper Palaeolithic Szeletian and Aurignacian cultures had both used obsidian, though in subordinate quantities (**Fig. 2.**). Both of these cultures inhabited the North-Eastern hilly regions.

In Hungary, a major geographical boundary is represented by the river Danube. This barrier was crossed probably by the beginning of the Würm 1 period as reflected by the retouched obsidian flake from the Pilisszántó II rock shelter.

In the more recent part of the Upper Palaeolithic, several phyla of the Gravettian Entity used obsidian in significant, but not dominant quantities (Biró 1984, Dobosi 2011, Markó 2017). The most important from this respect is probably Bodrogkeresztúr, in the hearth of the obsidian region (Dobosi ed. 2000). The percentage of obsidian use is impressive in itself but it is even more important for us that the Southern Tokaj sources (Carpathian 2) were used as local raw material together with a variety of hydrothermal and limnosilicites.

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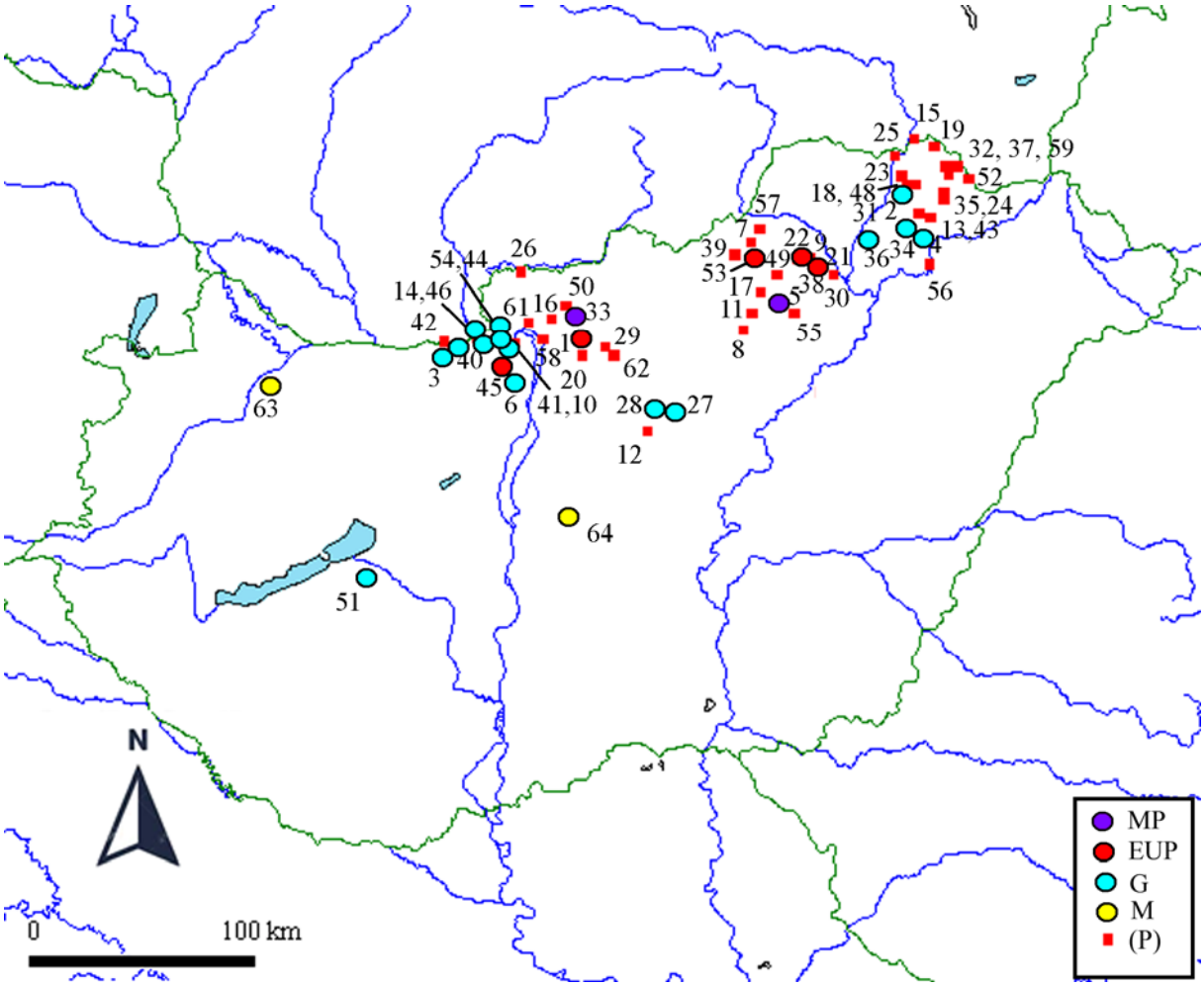

Fig. 1.: Palaeolithic and Mesolithic obsidian use in Hungary.

Key of symbols: MP: Middle Palaeolithic; EUP: Early Upper Palaeolithic; G: Gravettian; M: Mesolithic; (P): unspecified Palaeolithic

Site numbers: 1. Acsa; 2. Arka; 3. Bajót; 4. Bodrogkeresztúr; 5. Cserépfalu; 6. Csobánka; 7. Csokvaomány; 8. Demjén; 9. Diósgyőrtapolca; 10. Dömös; 11. Eger; 12. Egreskáta; 13. Erdőbénye; 14. Esztergom; 15. Felsőkéked; 16. Felsőpetény; 17. Felsőtárkány; 18. Fony; 19. Füzér; 20. Galgagyörk; 21. Miskolc-Görömbölytapolca; 22. Hámor; 23. Hejce; 24. Hercegkút; 25. Hidasnémeti; 26. Hont; 27. Jászberény; 28. Jászfelsőszentgyörgy; 29. Kálló; 30. Kistokaj; 31. Korlát; 32. Kovácsvágás; 33. Legénd; 34. Mád; 35. Makkoshotyka; 36. Megyaszó; 37. Mikóháza; 38. Miskolc; 39. Mocsolyástelep; 40. Mogyorósbánya; 41. Nagymaros; 42. Nyergesújfalu; 43. Olaszliszka; 44. Pilismarót; 45. Pilisszántó; 46. Pilisszentlélek; 47. Püspökhatvan; 48. Regéc; 49. Répáshuta; 50. Romhány; 51. Ságvár; 52. Sátoraljaújhely; 53. Szilvásvárad; 54. Szob; 55. Tarcal; 56. Tiszaladány; 57. Uppony; 58. Vác-Csipkés; 59. Vágáshuta; 60. Verőce; 61. Verőcemaros; 62. Verseg; 63. Koroncó; 64. Kunpeszér

1. ábra: Őskőkori és középső kőkori lelőhelyek régészeti obszidián leletekkel.

Jelkulcs: MP: középső paleolitikum; EUP: korai felső paleolitikum; G: gravetti; M: mezolitikum; (P): pontosabban nem meghatározott paleolitikus lelőhely

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Fig. 2.: Early Upper Palaeolithic leafpoint from the Puskaporos rock shelter, Miskolc environs. Szeletian culture. (Photo by J. Kardos)

2. ábra: Korai felső paleolit levélhegy a Puskaporosi kőfülkéből, Szeleta kultúra. (Kardos J. felvétele)

Practically all the Gravettian localities to the East of the Danube had obsidian and most of the Transdanubian sites as well (Pilismarót, Mogyorósbánya, Ságvár).

At Megyaszó and Arka-Herzsarét, the rare mahogany obsidian was also spotted (Biró et al. 2005, Kasztovszky at al. 2018).

The Mesolithic period is very poorly represented in Hungary; obsidian use was documented on some of the few sites, even in Transdanubia (e.g. Koroncó, Biró 1984, 2002).

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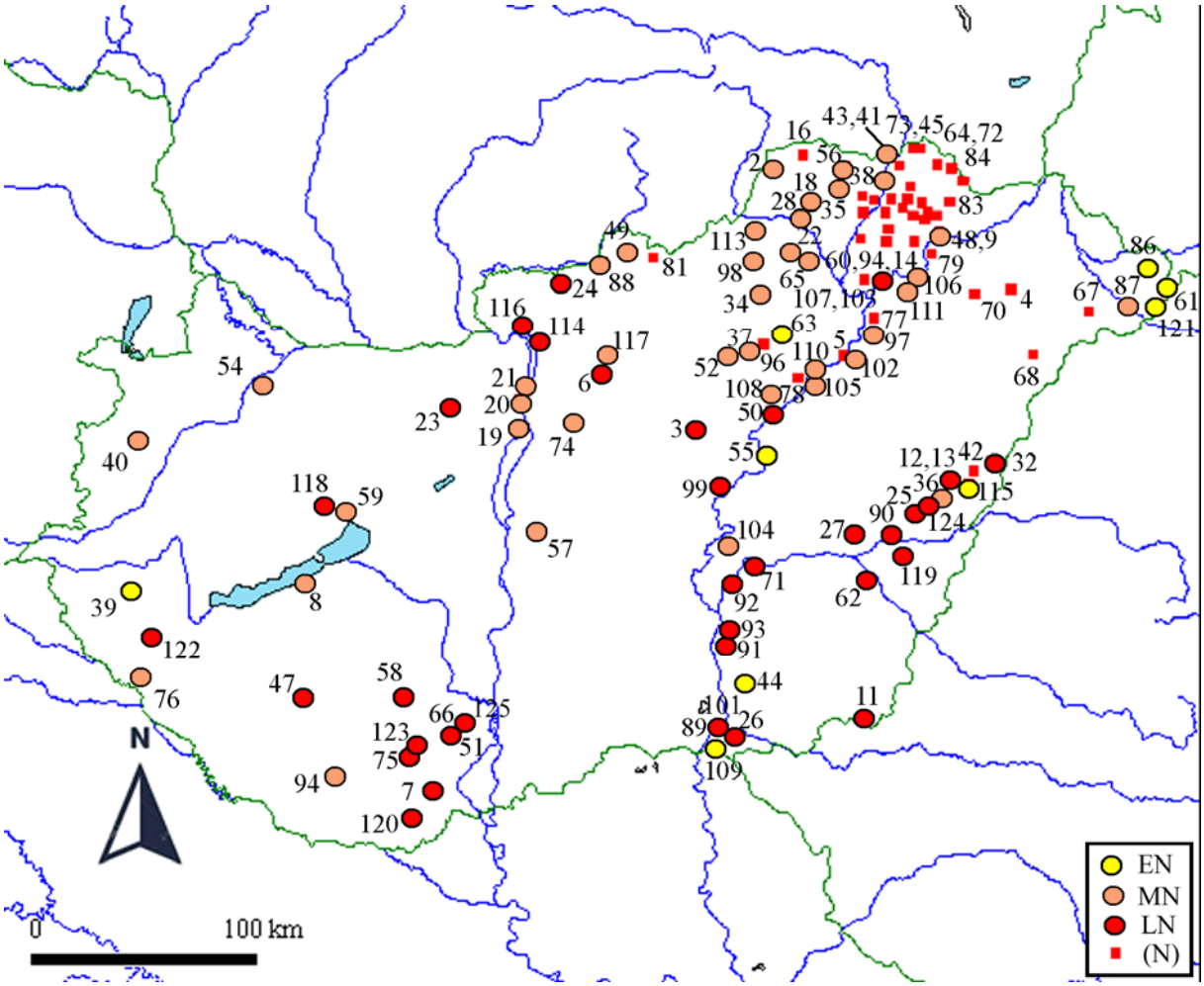

Fig. 3.: Neolithic obsidian use in Hungary.

Key of symbols: EN: Early Neolithic; MN: Middle Neolithic; LN: Late Neolithic; (N): unspecified Neolithic

Site numbers: 1. Abaújszántó; 2. Aggtelek; 3. Alattyán; 4. Apagy; 5. Ároktő; 6. Aszód; 7. Babarc; 8. Balatonszemes; 9. Balsa-Fecskepart; 10. Baskó; 11. Battonya; 12. Berettyószentmárton; 13. Berettyóújfalu; 14. Bodrogkeresztúr; 15. Bodrogzsadány; 16. Bódvaszilas; 17. Boldogkőváralja; 18. Borsod; 19. Budapest-Albertfalva; 20. Budapest-Aranyhegyi út; 21. Budapest-Nánási út 69; 22. Büdöspest barlang; 23. Csabdi; 24. Csesztve; 25. Darvas; 26. Deszk; 27. Dévaványa; 28. Edelény; 29. Encs; 30. Erdőbénye; 31. Erdőhorváti; 32. Esztár; 33. Fancsal; 34. Felsőtárkány; 35. Felsővadász; 36. Furta; 37. Füzesabony; 38. Garadna; 39. Gellénháza; 40. Gór; 41. Gönc; 42. Hencida; 43. Hidasnémeti; 44. Hódmezővásárhely; 45. Hollóháza; 46. Inánc; 47. Kaposvár; 48. Kenézlő; 49. Karancság; 50. Kisköre; 51. Kismórágy; 52. Kompolt; 53. Korlát; 54. Koroncó; 55. Kőtelek; 56. Krasznokvajda; 57. Kunszentmiklós; 58. Lengyel; 59. Litér; 60. Megyaszó; 61. Méhtelek; 62. Mezőberény; 63. Mezőkövesd; 64. Mikóháza; 65. Miskolc; 66. Mórágy; 67. Nagyecsed; 68. Nyírlugos; 69. Olaszliszka; 70. Oros; 71. Öcsöd; 72. Pálháza; 73. Pányok; 74. Pécel; 75. Pécsvárad; 76. Petrivente; 77. Polgár; 78. Poroszló; 79. Rakamaz; 80. Regéc; 81. Salgótarján; 82. Sárazsadány; 83. Sárospatak; 84. Sátoraljaújhely; 85. Sima; 86. Sonkád; 87. Szamossályi; 88. Szécsény; 89. Szeged; 90. Szeghalom; 91. Szegvár; 92. Szelevény; 93. Szentes; 94. Szentlőrinc; 95. Szerencs; 96. Szihalom; 97. Szilmeg; 98. Szilvásvárad; 99. Szolnok; 100. Tállya; 101. Tápé; 102. Tiszacsege; 103. Tiszadob; 104. Tiszaföldvár; 105. Tiszafüred; 106. Tiszalök; 107. Tiszalúc; 108. Tiszanána; 109. Tiszasziget; 110. Tiszavalk; 111. Tiszavasvári; 112. Tolcsva; 113. Uppony; 114. Vác; 115. Váncsod; 116. Verőcemaros; 117. Verseg; 118. Veszprém; 119. Vésztő; 120. Villánykövesd; 121. Zajta; 122. Zalaszentbalázs; 123. Zengővárkony; 124. Zsáka 125. Szálka.

3. ábra: Újkőkori lelőhelyek régészeti obszidián leletekkel.

Jelkulcs: EN: kora neolitikum; MN: középső neolitikum; LN: késő neolitikum; (N): pontosabban nem meghatározott neolitikus lelőhely

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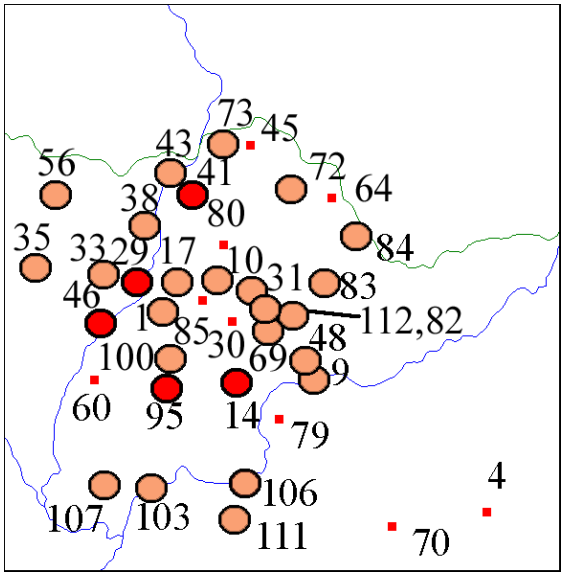

Fig. 3a: Neolithic obsidian use in Hungary.

(Top right corner of Fig. 3.)

3a ábra: Újkőkori lelőhelyek régészeti obszidián leletekkel.

(a 3. ábra jobb felső sarkának részlete)

Neolithic period (Fig. 3.)

The utilisation of obsidian in the Early Neolithic period show important new directions. Sites of the Körös culture and its late variants, so-called Szatmár-group used obsidian in very large quantities and also large percentages (Méhtelek & Starnini 1993, Bácskay & Simán 1987). Among the most recent finds we can mention the fabulous obsidian raw material depot find from Váncsod (excavation by A. Priskin, poster presented on the conference Carpathian Obsidians: State of Art (http://www.ace.hu/ametry/Varnyukova.pdf) and to be presented on IOC-2019), also from Early Neolithic context.

The tendency of using large quantities of obsidian continued on the foothill regions of the Alföld in the earliest phases of the LBC culture, notably at Mezőkövesd-Mocsolyás (Biró 2002, 2014b) and Füzesabony-Gubakút (Biró 2002).

In the LBC industries of the Alföld, the Middle Neolithic period brought about a characteristic 'home-based' lithic industry comprising obsidian and limnic silicites of the North Hungarian Mid-Mountain range, mainly from the Tokaj Mts. (e.g. Hidasnémeti: Biró et al. in press). These raw materials appeared in Transdanubia in the same period mainly along the Danube, notably in Budapest environs. (e.g. Budapest-Aranyhegyi út, Biró 1987, Biró 1998a). The role of the northern communication road (Ipoly valley) is seemingly getting stronger as reflected by the important site Szécsény-Ültetés and related industries like Karancsság (Biró 1987, Szilágyi 2009).

By the Late Neolithic, important changes can be observed both on the lowlands and Transdanubia as well. The central parts of the Alföld became relatively poor in obsidian and the local limnosilicites of the Mátra and possibly Cserhát Mts. became more popular (Biró 1998a).

Centres for distribution of obsidian can be hypothesed, especially in Lengyel Culture context (Aszód, Csabdi, Biró 1998a, Szálka (unpublished surface collection, **Fig. 4**.) and probably also in coeval Vinča context (Chapman 1981).

Fig. 4.:

Obsidian micro-blades and micro-cores from Szálka-Pincehely, Lengyel Culture. (Photo by the author)

4. ábra:

Obszidián mikropengék és mikromagkövek. Szálka-Pincehely, lengyeli kultúra. (a szerző felvétele)

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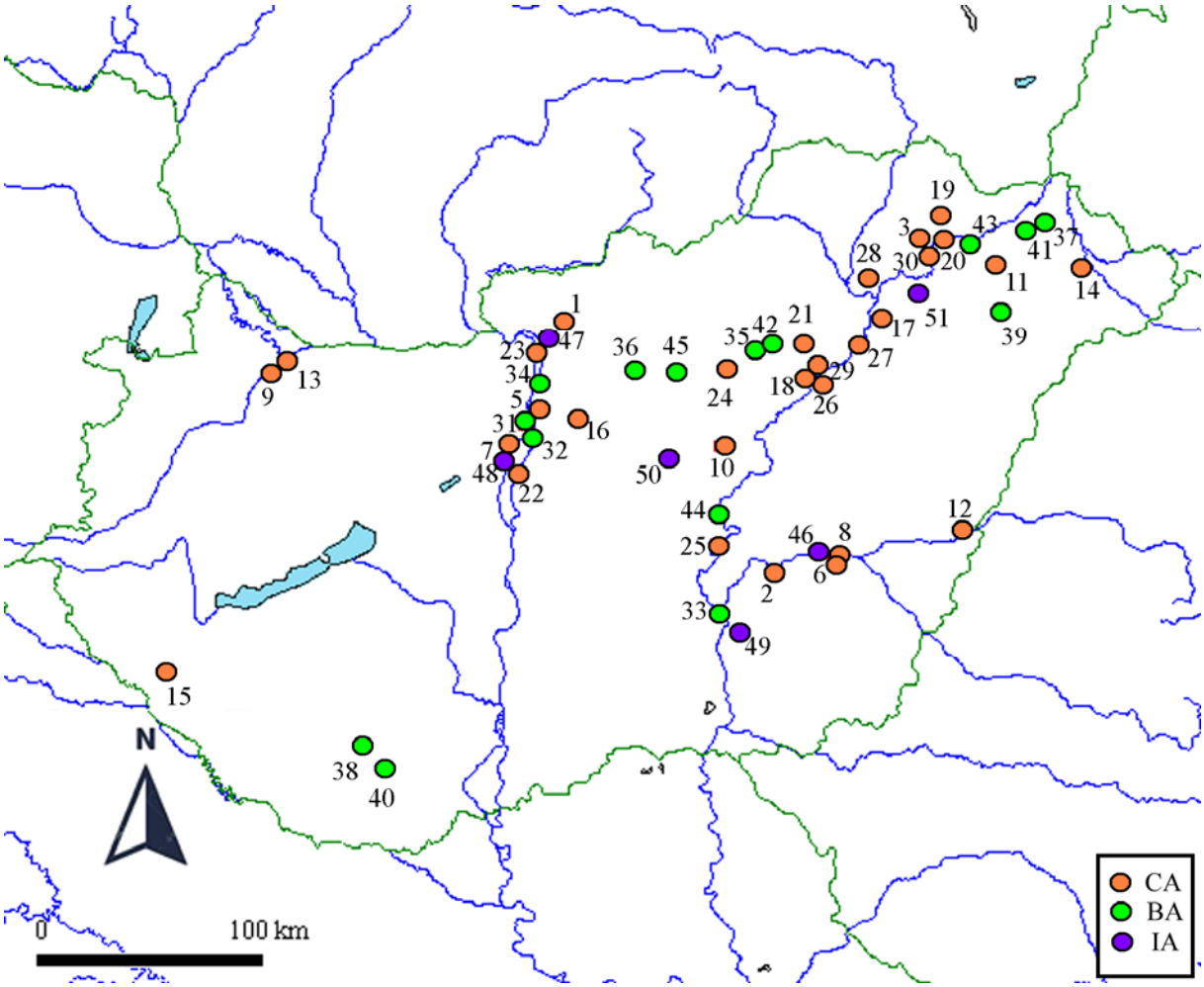

Fig. 5.: Obsidian use in Hungary after the Neolithic period.

Key of symbols: CA: Copper Age; BA: Bronze Age; IA: Iron Age

Site numbers: 1. Alsópetény; 2. Békésszentandrás; 3. Bodrogkeresztúr; 4. Bodrogzsadány; 5. Budapest; 6. Endrőd; 7. Érd; 8. Gyoma; 9. Ikrény; 10. Jászladány; 11. Kemecse; 12. Magyarhomorog; 13. Ménfőcsanak; 14. Nagydobos; 15. Nagykanizsa; 16. Pécel; 17. Polgár; 18. Poroszló; 19. Sárazsadány; 20. Szabolcs; 21. Szentistván; 22. Szigetcsép; 23. Tahitótfalu; 24. Tarnabod; 25. Tiszabög; 26. Tiszafüred; 27. Tiszakeszi; 28. Tiszalúc; 29. Tiszavalk; 30. Tokaj; 31. Budapest-Albertfalva; 32. Budapest-Csepel, Hollandi u.; 33. Csongrád; 34. Dunakeszi; 35. Füzesabony; 36. Hatvan; 37. Kisvárda; 38. Kovácsszénája; 39. Nagykálló; 40. Pécs; 41. Rétközberencs; 42. Szihalom; 43. Tiszabercel; 44. Tószeg; 45. Vámosgyörk; 46. Gyomaendrőd; 47. Kosd; 48. Százhalombatta; 49. Szentes; 50. Tápiószele; 51. Tiszavasvári

5. ábra: Újkőkornál fiatalabb lelőhelyek régészeti obszidián leletekkel.

Jelkulcs: CA: rézkor; BA: bronzkor; IA: vaskor

This period is probably the most favourable for long distance contacts. The Carpathian obsidian travels in Late Neolithic context as far as Istria (Williams et al. 1984), giving one of the rare instances of interaction with the areas basically supplied from Lipari (Kasztovszky & Težak-Gregl 2009). The extreme long-distance trade network of the period is also documented by special raw materials like jade (Biró et al. 2017).

More recent prehistoric obsidian use (Fig. 5.)

Obsidian distribution in the recent periods of prehistory, especially in Bronze and Iron Age has not been systematically studied. As part of the evaluation of Late Neolithic obsidian distribution, mainly Early and Middle Copper Age obsidian use was evaluated by Biró (1998a). This period (the first half of the Copper Age) has also been surveyed by I. Bognár-Kutzián (Kutzián 1972).

Fig. 6.: Copper Age obsidian arrowheads from Magyarhomorog. (Photo by J. Kardos)
6. ábra: Rézkori nyílhegyek Magyarhomorogról. (Kardos J. felvétele)

Fig. 7.: Large obsidian retouched blade from the Kurgan Csongrád-Felgyő. (Photo by the author)

7. ábra: Csongrád-Felgyő, nagy méretű obszidián retusált penge a kurgánból. (a szerző felvétele)

In his classical study on Copper Age lithic implements, P. Patay (Patay 1976a) has mentioned Copper Age obsidian use. He has also contributed to the knowledge on authentic, well dated and „personal" obsidian use by his excavations of Copper Age cemeteries, e.g. Magyarhomorog (Patay 1976b) (**Fig. 6.**). More Copper Age obsidian finds were studied from the Tiszalúc settlement (Patay 2005, Kövecses-Varga 2005). Late Copper Age obsidian finds tend to centre, apart from the Alföld, again in the Danube-band region and along the Danube (Zandler & Horváth 2010).

Early Bronze Age sites give ample evidence of obsidian use in traditional stone tool functions (Csongrád-Felgyő, Ecsedy 1979, Albertfalva Biró 2016) (**Fig. 7.**). In the Middle Bronze Age, scattered obsidian finds are still known (Horváth 2009).

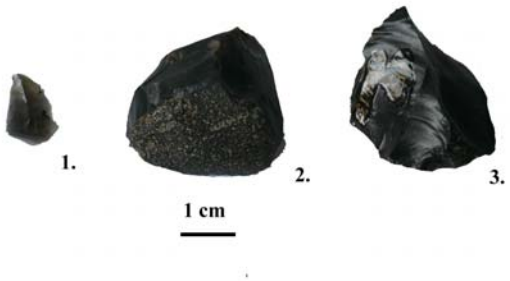

Fig. 8.: Obsidian finds from Scythian graves. Prehistoric collection of HNM. (Photo by J. Antoni)

1: Tápiószele 55.11.43; 2: Tiszavasvári 62.50.112; 3: Szentes-Vekerzug 55.14.138.

8. ábra: Obszidián leletek szkíta sírokból. MNM őskori gyűjteménye. (Antoni J. felvétele)

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The prehistoric collection of the Hungarian National Museum contains obsidian finds from classical Bronze Age localities like Füzesabony, Hatvan and Nagykálló. More surprisingly, we have quite a few obsidian from Iron Age (Celtic and Scythian) context. In these cases, the question of the secondary use and non-traditional stone tool functions like fire-flint emerge (**Fig. 8.**).

Concluding remarks

Obsidian is a characteristic element of the lithic industries in Hungary from the (Middle) Palaeolithic till the terminal periods of prehistory. So far, only Carpathian obsidians (C1 and C2E, C2T) types have been identified. There is a characteristic temporal and spatial pattern observable in the archaeological distribution of obsidian, along main river valleys and foothill regions of the Northern Mid-Mountain range. The most intensive use of obsidian is observed on the Hungarian Lowlands (Alföld) at the beginning and first half of the Neolithic period (early Neolithic, Körös culture and Szatmár group as well as early LBC). By the Late Neolithic, obsidian access is clearly a political issue – the longest distances of distribution, local distribution centres relatively far from the source areas (Lengyel culture) and scarcity of obsidian on traditionally well supplied Alföld region (Biró 1998a, 1998b).

There is still much work to do. It is important to check – especially long distance – items of obsidian by strictly non-destructive analytical methods. Also, more attention should be paid to relatively recent, i.e., recent prehistoric obsidian distribution. It is important to know more on border zones of the distribution area, regions probably supplied from several obsidian sources. Probably the most important is the study of the complete distribution area of Carpathian obsidians, over the current political boundaries and the collection of representative data on the lithic composition of sites.

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