

DISTRIBUTION MAPS OF THE PALAEOOLITHIC SITES STUDIED BY POLLEN AND PLANT MACROFOSSIL ANALYSES (DATABASE FOR THE FORMER USSR)

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ABSTRACT. This paper contains 6 maps. They show the distribution of the principal Early, Middle and some of the more ancient Late Palaeolithic sites studied by pollen and plant macrofossil analyses from the area covered by the former USSR. The maps illustrate the locations of the resources contained in the Archaeology–Palaeobotany–Palynology Database (BARPP). All text tables of the European Pollen Database (EPD) and some additional text tables with information on archaeology are used in BARPP for each site. Part of the BARPP material is available on the Internet at the following address: <http://www.peterlink.ru/~stepanov/gml>.

KEY WORDS: pollen, macrofossil plant remains, Internet, database, Palaeolithic, archaeological sites

INTRODUCTION

The Archaeology–Palaeobotany–Palynology Database of palynological and different types of plant macrofossil remains (seeds, wood, charcoal, etc) is held at IHMC RAS. Published material is available on the PeterLink web-server, while some additional information is stored on personal computers. The maps (Figs 1–6) show the geographical location of the principal Palaeolithic sites studied by pollen and plant macrofossil analyses from the area of the former USSR. Most of them are contained in BARPP.

groups of sites and a bibliography on 166 publications. The authors hope that BARPP will contain information on the late phase of the Upper Palaeolithic and on the Mesolithic in 2000.

The important part of BARPP is the previously unpublished material – a large series of pollen data on the best stratified sites from the Carpathians, Russian Plain, Altai and Caucasus (material of some palynologists and G.M. Levkovskaya from the open sites on Korolevo I, Kostenki 1, Kostenki 12, Kostenki 14, Kostenki 21, Stinka, Shipot, Betovo, Korshevo 1, Korshevo 2, Birutchia Balka, Ust-Karakol 1, Ust-Karakol 2 and on cave sites Denisova, Matouzka, Treugolnaya, Mezmaiskaya, Akhstyr, Vorontsovskaya, Guppski, Monasheskaya, etc).

METHODOLOGY

Palaeobotanical information in BARPP is given in the form of statistical tables, diagrams, maps, pictorial images of the studied objects (SEM micrographs of items gathered for food, relics, palynoterates, etc) and text tables which contain archaeological information and also most of the 99 data recommended by the European Pollen Database (EPD) and prepared according to its demands.

MATERIAL STORED

Currently BARPP contains Early–Middle Palaeolithic palaeobotanical information (about 40 Mb of data on 69 sites and a bibliography on 169 publications). The first Late Palaeolithic data about 50 Mb has also been entered in BARPP: selected material on the chronologically early (40–25 kyr) and middle (24–20 kyr)

DISCUSSION OF THE RESEARCH RESULTS

BARPP contains information on Pleistocene flora or on dynamics of natural or ruderal vegetation on 120 Palaeolithic sites. Although only part of them are characterized by a large series of pollen or palaeobotanical samples.

The maps show that the Early Palaeolithic (Figs 1, 2) palaeobotanical or palynological material are known for 18 sites and Middle Palaeolithic one (Figs 3, 4) for 51 sites. Late Palaeolithic data are obtained for 22 sites of the first (40–25 kyr) and for 29 one of the second (24–20 kyr) chronological groups (Figs 5, 6). But the number of points on the maps may be changed as a result of discussion on the problem of archaeological dating of some sites or appearance of some additional information (chronological, palaeobotanical, etc).

Most of the Middle Palaeolithic material (Figs 3, 4)

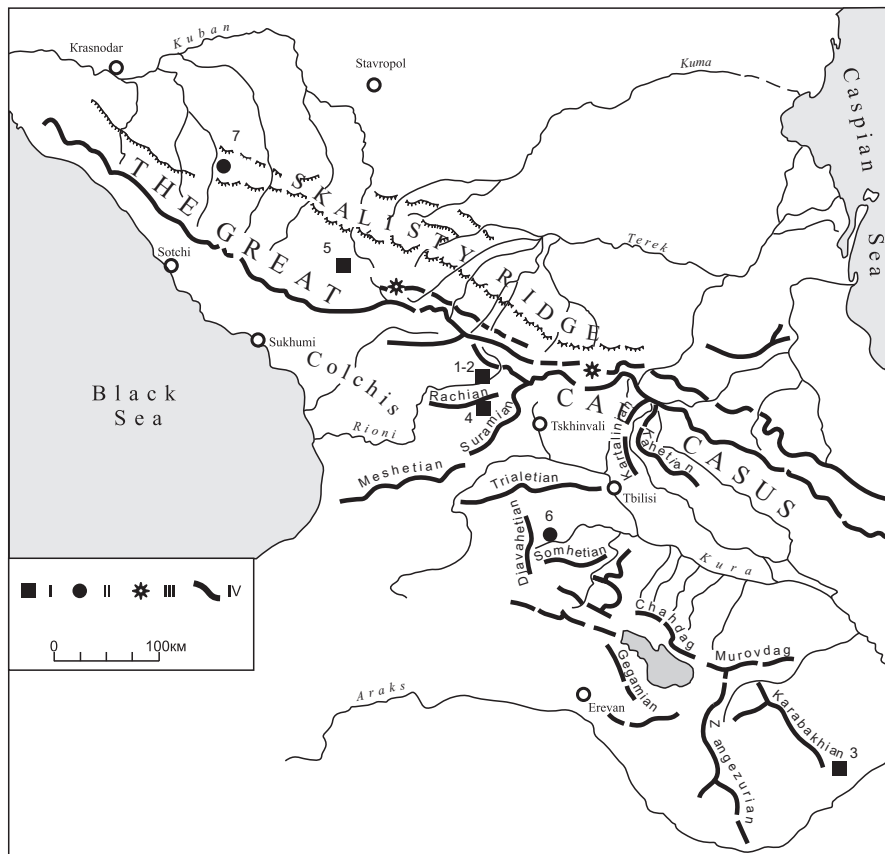


Fig. 1. Early Palaeolithic sites from the Caucasus, studied by pollen and other palaeobotanical analyses. Legend: I – cave sites, II – open sites, III – volcanos, IV – mountain ranges. Pollen analyses: 1. Kudaro 1; 2. Kudaro 3; 3. Azykh; 4. Tsona; 5. Treugolnaya; 6. Dmanisi; 7. Sredni Hadgoh. Other analyses: seeds (site 6); the most ancient indeterminate charcoal pieces found in pollen samples (site 1 from layer 5b; site 5 from layer 5b); palynoteratical statistical studies (sites 1, 2, 5)

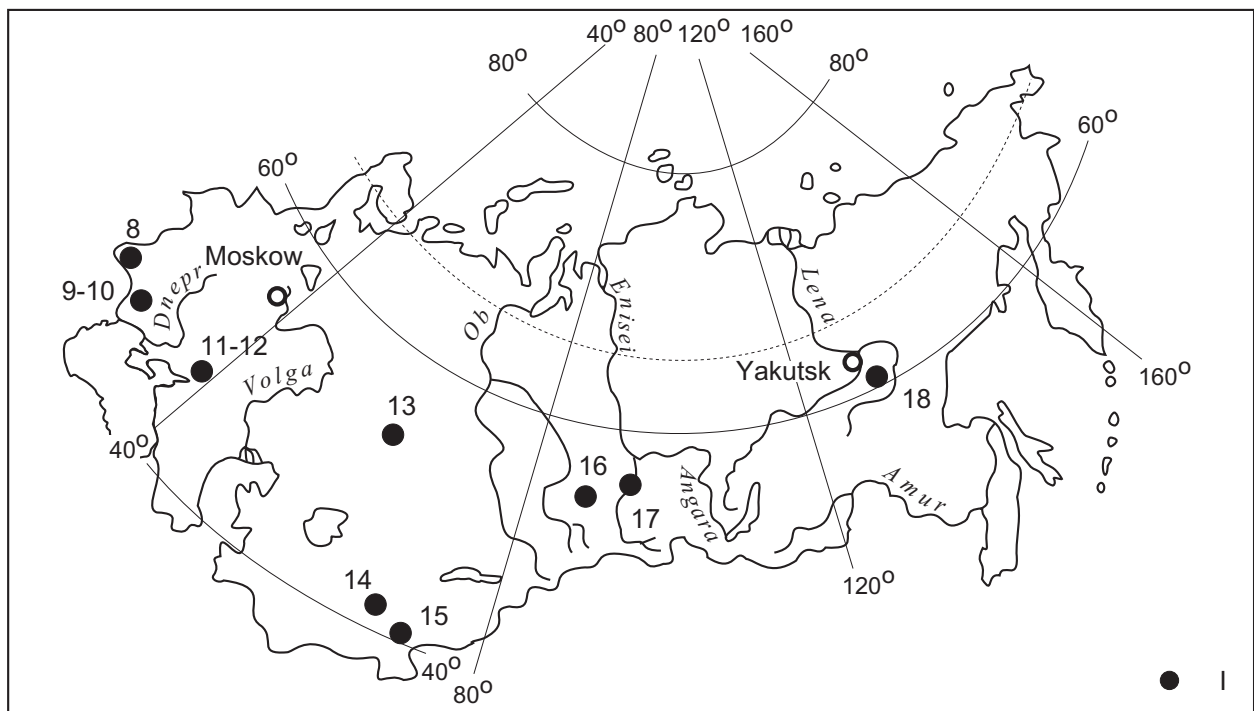


Fig. 2. Early Palaeolithic sites from other regions of the former USSR, studied by pollen and other palaeobotanical analyses. Legend: I – open sites. Pollen analyses: 8. Korolevo 1; 9–10. Pogreby and Dubossary; 11–12. Hriaschi and Michailovskoye; 13. Aktasty 1; 14. Kulbulak (?); 15. Sel-Ungur; 16. MK-1; 17. Bereshekovo; 18. Diring. Other analyses: palynoteratical statistical studies (sites 8, 9, 10)

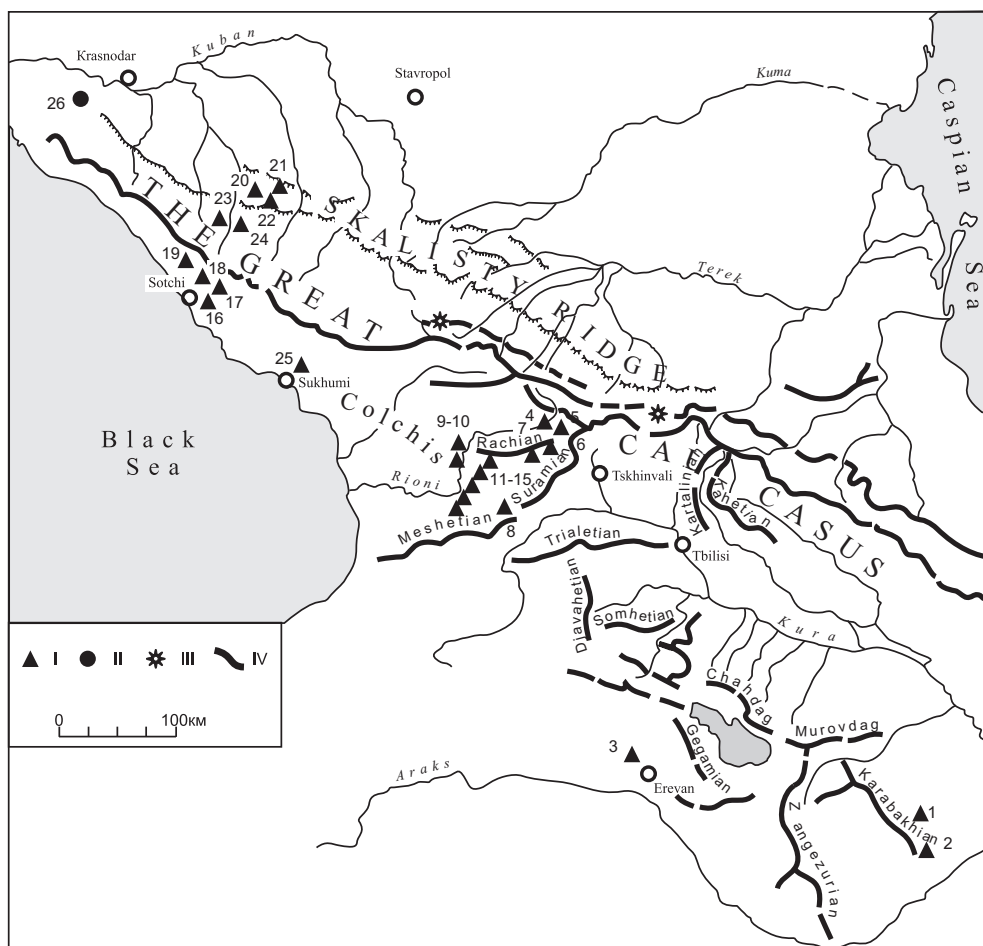


Fig. 3. Middle Palaeolithic sites from the Caucasus studied by pollen and other analyses. Legend: I – cave sites, II – open sites, III – volcanoes, IV – mountain ranges. Pollen analyses: 1. Azykh; 2. Taglar; 3. Erevanskaya; 4. Kudaro I; 5. Kudaro 3; 6. Tsona; 7. Djrchula; 8. Ortvala-Klde; 9. Ortvala; 10. Sakajia; 11–15. Tsutskvaty cave system (11. Bronzovaya; 12. Bizonovaya; 13. Medvejaya; 14. Dvoynoy Grot; 15. Verchnaya); 16. Akhstyr; 17. Kepshinskaya; 18. Navalishenskaya; 19. Malaya Vorontsovskaya; 20. Guppski 1; 21. Barakaevskaya; 22. Monasheskaya; 23. Matouzka; 24. Mezmaiskaya; 25. Apiancha; 26. Ilskaya 1. Other analyses: SEM pollen research (sites 4, 5, 16, 19–24); palynoteratical statistical studies (sites 4, 5, 16, 19–24)

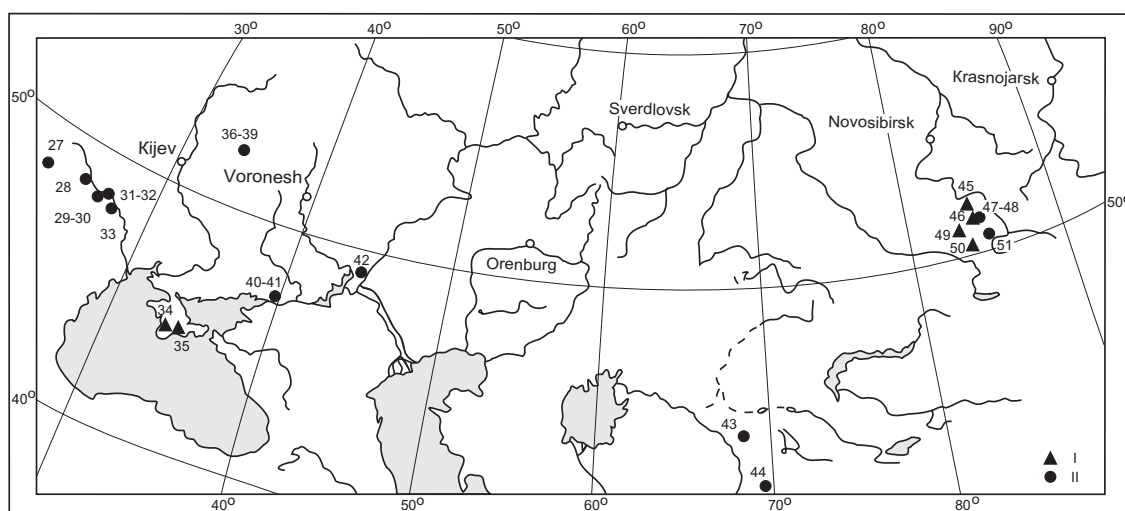


Fig. 4. Middle Palaeolithic sites from different regions of the former USSR studied by pollen and other analyses. Legend: I – caves sites, II – open sites. Pollen analyses: 27. Korolevo 1; 28. Stinka 1; 29. Ketosy; 30. Shipot 1; 31. Molodova 1; 32. Molodova 5; 33. Korman 4; 34. Kabazi 2; 35a-35b. Zaskalnaya 5 and Kiik-Koba; 36. Khotylevo 1; 37. Betovo; 38. Korshevo 1; 39. Korshevo 2; 40. Rozhok; 41. Nosovo; 42. Stalingradskaya (Sukhaya Metchetka); 43. Kulbulak; 44. Sel-Ungur; 45. Okladnikova; 46. Denisova; 47–48. Ust-Karakol 1 and Ust-Karakol 2; 49. Strashnaya; 50. Ust-Kan; 51. Kara-Bom. Other analyses: wood (sites 31–33); charcoal (site 35b); epidermises (sites 31–32); SEM pollen research (sites 27, 29, 37–39, 46, 48); palynoteratical statistical studies (sites 27, 29, 37–39, 46, 48)

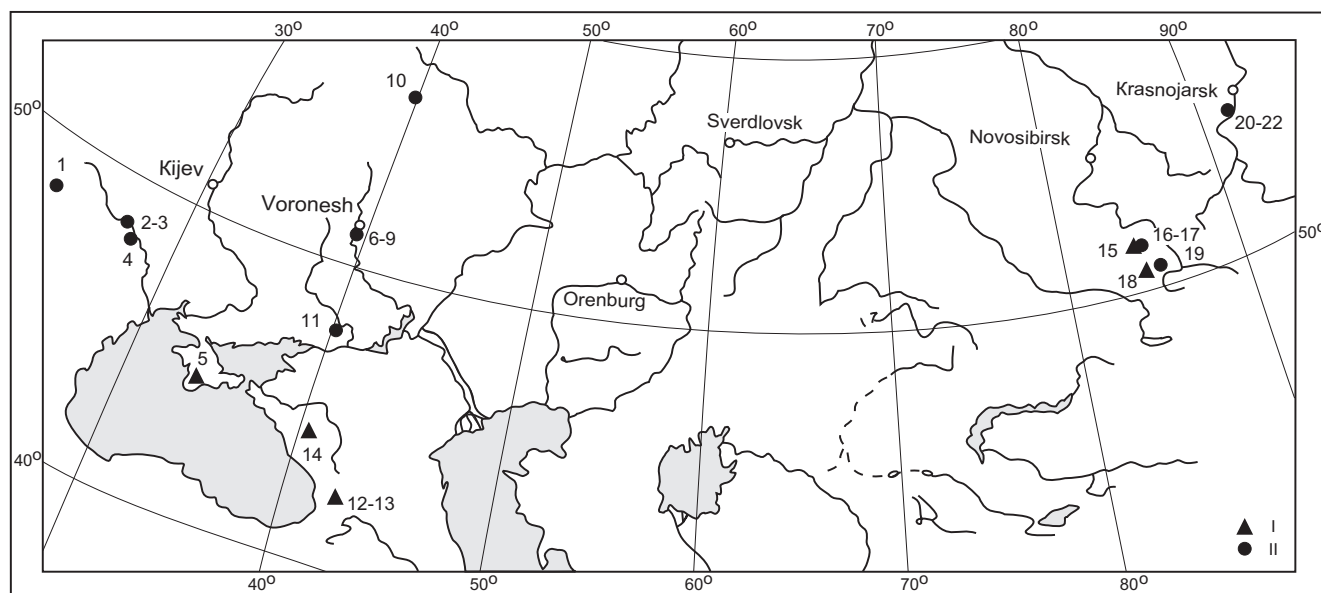


Fig. 5. The location of principal Late Palaeolithic sites of the first period (40–25 kyr) studied by pollen and other analyses. Legend. I – cave sites, II – open sites. Pollen analyses: 1. Korolevo 1; 2–3. Molodova 1 and Molodova 5; 4. Korman 4; 5. Suren 1 (?); 6. Kostenki 1; 7. Kostenki 12; 8. Kostenki 14; 9. Kostenki 17; 10. Sungyr; 11. Birutshia Balka; 12. Ortvala; 13. Apiancha; 14. Mezmaiskaya; 15. Denisova; 16–17. Ust-Karakol 1 and Ust-Karakol 2; 18. Maloyamanskaya; 19. Kara-Bom; 20–22. Malaya Syia, Kurtak 4 and Makarovo 4. Other analyses: wood (sites 2–4); epidermises (sites 2–4, 6, 15); seeds (site 6); charcoal (sites 6, 8, 9); palynoteral statistical studies (sites 6–8, 14, 15); SEM pollen research (sites 14, 15)

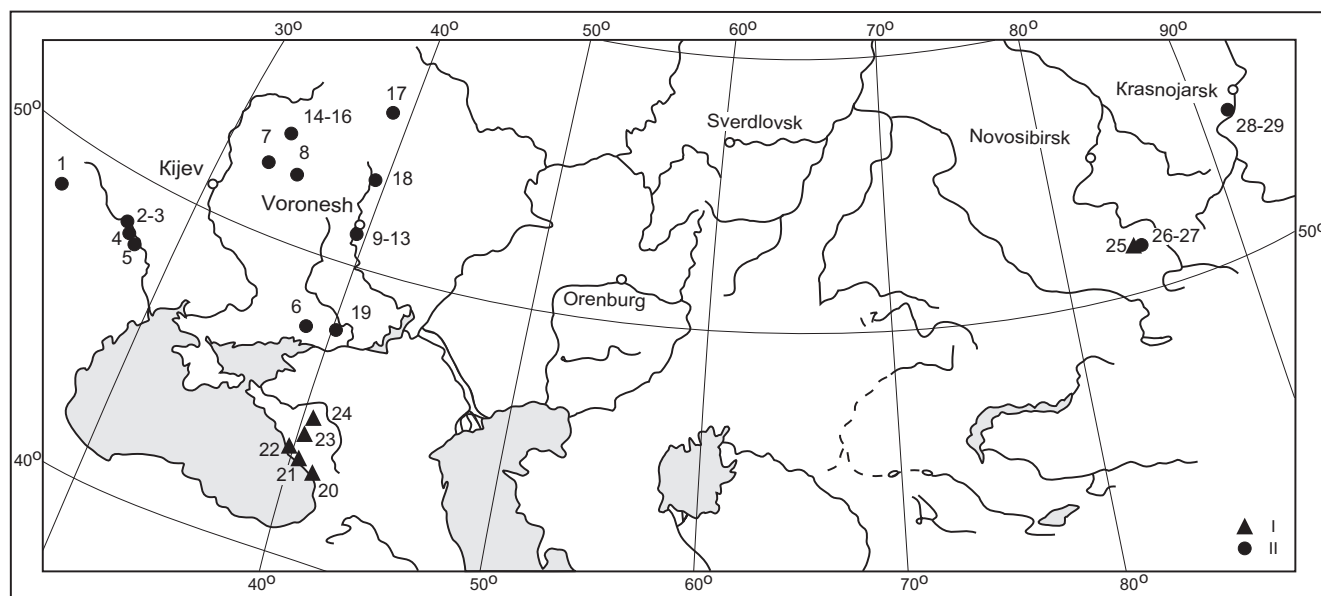


Fig. 6. The location of principal Late Palaeolithic sites of the second period (24–20 kyr) studied by pollen and other analyses. Legend: I – cave sites, II – open sites. Pollen analyses: 1. Molotchnii Kamen; 2–3. Molodova 1 and Molodova 5; 4. Korman 4; 5. Korpatch; 6. Amvrosievka; 7. Pogon (Pushkari 8); 8. Avdevo; 9. Kostenki 1; 10. Kostenki 8; 11. Kostenki 14; 12. Kostenki 19; 13. Kostenki 21; 14. Khotylevo 2; 15. Korshevo 1; 16. Korshevo 2; 17. Zارايسкая; 18. Gagarino; 19. Birutshia Balka; 20. Apiancha; 21. Malaya Vorontsovskaya; 22. Akhstyr; 23. Mezmaiskaya; 24. Gupski 1; 25. Denisova; 26. Anuj 2; 27. Ust-Karakol 1; 28. Kashtanka; 29. Malaya Syia. Other analyses: wood (sites 2–4); epidermises (sites 2–4, 25); palynoteral statistical studies (sites 9, 11, 13, 15, 16, 19, 21–25)

was obtained from the Caucasus, and the Late Palaeolithic from the present forest-steppe of the Russian Plain (Figs 5, 6). Most of the palaeobotanical material available consists of pollen analyses and only rarely other data. The situation is similar in the Western Europe

(Laville & Renault-Miskovsky 1977, Levkovskaya *et al.* 1984).

Pollen analyses provide good evidence of how well the human Palaeolithic population adapted to different ecological conditions: sites were surrounded by different

plant communities, although trees grew near them in most cases. Data on the distribution of charcoal microremains show that Palaeolithic man began to use fire since the Asheulean Epoch (Fig. 1).

BARPP can be considered not only as a palaeobotanical but also as a chronological and stratigraphical bank for archaeological sites with palaeobotanical and palynological material, because the correlations of all layers (even those which are archaeologically or palaeobotanically sterile) with different dating (C^{14} , palaeomagnetic, etc) and with chronostratigraphical markers or O^{16}/O^{18} stages are represented in it. Some pollen diagrams, included in the BARPP, have significance for climatic stratigraphy of different Pleistocene periods (Korolevo 1 with pollen characteristic of four interglacials; Kudaro 1 and Kudaro 3 with two interglacials, entrance section of Denisova cave site with pollen reconstructions for all substages of O^{16}/O^{18} stage 5, etc). Pollen data are important for interregional correlations of some sediments with ancient archaeological complexes (Levkovskaya *et al.* 1984, Levkovskaya 1988) and for palaeoecological reconstructions of significant archaeological or anthropological events such as: transition from Middle to Late Palaeolithic (Korolevo 1, Denisova cave, sites of Kostenki area, etc) and first appearance of Neanderthals (Barakaevskaya, Monasheskaya, Matouzka, Denisova, etc.) or *Homo sapiens* (Akhstyr) on different territories. Non-published materials, presented in the BARPP, contain SEM information on plant-gatherery of Palaeolithic population and on palynoteral complexes which are important for reconstructions of palaeoecological stresses (see the article of G.Levkovskaya in the present issue).

BARPP contains addresses of archaeologists, palaeobotanists and palynologists. It has bibliographical significance as well.

CONCLUSION

Currently BARPP is being translated into English, so that its content will be accessible for use in different international archaeological, palaeobotanical or palynological databases. The information contained in it should be of value to libraries, teachers, students, Palaeolithic specialists and a wide range of scientists (palynologists, palaeobotanists, palaeoclimatologists, palaeogeographers, palaeozoologists, quaternary geologists, etc).

The authors invite all who are interested in open (published) or closed (non-published) BARPP material to contact them at the following address: stepanov@peterlink.ru

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