Mining Under Empire: Exploiting the Metal Resources of Roman Dacia

Volume 2

Swii Yii Lim
Merton College
University of Oxford

A thesis submitted for the degree of
Doctor of Philosophy
Trinity 2018

References

AM I (2003) = Damian, P. ed. (2003) *Alburnus Maior I*. Cluj-Napoca: Mega.

AM I (2010) = Damian, P. ed. (2010) *Alburnus Maior I*. 2nd ed. Cluj-Napoca: Mega.

AM II (2005) = Simion, M., Apostol, V. and Vleja, D. (2005) *Monumentul funerar circular. The Circular Funeral Monument*. Alburnus Maior II. București: DAIM.

AM III (2008) = Damian, P. ed. (2008) *Necropola romană de incinerație de la Tăul Corna. Partea I*. Alburnus Maior III. Cluj-Napoca: Mega.

Anason, A., Bilal, E., Marincea, S. and Dumitras, D.-G. (2011) "W-Mo skarn from the Mraconia Valley, Romania", in N. Banjac (ed.), *Proceedings of the 17th Meeting of the Association of European Geological Societies (MAEGS-17)*, Belgrade, 215–17.

Ardeț, A. (2004) "The Roman province of Dacia: aspects of commerce in light of amphoras", in Ruscu et al. (eds.), 330–41.

Ardeț, A. (2006) *Amforele din Dacia Romană*. Timișoara: Mirton.

Ardevan, R. (1998) *Viața municipală în Dacia Romană*. Timișoara: Mirton.

Ardevan, R. and Zerbini, L. (2007) *La Dacia Romana*. Soveria Mannelli (Catanzaro): Rubbettino.

Băeștean, G. (2004) "Types of aqueducts in Roman Dacia", in Ruscu et al. (eds.), 354–67.

Băeștean, G. (2006) "The water supply of the Roman settlements in Dacia", in Gaiu and Găzdac (eds.), 341–49.

Băeștean, G. (2007) *Aprovizionarea cu apă în Dacia Romană*. Cluj-Napoca: Mega.

Barker, G.W.W., Gilbertson, D.D. and Mattingly, D.J. eds. (2007) *Archaeology and Desertification: The Wadi Faynan Landscape Survey, Jordan*. Oxford: CBRL/Oxbow.

Baron, S., Tămaş, C.G. and Le Carlier, C. (2013) "How mineralogy and geochemistry can improve the significance of Pb isotopes in metal provenance studies: the significance of Pb isotopes in metal provenance studies", *Archaeometry*: 1–16.

Baron, S., Tămaș, C.G., Cauuet, B. and Munoz, M. (2011) "Lead isotope analyses of gold-silver ores from Roșia Montană (Romania): a first step of a metal provenance study of Roman mining activity in Alburnus Maior (Roman Dacia)", *Journal of Archaeological Science* 38: 1090–100.

Barrington Atlas = Talbert, R.J.A. (2000) *Barrington Atlas of the Greek and Roman World*. Princeton: Princeton University Press.

Bauer, G. (1904) "A rudai 12 apostol bányatársulat aranybányászata", *Bányászati és Kohászati Lapok* 37: 289–338.

Benea, D. (2000) “Die innere organisierung der Militärvici aus Dakien (I) (Die Vohnungen)”, in Ciugudean and Moga (eds.), 33–61.

Benea, D. ed. (2008) *Dacia în sistemul socio-economic roman: cu privire la atelierele meşteşugăreşti locale*. BHAUT IX. Timișora: Excelsior Art Publishing House.

Bennett, J. (2001) *Trajan: Optimus princeps*. 2nd ed. London: Routledge.

Berecki, S., Czajlik, Z. and Soós, Z. eds. (2012) *Historical Landscapes: Aerial Photographs of Transylvanian Archaeological Sites and Monuments*. Catalogi Mvsei Marisiensis Seria Archaeologica I. Budapest and Târgu Mureș: Mega.

Berger, A. (1948) “A labor contract of A.D. 164: *CIL*, III, P. 948, No. X”, *Classical Philology* 43.4: 231–242.

Bergquist, A.K. (1989) “The emergence of a pre-Roman state in Dacia: the archaeological and historical sources in Transylvania, 800 BC–AD 106”. Ph.D. thesis. University of Cambridge.

Blázquez Martínez, J. M. (1989) “Administracion de las minas en epoca romana. Su evolucion”, in Domergue (ed.), 119–32.

Bogdan-Cătăniciu, I. (1981) *Evolution of the System of Defence Works in Roman Dacia*. BAR International Series 116. Oxford: BAR.

Bogdan-Cătăniciu, I. (2000) “Territoire civile et militaire à Apulum”, in Ciugudean and Moga (eds.), 109–39.

Bogdan-Cătăniciu, I. (2006) “Where is research on the history of the Dacia province headed?”, in Gaiu and Găzdac (eds.), 959–67.

Böhm, L. (1880) “Alterthümer längs der Donau von Panscova bis Orsova”, *Archäologisch-Epigraphische Mitteilungen aus Österreich-Ungarn* 4: 174–84.

Boon, G. C. and Williams, C. (1966) “The Dolaucothi drainage wheel”, *Journal of Roman Studies* 56: 122–27.

Boroneanț, V. (2000) *Arheologia peșterilor și minelor din România*. București: cIMec.

Bostan, I. (2013) “Economic opportunities for the exploitation of copper ore in the Romanian Carpathians”, *Croatian Journal Metalurgija* 52(2): 282–84.

Bozu, O. (2010) “Descoperiri arheologice de epocă romană în Clisura Dunării”, *Banatica* 20(1): 199–222.

Bronk Ramsey, C. (2009) “Bayesian analysis of radiocarbon dates”, *Radiocarbon* 51(1): 337–60.

Bruns, C. G. ed. (1909) *Fontes iuris romani antiqui*. Seventh edition. Tübingen.

Brunt, P.A. (1980) “Free labour and public works at Rome”, *Journal of Roman Studies* 70: 81–100.

Bugoi, R., Cojocaru, V., Constantinescu, B., Calligaro, T., Pichon, L., Röhrs, S. and Salomon, J. (2008) Compositional studies on Transylvanian gold nuggets: advantages and limitations of PIXE–PIGE analysis. *Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms* 266(10): 2316–19.

Burnham, B. and Burnham, H. (2004) *Dolaucothi-Pumsaint: Survey and Excavations at a Roman Gold-Mining Complex 1987 – 1999*. Oxford: Oxbow Books.

Butcher, K., and Ponting, M. (2014) *The Metallurgy of Roman Silver Coinage. From the Reform of Nero to the Reform of Trajan*. Cambridge: Cambridge University Press.

Călinescu, Ch., Soare, E. and Rodica, R. (2002) *General Climatic Study of the Apuseni Mountains (Gheţari – Poiana Călineasa Area)*. Institutul Naţional de Meteorologie şi Hidrologie INMH Bucureşti. Retrieved from <http://www.proiect-apuseni.org/dokumente/fachberichte/klima_eng.pdf>.

Cântar, I.C., Chisăliță, I., Cadar, N., Merce, O. and Turcu, D. (2015) "The impact of mining activities from Moldova Noua on forests", *Journal of Horticulture, Forestry and Biotechnology* 19(1): 207–15.

Carcopino, J. (1924) "Les richesses des Daces et le redressement de l'Empire romain, sous Trajan", *Dacia* 1: 28–34.

Carcopino, J. (1934) "Un retour à l'impérialisme de conquête: l'or des Daces", in *Points de vue sur l'impérialisme romain*, Paris, Le Divan, 73–86.

Carpathian Gold Inc. (2012) *Rovina Valley Project, West-Central Romania. NI 43-101 Technical Report Mineral Resource Estimate Update*. Retrieved from < http : // eurosunmining.com / _ resources / reports / 120830 _ Carpathian _ NI _ 43-101_Mineral_Resource_Update.pdf >.

Cauuet, B. (2004) "Apport de l'archéologie minière à l'étude de la mise en concessions des mines romaines aux IIe et IIIe siècles. L'exemple de Vipasca (Aljustrel, Portugal) et d'Alburnus Maior (Rosia Montana, Roumanie)", in J.-G. Gorges, E. Cerrillo and T. Nogales Basarrate (eds.), *V Mesa Redonda Internacional sobre Lusitania Romana: las comunicaciones*, Madrid, Ministerio de Cultura, Secretaría General Técnica, Subdirección General de Información y Publicaciones, 33–60.

Cauuet, B. (2005) "Les mines d'or antiques d'Europe hors péninsule Ibérique. État des connaissances et travaux récents", *Pallas* 67: 241–91.

Cauuet, B. (2008) "Équipements en bois dans les mines d'or protohistoriques et antiques (Gaule et Dacie romaine)", in M.-C. Bailly-Maître, C. Jourdain-Annequin and M. Clermont-Joly (eds.), *Archéologie et paysages des mines anciennes: de la fouille au musée*, Paris, Picard, 57–73.

Cauuet, B. (2009a) *Rapport de recherche archéologique préventive. Massif de Cârnic, Roşia Montană, Roumanie. Le projet minier de Roşia Montană. Document final de synthèse 2009*. Vol. 1. Programme National de Recherche ALBURNUS MAIOR. Unpublished report.

Cauuet, B. (2009b) *Raport de cercetare arheologică preventivă. Masivul Cârnic, Roşia Montană, România. Proiectul minier Roşia Montană. Document final de sinteză 2009*. Vol 2. Programul Național de Cercetare ALBURNUS MAIOR. Unpublished report.

Cauuet, B. (2012) "TRACES: UMR 5608 - Découverte d'un système d'épuisement des eaux dans une mine d'or romaine", Electronic bulletin from the Travaux et Recherches Archeologiques sur les Cultures, les Espaces et les Societes (TRACES) UMR 5608 – CNRS laboratory. Retrieved on 16 November 2012 from <http://traces.univtlse2.fr/accueil-traces/decouverte-d-un-systeme-d-epuisement-des-eaux-dans-une-mine-dor-romaine-204095.kjsp?RH=ACCUEIL_TRACES>.

Cauuet, B. (2014) "Gold and silver extraction in Alburnus Maior mines, Roman Dacia (Rosia Montana, Romania). Dynamics of exploitation and management of the mining space", in L. Fontes (ed.), *Paisagens mineiras antigas na Europa Ocidental: investigação e valorização cultural. Atas do simpósio internacional, Boticas, 25/26/27 julho 2014*, Boticas, Câmara Municipal de Boticas, 83–107.

Cauuet, B. *et al*. (1999) "Mines d'or antiques de Dacie. Vallée du Pianul et district de Rosia Montana (Carpates méridionales, Roumanie)", *Rapport de mission archéologique*. Toulouse.

Cauuet, B., Ancel, B., Rico, C. and Tamaş, C. (2003) "Ancient mining networks. The French archaeological missions 1999–2001", in *AM I* (2003), 467–503.

= Cauuet, B., Ancel, B., Rico, C., and Tămaș, C. (2010) "Ancient mining networks. The French archaeological missions 1999–2001", in *AM I* (2010), 453–510.

Cauuet, B., Ionescu, C., Ghergari, L. and Tămaș, C. (2002) *National Research Program (Romania). ALBURNUS MAIOR. Ancient Gold Mines of Dacia. Roșia Montană District (Apuseni Mountains, Romania). Report 2002*.

Cauuet, B. and Tamaş, C. (2012) "Les travaux miniers antiques de Roșia Montană (Roumanie). Apports croisés entre archéologie et géologie", in A. Orejas Saco del Valle, C. Rico and C. Domergue (eds.), *Minería y metalurgia antiguas: visiones y revisiones. Homenaje a Claude Domergue*, Madrid, Casa de Velázquez, 219–41.

CCA 1983–1992 = (1993) *Cronica Cercetărilor Arheologice din România. Campaniile 1983–1992*. Bucureşti: CIMEC-Institutul de Memorie Culturală.

CCA 1999 = (2000) *Cronica Cercetărilor Arheologice din România. Campania 1999*. București: Institutul Naţional al Patrimoniului.

CCA 2000 = (2001) *Cronica Cercetărilor Arheologice din România. Campania 2000*. București: Institutul Naţional al Patrimoniului.

CCA 2001 = (2002) *Cronica Cercetărilor Arheologice din România. Campania 2001*. București: Institutul Naţional al Patrimoniului.

CCA 2002 = (2003) *Cronica Cercetărilor Arheologice din România. Campania 2002*. București: Institutul Naţional al Patrimoniului.

CCA 2003 = (2004) *Cronica Cercetărilor Arheologice din România. Campania 2003*. București: Institutul Naţional al Patrimoniului.

CCA 2004 = (2005) *Cronica Cercetărilor Arheologice din România. Campania 2004*. București: Institutul Naţional al Patrimoniului.

Chappell, L.S. (2005) "Romanization in Dacia". Ph.D. thesis. University of California, Los Angeles.

CHBR (2006) = S.C. Roșia Montană Gold Corporation S.A. (2006) *Cultural Heritage Baseline Report*. Retrieved from <http://67.192.21.189/Theme/Gabriel/files/EIA/BR/BLR_06.pdf>.

Christescu, V. (1929) *Viaţa economica a Daciei romane: contribuţii la o reconstituire istorică*. Piteşti: Tipografia "Artistica" P. Mitu.

Cibinium (1966) = Muzeul Brukenthal (1966) *Cibinium. Studii şi materiale privind Muzeul Tehnicii Populare din Dumbrava Sibiului. Studien und Mitteilungen aus dem Hermannstädter Freilichtmuseun der Bäuerlichen Technik*. Sibiu: Muzeul Brukenthal.

CIL III = Mommsen, T. (1873) Inscriptiones Asiae, provinciarum Europae Graecarum, Illyrici Latinae. consilio et auctoritate Academiae Litterarum Regiae Borussicae edidit Theodorus Mommsen. Inscriptionum Illyrici partes VI–VII, Res gestae spani Augusti, Edictum Diocletiani de pretiis rerum, Privilegia militum veteranorumque, Instrumenta Dacica comprehendens / Pars posterior. Berolini.

Ciobanu, C.L., Cook, N.J. and Stein, H. (2002) "Regional setting and geochronology of the Late Cretaceous Banatitic Magmatic and Metallogenetic Belt", *Mineralium Deposita* 37: 541–67.

Ciobanu, C.L., Găbudeanu, B. and Cook, N.J. (2004) "Neogene ore deposits and metallogeny of the Golden Quadrilateral, South Apuseni Mts., Romania", in Cook and Ciobanu (eds.), 23–88.

Ciobanu, R. (1999) "Les illyriens et la Dacie romaine", *Apulum* 36: 199–214.

Ciongradi, C. (2009) *Die Römischen Steindenkmäler aus Alburnus Maior*. Bibliotheca Mvsei Napocensis XXXII. Cluj-Napoca: Mega.

Ciugudean, H. (1996) *Epoca timpurie a bronzului în centrul şi sud-vestul Transilvaniei*. Bucuresti : Institutul Român de Tracologie.

Ciugudean, H. (2010) "Landscape archaeology in south-west Transylvania: ancient gold mining in the Bucium-Zlatna Region", *New Europe College, GE-NEC Program 2004–2007*. București: New Europe College, 251–316.

Ciugudean, H. (2012) "Ancient gold mining in Transylvania: the Roşia Montană – Bucium area", in Caiete ARA Reports, Bucharest, 219–32. Retrieved 20 November 2012, <http://www.simpara.ro/files/horia-ciugudean-caiete-ara-3.pdf>.

Ciugudean, H. and Moga, V. eds. (2000) *Army and Urban Development in the Danubian Provinces of the Roman Empire: Proceedings of the International Symposium, Alba Iulia 8th–10th October, 1999*. Bibliotheca Musei Apulensis XV. Alba Iulia: Muzeul Național al Unirii Alba Iulia.

Cociș, S., Ursuțiu, A., Cosma, C. and Ardevan, R. (2003) "Area Sacra de la Hăbad", in Damian (ed.), Romanian edition, 149–91.

Cojocaru, V., Constantinescu, B., Ștefănescu, I., and Petolescu, C.M. (2000) "EDXRF and PAA analyses of Dacian gold coins of "Koson" type", *Journal of Radioanalytical and Nuclear Chemistry* 236(1): 185–90.

Constantinescu, B., Bugoi, R., Cojocaru, V., Radtke, M., Calligaro, T., Salomon, J., Pichon, L., Röhrs, S., Ceccato, D. and Oberländer-Târnoveanu, E. (2008) "Micro-SR-XRF and micro-PIXE studies for archaeological gold identification – the case of Carpathian (Transylvanian) gold and of Dacian bracelets", *Nuclear Instruments and Methods in Physics Research B* 266(10): 2325–28.

Constantinescu, B., Oberländer-Târnoveanu, E., Bugoi, R., Cojocaru, V. and Radtke, M. (2010) "The Sarmizegetusa bracelets", *Antiquity* 84: 1028–42.

Constantinescu, B., Vasilescu, A., Radtke, M. and Reinholz, U. (2011) "A study on gold and copper provenance for Romanian prehistoric objects using micro-SR XRF", *Journal of Analytical Atomic Spectrometry* 26: 917–21.

Constantinescu, B., Vasilescu, A., Radtke, M., Reinholz, U., Pacheco, C., Pichon, L. and Oberländer-Târnoveanu, E. (2012a) "SR XRF and micro-PIXE studies on ancient metallurgy of thirteen Dacian gold bracelets", *Applied Physics A* 109(2): 395–402.

Constantinescu, B., Vasilescu, A., Stan, D., Radtke, M., Reinholz, U., Buzanich, G., Ceccato, D. and Oberländer-Târnoveanu, E. (2012b) "Studies on archaeological gold items found in Romanian territory using X-Ray-based analytical spectrometry", *Journal of Analytical Atomic Spectrometry* 27(12): 2076–81.

Cook, N.J. and Ciobanu, C.I. eds. (2004) *Au-Ag-Telluride Deposits of the Golden Quadrilateral, Apuseni Mts., Romania. Guidebook of the International Field Workshop of IGCP project 486, Alba Iulia, Romania, 31 August – 7 September 2004*. IAGOD Guidebook Series 12.

Cosma, C. and Rustoiu, A. (2005) *Comerț și civilizație: Transilvania în contextual schimburilor comerciale și culturale în antichitate. Trade and Civilization: Transylvania in the Frame of Trade and Cultural Exchanges in Antiquity*. Cluj-Napoca: Mega.

Crăciun, C. and Moga, V. (2010) "Surveys and archaeological excavations", in *AM I* (2010), 33–41.

= Crăciun, C. and Moga, V. (2003) "Surveys and archaeological excavations", in *AM I* (2003), 31–39.

Crăciun, C. and Sion, A. (2003) "Edificiul de cult din punctul Drumuș (Edificiul T2)", in Damian (ed.), Romanian edition, 287–337.

Crăciun, C., Sion, A., Iosipescu, R. and Iosipescu, S. (2003) “Edificiul de cult din punctul Szekely (Edificiul T1)”, in Damian (ed.), Romanian edition, 255–85.

Crawford, M. (1977) “Republican denarii in Romania: the suppression of piracy and the slave-trade”, *Journal of Roman Studies* 67: 117–24.

Crawford, M.H. (1974) *Roman Republican Coinage*. London: Cambridge University Press.

Croitoru, G. (2009) “Aurul de la izvoarele Nerei. M-ţii Semenic, Banat, Romania”, *Romanian Journal of Mineralogy* 84: 15–18.

Daicoviciu, C. (1961) ““Castella” Delmatarum în Dacia (Un aspect al colonizării și romanizării provinciei Dacia”, *Apulum* 4: 51–60.

Daicoviciu, C. and Floca, O. (1937) “Mausoleul Aureliilor de la Sarmizegetusa. Raport preliminar (Das Mausoleum der Aurelier von Sarmizegetusa. Kurze Beschreibung)”, *Sargetia* 1: 1–23.

Daicoviciu, C., Condurachi, E., Nestor, I. and Ştefan, Gh. (1960) *Istoria Romîniei I*. București: Academiei Republicii Populare Române.

Damian, P. and Simion, M. (2007) “Funerary practices in the necropolises belonging to the ancient communities at Alburnus Maior”, in S. Luca (ed.), *Funerary Practices in Europe Before and After the Roman Conquest (3rd century BC–3rd century AD). Proc. 8th Int. Colloquium of Funerary Archaeology, 2007*, Acta Terrae Septemcastrensis VI.1, Sibiu, 141–53.

Davies, O. (1935) *Roman Mines in Europe*. Oxford: Clarendon.

Dayton, J.E. (1971) “The problem of tin in the ancient world”, *World Archaeology* 3: 49–70.

Diaconescu, A. (2004a) “Romanizarea Daciei; un capitol de istorie a mentalităților abordat dintr-o perspectivă arheologică”, in M. Crînguş (ed.), *Studia historica et archaeologica in honorem Magistrae Doina Benea*, Bibliotheca Historica et Archaeologica Universitatis Timisiensis 6, Timişoara, Eurostampa, 111–46.

Diaconescu, A. (2004b) “The towns of Roman Dacia: an overview of recent archaeological research”, in Hanson and Haynes (eds.), 87–142.

Diaconescu, A., Haynes, I. and Schäfer, A. (2001) “The Apulum Project. Summary report of the 1998 and 1999 seasons”, in S. Altekamp and A. Schäfer (eds.), *The Impact of Rome on Settlement in the Northwestern and Danube Provinces: Lectures Held at the Wincklemann-Institut der Humboldt-Universität zu Berlin in Winter 1998/99*, BAR S921, Oxford, Archaeopress, 115–28.

Domergue, C. (1983) “La mine antique d’Aljustrel (Portugal) et les tables de bronze de Vipasca”, *Conimbriga* 22: 5–193.

Domergue, C. ed. (1989) *Mineria y metalurgia en las antiguas civilizaciones Mediterraneas y Europeas*. Vol. 2. Madrid: Ministerio de Cultura.

Domergue, C. (2008) *Les mines antiques: la production des métaux aux époques grecque et romaine*. Paris: Picard.

Domergue, C. (1990) *Les mines de la péninsule Ibérique dans l'antiquité romaine.* Rome: École Française de Rome.

Du Plessis, P. (2012) *Letting and Hiring in Roman Legal Thought: 27 BCE–284 CE*. Leiden: Brill.

Dušanić, S. (1977) "Aspects of Roman mining in Noricum, Pannonia, Dalmatia and Moesia Superior", *ANRW* II.6: 52–94.

Dušanić, S. (1989) "The Roman mines in Illyricum: organization and impact on provincial life", in Domergue (ed.), 148–56.

Dušanić, S. (1995) "Late Roman mining in Illyricum: historical observations", in P. Petrović and S. Đurdjekanović (eds.), *Ancient Mining and Metallurgy in Southeast Europe, International Symposium, Donji Milanovac May 20 – 25, 1990*, Belgrade – Bor, Archaeological Institute – Museum of Mining and Metallurgy, 215–26.

Dušanić, S. (1999) "The miners' cults in Illyricum", *Pallas* 50: 129–39.

Dušanić, S. (2004) "Roman mining in Illyricum: historical aspects", in G. Urso (ed.), *Dall' Adriatico al Danubio-L'Illirico nell'età greca e romana, Atti del convegno internazionale, Cividale del Friuli, 25-27 settembre 2003*, Pisa, Edizione Elettronica, 247–70.

Eldorado Gold (2014) *Technical Report. Certej Project, Romania*. Retrieved from <http://www.eldoradogold.com/uploads/operations-reports/Technical_Report_Certej_%28Feb_2014%29.pdf>

Eldorado Gold (2016). *Certej Project*. Retrieved from <http://s2.q4cdn.com/536453762/files/doc_presentations/2016/sep/09-Certej-Final-web.pdf>.

Ellis, L. (1998) "'Terra deserta': population, politics, and the [de]colonization of Dacia", *World Archaeology* 30(2): 220–37.

European Goldfields Limited (2009) *Certej Updated Definitive Feasibility Study Summary Technical Report*. Retrieved from < http://s2.q4cdn.com/536453762/files/doc_downloads/Reports/Certej_Technical_Report_%E2%80%93_February_2009.pdf>.

Fodorean, F. (2004) "Road-repairs in the Danubian provinces during military anarchy (A.D. 235–271)", in Ruscu et al. (eds.), 523–30.

Fodorean, F. (2006a) "Austrian military maps and Roman roads: a cartographic study", in Gaiu and Găzdac (eds.), 997–1010.

Fodorean, F. (2006b) *Drumurile din Dacia romană*. Cluj-Napoca: Napoca Star.

Fodorean, F. (2010a) "Landscapes of Roman *Dacia*. Ilișua", in Angelescu, M.V. et al. (eds.), *Antiquitas istro-pontica: mélanges d'archéologie et d'histoire ancienne offerts à Alexandru Suceveanu*, Cluj-Napoca, Mega, 93–102.

Fodorean, F. (2010b) “Roman fortresses and roads on Habsburgic and Austro-Hungarian maps”, in Pop et al. (eds.), 469–78.

Floca, O. (1936–1940) “Cercetări arheologice în Munții Zlatnei, pe Dealul Boteș și Corabia. Raport înaintat Comisiunii Monumentelor Istorice, secția pentru Transilvania, Cluj”, *Anuarul Institutului de Studii Classice* 3: 160–73.

Friedman, H.A. (2008) “Industry and empire: administration of the Roman and Byzantine Faynan”. Ph.D. thesis. University of Leicester.

Friedman, H. (2010) “Surveillance and control in the imperial metalla of Faynan”, *Travaux de la Maison de l'Orient et de la Méditerranée* 56: 205–13.

Gaiu, C. and Găzdac, C. eds. (2006) *Fontes historiae: studia in honorem Demetrii Protase*. Bistrița and Cluj-Napoca: Accent.

Galcenco, V., Veress, E. and Velciov, G. (1995) “L’or alluvionnaire du cours moyen des rivières Mureş, Strei et Crişul Alb (Roumanie)”, *Romanian Journal of Mineralogy* 76(2): 105–10.

Găzdac, C. (2009) Review of Mateusz Żmudziński, *Gospodarka w rzymskiej prowincji Dacji Superior*, editura Wydawnictwo Uniwersytetu Wrocławskiego (Wrocław 2007). *Ephemeris Napocensis* 19: 253–56.

Găzdac, C. (2010) *Money Circulation in Dacia and the Provinces from the Middle and Lower Danube from Trajan to Constantine I (AD 106–337)*. 2nd ed. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 7. Cluj-Napoca: Mega.

Găzdac, C. and Cociș, S. (2004) *Ulpia Traiana Sarmizegetusa*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 1. Cluj-Napoca: Mega.

Găzdac, C. and Gudea, N. (2006) *Porolissum*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 2. Cluj-Napoca: Mega.

Găzdac, C. and Isac, D. (2007) *The Auxiliary Forts from (Samum) Căşeiu and Gilău*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 4. Cluj-Napoca: Mega.

Găzdac, C. and Pripon, E. (2012) *The Roman Auxiliary Fort at Buciumi (Roman Dacia, Romania): Coins in Archaeological Context*. BAR International Series 2381. Oxford: Archaeopress.

Găzdac, C., Călian, L. and Alföldy-Găzdac, Á (2007a) *Roman Republican Coinage in the National History Museum of Transylvania*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 3/1. Cluj-Napoca: Mega.

Găzdac, C., Călian, L. and Alföldy-Găzdac, Á (2007b) *The Ancient and Byzantine Gold Coinages in the National History Museum of Transylvania. Moneda de aur antică și Bizantină în Muzeul Național de Istorie a Transilvanie*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 3/2. Cluj-Napoca: Mega.

Găzdac, C., Gaiu, C. and Marchiş, E. (2011) *Arcobadara (Ilişua)*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 6. Cluj-Napoca: Mega.

Găzdac, C., Suciu, V. and Alföldy-Găzdac, Á. (2009) *Apulum*. Coins from Roman Sites and Collections of Roman Coins from Romania Vol. 5. Cluj-Napoca: Mega.

Ghițulescu, T.P. and Socolescu, M. (1941) "Etude géologique et minière des Monts Métallifères (Quadrilatère aurifère et régions environnantes)", *Anuarul Institutului Geologic al Romaniei* 21: 181–465.

Glicksman, K. (2018). "Metal mining in Roman Dalmatia", *Opuscula Archaeologica* 39–40: 261–283.

Glodariu, I. (1976) *Dacian Trade with the Hellenistic and Roman World*. Oxford: British Archaeological Reports.

Glodariu, I. (1997) "Etnogeneza românilor", Ch. 2 in *Istoria României. Transilvania, Volumul I, Edit. „George Barițiu"*, Cluj-Napoca, 114–76.

Glodariu, I., and Iaroslavschi, E. (1979) *Civilizația fierului la Daci: (sec. II î.e.n.–I e.n.)*. Cluj-Napoca: Editura Dacia.

Glumac, P.D. (1991) "The advent of metallurgy in prehistoric Southeast Europe". Ph.D. thesis. University of California, Berkeley.

Greenberg, M., Hamilton, R., Phillips, S., and McCluskey, G. (2003). *Occupational, Industrial and Environmental Toxicology* (2nd ed.). Philadelphia, Penn.: Mosby.

Gudea, A.I. (2005) "Civilizație și comerț pe teritoriul Daciei Romane. Creșterea animalelor și implicațiile ei. Studiu arheozoologic, statistic și comparativ", in Cosma and Rustoiu (eds.), 211–67.

Gudea, A. (2009) *Soldatul roman în Dacia (106–275 p.Chr.): studiu de arheozoologie privind creșterea animalelor și regimul alimentar în armata romană*. Cluj-Napoca: Mega.

Gudea, A.I. and Gudea, N. (2000) "Despre creșterea animalelor, cunoștinte de zootehnie și medicină veterinară în provinciile dacice (106–275). O incercare metodologică pentru stadiul actual al cercetărilor (I)", *Apulum* 36: 145–73.

Gudea, N. (1989) *Porolissum: der Schlussstein des Verteidigungssystems der Provinz Dacia Porolissensis*. Marburg: Philipps-Universität Marburg.

Gudea, N. (2001) "Porolissum "caput provinciae tertiae sive Porolissensis"", *Transylvanian Review* 10(2): 38–58.

Gudea, N. (2005) "Despre consumari ale armatei romane din Dacia Porolissensis. Necesități, producție locală și importuri – Studiu preliminar", in Cosma and Rustoiu (eds.), 185–209.

Gudea, N. and Lobüscher, T. (2006) *Dacia: eine römische Provinz zwischen Karpaten und Schwarzem Meer*. Mainz am Rhein: Von Zabern.

Hanson, W.S. and Haynes, I.P. eds. (2004) *Roman Dacia: The Making of a Provincial Society*. JRA Supplementary Series 56. Portsmouth: Journal of Roman Archaeology.

Hanson, W. and Oltean, I. (2003) "The identification of Roman buildings from the air: recent discoveries in Western Transylvania", *Archaeological Prospection* 10: 101–17.

Hardesty, D.L. (2010) *Mining Archaeology in the American West: A View from the Silver State*. Lincoln: University of Nebraska Press and the Society for Historical Archaeology.

Hartmann, A. (1970) *Prähistorische Goldfunde aus Europa. Studien zu den Anfängen der Metallurgie*. Berlin: Mann.

Hauptmann, A., Rehren, T., and Pernicka, E. (1995) "The composition of gold from the ancient mining district of Verespatak/Roșia Montană, Romania", in Morteani and Northover (eds.), 369–81.

Haynes, I.P. and Hanson, W.S. (2004) "An introduction to Roman Dacia", in Hanson and Haynes (eds.), 11–31.

Healey, J.F. (1978) *Mining and Metallurgy in the Greek and Roman World*. London: Thames and Hudson.

Herz, N., and Garrison, E. G. (1998) *Geological Methods for Archaeology*. New York: Oxford University Press.

Hirt, A.M. (2010) *Imperial Mines and Quarries in the Roman World: Organizational Aspects, 27 BC–AD 235*. Oxford: Oxford University Press.

Hoffmann, A. (2002) "Die römischen Wachstafeln von Roşia Montană – Einführung, Text und Übersetzung, Kommentar", in Slotta, Wollmann and Dordea (eds.), 65–90.

Holleran, C. (2016) "Labour mobility in the Roman world: a case study of mines in Iberia", in L. Tacoma and L. DeLigt (eds.) *Migration and Mobility in the Early Roman Empire*, Leiden, Brill, 95–137.

Horedt, K. (1941–43) "Funde der Völkerwanderungszeit aus Siebenbürgen", *Anuarul Institutului de Studii Clasice* 4: 163–79.

Howgego, C. (1992) "The supply and use of money in the Roman world 200 B.C. to A.D. 300", *Journal of Roman Studies* 82: 1–31.

Howgego, C. (2013) "The monetization of temperate Europe", *Journal of Roman Studies* 103: 16–45.

Ianovici, V. and Borcoș, M. (1982) "Romania", in F.W. Dunning, W Mykura and D. Slater (eds.), *Mineral Deposits of Europe. Volume 2: Southeast Europe*, London, The Institution of Mining and Metallurgy and The Mineralogical Society, 55–142.

Iaroslavschi, E., and Mateescu, R. (2010) "Lupe și bureți de fier în Dacia", in *Antiquitas istro-pontica: mélanges d'archéologie et d'histoire ancienne offerts à Alexandru Suceveanu*. Cluj-Napoca: Mega, 209–17.

IDR I = Rusu, I. I. (1975) *Inscripţiile Daciei Romane*. Vol. 1. Bucureşti: Editura Academiei Republicii Socialiste România.

IDR III/3 = Rusu, I. I. (1984) *Inscripţiile Daciei Romane*. Vol. 3. Bucureşti: Editura Academiei Republicii Socialiste România.

IDR III/5 = Piso, I. (2001) *Inscriptions d'Apulum. Inscriptiones Daciae Romanae. Volumen III 5. Apulum Daciaee Superioris (IDR III 5)*. 2 vols. Paris: Diffusion de Boccard.

Iliescu, V., Popescu, V. C. and Ştefan, Gh. eds. (1964) *Izvoare privind istoria Romîniei I: de la Hesiod la Itinerarul lui Antoninus*. Bucureşti: Academiei Republicii Populare Romîne.

Ionescu, C., Ghergari, L. and Ţentea, O. (2006) "Interdisciplinary (mineralogical-geological-archaeological) study on the tegular material belonging to the Legion XIII Gemina from *Alburnus Maior* (Roşia Montană) and *Apulum* (Alba Iulia): possible raw materials sources", *Cercetări Arheologie* 13: 413–36.

Iştvan, D. and Minghiraş, T. (2004) "Galeria medievală din Dealul Crucii", *Revista Fundaţiei Culturale Pro Unione, Anul VII, nr. 1–2 (17–18)*: 127–29.

Jones, R.F.J. and Bird, D.G. (1972) "Roman gold-mining in north-west Spain, II: workings on the Rio Duerna", *Journal of Roman Archaeology* 62: 59–74.

Kacsó, C., Iştvan, D. and Minghiraş, T. (2010a) " Cercetări de arheologie montană la Băile Borşa", *Memoria Antiquitatis XXV–XXVI (2008–2009)*: 505–36.

Kacsó, C., Iştvan, D. and Minghiraş, T. (2010b) "Mina piticilor de la Chiuzbaia", *Revista Bistriţei* XXIV: 385–98

Kacsó, C., Iștvan, D. and Minghiraș, T. (2011) "Cercetări de arheologie montană la Baia Mare (I.)", *Revista Bistriţei* XXV: 295–336.

Kacsó, C., Minghiraș, T. and Bâlcu, T. (2016) "Cercetări de arheologie montană la Baia Mare (II)", in D. Micle (ed.), *Arheovest IV*, Szeged, Universitatea de Vest Timișoara, 491–512.

Kalcyk, H.-J. (1984) "Water in ancient mining", *Mitteilungen. Leichtweiss-Institut für Wasserbau der Technischen Universität Braunschweig* 82.

Knapp, A.B. (1998) "Social approaches to the archaeology and anthropology of mining", in A. Knapp, V. Pigott and E. Herbert (eds.), *Social Approaches to an Industrial Past: The Archaeology and Anthropology of Mining*, London and New York, Routledge, 1–23.

Kovacs, M. and Fülöp, A. (2009) "Baia Mare Geological and Mining Park – a potential new Geopark in the northwestern part of Romania", Studia Universitatis Babeș-Bolyai, *Geologia* 54(1): 27–32.

Kuun, G., Torma, S. and Téglàs, G. (1902) *Hunyadvármegye Története*. Budapest: Az Athenaeum Irodalmi és Nyomdai Részvény Társulat Könyvnyomdája.

Laufer, R. (2000) “Abermals die *Canabae legionis*. Einige Bemerkungen zu den *vicani canabenses, conscribti, territorii contributi* und *cives Roman consistentes in cannabis*. Problemstellungen und Terminologie”, in Ciugudean and Moga (eds.), 15–29.

Le Roux, P. (1989) “Exploitations minières et armées romaines: essai d’interprétation”, in Domergue (ed.), 171–82.

Leary, S., O’Connor, G., Howie, K., and Nadasan, L. (2004) “The Bucium (Rodu-Frasin) deposit”, in Cook and Ciobanu (eds.), 99–104.

Leary, S., O’Connor, G., Minuț, A., Tămaș, C., Manske, S. and Howie, K. (2004) “The Roșia Montană ore deposit”, in Cook and Ciobanu (eds.), 89–98.

Lewis, P.R. and Jones, G.D.B. (1970) “Roman gold-mining in north-west Spain”, *Journal of Roman Studies* 60: 169–85.

Lipovan, I. (1988) “Monumente epigrafice din Ampelum (I)”, *Studii și Cercetări de Istorie Veche și Arheologie* 39: 55–69.

Lipovan, I. (1990) “Monumente epigrafice din Ampelum (II)”, *Studii și Cercetări de Istorie Veche și Arheologie* 41: 69–79.

Lockyear, K. (2004) “The Late Iron Age background to Roman Dacia”, in Hanson and Haynes (eds.), 33–74.

Lockyear, K. (2008) Aspects of Roman Republican coins found in Late Iron Age Dacia. In V. Spinei and L. Munteanu (eds) *Miscellanea numismatica Antiquitatis. In honorem septagenarii magistri Virgilii Mihailescu-Bîrliba oblata.* București: Editura Academiei Române, 147–176. Available at: <http://discovery.ucl.ac.uk/4832/1/4832.pdf>.

Luca, S.A. ed. (2008) *Repertoriul arheologic al judeţului Hunedoara*. Bibliotheca Brukenthal XXVI. 2nd ed. Sibiu: Altip.

Luca, S.A. ed. (2010) *Descoperiri arheologice din Banatul Românesc. Repertoriu*. Bibliotheca Brukenthal XLVI. 2nd ed. Sibiu: Altip.

Lupu, N. (2002) “ Staţiunea romană de la Boiţa (jud. Sibiu)”, *Acta Terrae Septemcastrensis I*: 71–106.

Macrea, M. (1969) *Viața în Dacia romană*. București: Științifică.

Maghiar, N. and Olteanu, Ș. (1970) *Din istoria mineritului în România*. București: Științifică.

Makkay, J. (1995a) “The rise and fall of gold metallurgy in the Copper Age of the Carpathian Basin: the background of the change”, in Morteani and Northover (eds.), 65–76.

Makkay, J. (1995b) “The treasures of Decebalus”, *Oxford Journal of Archaeology* 14(3): 333–43.

Man, N. (2011) *Aşezarea romană de la Cristeşti*. Cluj-Napoca: Mega.

Manske, S.L., Hedenquist, J. W., O'Connor, G., Tămaş, C., Cauuet, B., Leary, S. and Minut, A. (2006) "Roşia Montană, Romania: Europe's largest gold deposit", *SEG Newsletter* 64: 8–15.

Marcu, F. (2004) "Military tile-stamps as a guide for the garrisons of several forts in Dacia", in Ruscu et al. (eds.), 570–94.

Marcu, F. (2009) *The Internal Planning of Roman Forts of Dacia*. Bibliotheca Mvsei Napocensis XXX. Cluj-Napoca: Mega.

Marțian, J. (1909) "Archäeologisch-prähistorisches Repertorium für Siebenbürgen", *Mitteilungen der Anthropologischen Gesellschaft in Wien* 39: 321–58.

Mason, A.H., Powell, W.G., Bankoff, H.A., Mathurd, R., Bulatović, A., Filipović, V. and Ruiz, J. (2016) "Tin isotope characterization of bronze artifacts of the central Balkans", *Journal of Archaeological Science* 69: 110–17.

Mattingly, D. (2004). "Being Roman: expressing identity in a provincial setting", *Journal of Roman Archaeology* 17: 5–25.

Mattingly, D.J. (2011). *Imperialism, Power, and Identity: Experiencing the Roman Empire*. Princeton and Oxford: Princeton University Press.

Mattingly, D., Newson, P., Creighton, O., Tomber, R., Grattan, J., Hunt, C., Gilbertson, D. and Pyatt, B. (2007) "A landscape of imperial power: Roman and Byzantine Phaino", in Barker, Gilbertson and Mattingly (eds.), 305–48.

Menges, K.H. (1951) "The oriental elements in the vocabulary of the oldest Russian epos, the Igor' Tale (*Slovo O PЂlku Igorevě*)", *WORD* 7 (sup1): 1–79, DOI: 10.1080/00437956.1951.11659414.

Mihailescu-Bîrliba, L. (2011) *Ex toto orbe Romano: Immigration into Roman Dacia; with Prosopographical Observations on the Population of Dacia*. Leuven: Peeters.

Mihailescu-Bîrliba, L., Dumitrache, I. and Piftor, V. (2010) "La mobilité locale en Dacie romaine selon les sources épigraphiques: I. Dacie Inférieure", *Studia Historica. Ha Antigua* 28: 95–108.

Milu, V., Leroy, J.L. and Peiffert, C. (2002) "Water contamination downstream from a copper mine in the Apuseni Mountains, Romania", *Environmental Geology* 42(7): 773–82.

Ministerul Mediului (2006) *Information on the Cultural Heritage of Roşia Montană and Related Management Aspects*. Vol. 48. Retrieved 3 December 2012, <http://www.mmediu.ro/protectia_mediului/rosia_montana/02_E/Volume%2048.pdf>.

Mitrofan, I. (1973) "Villae rusticae în Dacia Superioră I", *Acta Musei Napocensis* 10: 127–50.

Mitrofan, I. (1974) "Villae rusticae în Dacia Superioră II", *Acta Musei Napocensis* 11: 41–59.

Mladenović, D. (2009) “Roman Moesia Superior: the creation of a new provincial entity and processes of multicultural adjustment”. D.Phil. thesis. University of Oxford.

Moga, V. (1985) *Din istoria militară a Daciei romane: Legiunea XIII Gemina*. Cluj-Napoca: Dacia.

Moga, V., Drîmbărean, M. and Ciobanu, R. (2003) “Forme de habitat în punctul Găuri”, in Damian (ed.), Romanian edition, 45–79.

Moga, V. and Goșa, A. (2008) *Descoperă arheologia urbană!: Apulum 2007 catalog de expoziție*. Alba Iulia: ALTIP.

Moga, V. and Mesaroş, V. (1980) “Cercetările arheologice de la Abrud (jud. Alba)”, *Apulum* 18: 141–49.

Moga, V. and Sântimbreanu, A. (1996) “Sfincși funerari la Alburnus Maior”, *Studii și Cercetări de Istorie Veche și Arheologie* 47(2): 199–202.

Moga, V., Ciobanu, R. and Drîmbărean, M. “Recherches archéologiques à Partoş (*Municipium Aurelium Apulensis* et *Colonia Aurelia Apulensis*)”, in Ciugudean and Moga (eds.), 141–202.

Morteani, G., and Northover, J.P. eds. (1995) *Prehistoric Gold in Europe: Mines, Metallurgy, and Manufacture*. Dordrecht; Boston: Kluwer Academic.

Mrozek, S. (1971) “Les prix dans les mines d’or de Dacie au IIe siècle de n. è.”, *Apulum* 9: 443–52.

Mrozek, S. (1977) “Die Goldbergwerke im römischen Dazien”, *ANRW* II.6: 95–109.

Mrozek, S. (1989) “Le travail des hommes libres dans les mines romaines”, in Domergue (ed.), 163–70.

Mrozek, S. (2004) “L’aspects sociaux et administratifs des mines d’or en Dacie’, dans *Apulum*, *Acta Musei Apulensis, Alba Iulia*, t. VII/1, 1968, p. 307–326”, in S. Mrozek (2004), *Argent, société et épigraphie romaine (1er–3e siècles): recueil d’études completes*, Collection Moneta 38, Wetteren, Moneta, 9–21.

Munteanu, G. (2014) “Gold-silver antique mining “districts” from Metaliferi Mountains, Romania. Geographic, geologic and archaeological crosscutting perspectives. The case of Bucium-Butura-Volcoi-Corabia mining complex”, in L. Fontes (ed.), *Paisagens mineiras antigas na Europa Ocidental: investigação e valorização cultural. Atas do simpósio internacional, Boticas, 25/26/27 julho 2014*, Boticas, Câmara Municipal de Boticas, 195.

Neacşu, A., Popescu, G. C., Constantinescu, B., Vasilescu, A. and Ceccato, D. (2009) “The geochemical signature of native gold from Roşia Montană and Musariu ore deposits Metaliferi Mts. (Romania); preliminary data”, *Carpathian Journal of Earth and Environmental Sciences* 4(1): 49–59.

Neigebaur, J.F. (1851) *Dacien: aus den Ueberresten des klassischen Alterthums, mit besonderer Rücksicht auf Siebenbürgen*. Kronstadt: J. Gött.

Nemeth, E. ed. (2011) *Der südwestliche Limes des römischen Dakien. Strukturen und Landschaft*. Speculum Antiquitatis 1. Cluj-Napoca: Mega.

Nemeti, I. and Nemeti, S. (2010) "The barbarians within. Illyrian colonists in Roman Dacia", *Studia Historica. Ha Antigua* 28: 109–33.

Noeske, H.-C. (1977) "Studien zur Verwaltung und Bevölkerung der dakischen Goldbergwerke", *Bonner Jahrbücher* 177: 271–416.

"Oarda (Limba), mun. Alba Iulia, jud. Alba. Punct: Sesu Orzii" (2005) in *Cronica Cercetărilor Arheologice din România*. București. Retrieved from <http://cronica.cimec.ro/detaliu.asp?k=3182>.

Oleson, J.P. (1984) *Greek and Roman Mechanical Water-Lifting Devices: The History of a Technology*. Toronto: University of Toronto Press.

Oltean, I.A. (2004) "Rural settlement in Roman Dacia: some considerations", in Hanson and Haynes (eds.), 143–64.

Oltean, I.A. (2007) *Dacia: Landscape, Colonisation and Romanisation*. London: Routledge.

Oltean, I.A. (2009) "Dacian ethnic identity and the Roman army", in W.S. Hanson (ed.), *The Army and Frontiers of Rome: Papers Offered to David J. Breeze on the Occasion of His Sixty-Fifth Birthday and His Retirement from Historic Scotland*, JRA Supplementary Series 74, Portsmouth, Journal of Roman Archaeology, 90–101.

Oltean, I. and Hanson, W. (2001) "Military *vici* in Roman Dacia: an aerial perspective", *Acta Mvsei Napocensis* 38(1): 123–34.

Oltean, I.A. and Hanson, W.S. (2007) "Villa settlements in Roman Transylvania", *Journal of Roman Archaeology* 20(1): 113–37.

Oltean, I.A., Rădeanu, V. and Hanson, W.S. (2005) "New discoveries in the military *vicus* of the auxiliary fort at Micia", in Z. Visy (ed.) *Proceedings of the XIXth International Congress of Roman Frontiers Studies – Pécs, Hungary, September 2003*, Pécs, University of Pécs, 351–60.

Opreanu, C. (2000) "Relationship of forts to town origins in Roman Dacia", in Ciugudean and Moga (eds.), 79–89.

Opreanu, C. (2001) "Particularitățile modelului de urbanizare în Dacia romană. Contribuție la studiul integrării Daciei în civilizația romană", in E. Iaroslavschi et al. (eds.), *Studii de istorie antică: Omagiu profesorului Ioan Glodariu*, Bibliotheca Musei Napocensis XX, Deva and Cluj-Napoca, Muzeul Naţional de Istorie a. Transilvaniei , 427–38.

Opreanu, C.H. (2007) "Clădiri și lucrări imperiale din orașele Daciei. Cu specială referire la Sarmizegetusa și Apulum", in Nemeți et al. (eds.) *Dacia Felix. Studia Michaeli Bărbulescu oblate*, Cluj-Napoca, Tribuna, 606–19.

Orejas, A. and Javier Sanchez-Palencia, F. (2002) "Mines, Territorial Organization, and Social Structure in Roman Iberia: Carthago Noua and the Peninsular Northwest", *American Journal of Archaeology* 106: 581–99.

Ota, R. and Băeștean, A. (2010) “Water distribution and drainage in Apulum”, *Dacia N.S.* 54: 127–39.

Pencea, R., Brădățan, T. and Simion, Ș. (2013) “Transylvania – undermined territory”. First English edition. Mining Watch Romania. Retrieved from <http://mining-watch.ro/en/romana-raport-transilvania-teren-minat/>.

Pescaru, A., Rădeanu, V., Pavel, R., Rișcuță, N.C., Țuțuianu, D., Bălos, A. and Egri, M. (2003) “Forme de habitat în punctul Hăbad”, in Damian (ed.), Romanian edition, 123–48.

Piso, I. (1995) “Le territoire de la Colonia Sarmizegetusa”, *Ephemeris Napocensis* 5: 63–82.

Plotinskaya, O.Y., Damian, F., Prokofiev, V.Y., Kovalenker, V.A. and Damian, G. (2009) “Tellurides occurrences in the Baia Mare region, Romania”, *Carpathian Journal of Earth and Environmental Sciences* 4(2): 89–100.

Pop, H., Bejinariu, I., Băcueț-Crișan, S. and Băcueț-Crișan, D. eds. (2010) *Identități culturale locale și regionale în context european: studii de arheologie și antropologie istorică*. Muzeul Județean de Istorie și Artă Zalău. Bibliotheca Mvsei Porolissensis XIII. Cluj-Napoca: Mega.

Popa, A. (1961) “Colecția muzeală Sabin Olea din Cib-sat, r. Alba”, *Apulum* 4: 269–74.

Popa, A., Moga, V. and Ciobanu, R. (1986) “Săpăturile de salvare de la Ampelum (Zlatna)”, *Apulum* 23: 107–18.

Popa, D. (2002) *Villae, vici, pagi: aşezările rurale din Dacia romană intracarpatică*. București: Editura Economică. Retrieved from <http://arheologie.ulbsibiu.ro/publicatii/bibliotheca/popa/introducere.htm>.

Popa, D. (2001) “Așezările romane de pe Valea Hârtibaciului”, in G. Florea and L. Suciu (eds.), *Studii de istorie antică - Omagiu profesorului Ioan Glodariu*, Bibliotheca Musei Napocensis XX, Cluj-Napoca, Muzeul Național de Istorie a Transilvaniei, 419–26.

Pošepný, F. (1868) *Die montangeologische Aufname des Verespataker Goldbergbaugebietes im Komitat Alsofehervar*. Vienna.

Preda, C. (1973) *Monedele Geto-Dacilor*. București: Editura Academiei Republicii Socialiste România.

Preston, T.R.N. (1993) “Topographical elements in the Balkan lexicon: a descriptive and historical study of vocabulary pertaining to the mountains, lowland, and littoral of south-eastern Europe.” Ph.D. thesis. University of London.

Primaria Vețel (2013) “Economia”. Archived at <https://web.archive.org/web/20130518033318/http://www.primaria-vetel-hd.ro/vetel_economia-112.html>.

Pundt, H.A. (2012) “Mining culture in Roman Dacia: empire, community, and identity at the gold mines of *Alburnus Maior* ca.107–270 C.E.”. M.A. thesis. Portland State University.

Pupeză, L. (2010) “Arheologia urbană în România. De la orașul antic la orașul contemporan”, in Pop et al. (eds.), 701–7.

Reimer, P. *et al*. (2013) “IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years cal BP”, *Radiocarbon* 55(4): 1869–87.

Regep-Vlascici, S. (2008) “Producția locală de opaițe de fier din Dacia Romană”, in D. Benea (ed.), *Dacia în sistemul socio-economic roman. Cu privire la atelierele meştesugăreşti locale*, Timișoara, Excelsior Art, 353–61.

RepAB (1995) = Moga, V. and Ciugudean, H. eds. (1995) *Repertoriul arheologic al județului Alba*. Bibliotheca Musei Apulensis II. Alba Iulia: Muzeul Național al Unirii Alba Iulia.

RepCJ (1992) = Crișan, I. H. (1992) *Repertoriul arheologic al județului Cluj*. Bibliotheca Musei Napocensis 5. Cluj: Institutul de Istorie și Arheologie Cluj-Napoca.

Roman, B., Sîntimbrean, A. and Wollmann, V. (1982) *Aurarii din Muntii Apuseni*. București: Sport-Turism.

Römisch-Germanisches Museum (1969) *Römer in Rumänien: Ausstellung des Römisch-Germanischen Museums Kölns und des Historischen Museums Cluj : Kunsthalle Köln, 12. Februar bis 18. Mai 1969*. Köln: Römisch-Germanisches Museum.

Rosumek, P. *(1982) Technischer Fortschritt und Rationalisierung im antiken Bergbau.* Bonn.

RPER (2013) = Asociația Rencontres du Patrimoine Europe-Roumanie RPER-Ro (2013) *Repertoriu Patrimoniu Rural Bucium*. Vol. 2. București. Retrieved from <http://rper.ro/documente/RPER_caiet_II.pdf>.

RPER (2014) = Asociația Rencontres du Patrimoine Europe-Roumanie RPER-Ro (2014) *Repertoriu Patrimoniu Rural Bucium*. Vol. 3. București. Retrieved from <http://rper.ro/documente/RPER_caiet_III.pdf>.

RPER (2017) = Asociația Rencontres du Patrimoine Europe-Roumanie RPER-Ro (2017) *Repertoriu Patrimoniu Rural Bucium*. Vol. 4. București. Retrieved from <http://rper.ro/documente/RPER_caiet_IV.pdf>.

Ruscu, D. (2004) “The supposed extermination of the Dacians: the literary tradition”, in Hanson and Haynes (eds.), 75–85.

Ruscu, L., Ciongradi, C., Ardevan, R., Roman, C. and Găzdac, C. eds. (2004) *Orbis antiquus. Studia in honorem Ioannis Pisonis*. Cluj-Napoca: Nereamia Napocae Press.

Rusu, M. (1977) “Transilvania și Banatul în secolele VI–IX”, *Banatica* 4: 169–213.

Rusu-Bolindeț, V. (2007) *Ceramica romană de la Napoca. Contribuţii la studiul ceramicii din Dacia romană*. Bibliotheca Musei Napocensis XXV. Cluj-Napoca: Mega.

Rusu-Bolindeț, V. and Cociș, S. (2005) “Ceramica din vicus-ul roman Napoca. Importuri și producție locală”, in Cosma and Rustoiu (eds.), 149–84.

Rusu-Bolindeț, V. and Cociș, S. (2006) "The pottery in the Roman vicus of Napoca", in Gaiu and Găzdac (eds.), 555–86.

Sánchez-Palencia Ramos, F.J., Domingo Plácido, F., Orejas Saco del Valle, A. and Fernández-Posse, M.D. (1999) "Minería y metalurgia: de la Protohistoria a la España romana", *Studia Historica, Historia Antigua* 17: 263–98.

Sântimbreanu, A. and Wollmann, V. (1974) "Aspecte tehnice ale exploatării aurului în perioda romană la *Alburnus Maior* (Roşia Montană)", *Apulum* 12: 261–62.

Schwanz von Sprengfels, F. (1783) "Beschreibung der Oesterreichischen Walachen", in K.G. Windisch (ed.), *Ungrisches Magazin, oder Beyträge zur ungarischen Geschichte, Geographie, Naturwissenschaft und der darin eingeschlossenen Litteratur* 3, Preßburg, Löwe, 179–201.

Shepherd, R. (1993) *Ancient Mining*. London: Institution of Mining and Metallurgy.

Sîntimbrean, A. (1989) *Muzeul Mineritului din Roșia Montană*. București: Sport-Turism.

Slotta, R., Wollmann, V. and Dordea, I. eds. (2002) *Silber und Salz in Siebenbürgen. Katalog zur Ausstellung im Deutschen Bergbau-Museum Bochum „Das Gold der Karpaten – Bergbau in Roșia Montană" vom 27. Oktober 2002 bis zum 05. August 2003*. Bd. 4: Einleitende Aufsätze, Reiseberichte sowie geologische und mineralogische Literatur. Bochum: Deutschen Bergbau-Museums Bochum.

Slotta, R., Wollmann, V. and Dordea, I. eds. (2010) *Silber und Salz in Siebenbürgen.* Bd. 10: Gold aus dem „Goldenen Viereck" Der Bergbau in Brád, Offenburg (Baia de Arieș/Offenbánya), Băița (Boicza/Pernseifen) und Baia de Criș (Altenburg/Körösbánya). Teil I: Aufsätze und Manuskripte. Bochum: Deutschen Bergbau-Museums Bochum.

Stan, D., Păuna, C. and Constantinescu, B. (2009) "The use of X-Ray fluorescence for archaeological gold objects provenance studies", *Studia Universitatis Babeş-Bolyai, Geologia, Special Issue, MAEGS – 16*: 99–100.

Stumbea, D. (2013) "Preliminaries on pollution risk factors related to mining and ore processing in the Cu-rich pollymetallic belt of Eastern Carpathians, Romania", *Environmental Science and Pollution Research* 20(11): 7643–55.

Syme, R. (1930) "The imperial finances under Domitian, Nerva and Trajan", *The Journal of Roman Studies* 20: 55–70.

Tămaș, C.G. (2007) *Structuri de brecii endogene (breccia pipe – breccia dyke) și petrometalogenia zăcământului Roșia Montană (Munții Metaliferi, România)*. Cluj-Napoca: Casa Cărții de Știință.

Tamaș, C.G., Bailly, L., Ghergari, L., O'Connor, G. and Minuț, A. (2006) "New occurrences of tellurides and argyrodite in Roșia Montană, Apuseni Mountains, Romania, and their metallogenic significance", *The Canadian Mineralogist* 44: 367–83.

Tămaş, C.G. and Cauuet, B. (2009) "Advances in ancient mining studies from a geological perspective: Roşia Montană case study (Apuseni Mountains, Romania)", *Studia Universitatis Babeş-Bolyai, Geologia, Special Issue, MAEGS – 16*: 101–5.

Tamba, D. (2008) *Porolissum. Aşezarea civilă (vicus militaris) a castrului mare. Observaţii în legătură cu aşezările civile ale castrelor de trupe auxiliare din Dacia Porolissensis. Porolissum. The Civilian Settlement (vicus militaris). Remarks on Civilian Settlements Adjacent to Auxiliary Troops in Dacia Porolissensis*. Cluj-Napoca: Mega.

Téglàs, G. (1883) "A rómaiak aranybányászata Boiczán és Rudán Hunyadmegyében.", *Archaeologiai Értesítő* 3, 142–47.

Téglàs, G. (1890) "A Korábia bányászata és kettős sírmezeje Zalatna közelében", *Archaeologiai Közlemények* 16: 1–44.

Téglàs, G. (1893) "A Nagyalmási bányamivelés emlékei Hunyadmegyében", A*rchaeologiai Értesítő* 13, 133–40.

Téglàs, G. (1899) "Centum Putei nevének helyrajzi vonat-kozásai és értelmezése", *Archaeologiai Értesítő* 19, 214–25.

Téglás, G. (1909) "A dácziai bányászat lámpabélyegei", *Bányászati és Kohászati Lapok*: 484–88.

Ţentea, O. (2003) "Legion XIII Gemina and Alburnus Maior", *Apulum* 40: 253-65.

Ţentea, O., Voişian, V., Cîmpeanu, A. and Rusu-Bolindeţ, V. (2015) "The Roman baths at *Alburnus Maior*, Carpeni Hill", in Ţentea (ed.) *Bath and Bathing at Alburnus Maior. Băile romane de la Alburnus Maior*, Cluj-Napoca, Mega, 21–42, 91–93.

Timberlake, S. (1990) "Review of the historical evidence for the use of firesetting", in *Early Mining in the British Isles: Proceedings of the Early Mining Workshop at Plas Tan y Bwlch, Snowdonia National Park Study Centre, 17–19 November, 1989*, Tan y Bwlch, Gwynedd, Plas Tan y Bwlch, Snowdonia National Park Study Centre, 49–52.

Timoc, C. (2008) "Mineritul aurifer în Dacia romană", in Benea (ed.), 96–106.

TIR Dac. Inf. = Tudor, D. and Institutul de Arheologie al Academiei R.P.R. (1965) *Tabula Imperii Romani: Drobeta, Romula, Sucidava*. Bucureşti: Academiei Republicii Socialiste România.

TIR L34 = Union Académique Internationale (1968) *Tabula Imperii Romani: Aquincum-Sarmizegetusa-Sirmium auf dem Grunde der Weltkarte 1:1000000 L34 Budapest*. Amsterdam: Hakkert.

TIR L35 = Gostar, N. and Academia Republicii Socialiste România (1969) *Tábula imperii romani: Romula, Durostorum, Tomis ... L35: Bucarest*. Bucarest: Académie de la République Socialiste de Roumanie.

Tudor, D. (1968) *Orasę, tîrguri şi sate în Dacia Romană*. Bucureşti: Ştiinţifică.

Udubasa, Gh., Rosu, E., Seghedi, I., Ivascanu, P.M. (2001) "The "Golden Quadrangle" in Metaliferi Mts., Romania: what does this really mean?", *Romanian Journal of Mineralogy* 79 (suppl. 2): 24–34.

Valera, R.G. and Valera, P.G. (2003) "Tin in the Mediterranean area: history and geology", in A. Giumlia-Mair and F. Lo Schiavo (eds.), *The Problem of Early Tin*, Oxford, Archaeopress, 3–14.

"Vinţu de Jos" (2005) in *Cronica Cercetărilor Arheologice din România*. Bucureşti. Retrieved from <http://cronica.cimec.ro/detaliu.asp?k=3548>.

Vlad, Ş-N. and Orlandea, E. (2004) "Metallogeny of the Gold Quadrilateral: style and characteristics of epithermal-subvolcanic mineralized structures, South Apuseni Mts., Romania", *Studia Universitatis Babeş-Bolyai, Geologia* XLIX (1): 15–31.

Vleja, D. (2011) ¨Exploatarea şi prelucrarea metalelor în Dacia Romană. Interferenţe etnice şi culturale¨. Thesis summary. Retrieved from < http://www.unibuc.ro/studies/Doctorate2012Decembrie/VLEJA%20DECEBAL%20-%20Exploatarea%20si%20prelucrarea%20metalelor%20in%20Dacia%20romana.%20Interferente%20etnice%20si%20culturale/rezumat.pdf>.

Wanner, R. (2010a) "Animals and grain on the frontier: some considerations of Roman land-use in the Meseş Gate of Roman Dacia", in Pop et al. (eds.), 357–64.

Wanner, R. (2010b) "Forts, fields and towns: communities in Northwest Transylvania from the first century BC to the fifth century AD". Ph.D. thesis. University of Leicester.

Weisgerber, G. (1979) "Das römische Wasserheberad aus Rio Tinto in Spanien im British Museum London", in *Der Anschnitt: Mitteilungsbl. d. Vereinigung der Freunde von Kunst und Kultur im Bergbau* 2–3, Bochum, 62–80.

Wenzel, G. (1880) *Magyarország bányászatának kritikai története*. Budapest: A. M. Tud. Akadémia Könyvkiadó-Hivatal.

Willies, L. and Weisgerber, G. (2000) "The use of fire in prehistoric and ancient mining-firesetting", *Paléorient* 26(2): 131–49.

Wilson, A. (2002) "Machines, power and the ancient economy", *Journal of Roman Studies* 92: 1–32.

Wilson, A.I. (2007) "The metal supply of the Roman Empire", in E. Papi and M. Bonifay (eds.) *Supplying Rome and the Empire: The Proceedings of an International Seminar Held at Siena-Certosa di Pontignano on May 2–4, 2004, on Rome, the Provinces, Production and Distribution*, Portsmouth, R.I, Journal of Roman Archaeology, 109–25.

Wilson, A.I. (2011) "City sizes and urbanization in the Roman Empire", in A. Bowman and A. Wilson (eds.), *Settlement, Urbanization, and Population*, Oxford Studies on the Roman Economy, Oxford, Oxford University Press, 161–95.

Wilson, A., Mattingly, D., and Dawson, M. (2011) *Statement of Significance: Cârnic Massif, Roşia Montană, jud Alba Romania*. Oxford University, Institute of Archaeology.

Wilson, A., Mattingly, D. and Dawson, M. (2013) *Response to D. Jennings. A Critical Analysis of the Report: 'Statement of significance: Cârnic Massif, Roşia Montană, jud Alba Romania' by A Wilson, D Mattingly and M Dawson*. Retrieved from <http://users.ox.ac.uk/~corp0057/Rosia%20Montana%20-%20Response%20to%20David%20Jennings%20-%2019-12-2013.pdf>.

Wollmann, V. (1985–1986) " Un lucus la Alburnus Maior ", *Anuarul Institutului de Istorie şi Arheologie, Cluj-Napoca* 17: 253–95.

Wollmann, V. (1989) "Nouvelles données concernant la structure socio-ethnique de la zone minière de la *Dacia Superior*", in C. Domergue (ed.), 107–18.

Wollmann, V. (1996) *Mineritul metalifer, extragerea sării şi carierele de piatră în Dacia Romană. Der Erzbergbau, die Salzgewinnung und die Steinbrüche im römischen Dakien*. Cluj-Napoca: Muzeul Național de Istorie a Transilvaniei.

Wollmann, V. (2002a) "Roșia Montană in Altertum ", in Slotta, Wollmann and Dordea (eds.), 27–41.

Wollmann, V. (2002b) "Die römischen Wachstafeln von Roșia Montană - Paraleipomena", in Slotta, Wollmann and Dordea (eds.), 91–124.

Wollmann, V. (2002c) "Zur Geschichte des Goldbergbaus in Roșia Montană in der frühen Neuzeit", in Slotta, Wollmann and Dordea (eds.), 125–62.

Wollmann, V. (2010) "Der Bergbau von Brad und Umgebung (in Crișcior/Kreischquell, Ruda, Valea Arsului, Zdraholț und Musariu) von seinen Anfängen bis zur Gründung der „Mica"-Gesellschaft im Jahre 1920", in Slotta, Wollmann and Dordea (eds.), 35–80.

Wollmann, V. and Ciugudean, H. (2005) "Noi cercetări privind mineritul antic în Transilvania (I)", *Apulum* 42: 95–116.

Zirra, V.V., Oța, L., Panaite, A., Alexandrescu, C., Ganciu, A., Boroneanț, A. and Dragoman, A. (2003) "Spatiul sacru din punctul Dalea", in Damian (ed.), Romanian edition, 339–84.

Żmudziński, M. (2002) "Gospodarcza rola armii rzymskiej w *Dacia Porolissensis* w świetle źródeł archeologicznych", *Meander* 3–4: 337–48.

Żmudziński, M. (2004a) "Die Römische Wirtschaft in der Provinz *Dacia Porolissensis* im Lichte der archäologischen Quellen", in Ruscu et al. (eds.), 821–27.

Żmudziński, M. (2004b) "Wydobycie złota w rzymskiej Dacji w świetle źródeł archeologicznych", *Meander* 5–6: 481–91.

Żmudziński, M. (2006a) "Recherches sur l'artisanat en Dacie Romaine", *Eos* 92: 297–301.

Żmudziński, M. (2006b) "Remarks on the economic contacts of Roman Dacia", in Gaiu and Găzdac, 679–82.

Żmudziński, M. (2007) *Gospodarka w rzymskiej prowincji Dacji Superior.* [*The economy in the Roman province of Upper Dacia*]. Acta Universitatis Wratislaviensis No. 3003. Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.

Żmudziński, M. (2009) "Trade contacts of Roman Dacia", *Tyragetia, S.N.* 3.1: 285–92.

Figures

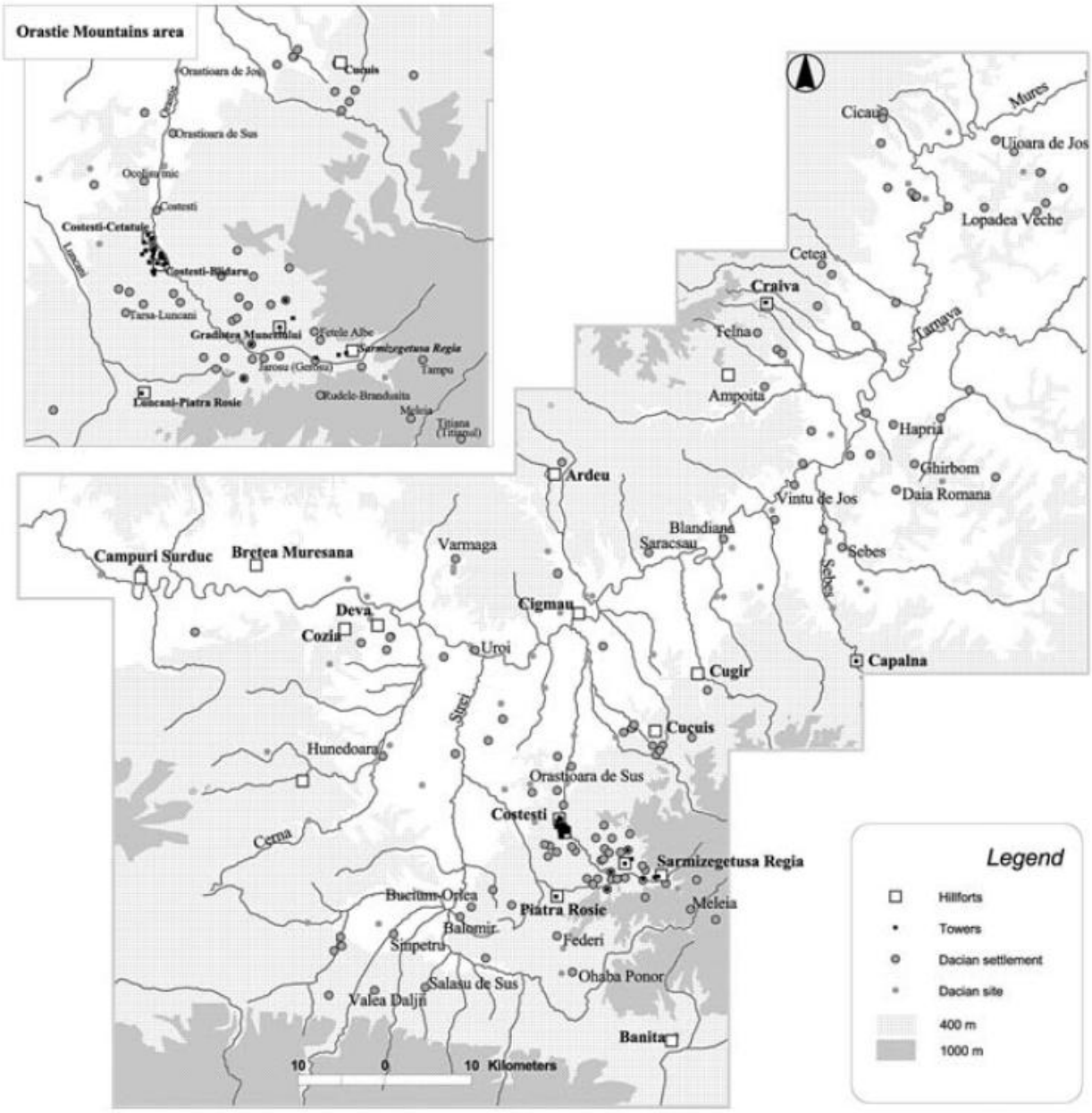


Figure 1: Distribution of Iron Age Dacian sites (Oltean 2007, Fig. 4.1).

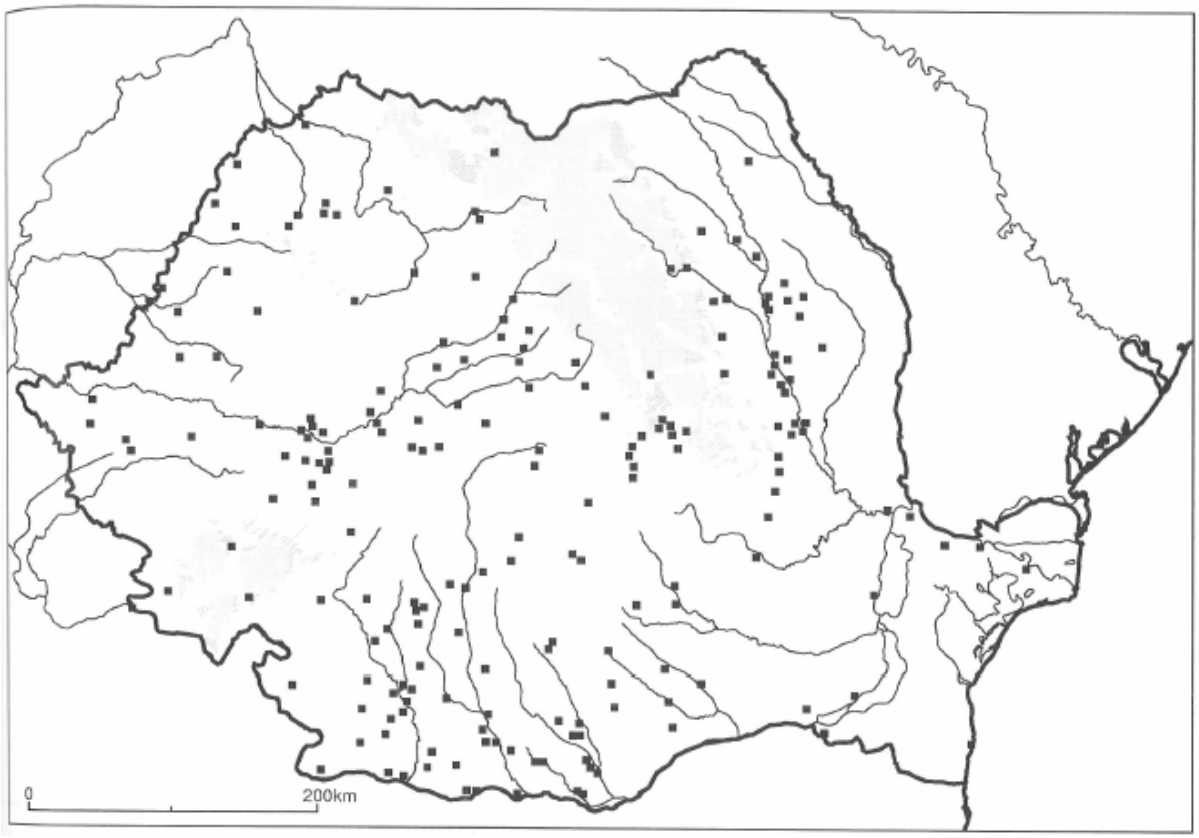


Figure 2: Distribution of Roman Republican denarii in modern Romania (Lockyear 2004).

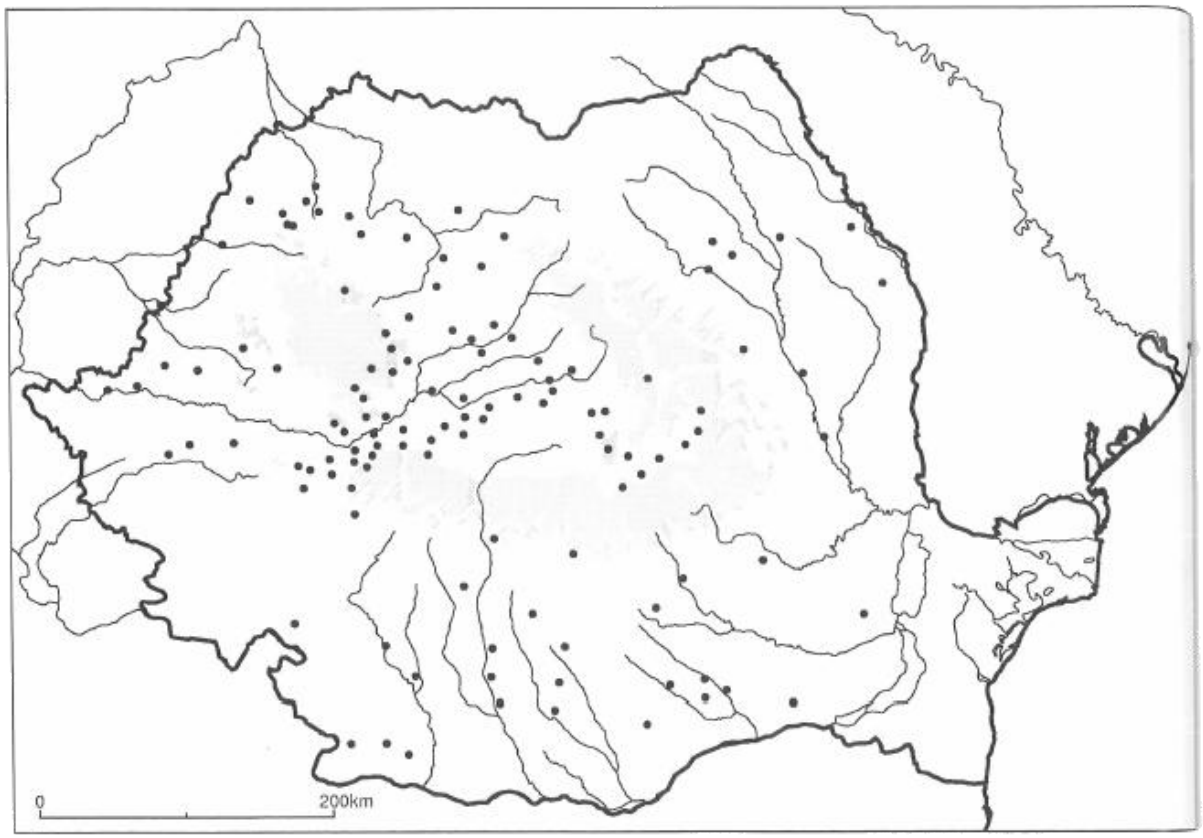


Figure 3: Distribution of Late Iron Age silver finds (Lockyear 2004).



Figure 4: Obverse and reverse of a monogrammed Koson coin (not to scale).



Figure 5: A Sarmizegetusa gold bracelet. National Museum of Romanian History, Bucharest.

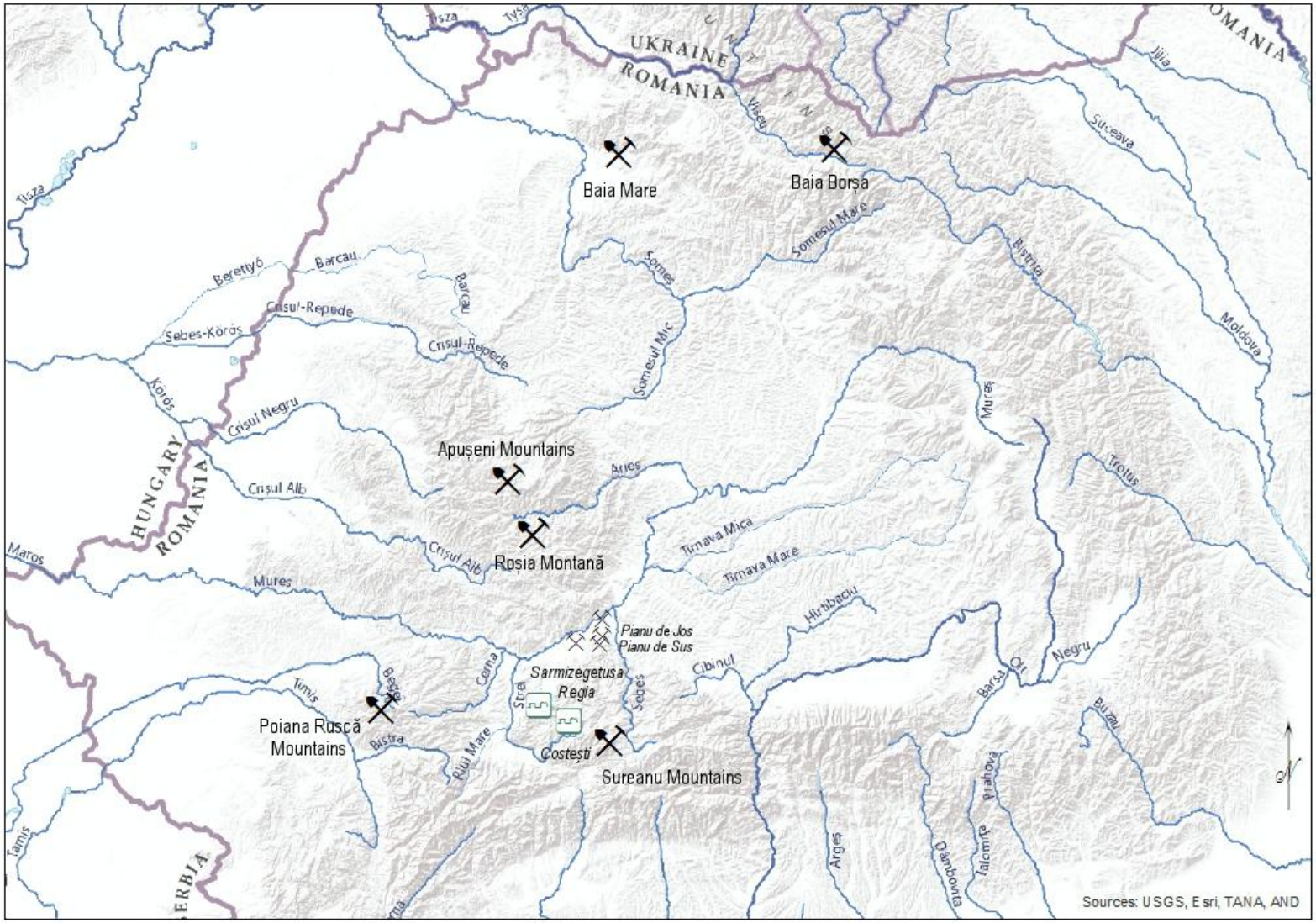


Figure 6: Major ore sources for pre-Roman mining in Romania.

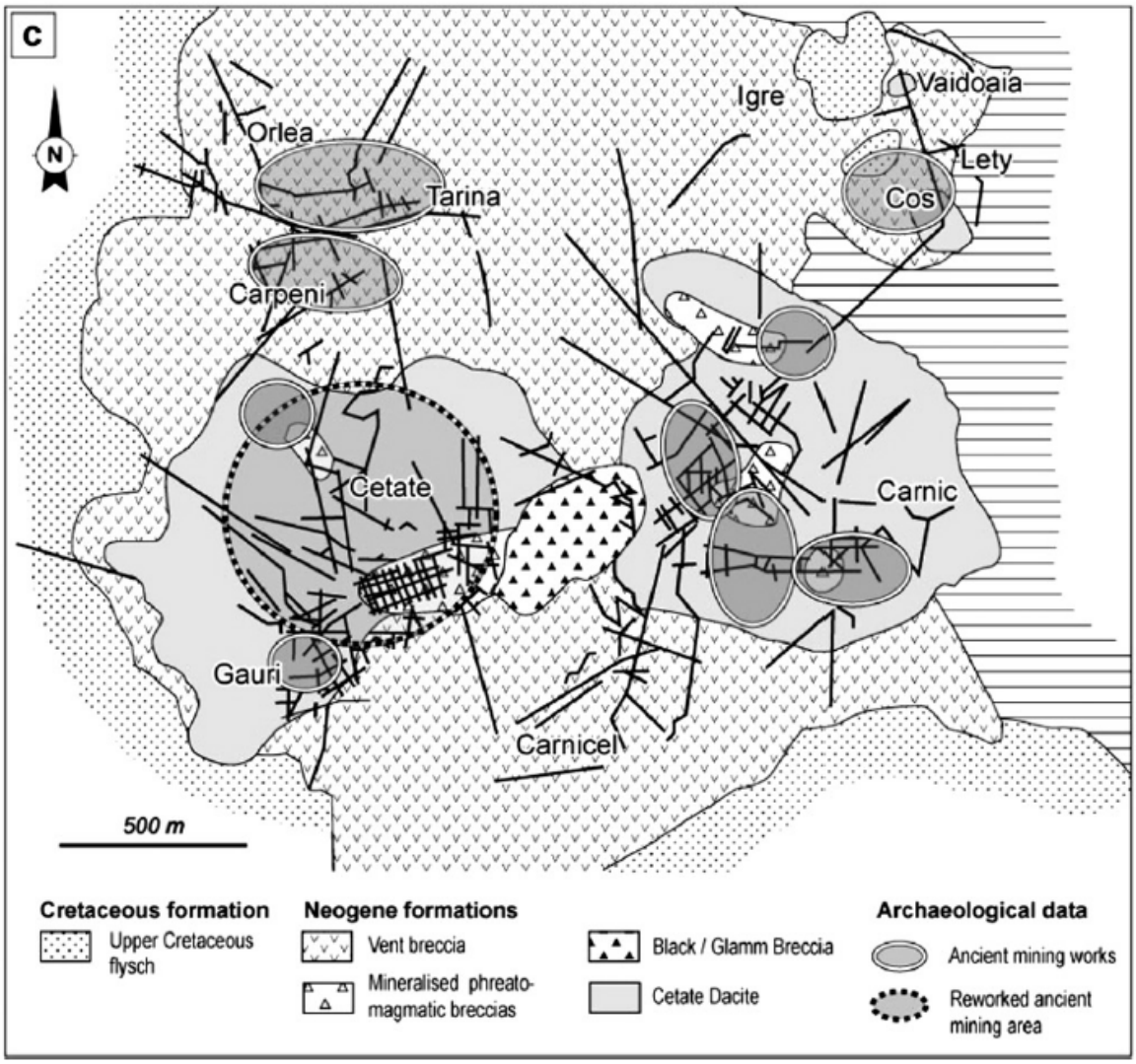


Figure 7: Goldfields of Roșia Montană and Roman workings (Baron et al. 2011, Fig. 1c).

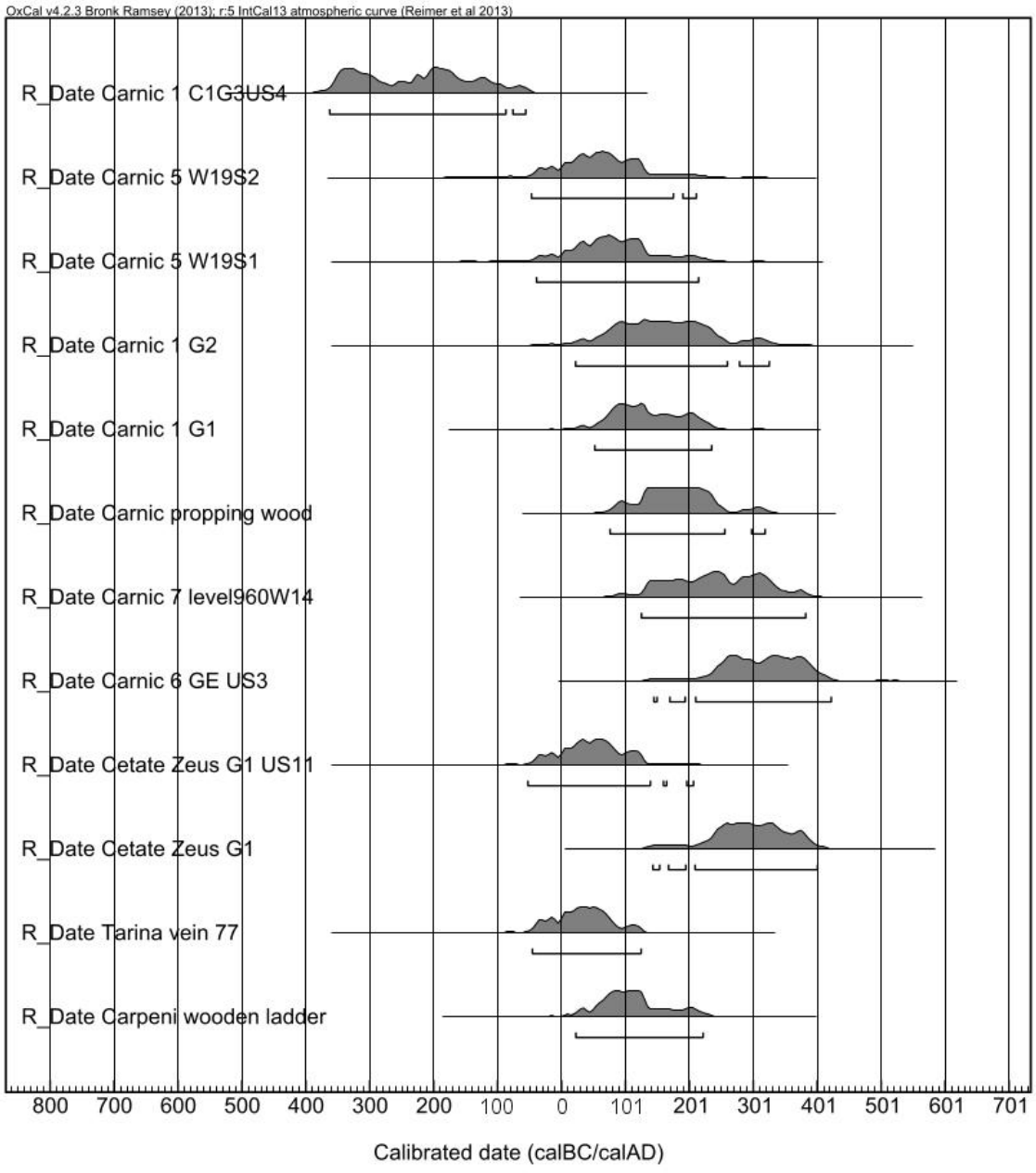


Figure 8: Plot of recalibrated radiocarbon dates from Roşia Montană.

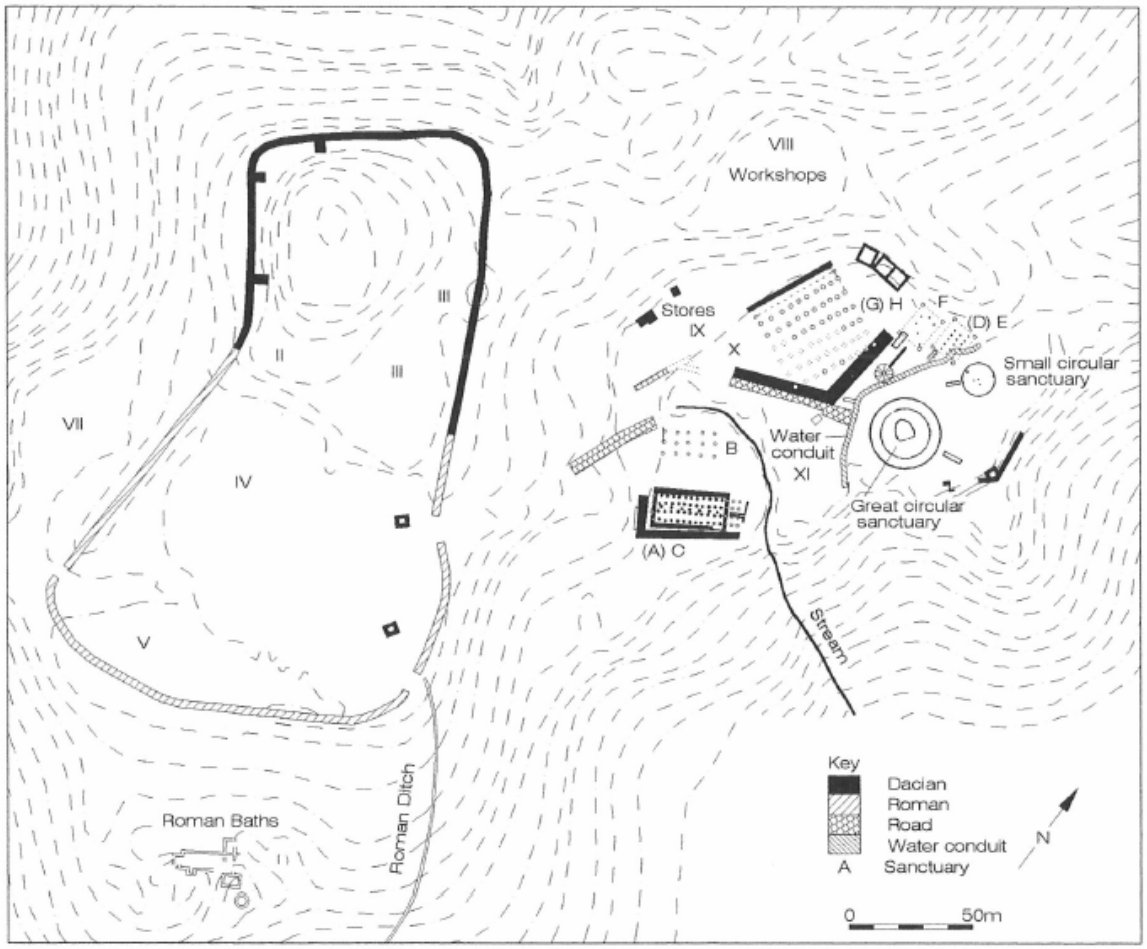


Figure 9: Plan of the citadel, religious sanctuary, and settlement buildings at Sarmizegetusa Regia (Lockyear 2004).

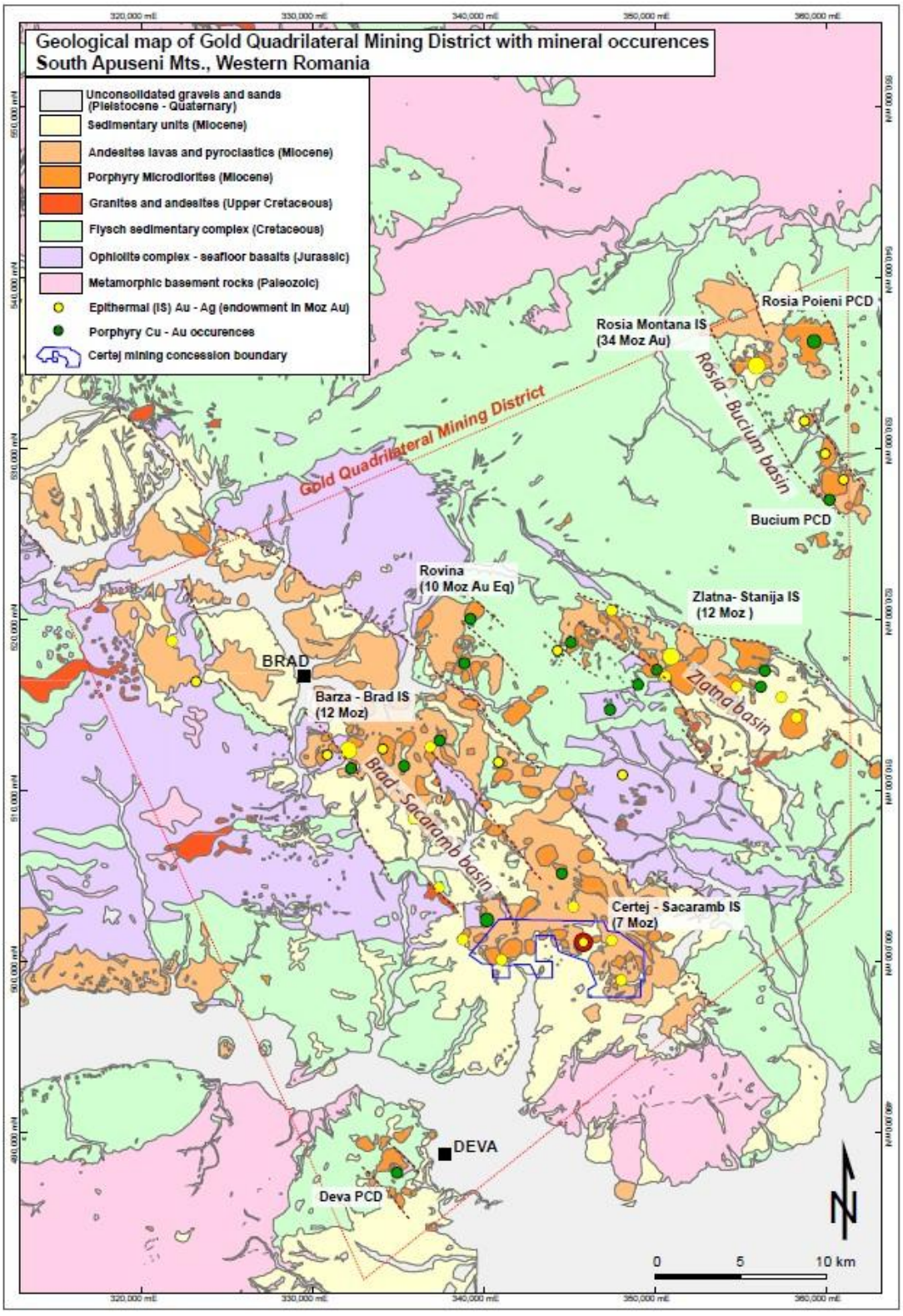


Figure 10: Geological map of the Golden Quadrilateral Mining District (Certej Project, Eldorado Gold).

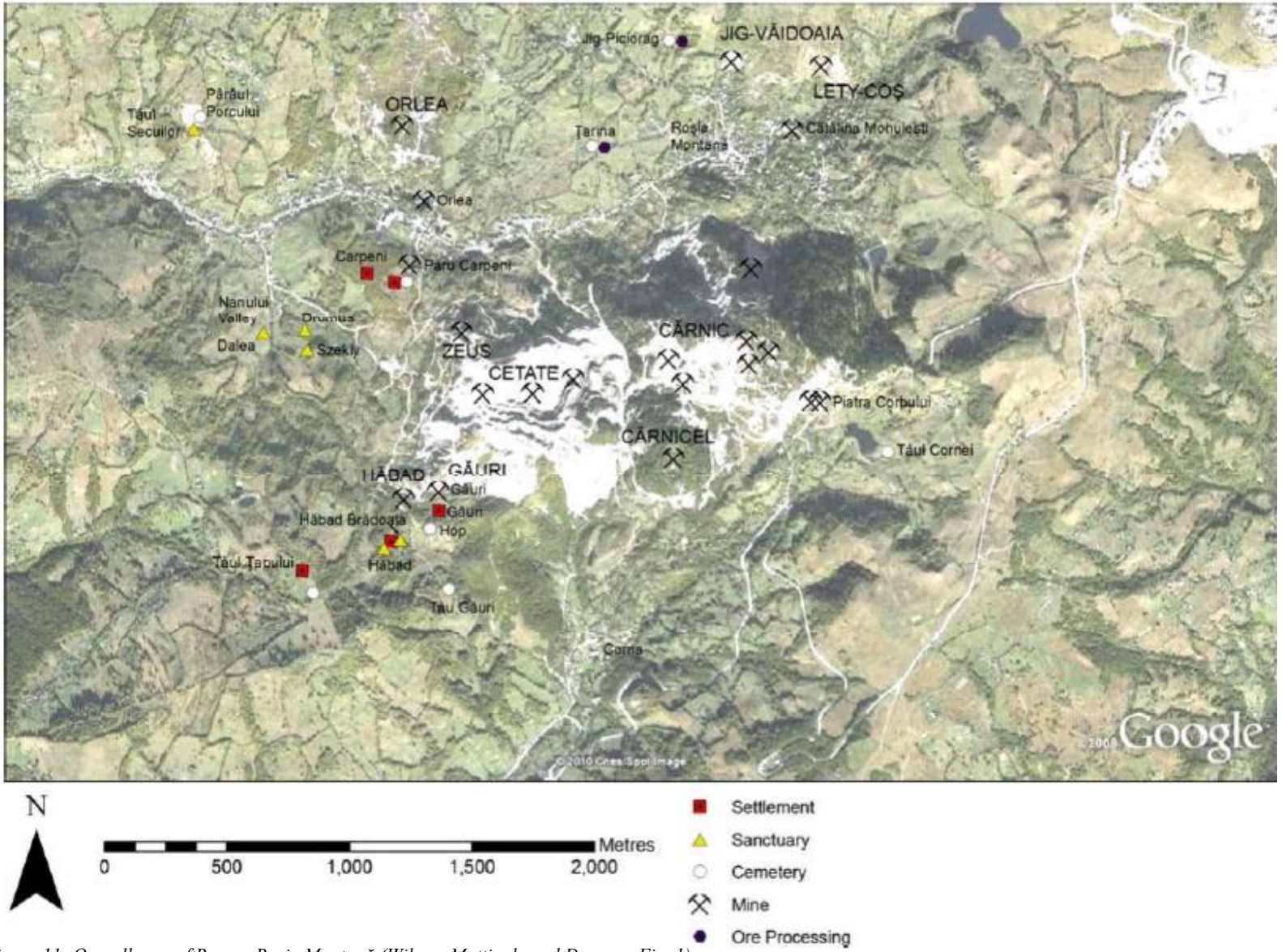


Figure 11: Overall map of Roman Roșia Montană (Wilson, Mattingly and Dawson, Fig. 1).

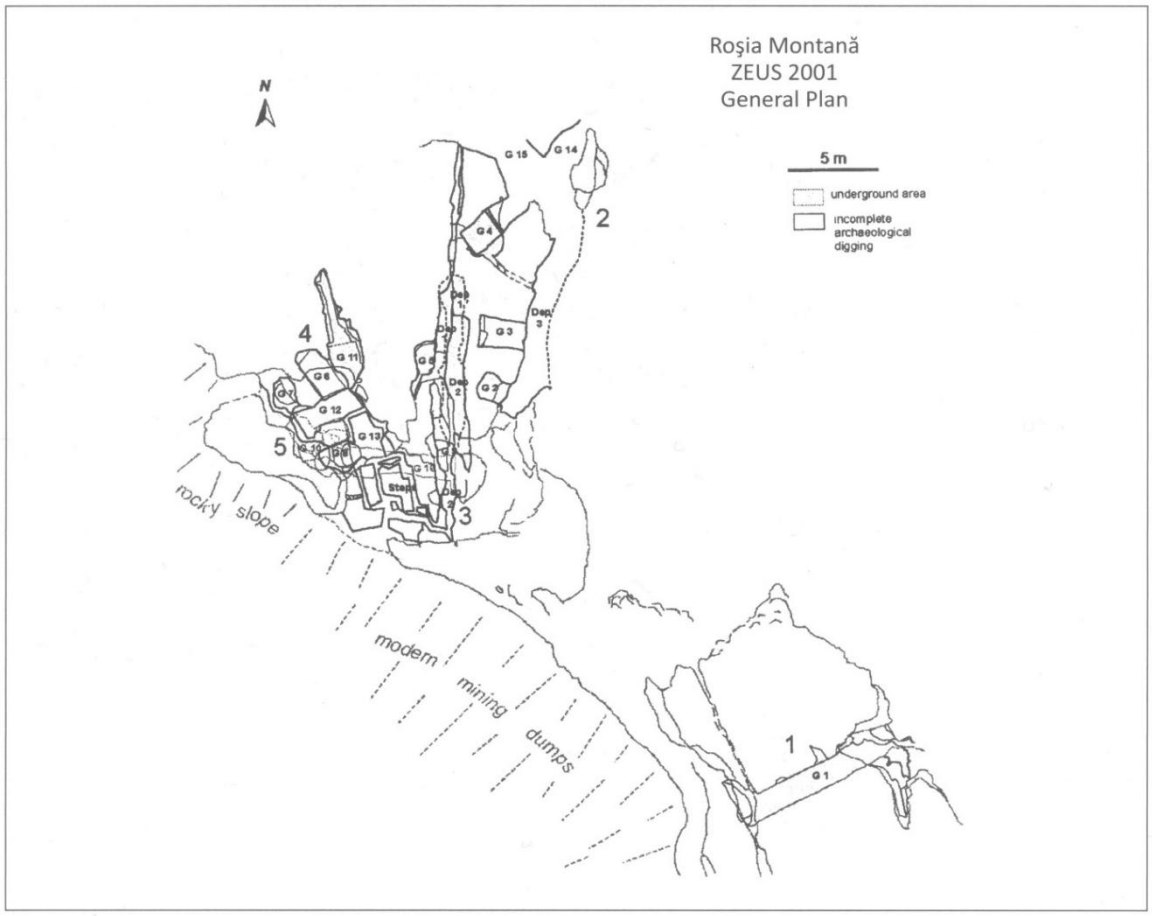


Figure 12: Plan of Zeus, Roşia Montană (Cauuet et al. 2003, Fig. 24).

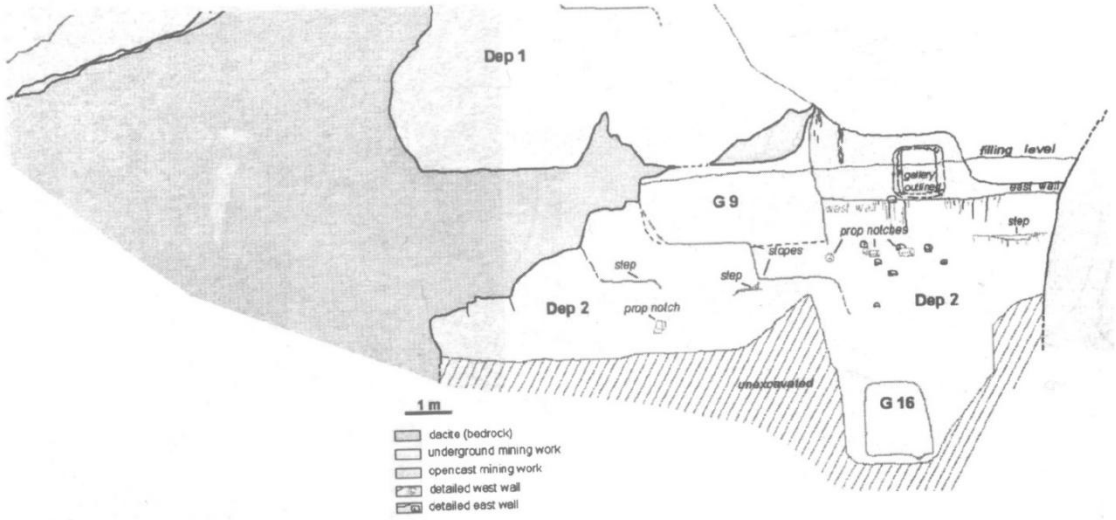


Figure 13: Profile plan of Dep 1 & 2, Zeus (Cauuet et al. 2003, Fig. 29).

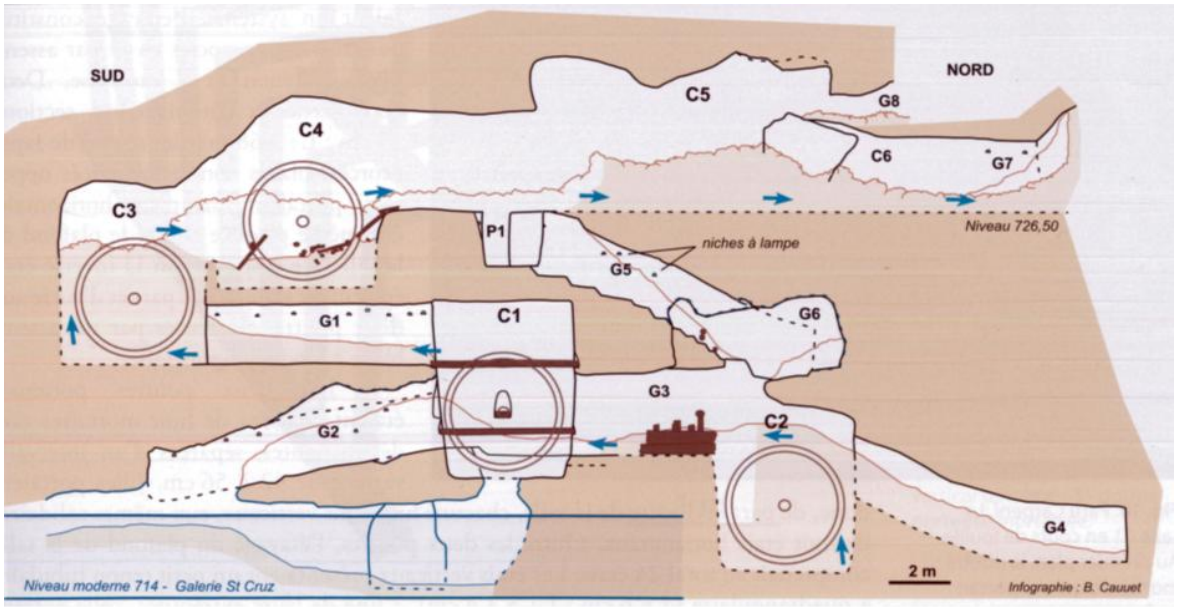


Figure 14: Drainage installation at Paru Carpeni mine, showing 4 water-lifting wheels installed in a series (Cauuet 2008, p. 67, Fig. 9).

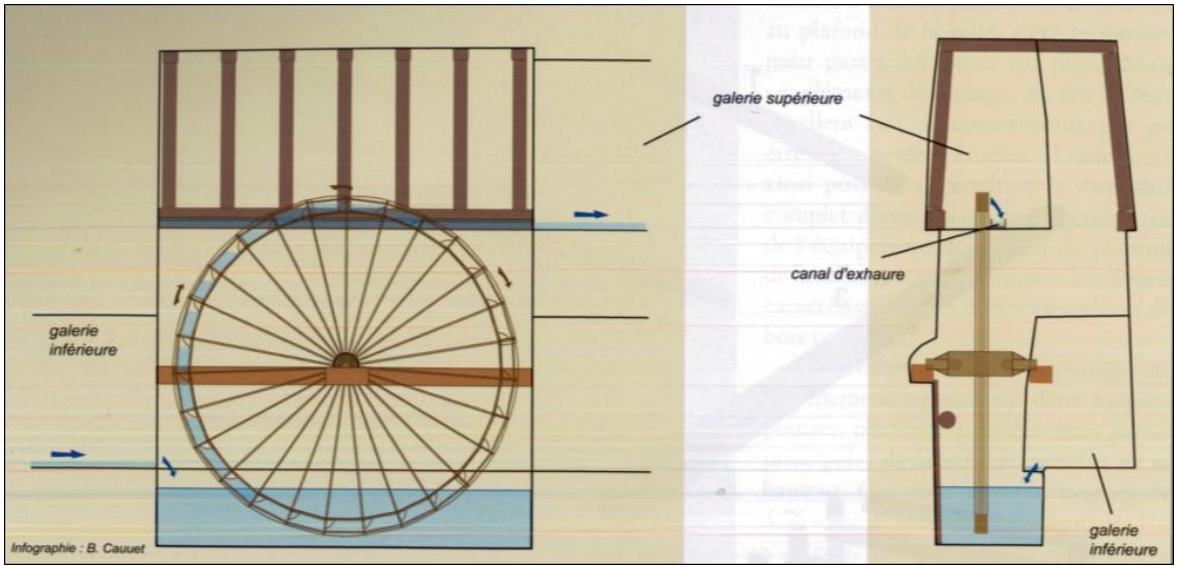


Figure 15: Reconstruction of the wheel in C1 at Paru Carpeni (Cauuet 2008, p. 70, Fig. 12).

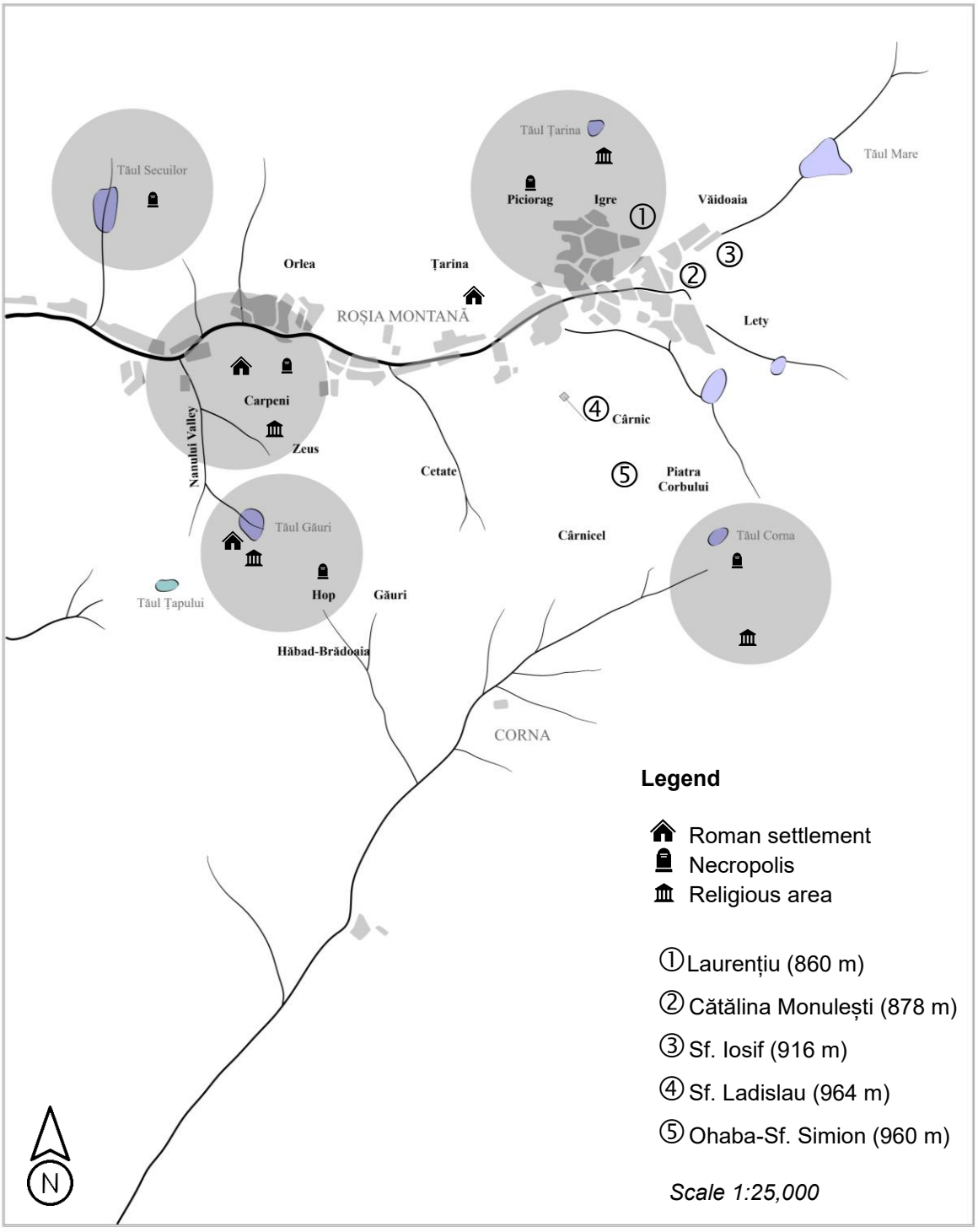


Figure 16: Map of Roșia Montană surface remains in clusters (after Wollmann 2002a, p. 31).

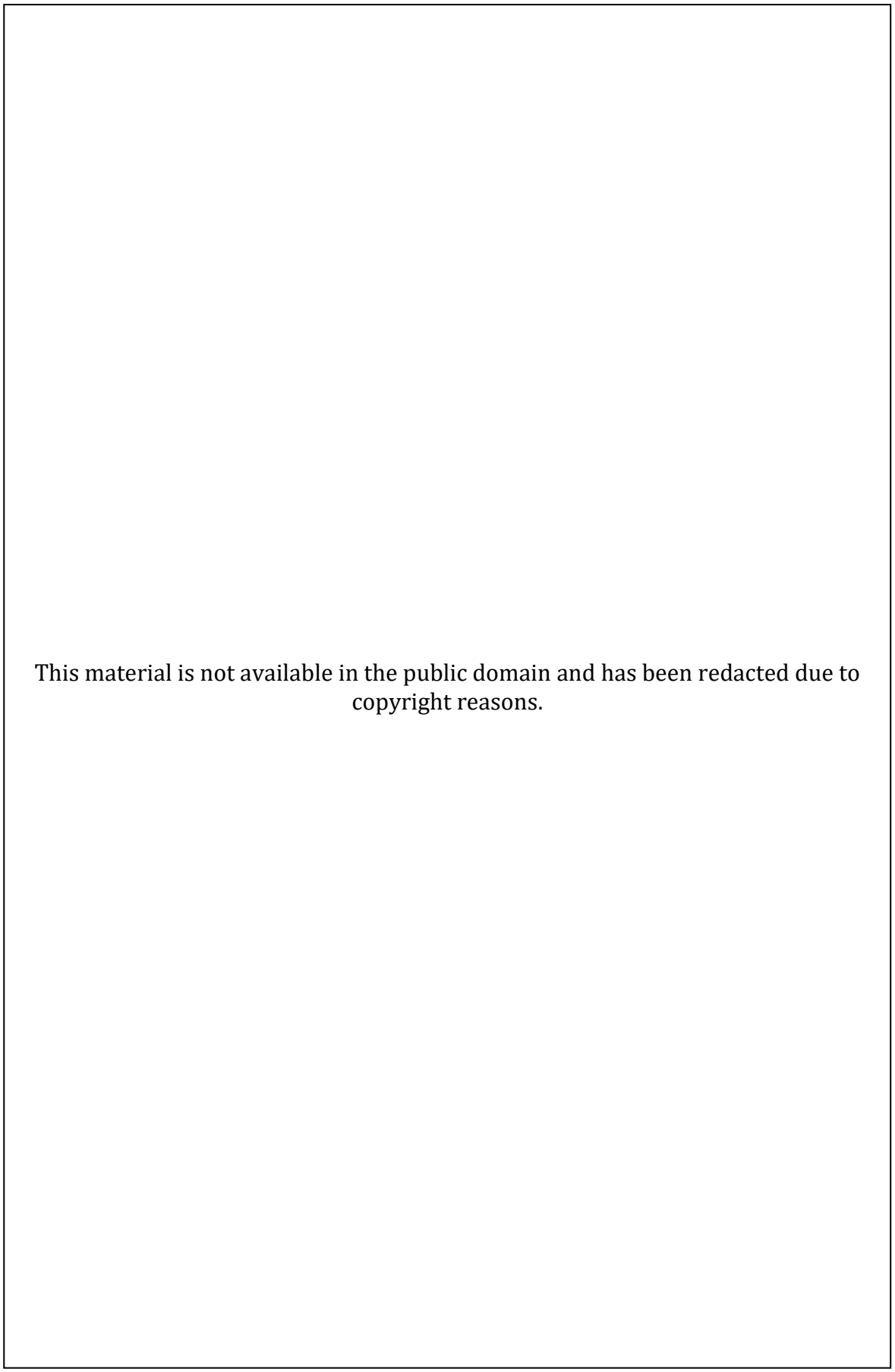


Figure 17: Cârnic 1, 2, 3 and 4 Inferior networks (Cauuet 2009b, Fig. 130).



Figure 18: 3D reconstruction of Cârnic 1, 2 & 3 (Cauuet 2009b, Fig. 131).

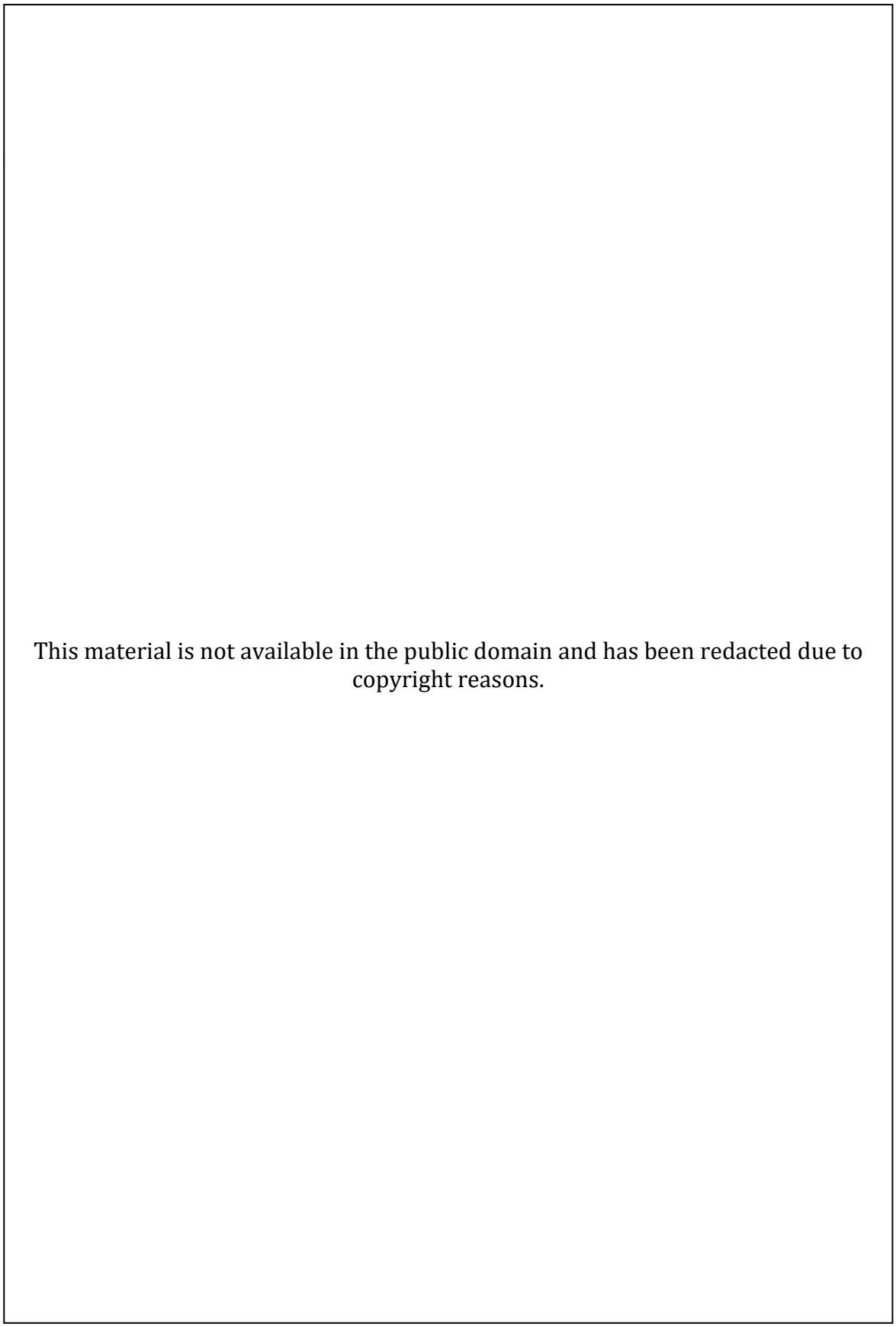


Figure 19: Plan of Cârnic 2 Inferior (Cauuet 2009b, Fig. 356).

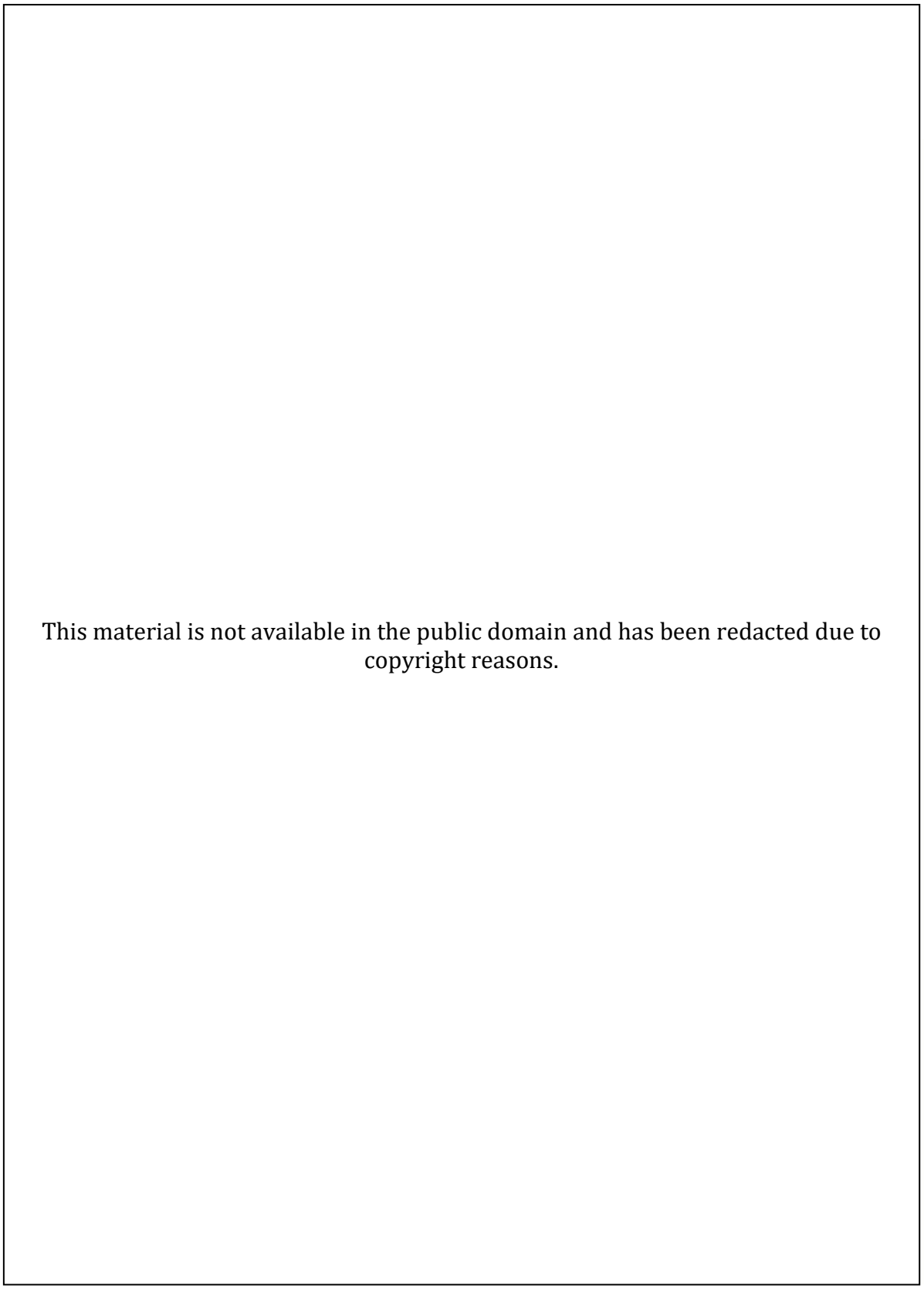


Figure 20: Plan of Câarnic 2 Inferior, G1 (Cauuet 2009b, Fig. 357).

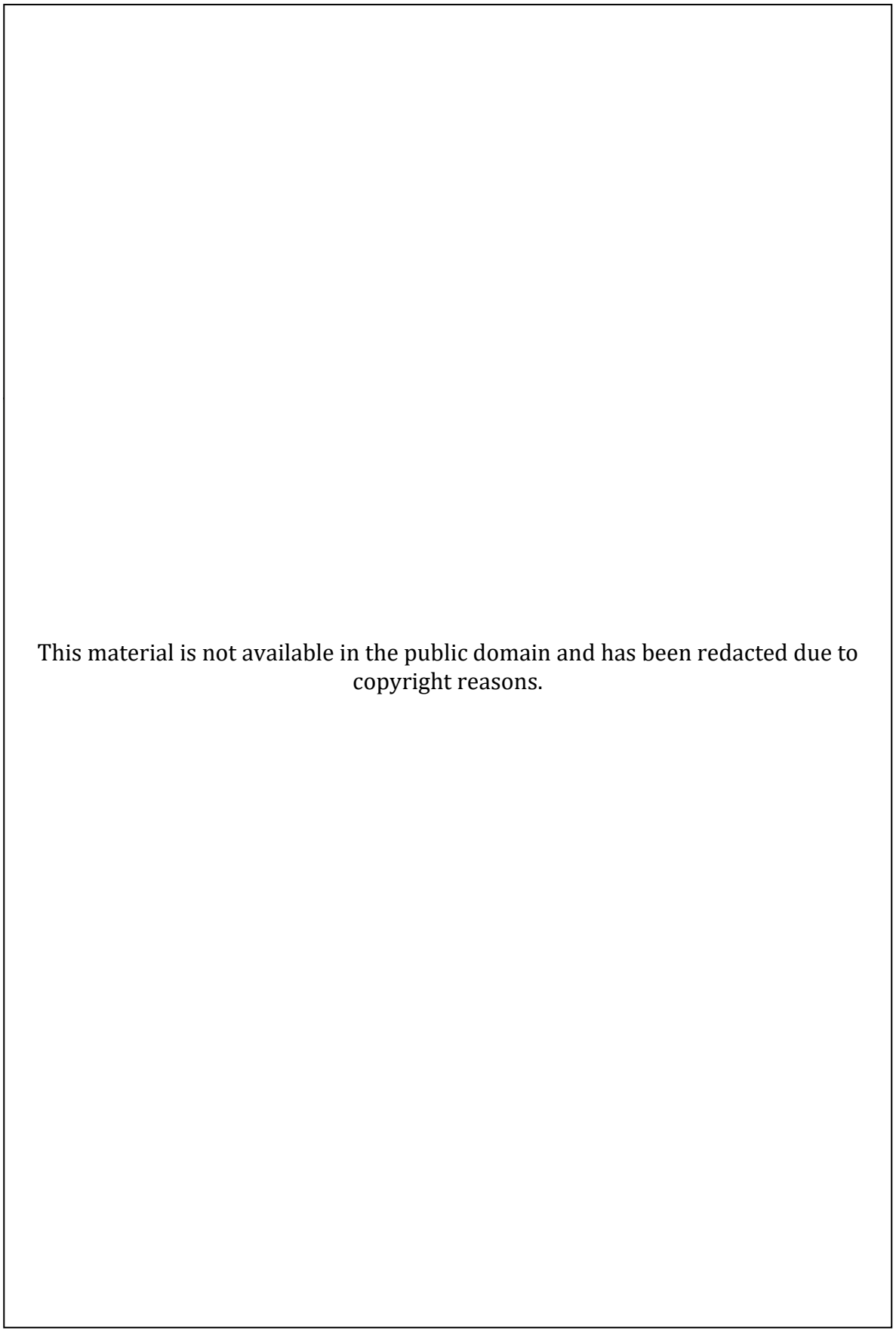


Figure 21: Plan of Cârnic 1 Inferior (Cauuet 2009b, Fig. 312).



Figure 22: Profile of Cârnic 1 Inferior (Cauuet 2009b, Fig. 329).

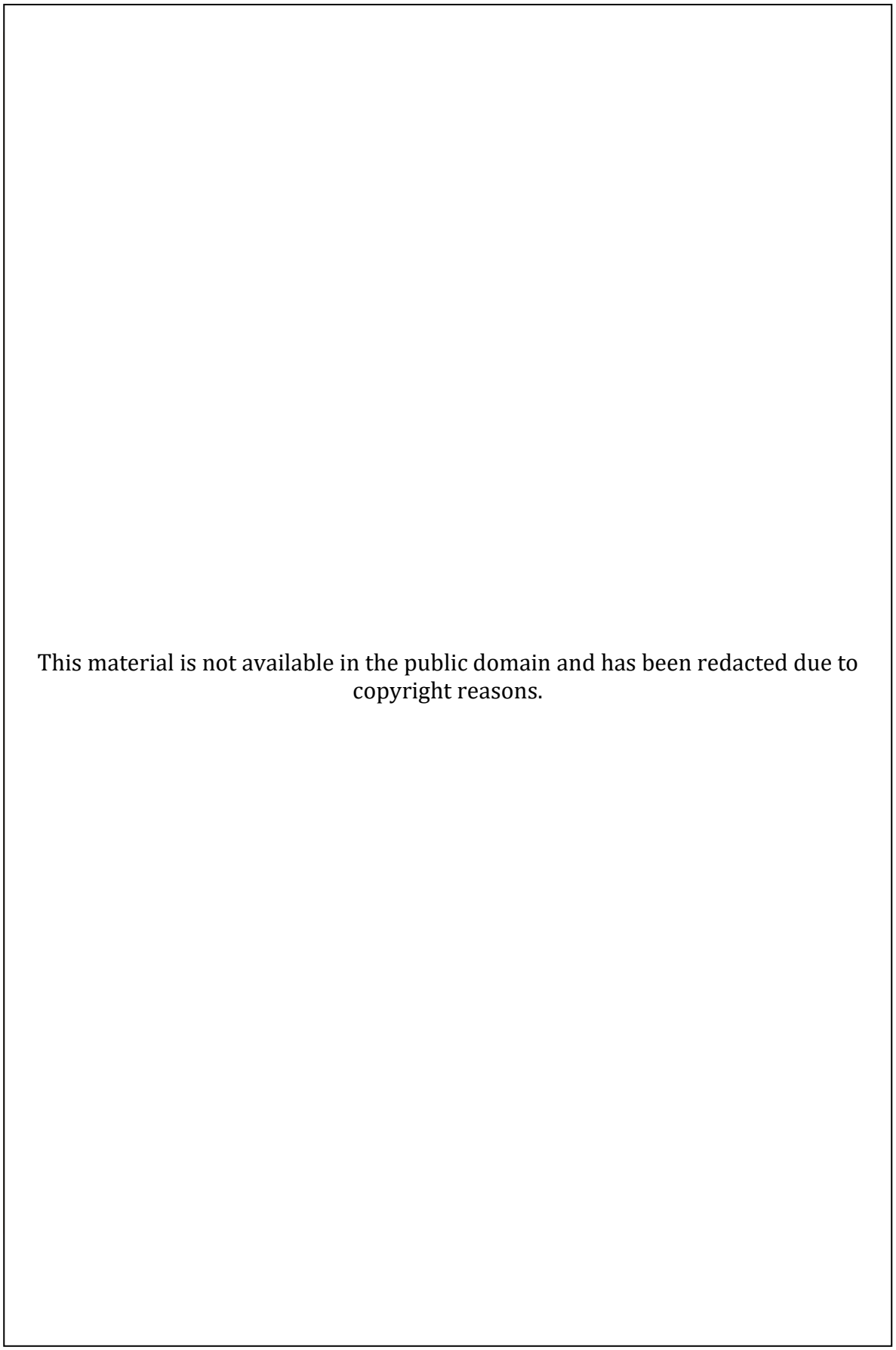


Figure 23: Plan of Cârnic 2 Superior (Cauuet 2009b, Fig. 398).

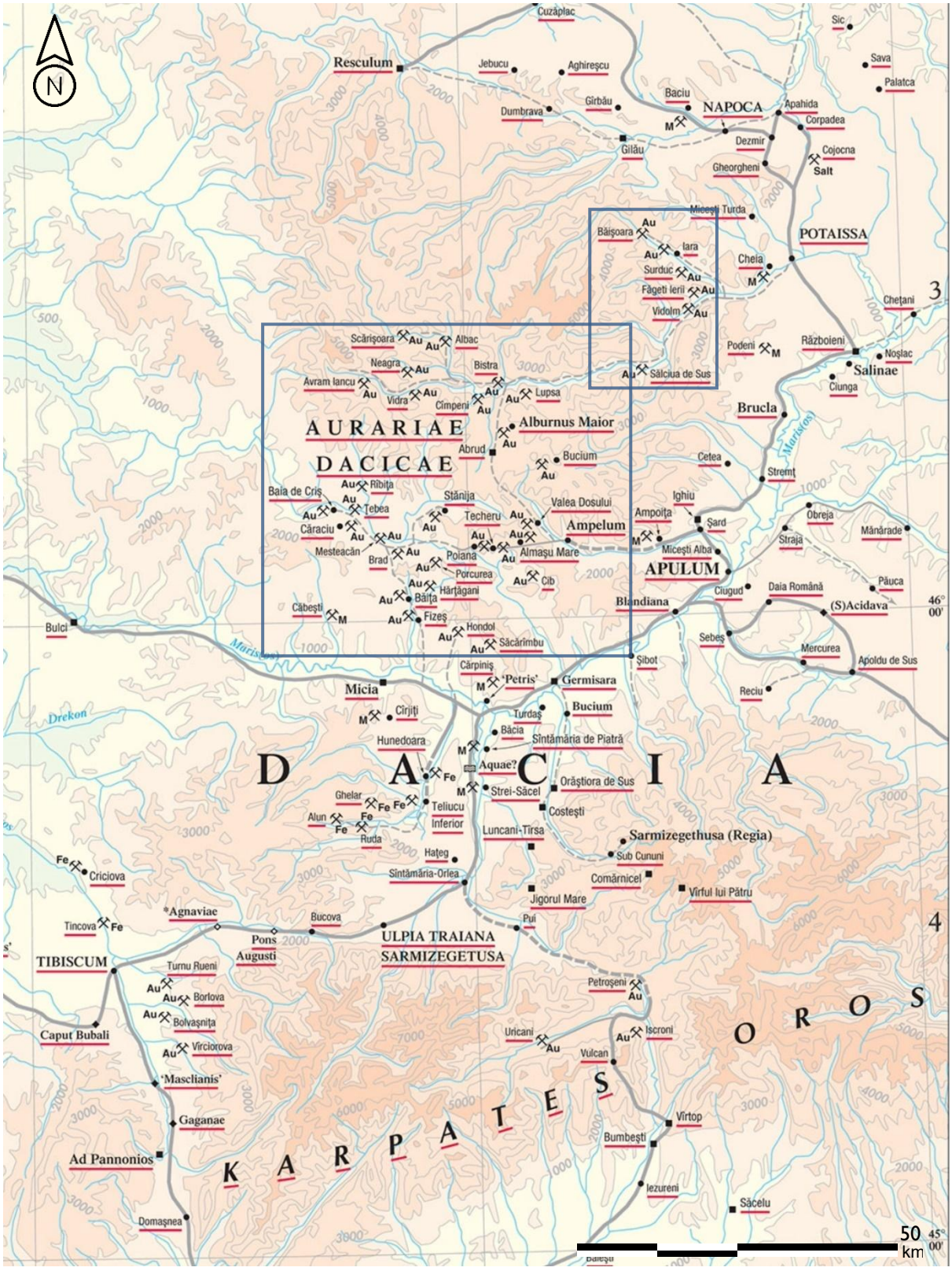


Figure 24: The Aurariae Dacicae with main gold-mining areas highlighted (blue) (Barrington Atlas).

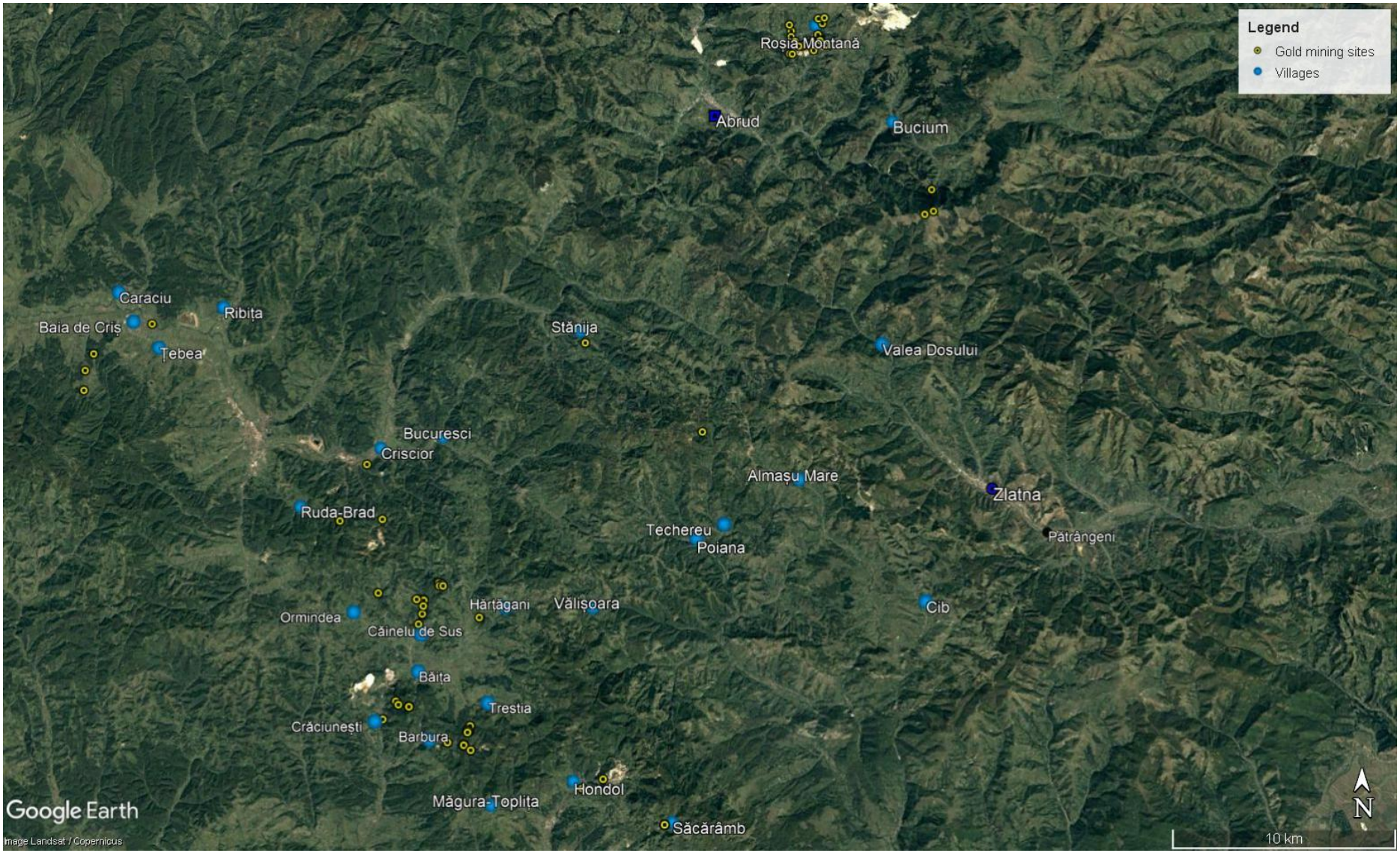


Figure 25: Main gold mines of the Golden Quadrilateral (Google Earth).

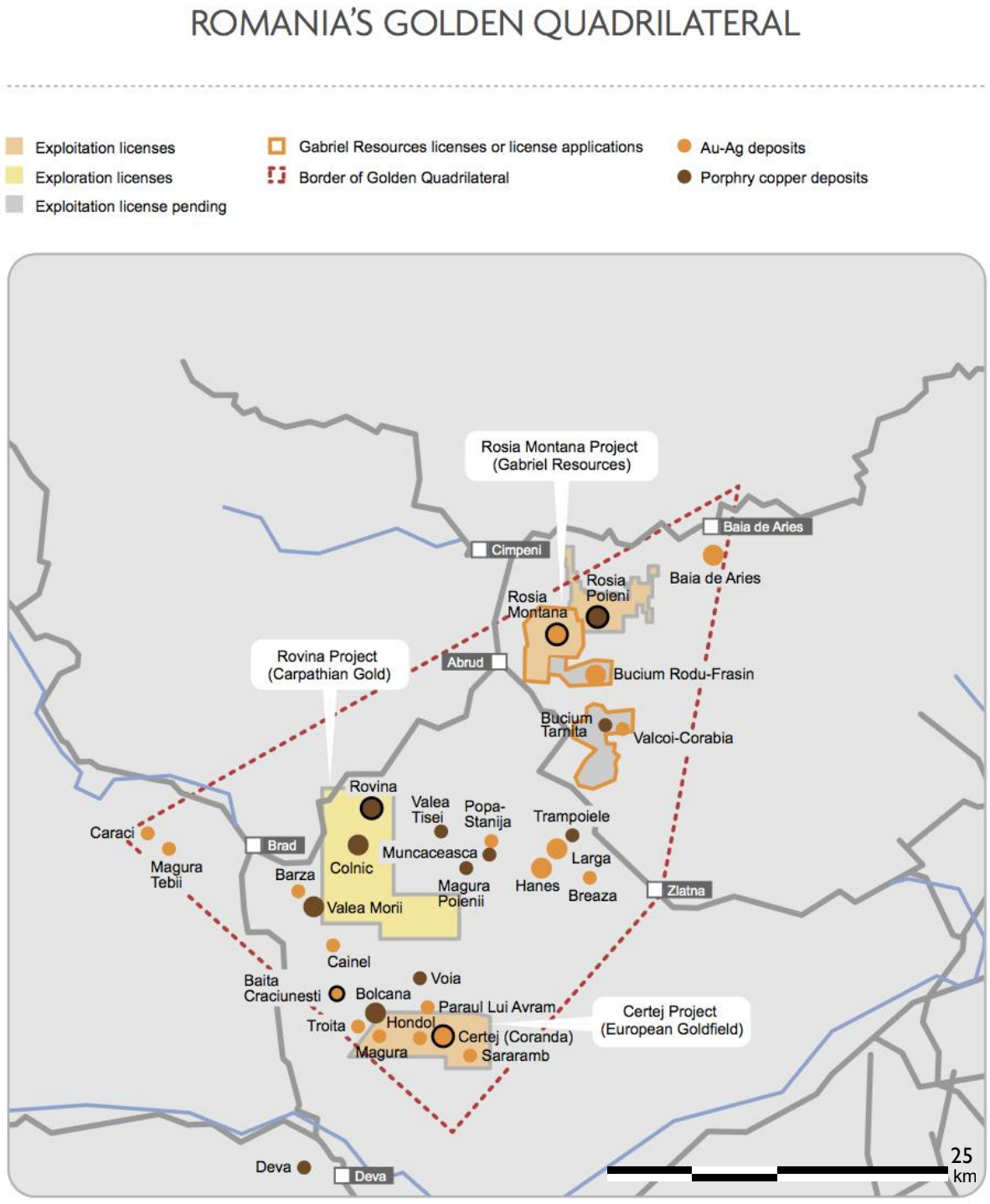


Figure 26: Modern mining development in the Golden Quadrilateral (Gabriel Resources).

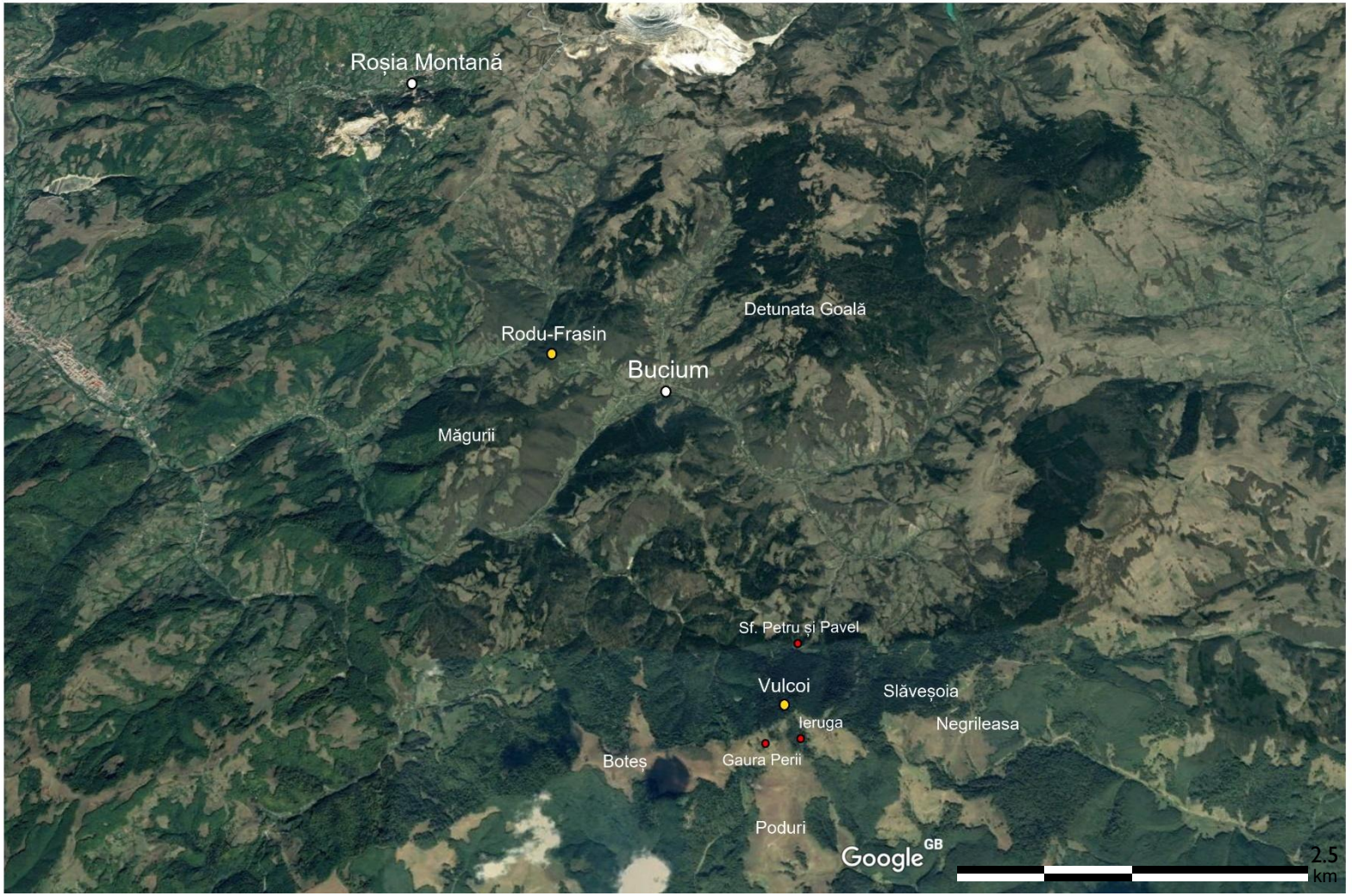


Figure 27: Bucium and Au-Ag deposits with signs of Roman activity (Google Earth).

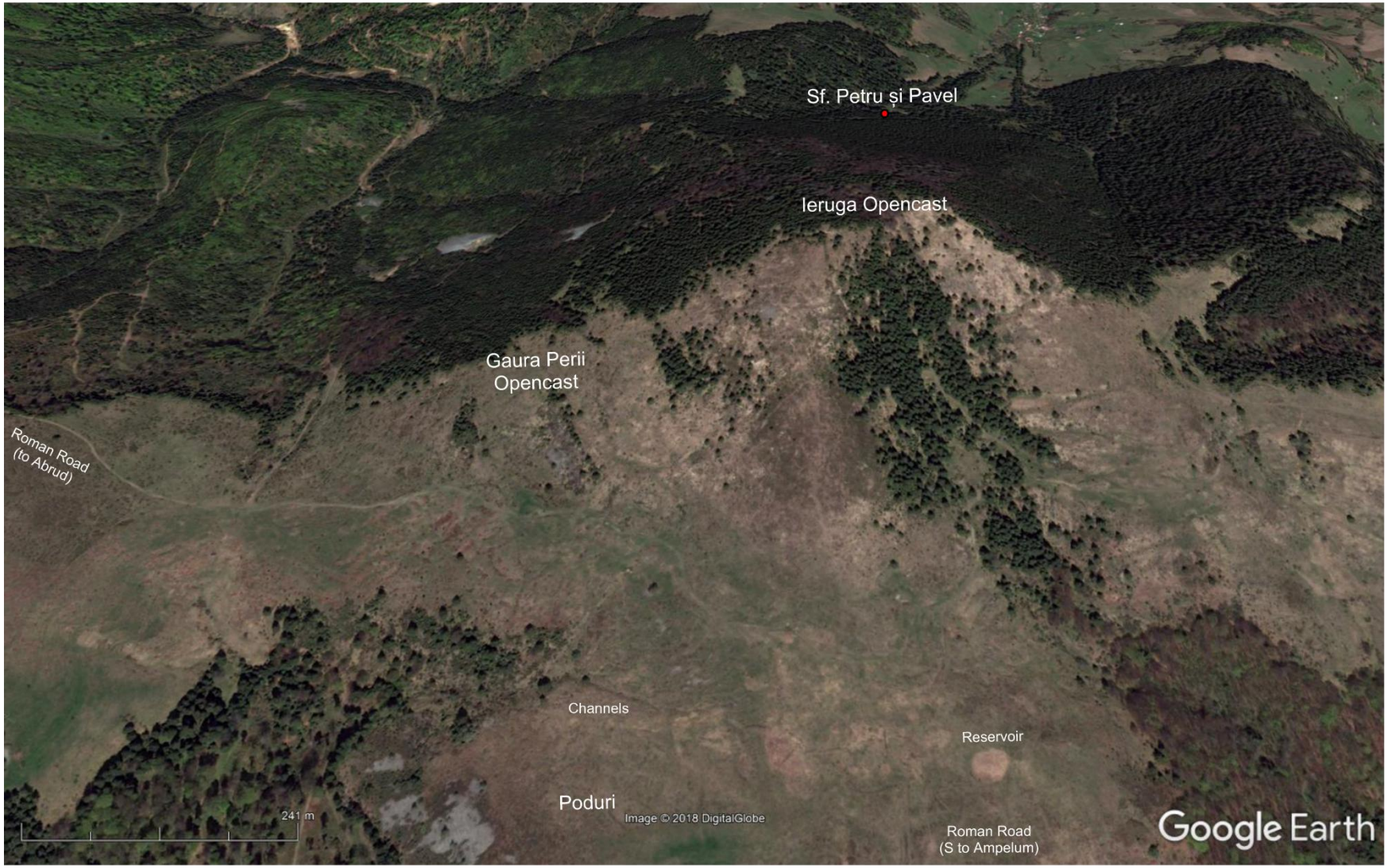


Figure 28: Vulcoi-Corabia surface mining remains as identified in Ciugudean (2012), with the approximate location of Sf. Petru și Pavel gallery shown on the massif's north side (Google Earth).



Figure 29: Ieruga opencast in 2011, with perpendicular cross-cut channels left from hydraulic mining techniques (Google Earth).

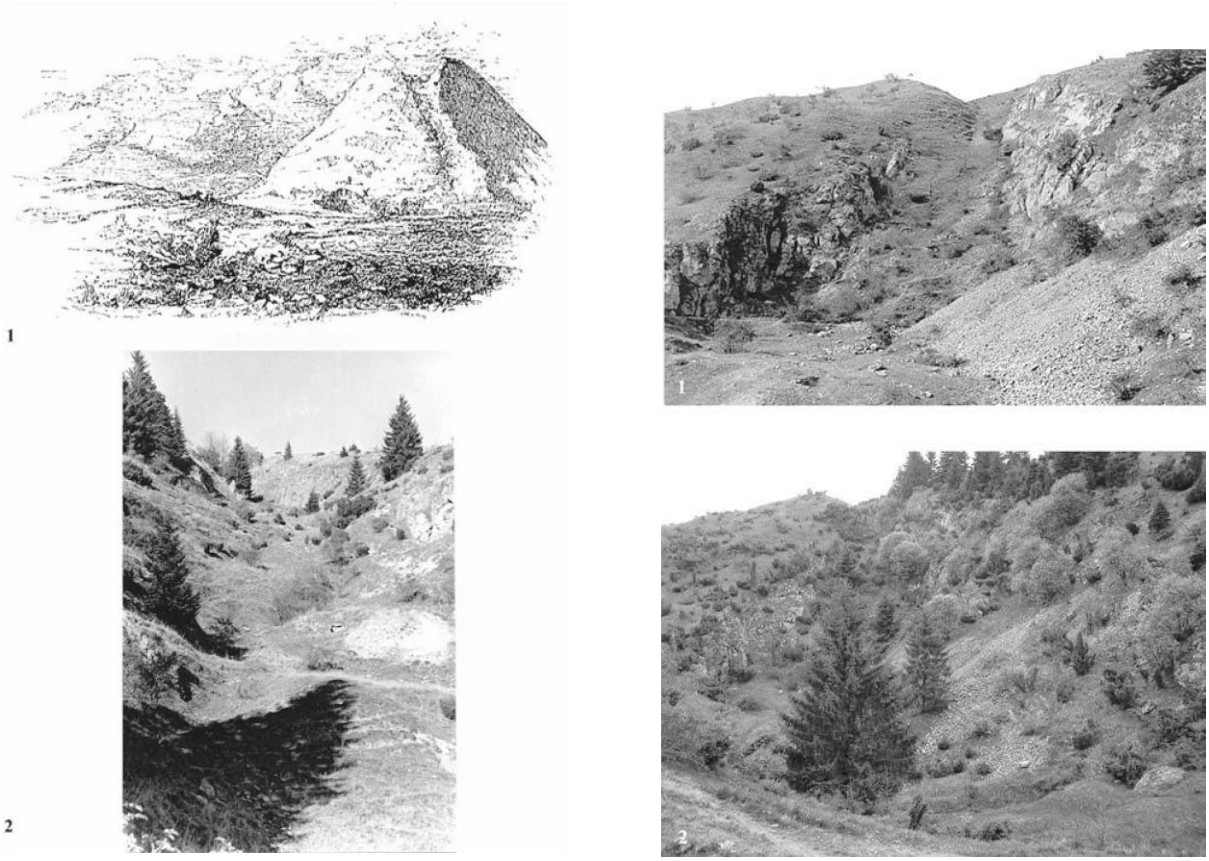


Figure 30: (Left) Ieruga in a 19th-century drawing from G. Téglàs (1890) (1), and a mid-20th century photograph (2); (Right) Gaura Perii in the mid-20th century (1), and the 21st century (2) (Ciugudean 2012, Pl. V).



Figure 31: Gaura Perii, facing N, September 2015 (Author's own photograph).



Figure 32: Panoramic view of Gaura Perii, facing N, September 2015 (Author's own photograph).



Figure 33: Possible water channel for hydraulic mining at Gaura Perii, viewed head on (Author's own photograph).

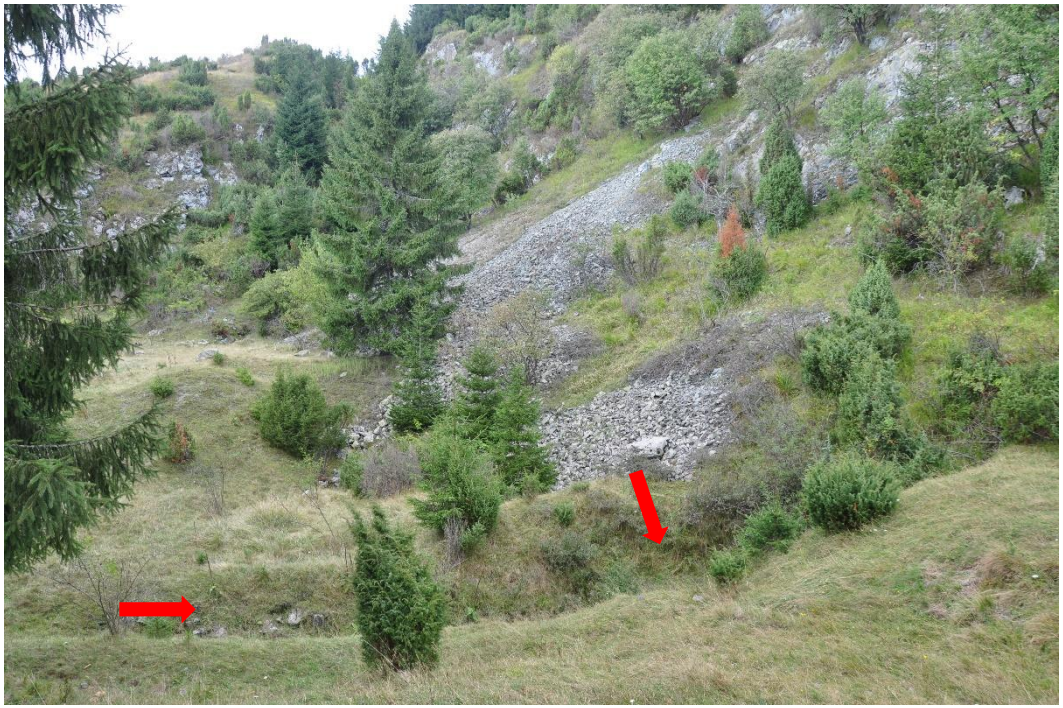


Figure 34: Possible water channel for hydraulic mining at Gaura Perii, viewed from the side (Author's own photograph).



Figure 35: Possible water channel at the top of Gaura Perii (Author's own photograph).



Figure 36: Possible water channel at the top of Gaura Perii, viewed from the side, facing NE (Author's own photograph).

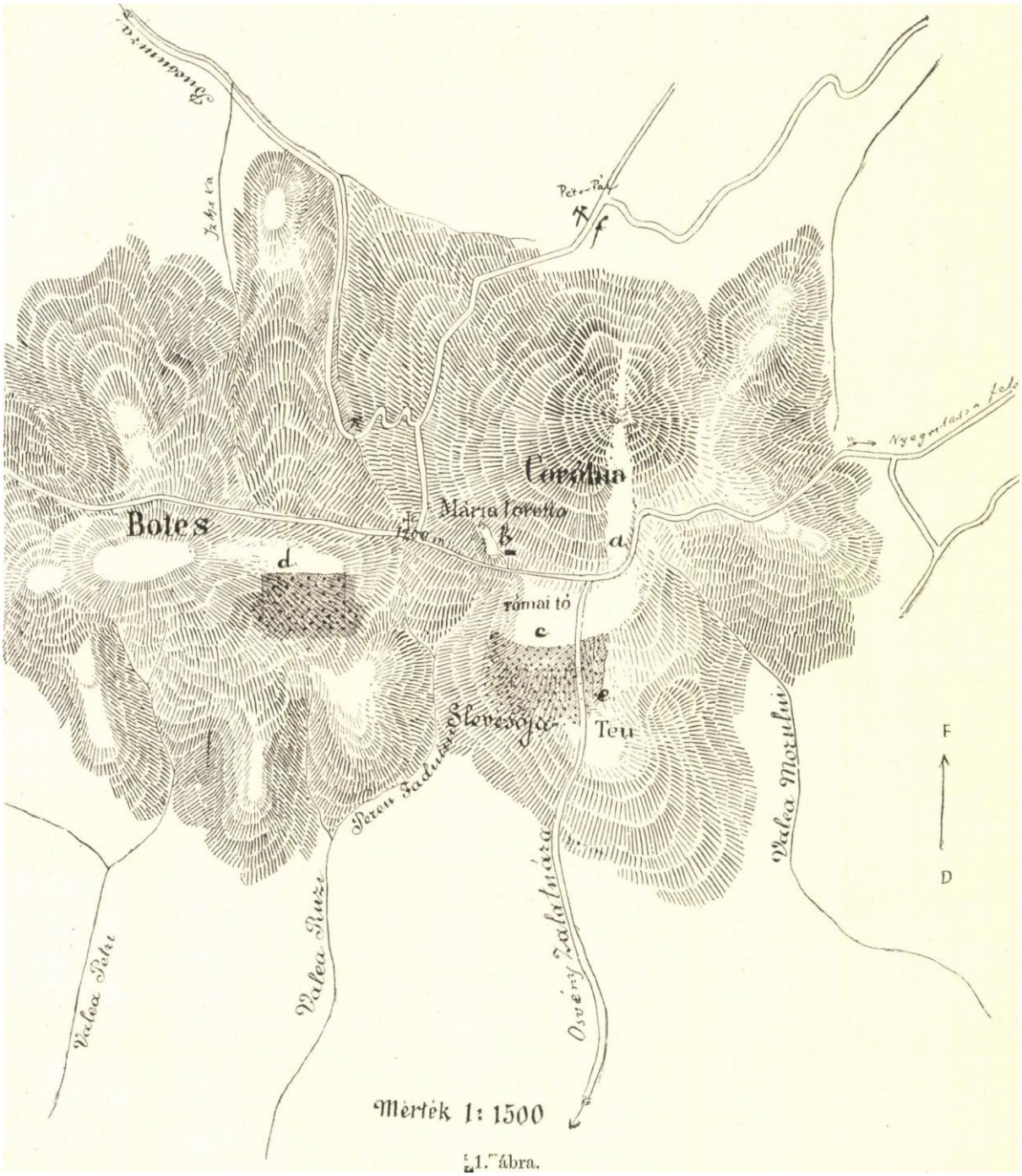


Figure 37: Map of Vulcoi-Corabia and environs. To the north of Corabia: Sf. Petru și Pavel mine. (a) Ieruga opencast, (b) Maria Loretto mine, (c) Slăveșoia necropolis, (d) Boteș necropolis, (e) reservoir. (Téglàs 1890).

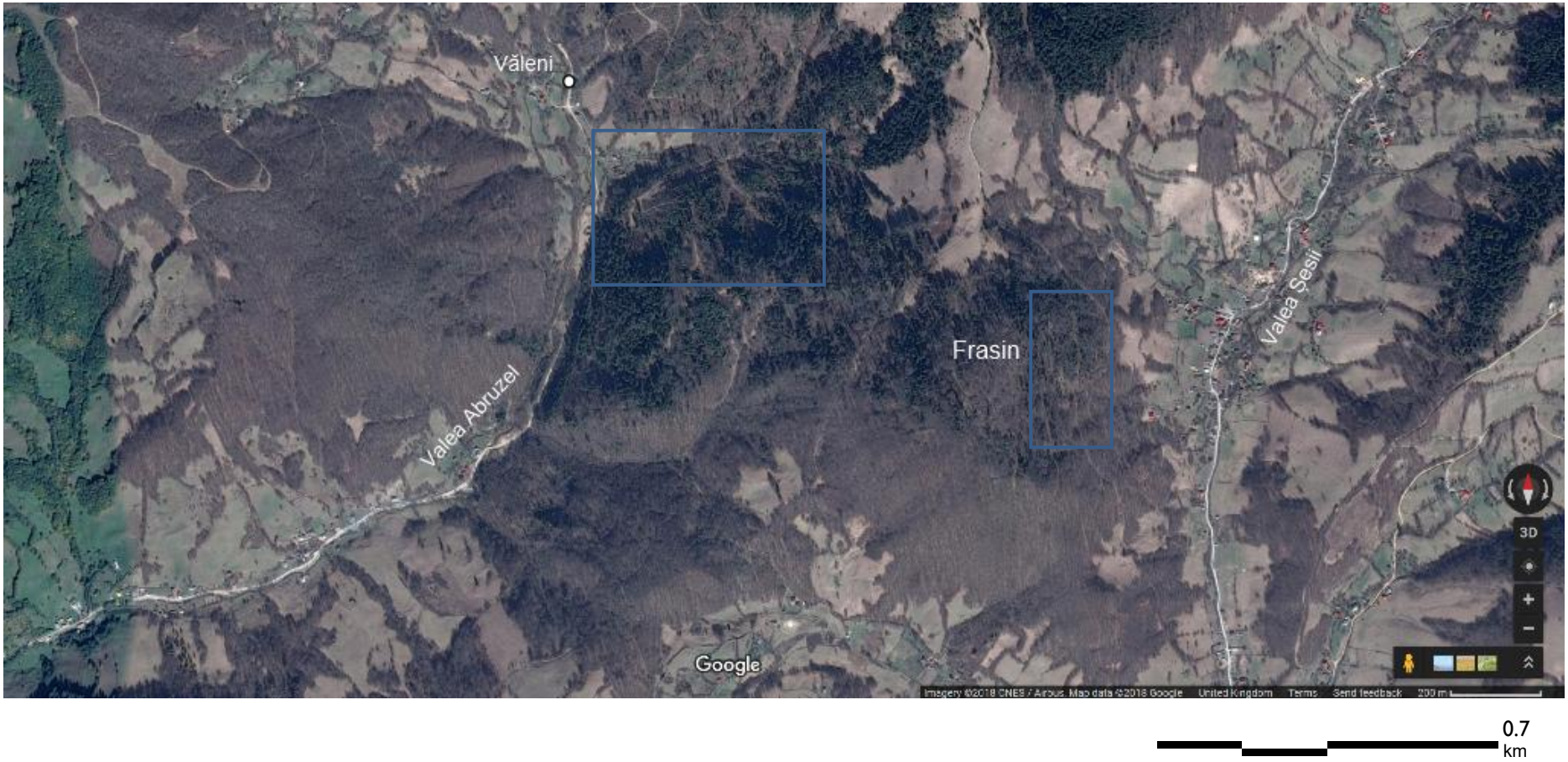


Figure 38: Remnants of mining activity on Rodu-Frasin Hill (Google Earth).

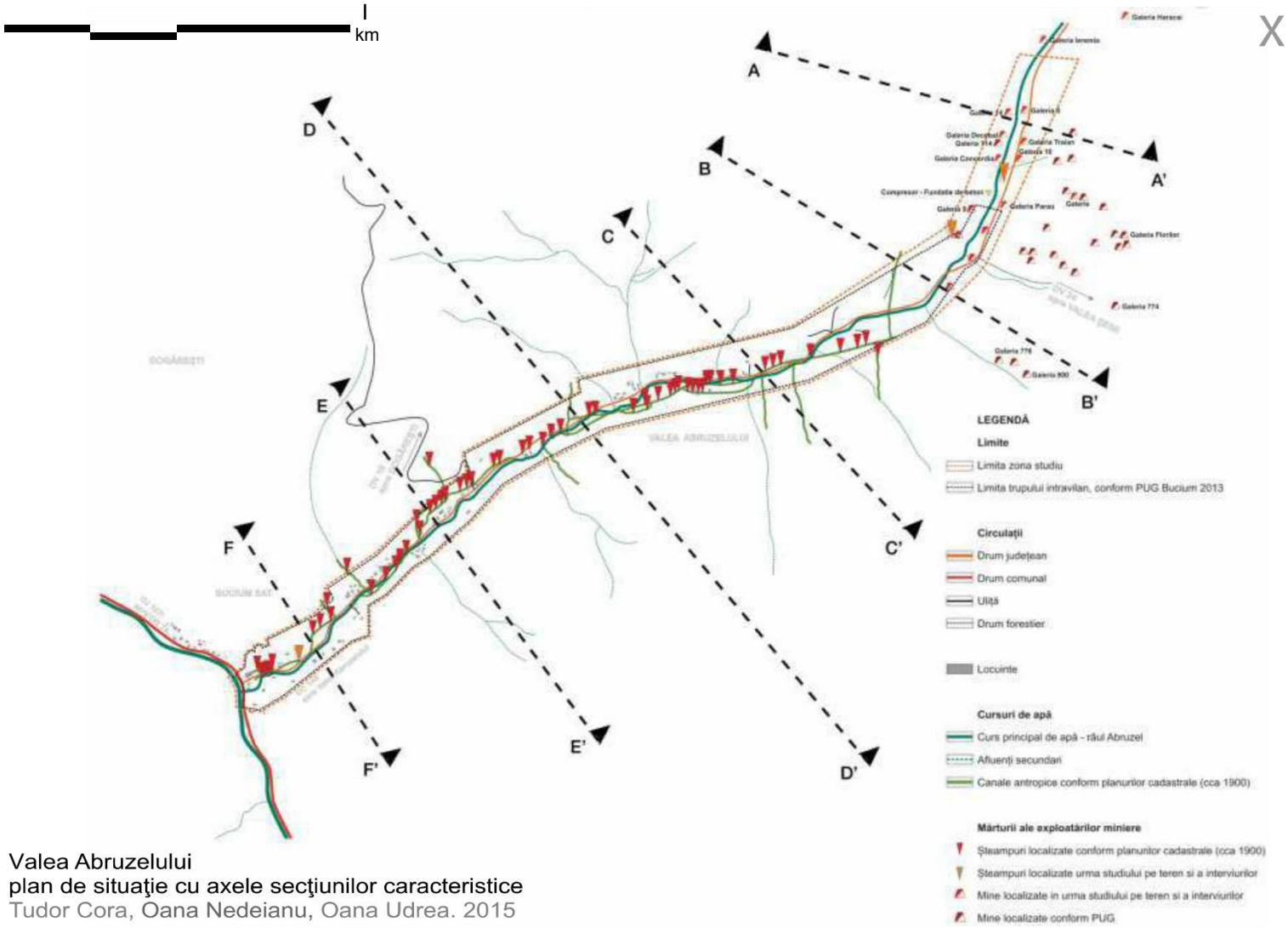


Figure 39: The stamps along Valea Abruzelului (red triangles), with the mines in the upper-right sector (RPER 2017).

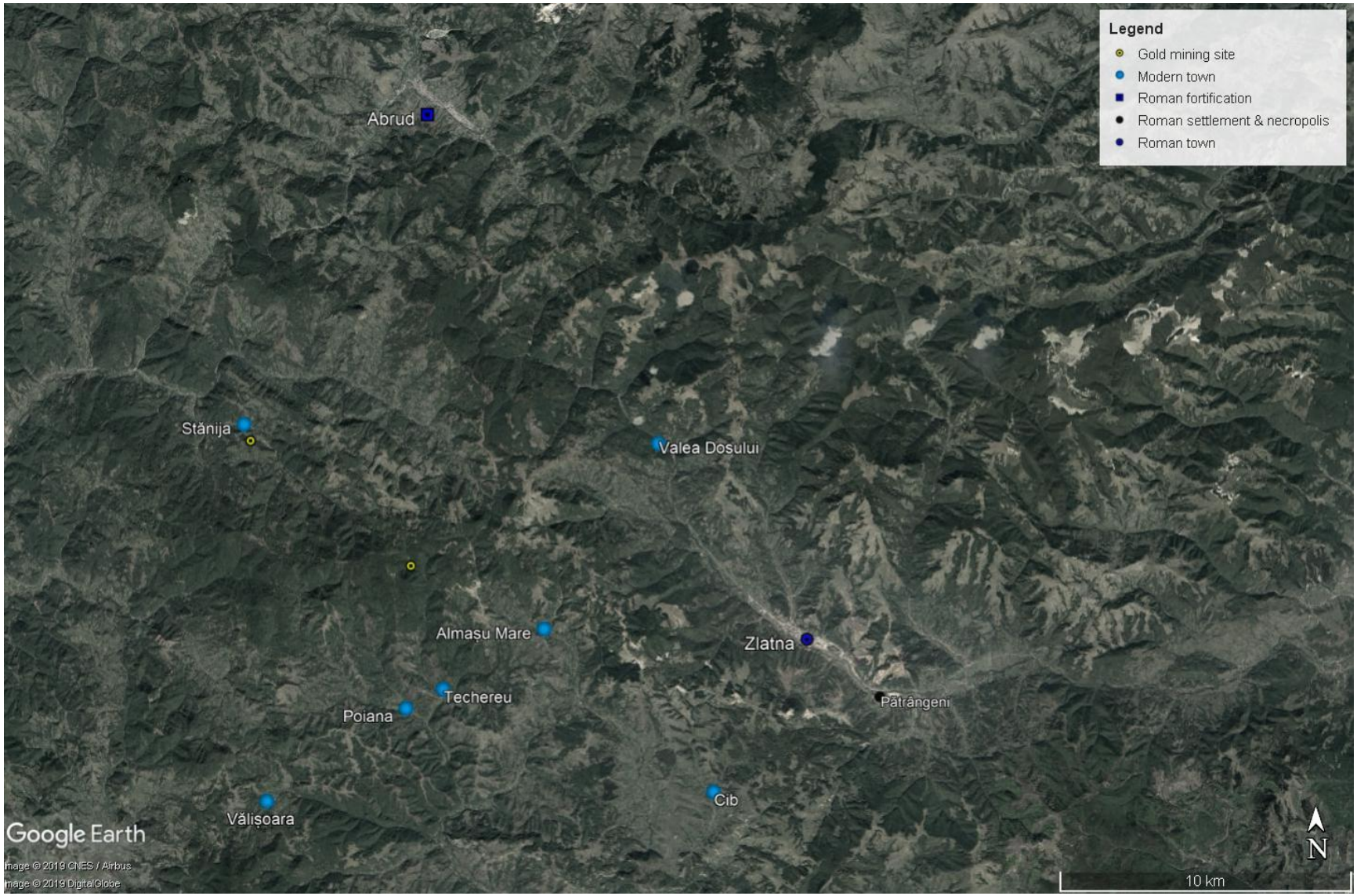


Figure 40: The Roman mines of the Zlatna-Stănija belt (Google Earth).

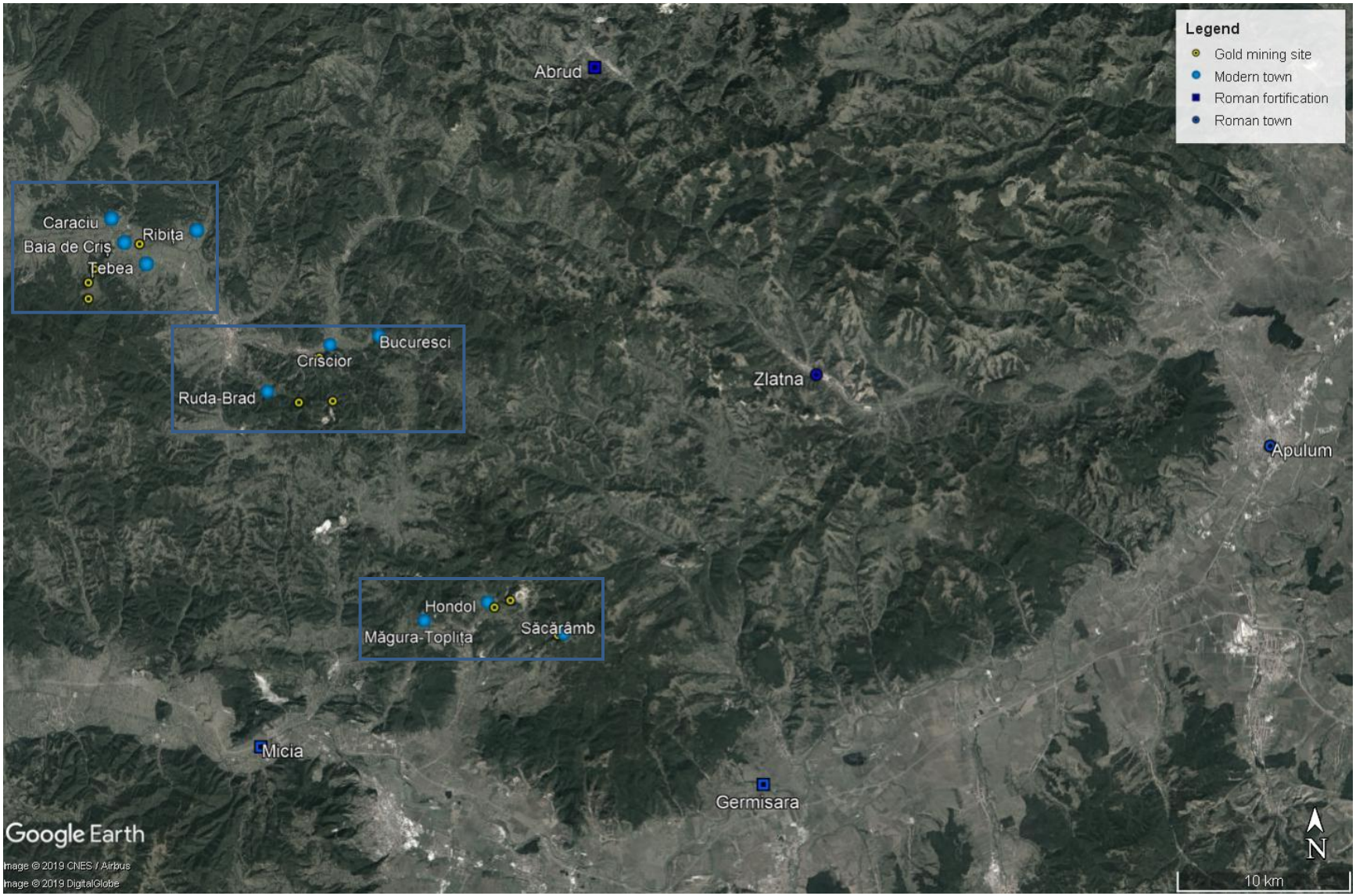


Figure 41: The Roman gold mines of the Crișul Alb, Ruda-Brad, and Săcărâmb (Google Earth).

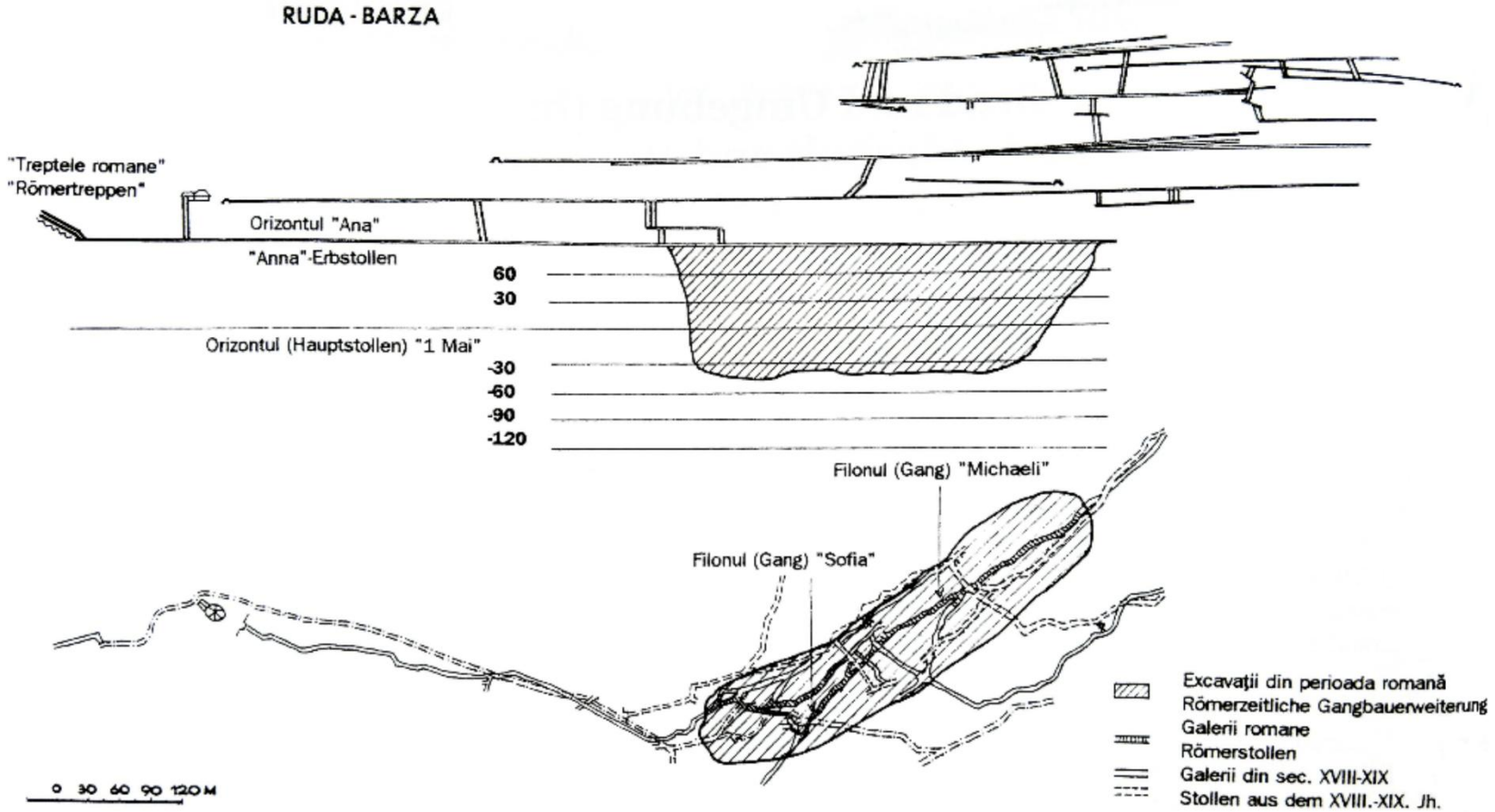


Figure 42: The Roman galleries at Ruda-Barza (Wollmann 2010, p. 36).

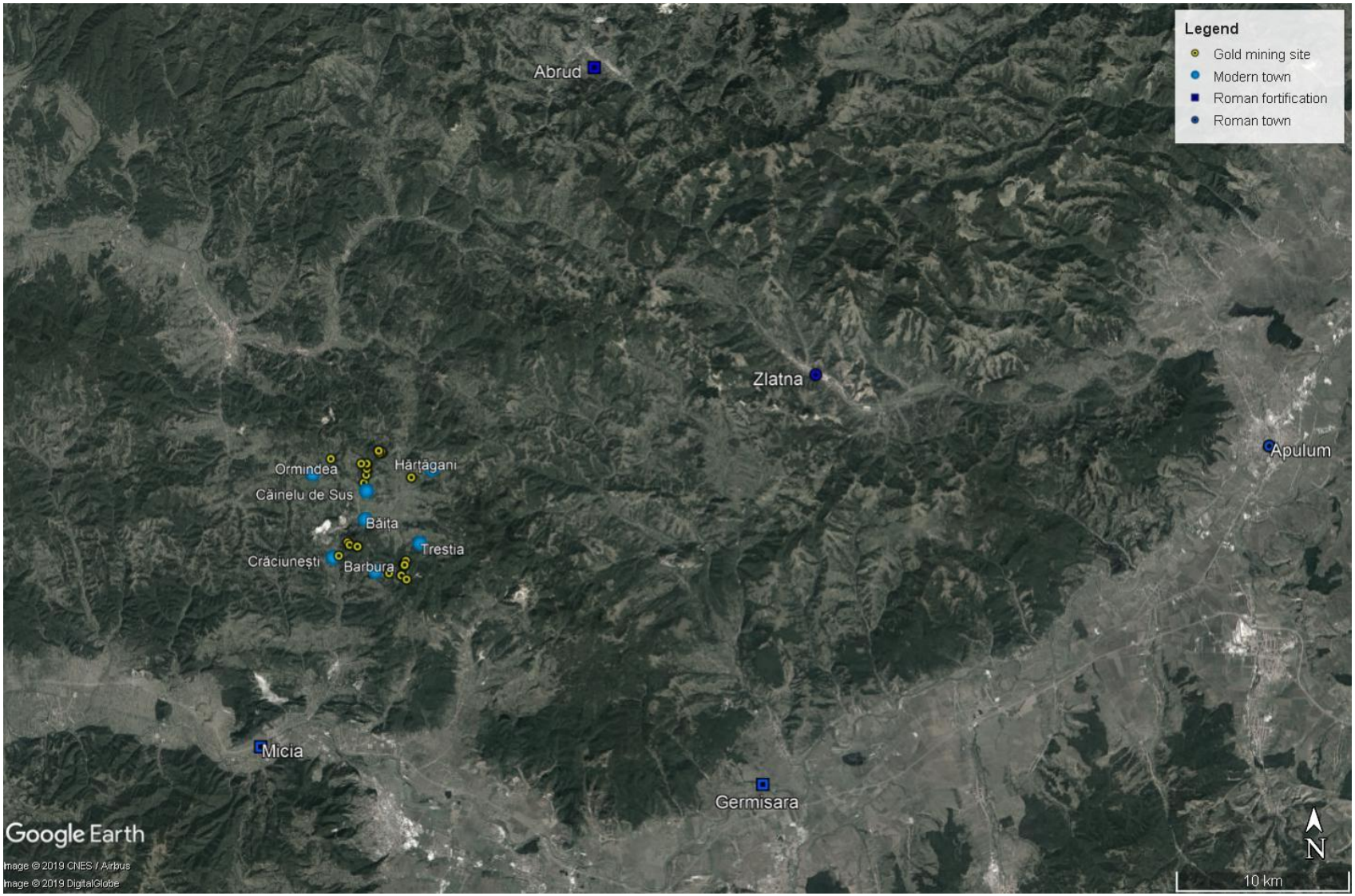


Figure 43: The Roman mines of Băița commune (Google Earth).



Figure 44: Hydraulic mining remains at Pianu de Sus and Pianu de Jos as identified on Google Earth.

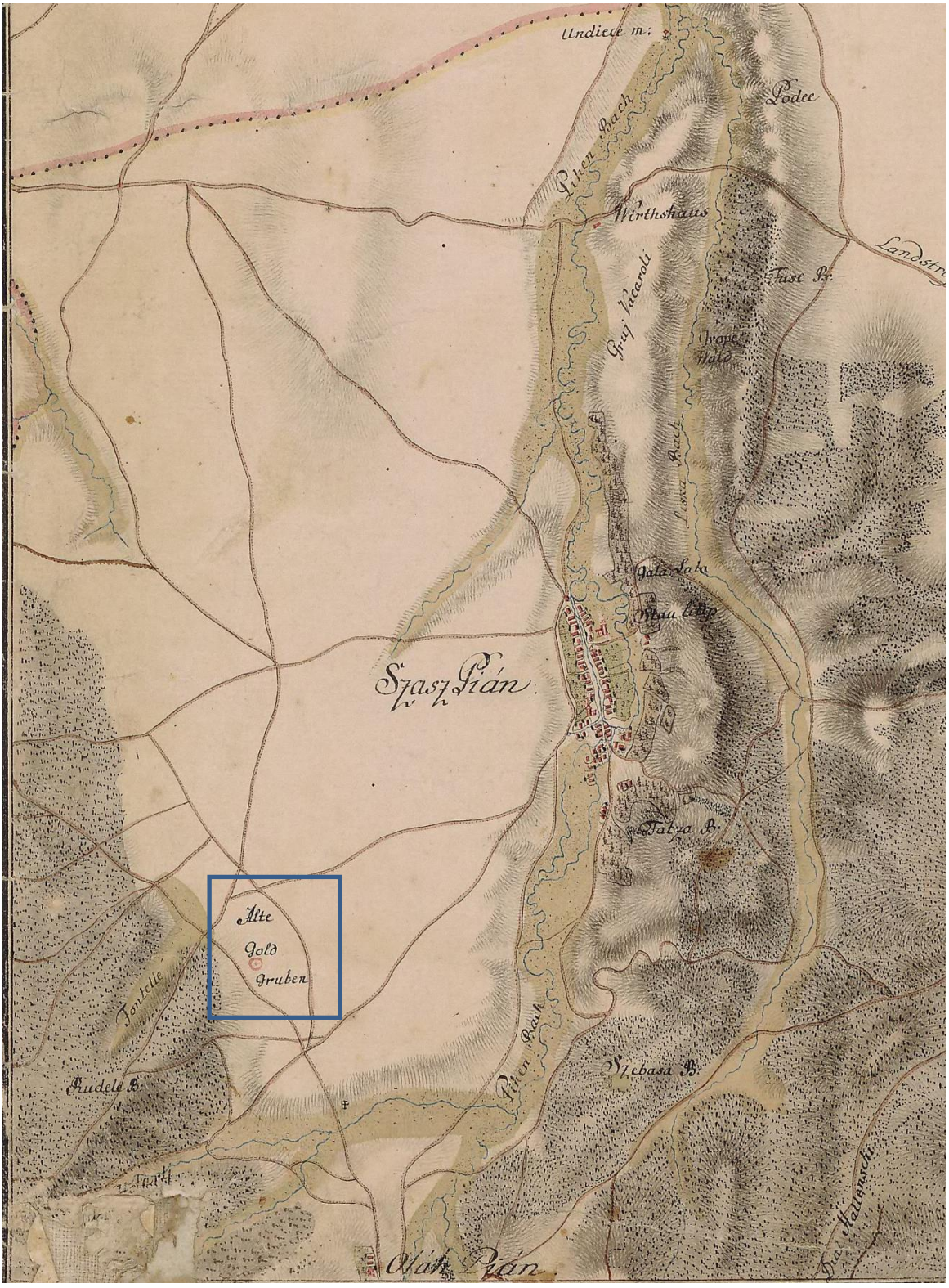


Figure 45: Antique gold mining near Pianu de Jos (Detail from Josephinische Landesaufnahme, 1763-1787).



Figure 46: Hydraulic mining remains of channels and sterile dumps with modern golf club on the right, looking SW towards Sălişte-Deal from Pianu de Jos (Google Earth).



Figure 47: Hydraulic mining remains of rectangular basin and drainage channels in the hills west of Pianu de Sus (Google Earth).



Figure 48: One of the drainage channels from hydraulic mining at Pianu de Sus, facing WSW, uphill towards the reservoir (Author's own photograph).



Figure 49: Remains of a water-collection basin, surrounded by trees, facing downhill towards Pianu de Sus (Author's own photograph).

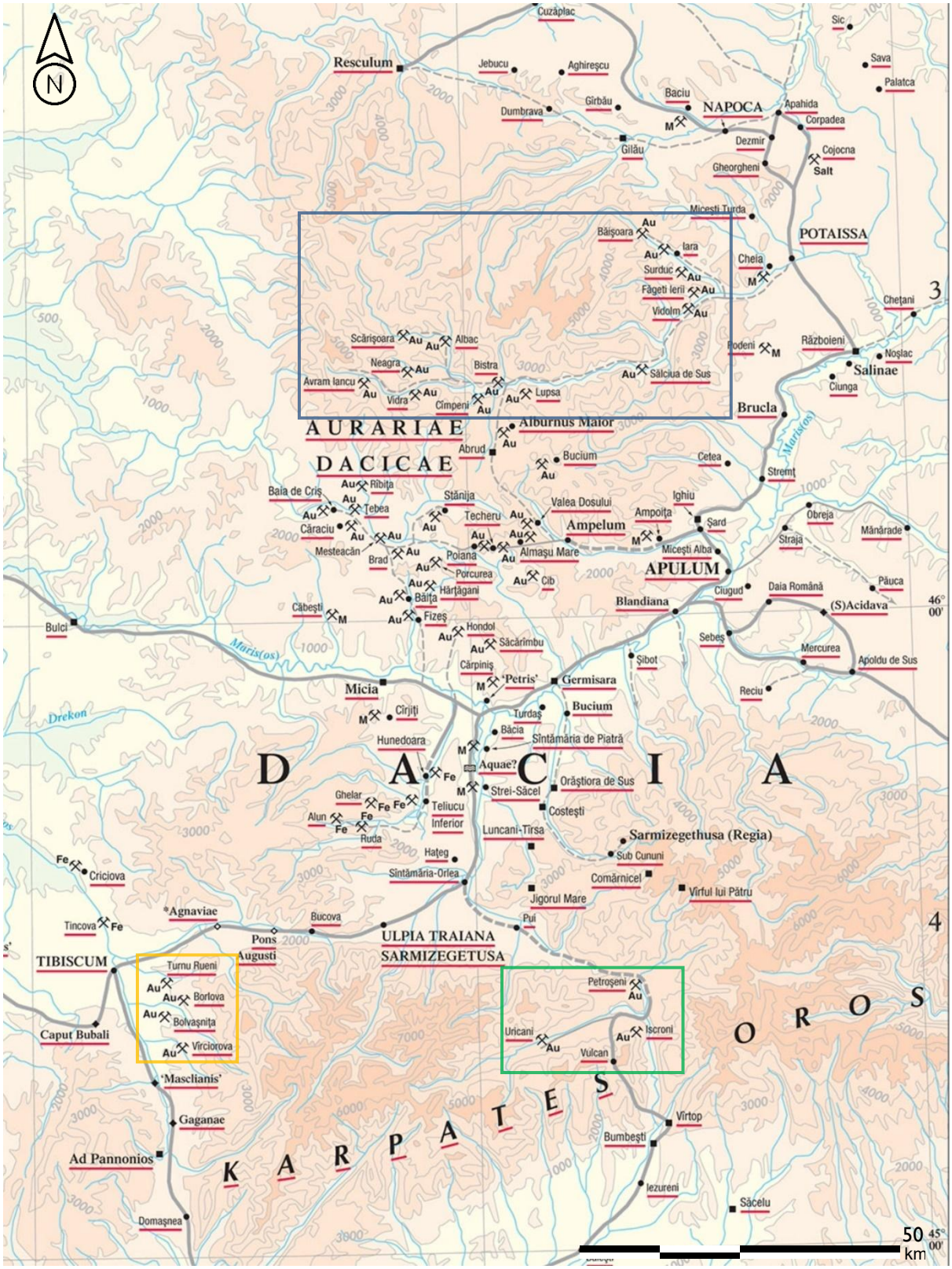


Figure 50: Known Roman gold washing sites along the Arieș (blue), Jiu (green), and in the Banat (yellow) (Barrington Atlas).

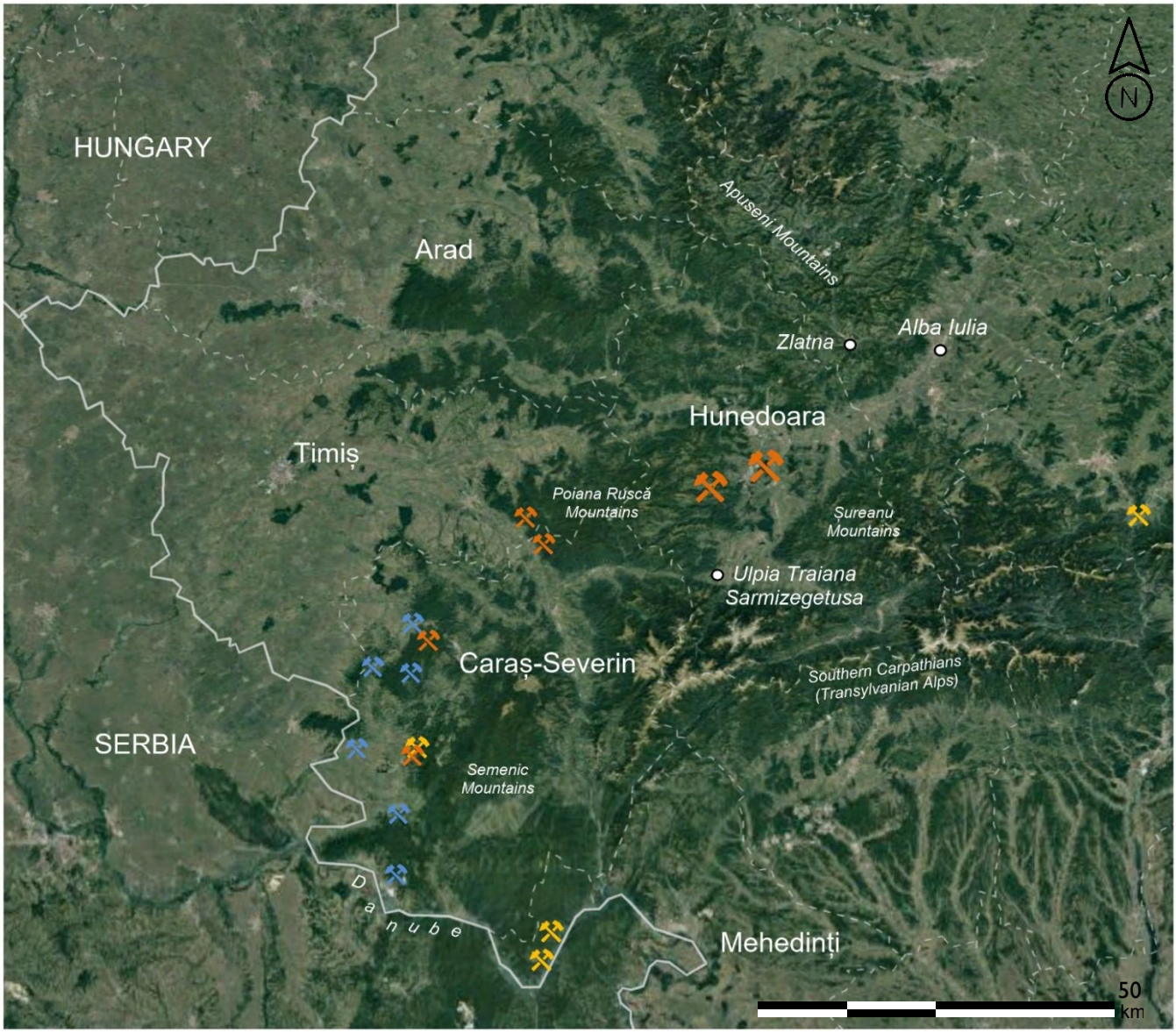


Figure 51: Known iron (orange), copper (yellow), and polymetallic (blue) Roman mines in SW Romania (Google Earth).

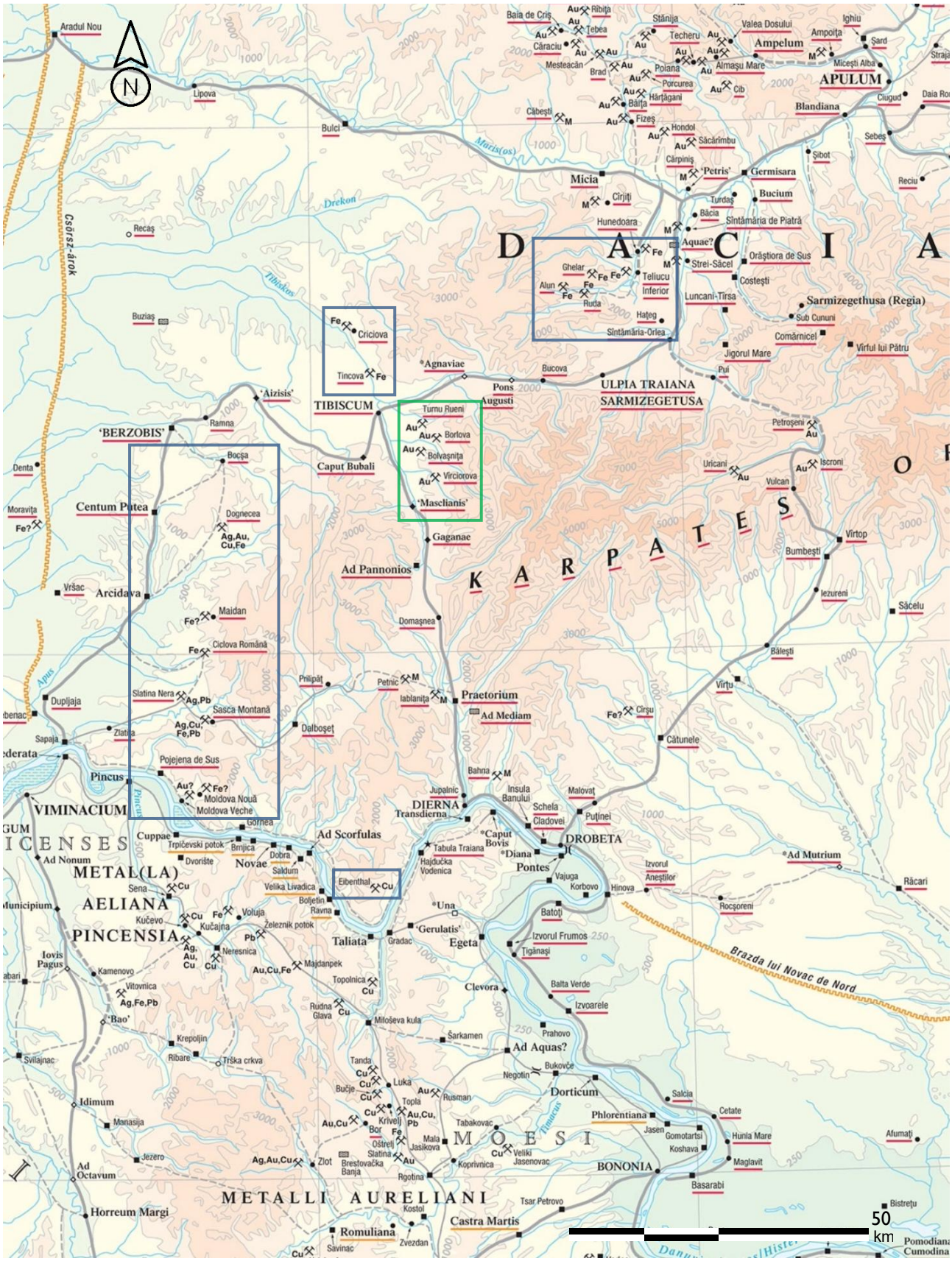


Figure 52: The main non-precious metal mines of Roman Dacia (Barrington Atlas).

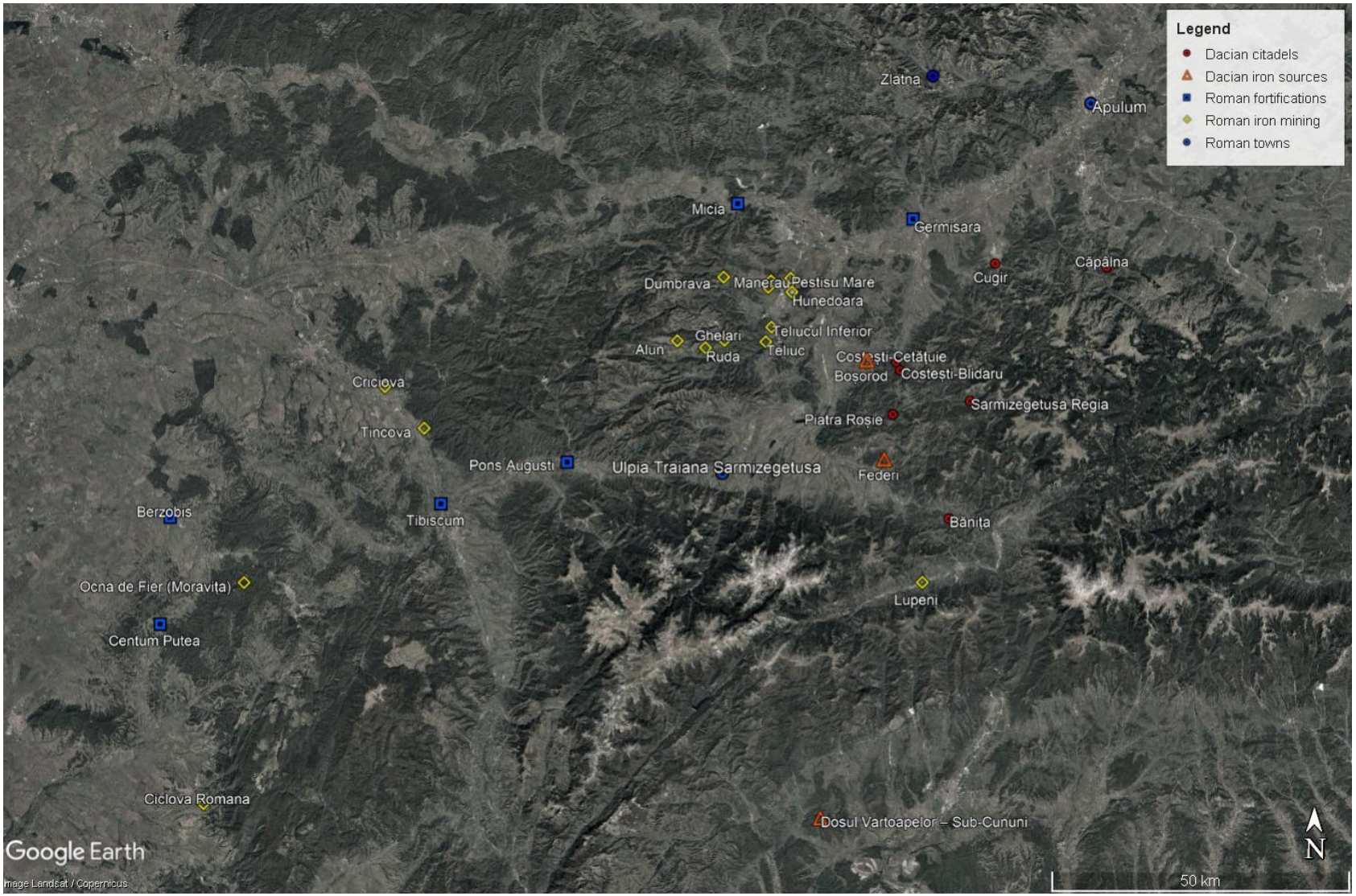


Figure 53: Distribution of iron mines and Roman (blue) and Dacian (red) sites (Google Earth).

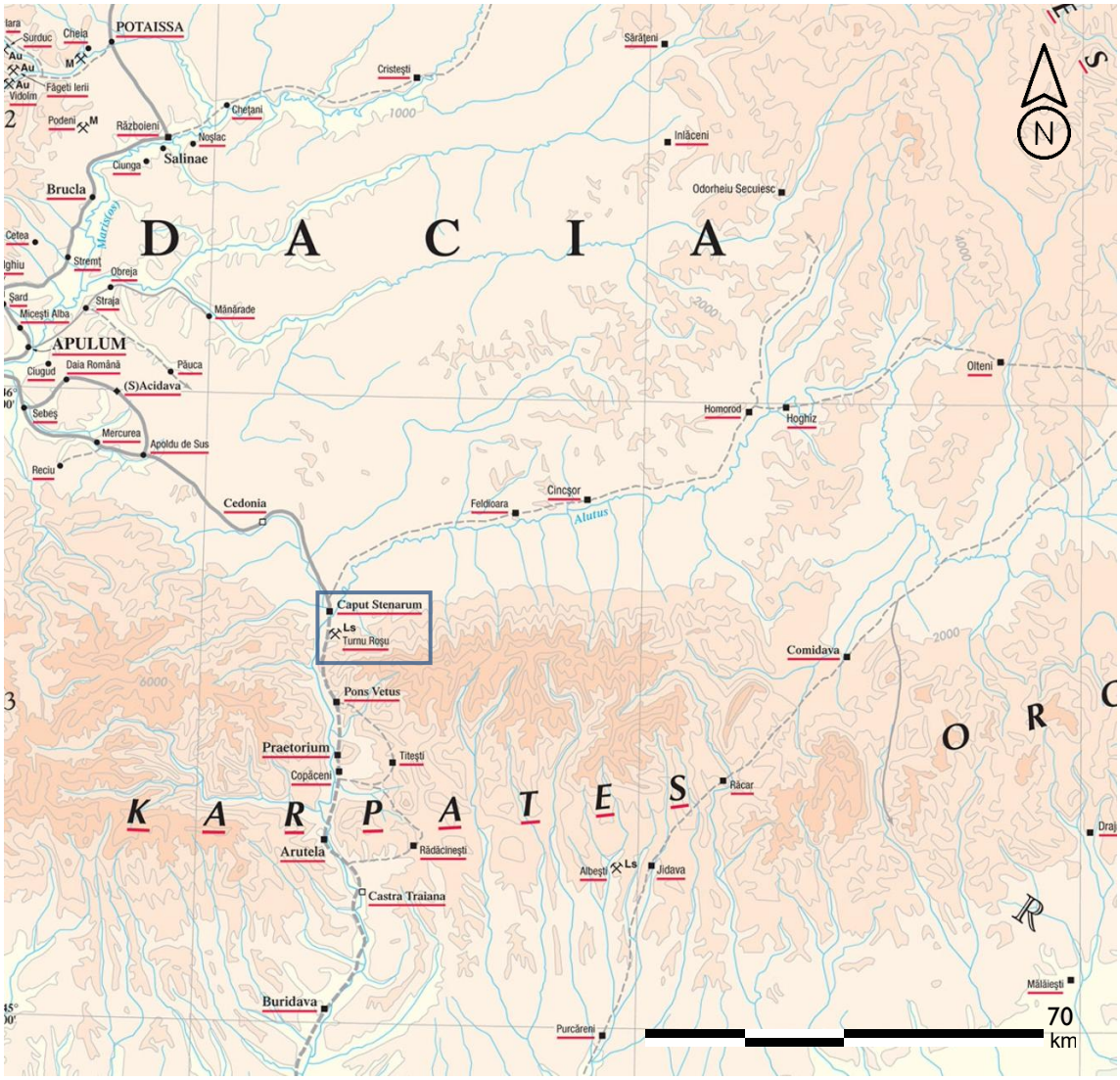


Figure 54: Mining at Turnu Roşu and the Eastern Carpathians (Barrington Atlas).

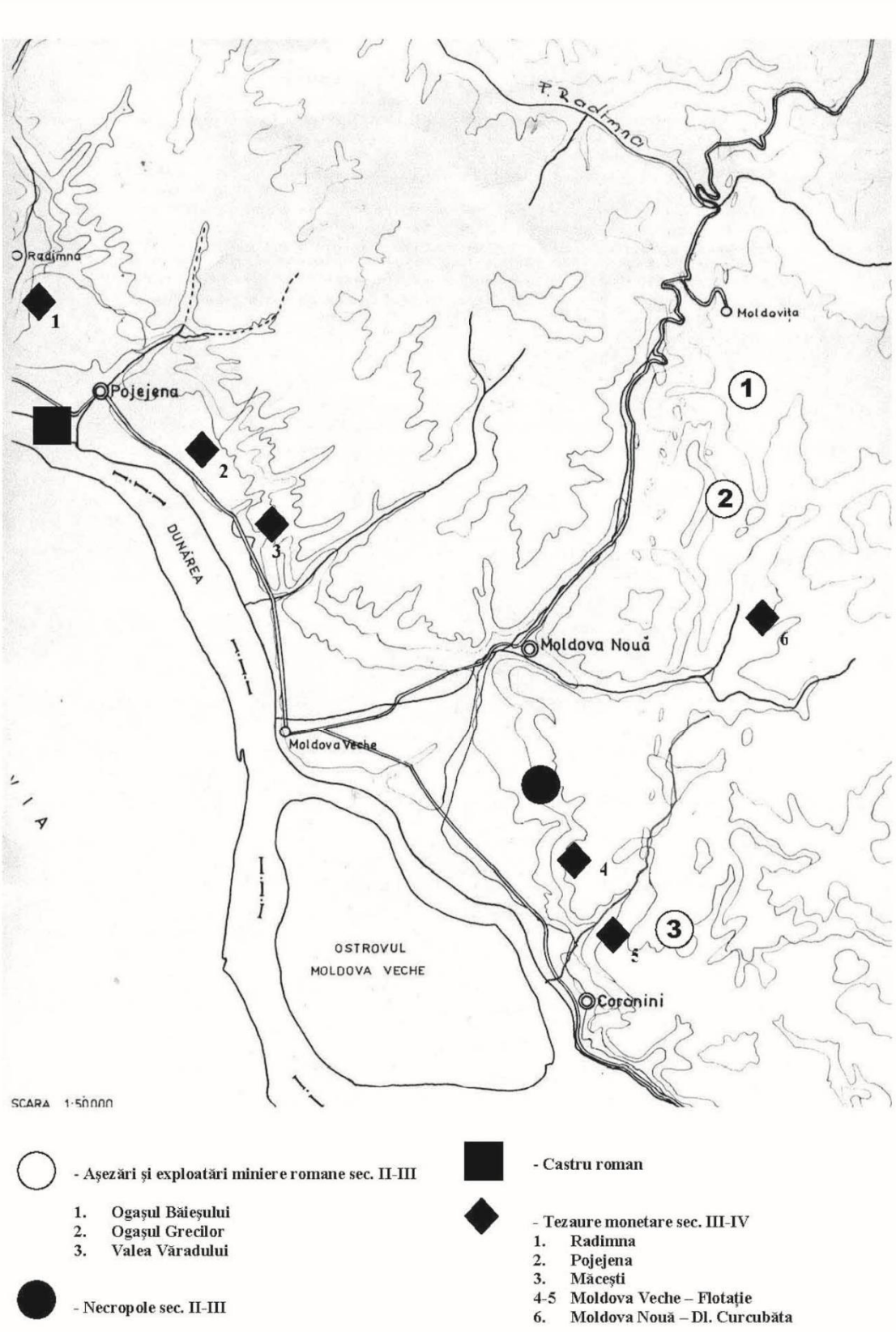


Figure 55: The Roman remains of Moldova Nouă (Bozu 2010, Figure VIII).

Legend: ○ *Settlements and mines,* ● *necropolis,* ■ *Roman fort, and* ♦ *hoards.*

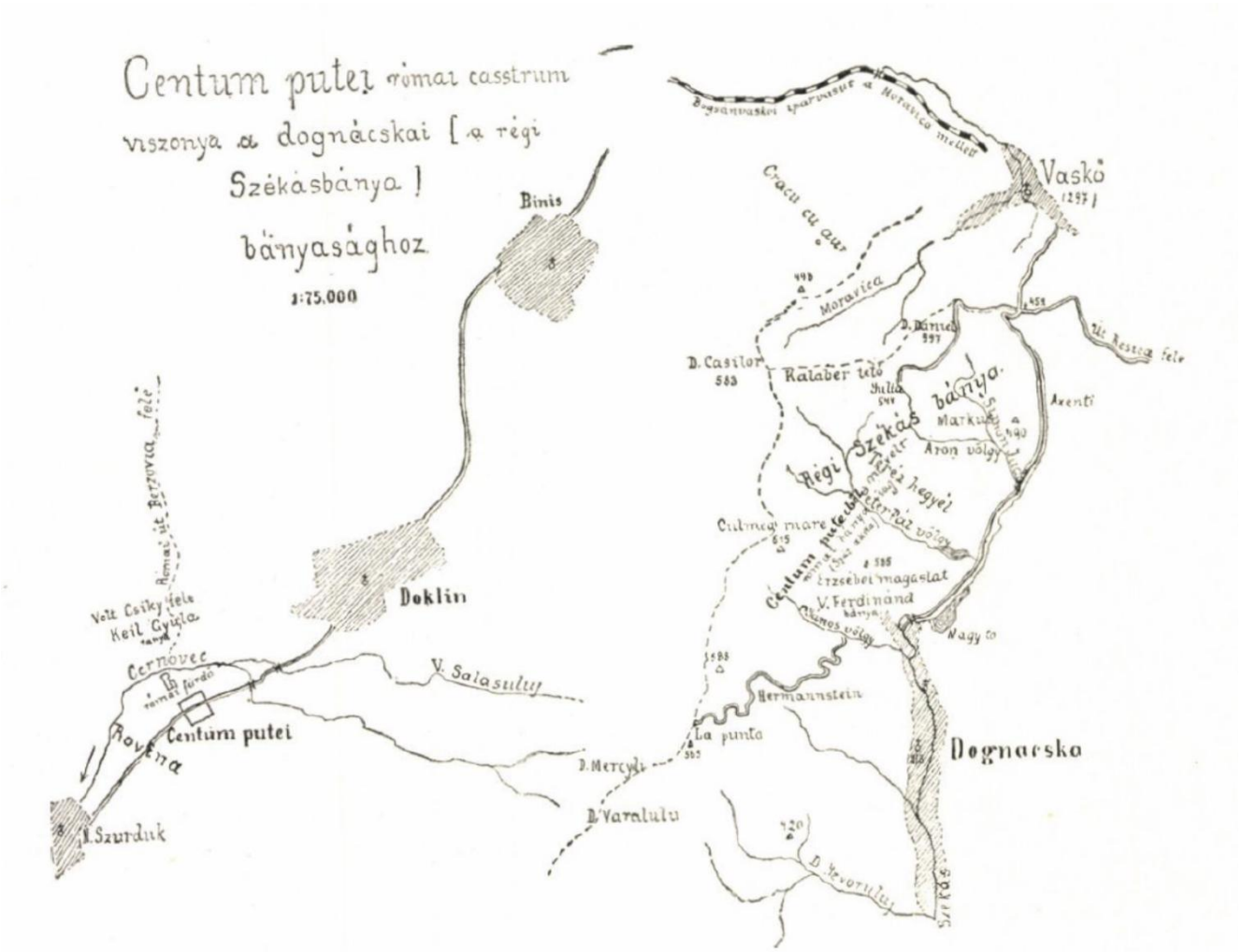


Figure 56: Map of Surducu Mare (Nagyszurduk), Centum Putea, Dognecea (Dognacsko), and Ocna de Fier (Vaskő) (Téglàs 1899).

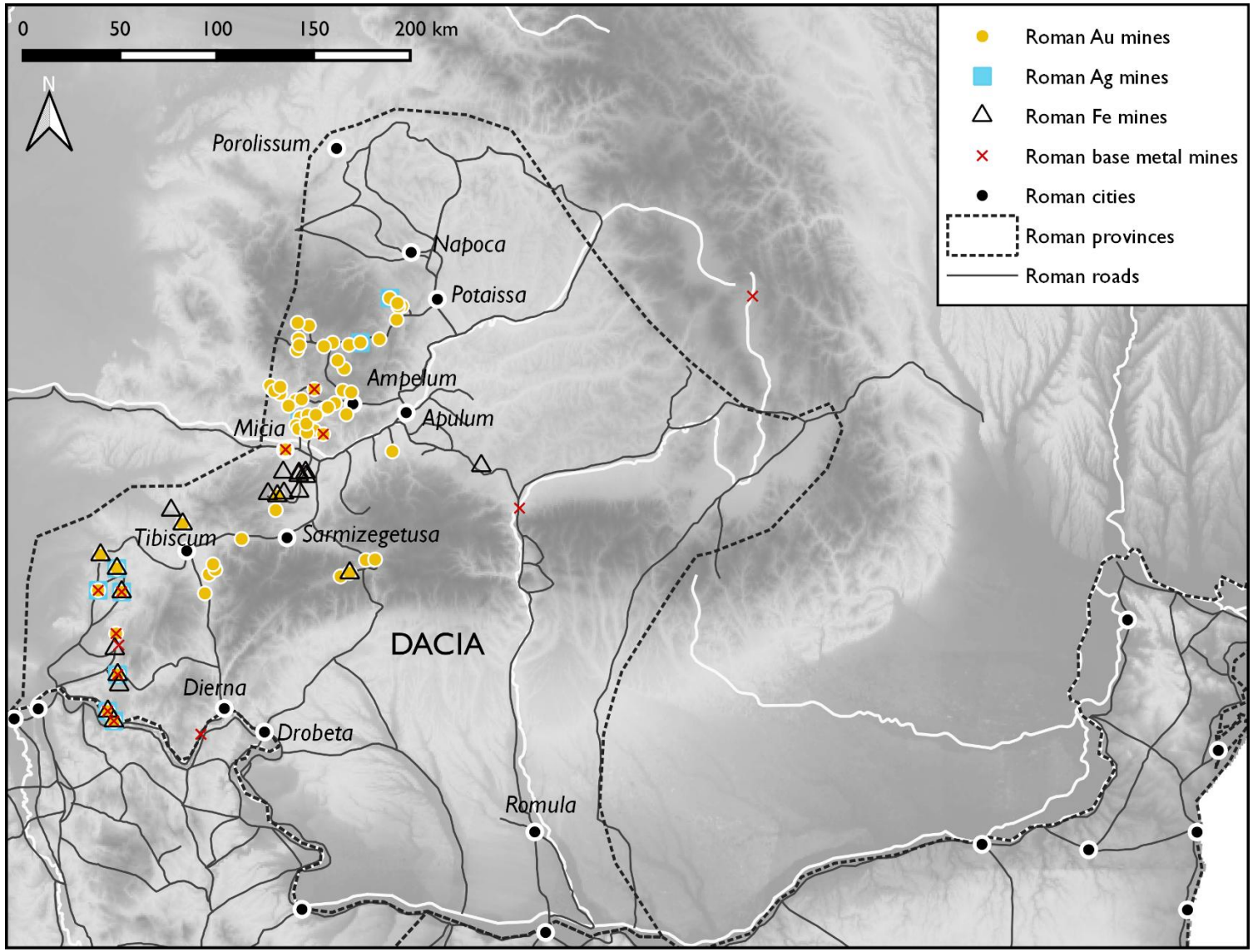


Figure 57: Distribution map of Roman mines in Dacia.

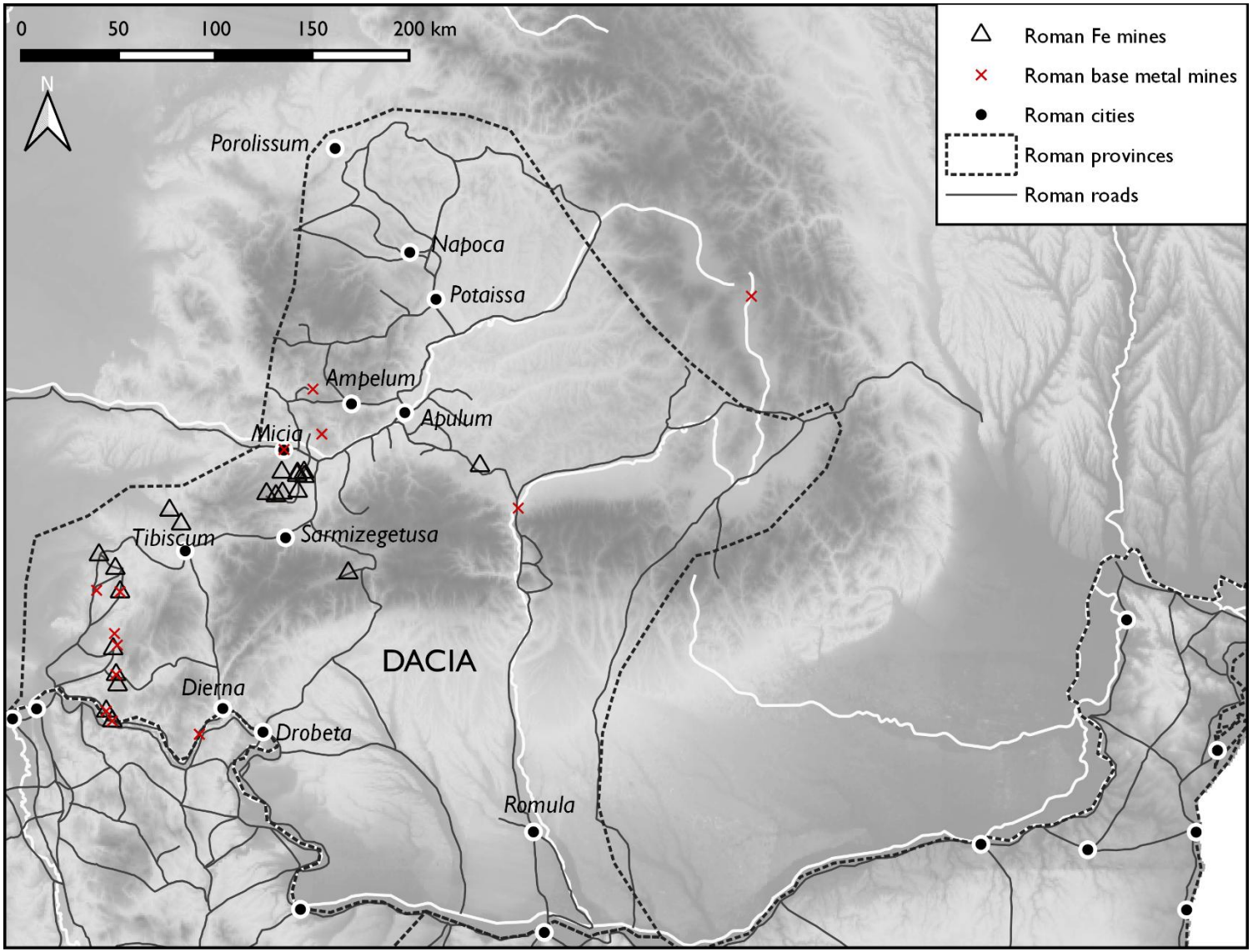


Figure 58: Distribution map of Roman base-metal mines in Dacia.

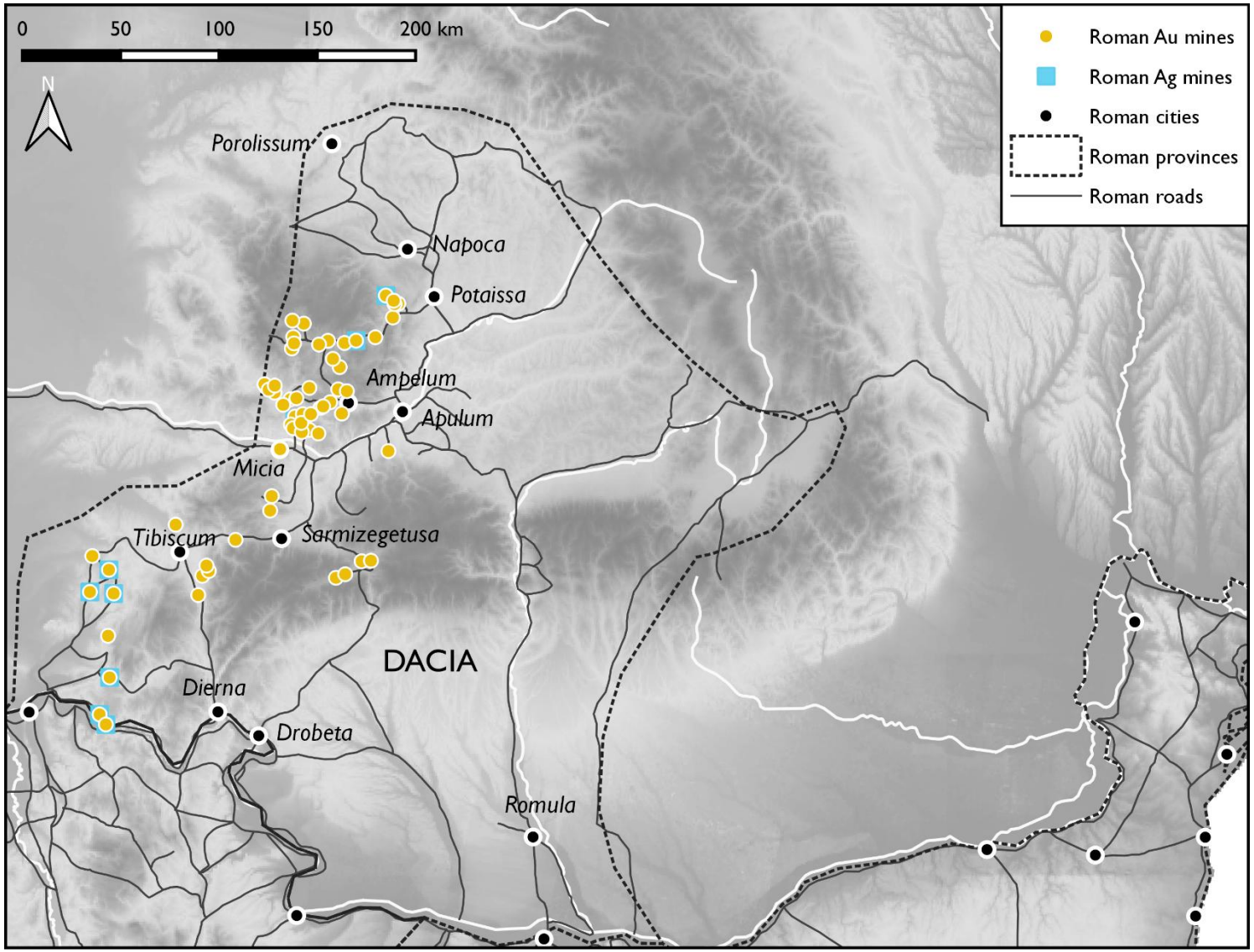


Figure 59: Distribution map of Roman precious-metal mines in Dacia.

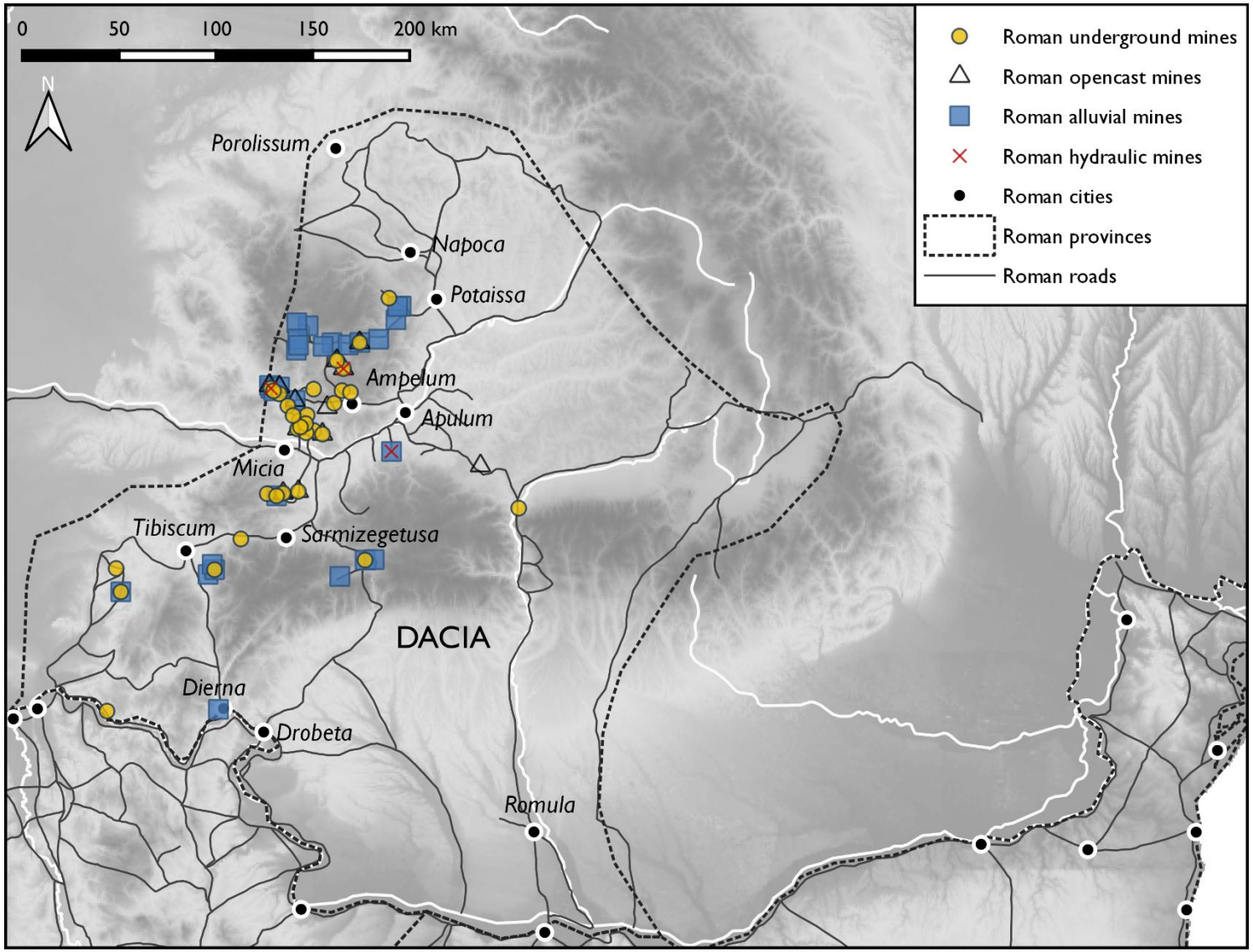


Figure 60: Distribution map of Roman mines in Dacia by mine type.

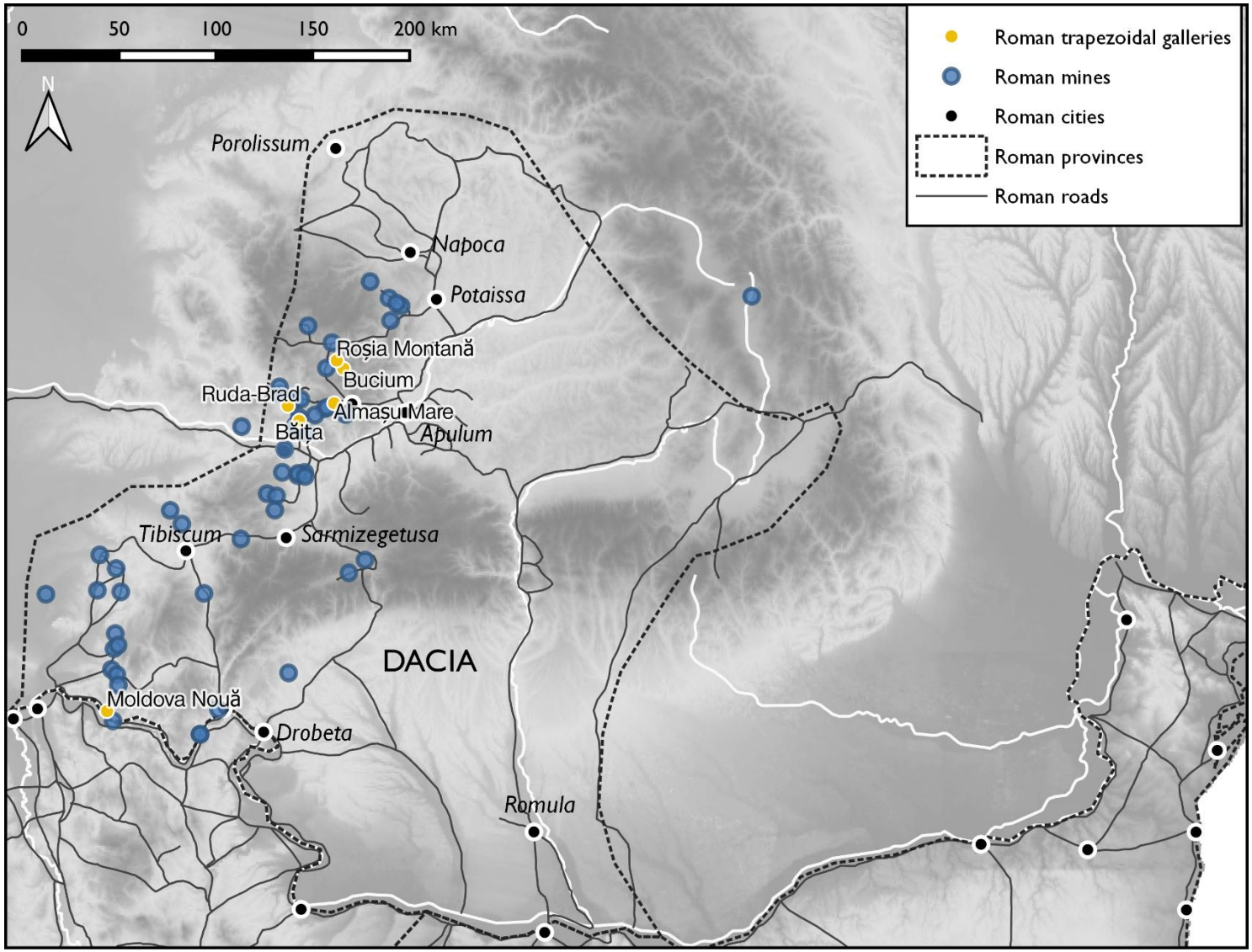


Figure 61: Distribution map of Roman mines with known trapezoidal galleries in Dacia.

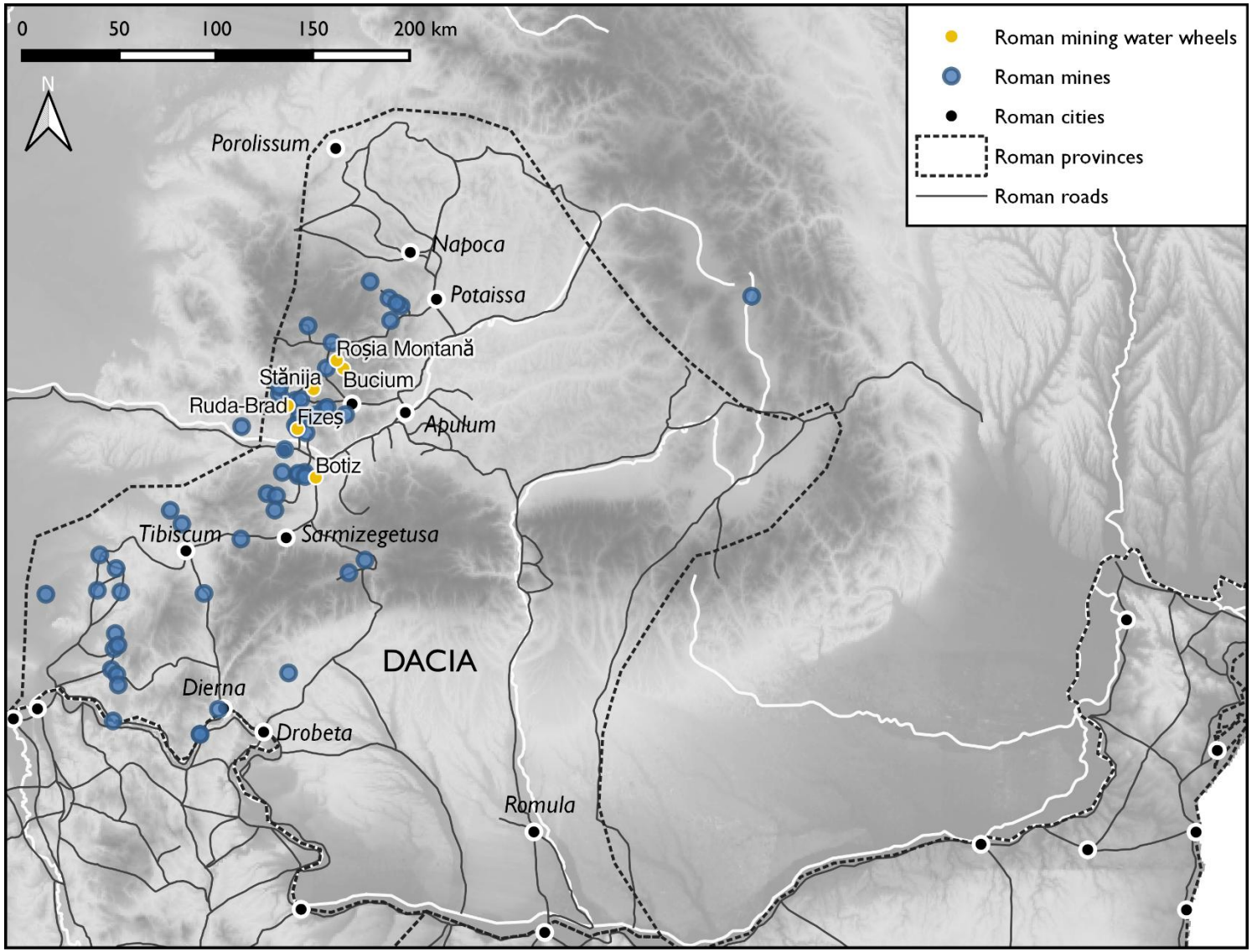


Figure 62: Distribution map of known Roman mining water wheels in Dacia.

Tables

Table 1: Recalibration of radiocarbon dates reported in Cauuet et al. (2003) Figure 15.

Sample	Reported Measurement[1]	Reported & Recalibrated Start date	Reported & Re-calibrated End Date
Cârnic 1 - Chamber 1 G13 US4[2]	2160 ± 50 BP	-265 *-365* *-75*	-90 *-90 (92.4%)* *-55 (3.0%)*
Cârnic 5 - Work 19 Sample 2	1940 ± 50 BP	-5 *-50* *190*	135 *175 (93.2%)* *215 (2.2%)*
Cârnic 5 - Work 19 Sample 1	1925 ± 50 BP	-5 *-40*	135 *215*
Cârnic 1 - G2	1860 ± 60 BP	45 *20*	260 *330*
Cârnic 1 - G1	1880 ± 40 BP	110 *50*	245 *240*
Cârnic 2 - Propping wood	1835 ± 40 BP	125 *75*	310 *320*
Cârnic 7 - Lev. 960 Work 14	1785 ± 50 BP	135 *125*	355 *385*

[1] The reported dates are given first, followed by the recalibrated dates (italicised) in each entry. The original dates were reported to one-sigma, whereas the recalibrated dates here are reported to two-sigma as per conventional practice and calculated using OxCal 4.2 and the IntCal13 calibration curve. The recalibrated dates have been rounded to the nearest 5 to allow for easier comparison.

[2] Wilson, Mattingly and Dawson (2011): Originally misreported as G3. G = Gallery.
US = Unité stratigraphique / Stratigraphic unit.

Cârnic 6 - GE US3	1720 ± 50 BP	215 *145*	430 *425*
Cetate - Zeus G1 US11	1950 ± 45 BP	5 *-55*	145 *210*
Cetate - Zeus G1	1740 ± 45 BP	210 *140*	415 *405*
Țarina - Vein 77	1965 ± 40 BP	-50 *-50*	80 *125*
Carpeni - Wooden ladder	1900 ± 40 BP	55 *20*	220 *225*

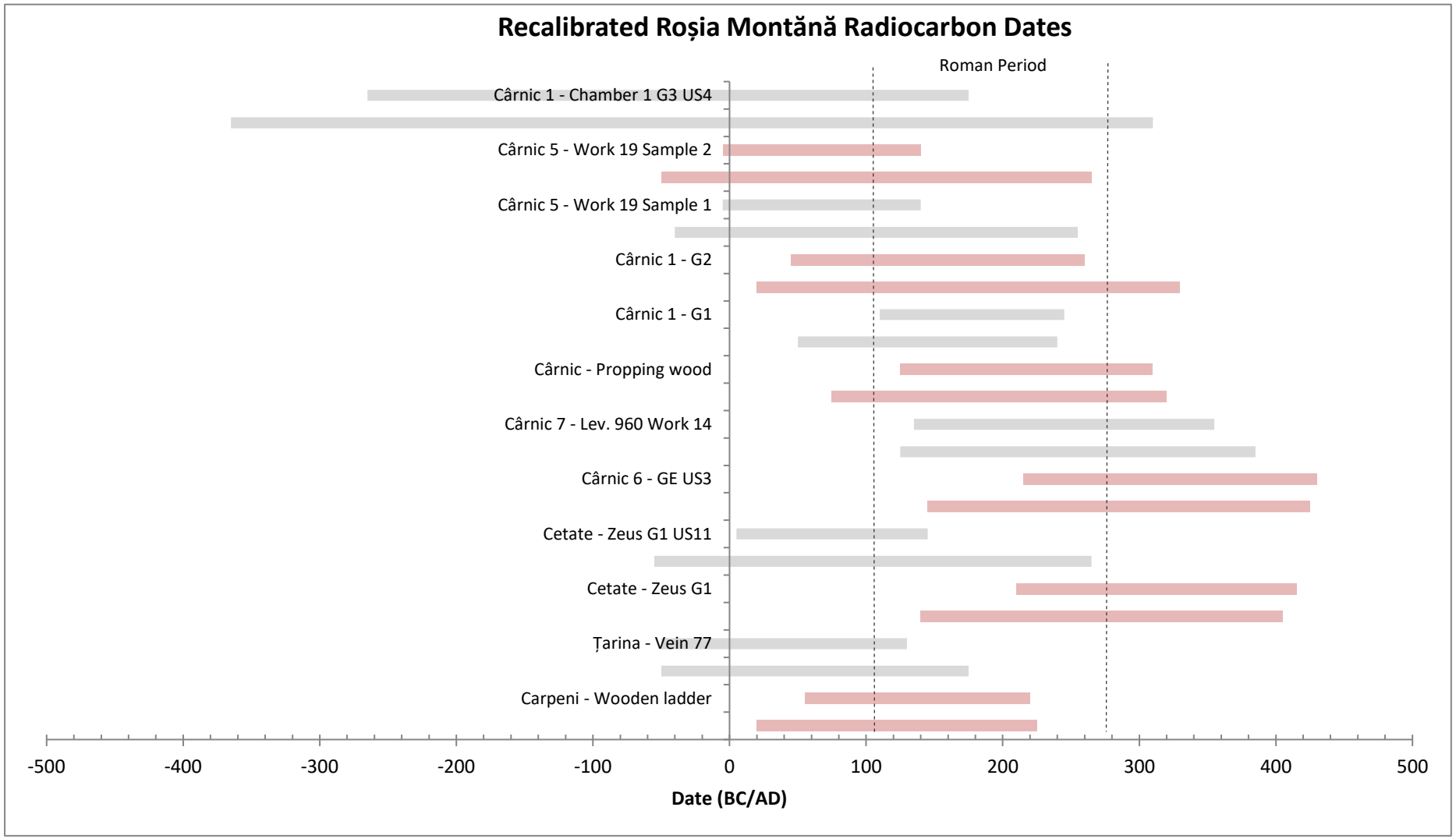

Recalibrated Roșia Montănă Radiocarbon Dates
Roman Period
Cârnic 1 - Chamber 1 G3 US4
Cârnic 5 - Work 19 Sample 2
Cârnic 5 - Work 19 Sample 1
Cârnic 1 - G2
Cârnic 1 - G1
Cârnic - Propping wood
Cârnic 7 - Lev. 960 Work 14
Cârnic 6 - GE US3
Cetate - Zeus G1 US11
Cetate - Zeus G1
Țarina - Vein 77
Carpeni - Wooden ladder
-500
-400
-300
-200
-100
0
100
200
300
400
500
Date (BC/AD)

Table 2a: The wax tablets from Roșia Montană. Main sources: IDR I; Hoffmann (2002); Wollmann (2002b); A.I. Wilson.

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
-	-	1786		Gallery in Sf. Laurențiu-Igren gold mine, Mt. Rotunda	Burnt while drying tablet for preservation. Found as a pair with TabCerD IV and a writing stylus.			Now lost.
IV	TC IV	1786	Date unclear	Gallery in Sf. Laurențiu-Igren gold mine, Mt. Rotunda Cf. CHBR (2006) 166 for find details.	Loan agreement (in Greek), over Latin text. Borrower agrees to pay 23 denarii and 12% starting from the date of the contract until the 4th calendar day of October (28 Sept.), and if not repaid by then, an additional 25 denarii.		Alburnus Maior	National Unification Museum (Alba Iulia)
I	TC I	1788	9 February 167	Lateral gallery in Sf. Iosif mine, Mt. Lety	Declaration to dissolve funerary *collegiuim*.	Artemidorus, son of Apollonius (guild master) Valerius, son of Nicon Offas, son of Menophilus Iulius, son of Iulius Witnesses: Lucius Vasidius Victor Caius Secundinius Legitimus Aelius Plator (Illyrian) Geldonis (Illyrian) Ulpius Felix Stertinius Rusticus September Plator(is) (peregrine, Illyrian)	*Statio* Resculum at Alburnus Maior	Budapest Museum (R. 588)

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
-	-	1791		Sf. Iosif	Discovery of 6 wax tablets and a human skeleton reported, but the information is contradictory and no more is known; see *IDR* I, p. 173; CHBR (2006) 166.			Now lost.
XXIII	TC XXII	1820 or 1824	No date	First half of the 19th century Neigebaur (1851): Found in bottom of Sf. Ladislau in Cârnic, in 1820? CHBR (2006) 166: Several tablets found in 1824, but only this survives.	Tablet of hazel wood (fragment). Written in ink; undecipherable.			Now lost. Private collection of Michael Johann Ackner in Sibiu. Cf. Wilson et al. (2011) 37.
-	-	1820 or 1824		Found with TabCerD XXIII	Part of a group of 7 tablets, but scattered amongst the people living in the mountains and subsequently lost.			Now lost.

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
XI	TC X	1854	20 May 164	Ohaba-Sf. Simion mine, Cârnic	Labour contract for work in a gold mine. Memmius Asclepius leases out services to Aurelius Adiutor until the ides of November for 70 denarii and the children(?) for 10 denarii. Found together with other tablets (presumably these are all from the same stash).	Flavius Secundinus (scribe) Memmius, son of Asclepius Aurelius Adiutor Witnesses: Titus, son of Beusas, nicknamed Bradua Socratio, son of Socrates Memmius, son of Asclepius	Immenosum Maius	Bucharest National Museum of History (Wollmann 2002b)
XVIII	TC XVII	1854 Date from *CHBR* (2006) 13.	6 February 131	Ohaba-Sf. Simion mine, Cârnic	Lacunose text. Contract between Verzo Beusantis and Dasius Verzonis. Found with other tablets (TabCerD II).	Verzo, son of Beusas Dasius, son of Verzo Valerius Firmus (jurist, Roman)	Alburnus Maior	Bucharest National Museum of History (Wollmann 2002b)
II	TC II	1854 or 1790?	17 September 159	Gallery in Ohaba-Sf. Simion, Cârnic Contra *IDR* I, p. 173: Found in gallery at Mt. Lety, 1790	Loan contract. Poor state of preservation. Date and find location not entirely clear.	Iulius Macedo (*fideiussor*) Epicadus (debtor?) [Andu]eia Batonis Apu[leius] Cerialis Maximus Veranis Servilius C(a?)ssi		Budapest Museum (R. 589)
-	-	1854 or 1790?		Ohaba-Sf. Simion or Cătălina Monulești	Ten unread or lost documents found with TabCerD II, along with furnace, table, chairs cut in the rock, etc. Exact find location and date unclear.			Budapest Museum?

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
III	TC III	1855	20 June 162	Gallery in Cătălina Monulești	Loan contract. Anduenna Batonis lends 140 denarii to Iulius Alexander.	Anduenna Batonis (Illyrian peregrine) Iulius Alexander (Roman citizen) Witnesses: Iulius Max[im-?] Luci--- Aureli S--- ---VERI--- Va-si--- I--- Nicomi0, possibly I[uli] Nicome[d-]	Deusara	Cluj National History Museum of Transylvania (first 2 tablets; Inv. V 2575–2576) and Biblioteca Documentară „Timotei Cipariu” (Blaj) (third tablet)
V	TC V	1855	20 October 162	Gallery in Cătălina Monulești	Loan agreement. Iulius Alexander lends 60 denarii to Alexander Carus for a period of 30 days at an interest rate of 1%. The gallery also had a lot of other wax tablets, lamps, tools, pots, baskets, etc.	Iulius Alexander Alexander Carus Titius Primitius L(ucius) Vasidius Victor Bato Pr---vi	Alburnus Maior	Budapest Museum (R. 590)
VI	TC VI	1855	17 March 139	Gallery in Cătălina Monulești Found together with TabCerD V.	Slave sale contract. Maximus Batonis buys a slave girl for 205 denarii from Dasius Verzonis.	Maximus Batonis Dasius Verzonis Passia (slave) Maximus Veneti Masurius Messi(i) Anneses Andunocnetis Planius Verzonis Liccaius Epicadi Epicadus Plarentis	Kartum	Budapest Museum (R. 591)

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
VII	TC VII	1854(?) or 1855	16 May 142	Gallery in Cătălina Monulești	Slave sale contract. Dasius Breucus buys a slave boy for 600 denarii from Bellicus Alexandri.	Dasius Breucus Bellicus Alexandri Apalaustrus (slave) Marcus Vibius Longus Appius Proclus (veteran) Antonius Celer Iul(ius) Viator Ulp(ius) Severinus Lucius Firmius Primitivus	*Canabae* of Leg. XIII Gem.	Biblioteca Documentară „Timotei Cipariu” (Blaj)
VIII	TC XXV	1855	4 October 160	Gallery in Cătălina Monulești Found together with TabCerD V.	Slave sale contract. Claudius Iulianus buys a slave woman for 420 denarii from Claudius Philetus.	Claudius Iulianus (soldier) Claudius Philetus Theodote (slave) Alexander Antipatri Valerius Valens (soldier) Cnaeus Varius A[l?]a Aelius Dionysius (veteran) Paulini S---ris Iulius Victorinus	*Canabae* of Leg. XIII Gem.	Cluj National History Museum of Transylvania (Inv. V 34566)

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
IX	TC VIII	1855	6 May 159	Gallery in Cătălina Monulești	House sale contract. Andueia Batonis buys half a house in the *vicus Pirustarum* at Alburnus Maior for 300 denarii from Veturius Valens. The house is located between the neighbouring homes of Plator Acceptianus and Ingenu(us) Callisti and other neighbours, and the public road.	Andueia, son of Bato Veturius Valens Plator Acceptianus Ingenu(us) Callisti Lucius Vasidius Victor T(itus) F(lavius) Felix M(arcus) Lucianus Melior Plator Carpi T(itus) Aurelius Priscus Bato Annaei	Alburnus Maior	Budapest Museum (R. 592)
XIV	TC XIII	1855	28 March 167	First two sheets found in a gallery in Cătălina Monulești	*Cautio societatis*. An agreement to establish a commercial partnership between Iulius Alexander and Cassius Frontinus, with Iulius Aleander contributing 500 denarii in cash and Cassius Palumbus contributing 267 denarii on behalf of his master, Cassius Frontinus.	Cassius Frontinus Iulius Alexander Cassius Palumbus (slave) Lossa	Deusara	Now lost. Berlin Museum, from the Museum of the Reformed College in Aiud
XVI	TC XV	1855	No specific date	Two sheets found in a gallery in Cătălina Monulești	Accounts and shopping list of food items, with prices (*index pecuniarum acceptarum rerumque emptarum*).			City Museum of Aiud (no inventory number)

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
XXI	TC XX	1855	No date	Probably found in Cătălina Monulești	Contract of sale and purchase. Interpretation uncertain. Recorded by Mommsen. Fragmentary state.	Bato Annaei Aepicadi Terent(ius?) Liga--- Dasas Loni Saturninus Scenobarbi Sextus Im---ali		Cluj National History Museum of Transylvania (Inv. V 34567)
XXII	TC XXI	1855	No date	Probably found in Cătălina Monulești with TabCerD V	Loan agreement(?) Recorded by Mommsen. Broken fragment of a tablet.		Alburnus Maior	Cluj National History Museum of Transylvania (Inv. V 34567a)
XXV	TC XXIV	1855	No date	Probably found in Cătălina Monulești	Fragment.	Some Roman names, but interpretation uncertain.		Cluj National History Museum of Transylvania (Inv. V 34564)
X	TC IX		23? October 163	None given by *IDR I*.	Labour contract. L. Ulpius Valerius will work for Socrates for one year for 90(?) denarii. Only two sheets of triptych found.	Adiutor, son of Macarius Lucius Ulpius Valerius Socratio, son of Socrates	Alburnus Maior(?)	Budapest Museum (R. 593)

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
XII	TC XI		No date	None given by *IDR* I.	Labour contract for work in a gold mine. Restitutus Senioris will work for Titus Beausantis until the next ides of November for 105 denarii, from which 25 denarii was paid in advance. Only one sheet of the triptych found.	Marcus(?) Aelius(?) Restitutus, nicknamed Senior Titus, son of Beausas, also called Bradua		Budapest Museum (R. 594)
XIII	TC XII		29 May 167	None given by *IDR* I.	Loan receipt (*depositum*, *cautio depositi*). Lupus Carentis received 50 denarii from Iulius Alexander. Only 1 sheet of the triptych found.	Lupus, son of Carens(?) Iulius Alexander	Alburnus Maior	Budapest Museum (R. 595)
XV	TC XIV		No date	None given by *IDR* I.	Partnership agreement(?) (*cautio fortasse societatis*). Only 1 sheet found. Very poor preservation, with lacunae.	Bradua Beusantis Ael(ius) Fortunatus Plarentis Bato Liani (?) Aurel(ius) Sil[vanus?] --- Flavius		Budapest Museum (R. 596)
XVII	TC XVI		No date	None given by *IDR* I.	Partnership agreement(?) Very poor preservation.	Publius Antonius		Budapest Museum (R. 597)

TabCerD	CIL III	Date Found	Document Date	Findspot	Content	People Mentioned	Where signed	Current Location
XIX	TC XVIII		No date	None given by *IDR* I.	Sale contract or loan with interest(?) Illegible. No text given in *IDR* I. Only 1 sheet preserved; broken in half.			Budapest Museum (R. 598)
XX	TC XIX		Date unclear (21 October)	None given by *IDR* I.	Sale contract or loan with interest(?) Only 1 sheet; poorly preserved.	Cerialis Flavius Valens		Budapest Museum (R. 599)
XXIV	TC XXIII		No date	None given by *IDR* I.	Stamp of T. Iulius Saturninus, conductor Illyr(), ann VI. Wax tablet in a triptych. Basically graffiti.	Titus Iulius Saturninus, head of customs in Illyricum (*conductor publici portorii Illyrici*) Aurelius Parthenius (possibly a witness to a contract)		Budapest Museum (R. 600)

Table 2b: Unedited wax tablet fragments from Roșia Montană. Main source: Wollmann (2002b).

TabCerD	CIL III	Date Found	Findspot	Content	Current Location
-	TC XXVI	Before 1860	Probably found in Cătălina Monulești	Found with at least one other tablet. Still no transcription available. Well-preserved when first discovered as plaster casts were made soon after discovery around 1860. Two of the plates are known only from these casts. These plates are probably from Cătălina Monulești, as not all the tablets from the 1855 cache have been identified.	City Museum "Ioan Raica" in Sebeș (Inv. R 200/31)
-	TC XXVII			From the collection of Timotei Cipariu. Possibly a reused tablet but needs further authentication. Cipariu identified that the Latin numbers were not from antiquity and the words should be in modern Greek.	Cluj National History Museum of Transylvania (Inv. V 34568)
-	TC XXVIII		Cătălina Monulești?	Tablet fragment. Only traces preserved on the wax. May be part of the Cătălina Monulești finds.	Cluj National History Museum of Transylvania (Inv. V 34565)
-	TC XXIX		Cătălina Monulești?	Three fragments. These were from Timotei Cipariu and may have come from Cătălina Monulești.	Cluj National History Museum of Transylvania (Inv. V 34563)
-	TC XXX		Probably found in Cătălina Monulești	Fragment. Wax layer mostly broken off, with only a few traces of letters imprinted on the wood. Since this fragment came from Blaj to the Cluj museum it is almost certainly from Cătălina Monulești, where among the forty tablets a few fragments have been found.	Cluj National History Museum of Transylvania (Inv. V 34567)
-	TC XXXI		Probably found in Cătălina Monulești	Fragment. Wax layer poorly preserved; difficult to distinguish the front of the tablet from the back. This tablet came from Timotei Cipariu's collection to Cluj, and is probably from Cătălina Monulești. Same inventory number as TC XXIV.	Cluj National History Museum of Transylvania (Inv. V 34564)
-	TC XXXII		Probably found in Cătălina Monulești	Fragment containing the end of the text from tablet's interior and the beginning of the text from the exterior, as well as the names of the witnesses. Poorly preserved; wax layer almost completely broken off. Part of the Timotei Cipariu collection given to Cluj museum, and most likely from Cătălina Monulești. Same inventory number as TC XX and XXX.	Cluj National History Museum of Transylvania (Inv. V 34567)

Table 3: Dimensions of the Curţile Romane at Cetate Massif. Data from Cauuet et al. (2003) 476.

Name	**Area (m^2)**	**Depth (m)**
Court 1	2400	60
Court 2	1200	50
Court 3	600	50
Court 4	300	40

Table 4: Table of ore grades at Roșia Montană.

Site	Au (g/t)	Ag (g/t)
Cârnic 1, upper part (958 level)	0.5	11
Cârnic 2, upper part (main breccia body)	9	220
Cârnic 1, chamber C5 (south pillar)	386	185
Cârnic 1, chamber C5 (north pillar)	6.03	13
Cârnic 1, chamber C5 (north side)	26	310
Cârnic 1, associated gallery G44	43.2	41
Cârnic 1 Inferior, P10 (breccia body)	18.06	93
Cârnic 1 Inferior, depilage D10 (breccia dyke)	15.15	58
Cârnic 1 Inferior, gallery G25	0.78	4
Cârnic 2 Middle (North), G4 (Fortis vein)	55	43
Cârnic 2 Middle, Coranda (sample 228)	8.7	219
Cârnic 2 Middle, Coranda (sample 2079)	7.54	64
Cârnic 2 Middle, Coranda (sample 2111)	4.45	115
Zeus, SE area, G1 drift	2.5	20
Zeus, upper central area, Dep 1 & Dep 2	4.2	3 – 42
Găuri, vertical depilage	2.2	28.5

Sources: Cauuet *et al*. (2003), Cauuet (2009a)

Table 5: Known and projected surface evidence at Roșia Montană.

Known Settlements	Associated Cemeteries	Associated Religious Areas
GĂURI (CETATE)		
Găuri	Hop	
Hăbad-Brădoiaia		Hăbad
Tăul Țapului	Tăul Țapului	
CARPENI		
Carpeni	Paru Carpeni	Nanului Valley
Paru Carpeni		(Drumus, Szekely, Dalea)

Cemeteries without Settlements	Associated Sites	Expected Sites
Tăul Cornei		At least one settlement associated with mining on southern slope of Cârnic and with Cârnicel
Pârâul Porcului-Tăul Secuilor		Settlement? Mining?
Jig-Piciorag	Ore-Processing	Settlement Roman mine at Jig-Văidoaia
Țarina	Ore-Processing	Settlement Mines at Țarina need more work

Mines without Settlements	Expected Sites
Cârnic Massif	Main settlement (*Alburnus Maior*) probably under historic Roșia Montană centre
Orlea Massif	Unidentified to date
Lety-Coș Massif	Settlement probably under historic Roșia Montană

Sources: Wilson, Mattingly & Dawson (2011), *CHBR* (2006)

Table 6a: Epigraphic evidence for immigrants into Alburnus Maior, organised by origin. Main data source: Mihailescu-Bîrliba (2011).

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
[---] Flavius [---]	?	?	XV	Alburnus Maior	before 212	citizen	*IDR* I, 45
[---] Frontinus	?	?	XIV	Deusara (Cătălina Monulești)	28.03.167	?	*IDR* I, 44
[---] Marcus	?	?	XII	Alburnus Maior	*c.* 164	?	*IDR* I, 42
[---] Verus	?	?	III	Deusara (Cătălina Monulești)	20.06.162	citizen?	*IDR* I, 33
Aelius Be[---]	?	?	-	Alburnus Maior	before 212	citizen	*IDR* III/3, 403
Aelius Fortunatus	?	?	XV	Alburnus Maior	before 212	citizen	*IDR* I, 45
Aelius Mar[---]	?	?	-	Alburnus Maior	?	citizen	Zirra et al. (2003) 348–49
Aelius Restitutus	?	?	XII	Alburnus Maior	*c.* 164	citizen	*IDR* I, 42
Antonius Celer	?	?	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	citizen	*IDR* I, 37
Apuleius Cerialis	?	?	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	citizen	*IDR* I, 32
Arria Mama	?	?	-	Alburnus Maior	?	citizen	*IDR* III/3, 413
Atrius Maximi	?	?	-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 396
Aurelius Adiutor	?	?	XI	Immenosum Maius (Ohaba-Sf. Simion)	20.05.164	citizen	*IDR* I, 41
Aurelius S[---]	?	?	III	Deusara (Cătălina Monulești)	20.06.162	citizen	*IDR* I, 33
Aurelius Sil[---]	?	?	XV	Alburnus Maior	before 212	citizen	*IDR* I, 45
C. Secundinius Legitimus	?	?	I	Statio Resculum (Sf. Iosif)	9.02.167	citizen	*IDR* I, 31
Caius [---]	?	?	-	Alburnus Maior	?	?	*IDR* III/3, 412
Cassia Peregrina	?	?	-	Alburnus Maior - Abrud	2nd–3rd c. (before 212)	citizen	*IDR* III/3, 418

[1] TabCerD: the location where the document was drawn up is given first, followed (in brackets) by the findspot in the mines if known.

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Cerdo	?	?	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	peregrinus?	*IDR* I, 32
Cerialis	?	?	XX	Alburnus Maior	?	?	*IDR* I, 50
Cn. Varius Atta	?	?	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	citizen	*IDR* I, 38
Flavius Secundinus	?	?	XI	Immenosum Maius (Ohaba-Sf. Simion)	20.05.164	citizen	*IDR* I, 41
Flavius Valens	?	?	XX	Alburnus Maior	?	citizen	*IDR* I, 50
Iulius Max[---]	?	?	III	Deusara (Cătălina Monulești)	20.06.162	citizen	*IDR* I, 33
Iulius Viator	?	?	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	citizen	*IDR* I, 37
Iulius Victorinus	?	?	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	citizen	*IDR* I, 38
L. Ulpius Valerius	?	?	X	Alburnus Maior	22.10.163	citizen	*IDR* I, 40
L. Vasidius Victor	?	?	I	Statio Resculum (Sf. Iosif)	9.02.167	citizen	*IDR* I, 31
L. Vasidius Victor (2)	?	?	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	citizen	*IDR* I, 39
Lucius [---]	?	?	III	Deusara (Cătălina Monulești)	20.06.162	?	*IDR* I, 33
Lupus Carentis	?	?	XIII	Alburnus Maior	29.05.167	peregrinus	*IDR* I, 43
M. Attius Primitivus	?	?	-	Alburnus Maior	?	citizen	*IDR* III/3, 414
M. Attius Saturninus	?	?	-	Alburnus Maior	?	citizen	*IDR* III/3, 414
M. Aurelius Maximus	?	?	-	Alburnus Maior	after 161	citizen	*IDR* III/3, 390
M. Aurelius Sil[---]	?	?	-	Alburnus Maior	after 161	citizen	*IDR* III/3, 415
M. Aurelius Superi[---]natus	?	?	-	Alburnus Maior	after 161	citizen	*IDR* III/3, 391
M. Aurelius Superianus	?	?	-	Alburnus Maior	after 161	citizen	*IDR* III/3, 391

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
M. Ulpius Clemens	?	?	-	Alburnus Maior	?	citizen	Zirra et al. (2003) 342–44
Nasidius Primus	?	?	-	Alburnus Maior	?	citizen	Wollmann (1985–86) no. 3–4
Nicomi[---]	?	?	III	Deusara (Cătălina Monulești)	20.06.162	?	*IDR* I, 33
P. Aelius Baebius	?	?	-	Alburnus Maior, Ampelum (Zlatna)	before 212	citizen	*IDR* III/3, 389 Lipovan (1988) 59–61
P. Aelius Licinianus	?	?	-	Alburnus Maior	3rd c.	citizen	*IDR* III/3, 416
P. Antonius [---]	?	?	XVII	Alburnus Maior	?	citizen	*IDR* I, 47
Passia	?	?	VI	Kartum (Cătălina Monulești)	17.03.139	slave	*IDR* I, 36
Paulinus S[---]	?	?	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	?	*IDR* I, 38
Refius Stenatus	?	?	-	Alburnus Maior	?	citizen	*IDR* III/3, 404
Secundus	?	?	XIV	Deusara (Cătălina Monulești)	28.03.167	slave	*IDR* I, 44
Servilius Cassi	?	?	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	peregrinus	*IDR* I, 32
Stertinius Rusticus	?	?	I	Statio Resculum (Sf. Iosif)	9.02.167	citizen	*IDR* I, 31
T. Aurelius Priscus	?	?	IX	Alburnus Maior (Cătălina Monulești)	6.06.159	citizen	*IDR* I, 39
T. Flavius Felix	?	?	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	citizen	*IDR* I, 39
Ulpius Felix	?	?	I	Statio Resculum (Sf. Iosif)	9.02.167	citizen	*IDR* I, 31
Ulpius Severinus	?	?	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	citizen	*IDR* I, 37
Va[---]si[---]	?	?	III	Deusara (Cătălina Monulești)	20.06.162	?	*IDR* I, 33

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Demetrius Arzakei	Asia Minor	Greece, Crete, Asia Minor	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 399
Adiutor Macarii	Asia Minor?	Greece, Crete, Asia Minor	X	Alburnus Maior	22.10.163	peregrinus	*IDR* I, 40
Alexander Caricci	Asia Minor?		V	Alburnus Maior (Cătălina Monulești)	20.10.162	peregrinus	*IDR* I, 35
Alexander Gai	Asia Minor?		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 412
Artemidorus Apolloni	Asia Minor?		I	*Statio* Resculum (Sf. Iosif)	9.02.167	peregrinus	*IDR* I, 31
Hermes Myrini	Asia Minor?		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 405
Iulius Alexander	Asia Minor?	?	III	Deusara (Cătălina Monulești)	20.06.162	citizen	*IDR* I, 33
Iulius Alexander (2)	Asia Minor?	?	V	Alburnus Maior (Cătălina Monulești)	20.10.162	citizen	*IDR* I, 35
Iulius Alexander (3)	Asia Minor?	?	XIII	Alburnus Maior	29.05.167	citizen	*IDR* I, 43
Iulius Alexander (4)	Asia Minor?	?	XIV	Deusara (Cătălina Monulești)	28.03.167	citizen	*IDR* I, 44
Memmius Asclepii	Asia Minor?	Greece, Crete, Asia Minor	XI	Immenosum Maius (Ohaba-Sf. Simion)	20.05.164	peregrinus	*IDR* I, 41
Offas Menophili	Asia Minor?		I	*Statio* Resculum (Sf. Iosif)	9.02.167	peregrinus	*IDR* I, 31
Socratio Socratis	Asia Minor?	Greece, Crete, Asia Minor	X	Alburnus Maior	22.10.163	peregrinus	*IDR* I, 40
Socratio Socratis (2)	Asia Minor?	Greece, Crete, Asia Minor	XI	Immenosum Maius (Ohaba-Sf. Simion)	20.05.164	peregrinus	*IDR* I, 41
Valerius Niconi	Asia Minor?		I	*Statio* Resculum (Sf. Iosif)	9.02.167	peregrinus	*IDR* I, 31
Treusenus	Celt		-	Alburnus Maior	before 212	peregrinus?	*IDR* III/3, 410
Theudote	Crete	Greece, Crete, Asia Minor	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	slave	*IDR* I, 38

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Aurelia Sambu	Egypt	Egypt	-	Alburnus Maior	3rd c.	citizen	*IDR* III/3, 416
Ammonius	Egypt?		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 394
Apalaustus	Greek	Greece, Crete, Asia Minor	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	slave	*IDR* I, 37
Aelius Dionysius/Aelius Dionysos	Greek?	Greece, Crete, Asia Minor	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	citizen, veteran	*IDR* I, 38
Alexandros Antipatri	Greek?	Greece, Crete, Asia Minor	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	peregrinus	*IDR* I, 38
Bellicus Alexandri	Greek?	Greece, Crete, Asia Minor	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	peregrinus	*IDR* I, 37
Claudius Philetus	Greek?	Greece, Crete, Asia Minor	VIII	Canabae Leg. Gem. XIII (Cătălina Monulești)	4.10.160	citizen	*IDR* I, 38
Demetr[---]	Greek?	Greece, Crete, Asia Minor	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus?	*IDR* III/3, 426
Dion	Greek?	Greece, Crete, Asia Minor	-	Alburnus Maior	2nd/3rd c.	peregrinus	*IDR* III/3, 409
Ingenuus Callisti	Greek?	Greece, Crete, Asia Minor	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	peregrinus	*IDR* I, 39
Domitia Chlone	Greek-speaker?	Greece, Crete, Asia Minor	-	Alburnus Maior	2nd/3rd c.	citizen	*IDR* III/3, 419
[---] Annaius	Illyrian		-	Alburnus Maior	?	?	*IDR* III/3, 406
[---] Beusantis	Illyrian	Dalmatia	XVIII	Alburnus Maior (Ohaba-Sf. Simion)	6.02.131	peregrinus	*IDR* I, 48
[---] Beusantis	Illyrian	Dalmatia	XVIII	Alburnus Maior (Ohaba-Sf. Simion)	6.02.131	peregrinus	*IDR* I, 48
[---] Geldonis	Illyrian	Dalmatia	I	*Statio* Resculum (Sf. Iosif)	9.02.167	peregrinus	*IDR* I, 31

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
[---] Tovetis	Illyrian	Dalmatia	V	Alburnus Maior (Cătălina Monulești)	20.10.162	peregrinus	*IDR* I, 35
[---]rat(us Beuci	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 344–45
Aelius Mes[---]	Illyrian		-	Alburnus Maior	?	citizen	Zirra et al. (2003) 342–44
Aelius Plator	Illyrian	Dalmatia	I	*Statio* Resculum (Sf. Iosif)	9.02.167	citizen	*IDR* I, 31
Aelius Quintus	Illyrian		-	Alburnus Maior	?	citizen	Crăciun & Sion (2003) 305–7
Aelius Scenus	Illyrian		-	Alburnus Maior	?	citizen	Wollmann (1985–86) no. 16
AEpicadus	Illyrian	Dalmatia	XXI	Alburnus Maior	before 212	peregrinus	*IDR* I, 51
Andes Titi	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 424
Andueia Batonis	Illyrian	Dalmatia	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	peregrina	*IDR* I, 32
Andueia Batonis (2)	Illyrian	Dalmatia	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	peregrina	*IDR* I, 39
Anduenna Batonis	Illyrian	Dalmatia	III	Deusara (Cătălina Monulești)	20.06.162	peregrina	*IDR* I, 33
Anneses Andi	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
Avilis Panentis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Cociș et al. (2003) 149
Bato Annaei	Illyrian	Dalmatia	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	peregrinus	*IDR* I, 39
Bato Annaei (2)	Illyrian	Dalmatia	XXI	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* I, 51
Bato Liani	Illyrian	Dalmatia	XV	Alburnus Maior	before 212	peregrinus	*IDR* I, 45
Bato Pr[---]	Illyrian	Dalmatia	V	Alburnus Maior (Cătălina Monulești)	20.10.162	peregrinus	*IDR* I, 35
Bato Secundi	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 352–53
Batonianus	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 20

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Beucus	Illyrian		-	Alburnus Maior	?	slave	*IDR* III/3, 413
Beucus	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 8
Beucus Daeici	Illyrian		-	Alburnus Maior	before 212	peregrinus	Cociș et al. (2003) 150
Beucus Dasantis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 349–50
Beusas Platoris	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 389
Bisius Scenobarbi	Illyrian	Dalmatia	-	Alburnus Maior - Abrud	2nd–3rd c. (before 212)	peregrinus	*IDR* III/3, 418
Bradua Beusantis	Illyrian	Dalmatia	XV	Alburnus Maior	before 212	peregrinus	*IDR* I, 45
Celsenius Adiutor	Illyrian		-	Alburnus Maior - Abrud	?	citizen	*IDR* III/3, 385
Dasa Sutinis	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 417
Dasas	Illyrian		-	Alburnus Maior	before 212	peregrinus	Moga et al. (2003) 50–51
Dasas	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 5
Dasas Loni	Illyrian	Dalmatia	XXI	Alburnus Maior	before 212	peregrinus	*IDR* I, 51 Crăciun & Sion (2003) 298–99
Dasius Breucus	Illyrian	Dalmatia	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	peregrinus	*IDR* I, 37
Dasius Sta[---]	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 350–51
Dasius Verzonis	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
Dasius Verzonis (2)	Illyrian	Dalmatia	XVIII	Alburnus Maior (Ohaba-Sf. Simion)	6.02.131	peregrinus	*IDR* I, 48
Dassius	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 386
Dasurius	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 5
Dexter	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 346–47
Epicadus	Illyrian	Dalmatia	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	peregrinus	*IDR* I, 32

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Epicadus Plarentis, qui et Mico	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
G. Valerius Viator	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	citizen	*IDR* III/3, 424
Germanus	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 345–55
Implaius Lisantis	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 392
Implaius Sumel(etis)	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 22
Iulia Beuci	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 14
Lavius Verzonis	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 421
Liccaius Epicadi	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
Lossa	Illyrian	Dalmatia	XIV	Deusara (Cătălina Monulești)	28.03.167	peregrinus	*IDR* I, 44
M. Aurelius Scenobarbus	Illyrian		-	Alburnus Maior	after 161	citizen	*IDR* III/3, 415
Macrianus Surionis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun & Sion (2003) 300–01
Martialis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 346–47
Massurius Messi	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus, decurion	*IDR* I, 36
Maxima	Illyrian	Dalmatia	-	Alburnus Maior - Abrud	2nd/3rd c. (before 212)	peregrina?	*IDR* III/3, 423
Maxima Luri	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrina	*IDR* III/3, 420
Maximus Batonis	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
Maximus Veneti	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
Novato	Illyrian		-	Alburnus Maior (Cătălina Monulești)	before 212	peregrinus	Moga et al. (2003) 50–51
Panes Epicasi	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 387

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Panes Nosetis	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 384
Panes Stagilis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 351–52
Plabaotius	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 402
Plaetoria Maxima	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	citizen	*IDR* III/3, 421
Planius Baezi	Illyrian	Dalmatia	-	Alburnus Maior - Abrud	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 423
Planius Verzonis	Illyrian	Dalmatia	VI	Kartum (Cătălina Monulești)	17.03.139	peregrinus	*IDR* I, 36
Plares	Illyrian	Dalmatia	XV	Alburnus Maior	before 212	peregrinus	*IDR* I, 45
Platino Verzonis	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrina	*IDR* III/3, 422
Platius	Illyrian		-	Alburnus Maior	before 212	peregrinus	Pescaru et al. (2003) 129–130
Platius Dasantis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun & Sion (2003) 295–96
Platius Turi	Illyrian		-	Alburnus Maior	before 212	peregrinus	Cociș et al. (2003) 149–50
Plator Acceptianus	Illyrian	Dalmatia	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	peregrinus	*IDR* I, 39
Plator Carpi	Illyrian	Dalmatia	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	peregrinus	*IDR* I, 39
Plator Implai	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun et al. (2003) 261–62
Plator Panentis	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 383
Plator Sar[---]	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 341–42
Purius	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 354–55
Rufus	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 420
Rufus Platoris	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* III/3, 422
Saturninus Scenobarbi	Illyrian	Dalmatia	XXI	Alburnus Maior	before 212	peregrinus	*IDR* I, 51

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Seneca Bisonis	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 388
September Platoris	Illyrian	Dalmatia	I	Statio Resculum (Sf. Iosif)	9.02.167	peregrinus	*IDR* I, 31
Sextus Im[plai?]	Illyrian	Dalmatia	XXI	Alburnus Maior	2nd/3rd c. (before 212)	peregrinus	*IDR* I, 51
Surio	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun & Sion (2003) 296–98
Surio Sumel(etis)	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 21
Terentius [---]	Illyrian		XXI	Alburnus Maior	before 212	citizen?	*IDR* I, 51
Terentius Liga[---]	Illyrian		XXI	Alburnus Maior	before 212	citizen?	*IDR* I, 51
Tertia	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	peregrina	*IDR* III/3, 420
Titius Primitus	Illyrian	Dalmatia	V	Alburnus Maior (Cătălina Monulești)	20.10.162	citizen	*IDR* I, 35
Titus Beusantis, qui et Bradua	Illyrian	Dalmatia	XI	Immenosum Maius (Ohaba-Sf. Simion)	20.05.164	peregrinus	*IDR* I, 41
Titus Beusantis, qui et Bradua (2)	Illyrian	Dalmatia	XII	Alburnus Maior	*c.* 164	peregrinus	*IDR* I, 42
Tizius Gelsi	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun & Sion (2003) 299–300
Tritio Cari	Illyrian		-	Alburnus Maior	before 212	peregrinus	Wollmann (1985–86) no. 19
Valeria Terentia	Illyrian	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	citizen	*IDR* III/3, 424
Varro Sceni	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 403
Varro Titi	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 405a
Verzo	Illyrian		-	Alburnus Maior	before 212	peregrinus	Moga et al. (2003) 50–51
Verzo Beusantis	Illyrian	Dalmatia	XVIII	Alburnus Maior (Ohaba-Sf. Simion)	6.02.131	peregrinus	*IDR* I, 48
Verzo C[---]sonis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun et al. (2003) 260–61

Person	Origin	Province/Region	TabCerD	Findspot[1]	Date	Legal/Social Status	Source
Verzo Dasantis	Illyrian		-	Alburnus Maior	before 212	peregrinus	Zirra et al. (2003) 345–46
Verzo Pantonis	Illyrian		-	Alburnus Maior	before 212	peregrinus	*IDR* III/3, 393
Verzo Platoris	Illyrian		-	Alburnus Maior	before 212	peregrinus	Crăciun et al. (2003) 261
Avilia Pietas (Aequum)	Illyrian (Aequum)	Dalmatia	-	Alburnus Maior	2nd/3rd c. (before 212)	citizen	*IDR* III/3, 417
Maximus Veranus	Illyrian?	Dalmatia	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	peregrinus	*IDR* I, 32
Appius Proclus	Italian?	Italy	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	citizen	*IDR* I, 37
Cassius Frontinus	Italian?	Italy	XIV	Deusara (Cătălina Monulești)	28.03.167	citizen	*IDR* I, 44
Cassius Palumbus	Italian?	Italy	XIV	Deusara (Cătălina Monulești)	28.03.167	citizen	*IDR* I, 44
M. Lucanus Melior	Italian?	Italy	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	citizen	*IDR* I, 39
M. Vibius Longus	Italian?	Italy	VII	Canabae Leg. Gem. XIII (Cătălina Monulești)	16.05.142	citizen	*IDR* I, 37
Valerius Firmus	Italian?	Italy	XVIII	Alburnus Maior (Ohaba-Sf. Simion)	6.02.131	citizen	*IDR* I, 48
Veturius Valens	Italian?	Italy	IX	Alburnus Maior (Cătălina Monulești)	6.05.159	citizen	*IDR* I, 39
Iulius Macedo	Macedonia?	Macedonia	II	Alburnus Maior (Ohaba-Sf. Simion)	17.09.159	citizen	*IDR* I, 32

Table 6b: Summary table of known individuals at Alburnus Maior based on the epigraphic evidence.

	Number of individuals	**Compared to known individuals at other Dacian mines[1]**
Unique individuals	187	79
Mentioned multiple times[2]	6	-
Breakdown by Origin		
Illyrians	102	11
(of which Dalmatian)	49	4
Greco-Oriental	22	13
Italian	7	-
Other	3	7
Unknown	53	48
Breakdown by Status		
Citizen	65	44
Peregrine	108	13
Freed slaves	-	7
Slave	5	6
Uncertain	9	9

[1] Ampelum, Bucium, Muncelu-Brad, as compiled in Mihailescu-Bîrliba (2011).
[2] Greco-Orientals: Iulius Alexander (4) and Socratio Socratis (2). Illyrians: Andueia Batonis (2), Bato Annaei (2), Dasius Verzonis (2), and Titus Beusantis (2).

Table 7: Non-precious metal mines of Roman Dacia. Data drawn from Appendix 2.

Mine	County	Metal Type	Reliability
Bocșa (Vasiova)	Caraș-Severin	Au, Ag, Fe	Verified
Dognecea	Caraș-Severin	Au, Ag, Pb, Cu, Fe	Probable
Moldova Nouă	Caraș-Severin	Au, Ag, Pb, Cu, Fe	Probable
Vărad	Caraș-Severin	Au, Ag, Cu, Fe	Probable
Sasca Română	Caraș-Severin	Au, Ag, Pb, Cu, Fe	Possible
Surducu Mare	Caraș-Severin	Au, Ag, Pb, Cu	Possible
Tisovița	Mehedinți	Cu	Probable
Eibenthal	Mehedinți	Cu	Possible
Ciclova Montană	Caraș-Severin	Cu	Possible
Turnu Roșu	Sibiu	Cu, Uncertain	Possible
Teliuc	Hunedoara	Fe	Verified
Teliucul Inferior	Hunedoara	Fe	Researched
Ciclova Română	Caraș-Severin	Fe	Probable
Ghelari	Hunedoara	Fe	Possible
Hunedoara	Hunedoara	Fe	Possible
Peștișu Mare	Hunedoara	Fe	Possible
Peștișu Mic	Hunedoara	Fe	Possible
Ruda	Hunedoara	Fe	Possible
Alun	Hunedoara	Fe	Uncertain
Mânerău	Hunedoara	Fe	Uncertain
Tincova	Caraș-Severin	Fe	Uncertain
Criciova	Timiș	Fe	Uncertain

Table 8: Mines of uncertain metal type. Data drawn from Appendix 2.

Mine	County	Metal Type	Reliability
Nera	Caraș-Severin	Uncertain	Uncertain
Peștera – "La Poduri"	Cluj	Uncertain	Uncertain
Valea Ierii	Cluj	Uncertain	Uncertain
Petrești	Hunedoara	Uncertain	Uncertain
Ribița	Hunedoara	Au, Uncertain	Possible
Cîrșu	Mehedinți	Fe?, Uncertain	Uncertain
Vârciorova	Mehedinți	Uncertain	Uncertain
Turnu Roșu	Sibiu	Cu, Uncertain	Possible
Moravița	Timiș	Fe?, Uncertain	Uncertain

Appendix 1

Glossary

The following list contains the most frequently used geological and mining terms in this thesis. It is not intended to be comprehensive.

Geological terms

BRECCIA	A rock consisting of broken mineral or rock fragments cemented by a finer grained matrix and typically silicified. A BRECCIA PIPE or CHIMNEY is a mass of breccia, frequently irregular and cylindrical in shape. They may or may not be silicified. These formations often host ore deposits, particularly copper and uranium, and are sensitive to oxidation. When they outcrop on the surface, breccia pipes can appear as iron-stained protrusions.
DYKE	An intrusive igneous rock body that cuts through pre-existing strata.
GANGUE	Low-value or non-metallic minerals in an ore, usually considered waste.
LODE	A rock mass containing several closely spaced veins that can be mined as a single unit along with the intervening rock, either through driving or stoping. Also REEF.
SKARN	A type of rock rich in calc-silicate minerals (i.e. calcium, magnesium, iron, manganese, aluminium) produced by metamorphic alteration of limestone or dolomite. A skarn with adequate amounts of mineralised ore can be classified as a skarn deposit; such deposits are economically valuable sources of metals like tin, tungsten, manganese, copper, gold, zinc, lead, nickel, molybdenum, and iron.
STOCKWORK	Native rock containing so many fine veinlets that extracting and crushing the rock in its entirety is frequently more economical than mining the veinlets alone.
VEIN	A general term for a long, narrow body of ore. In geology, veins are mineral deposits that form in fissures within the host rock. See also LODE.

Underground mining

ADIT	A horizontal or slightly inclined tunnel driven from the surface for accessing or draining a mine. Drives and other mining tunnels tend to have the following features: roof, floor, side walls, and working face. Also DRIVE or DRIFT.
AIR SHAFT	A shaft specifically driven to connect underground workings to provide ventilation; typically straight and vertical.
BONANZA	Small areas of ore of exceptional richness.
CHAMBER	A large cavern excavated as part of the underground workings or for the placement of machinery. Also CORANDA in Romanian.
DRIFT	A more general mining term denoting a near-horizontal passageway in an underground mine, following an ore vein that may or may not intersect the surface. A drift follows the vein, whereas a crosscut intersects a drift and a level or gallery may do either. All horizontal openings in a mine can also have the generic name of drift, with size and shape varying dependent on function (e.g. exploration, haulage, ventilation). See also ADIT.
FACE	The working face of a drift or adit.
GALLERY	Usually refers to a stoped area within a drift in a mine, but sometimes also used as a synonym of level or drift.
LEVELS	Series of horizontal workings in underground mines, usually numbered from the surface down. Levels can vary from *c*. 20 to 100 vertical metres apart and are connected by vertical shafts or steeply inclined passages.
OPENCAST	A method of mining employed when an ore body outcrops at or near the surface that avoids the need for underground mining. Commonly used for mining stockworks.
RISE	A vertical shaft excavated upwards from a lower passage. Also RAISE.
SHAFT	A vertical or near-vertical passage (between 45 and 90° to the horizontal) providing access from the ground surface to the underground levels or between levels.
STOPE	An underground excavation where the ore is extracted either above or below a drive or working level, i.e. STOPING, which leaves behind an open space or STOPE. The shape of a stope is often inclined and depends on the size and extent of the ore body; artificial support may be needed in instances where the country rock is insufficiently strong to prevent collapse.

The direction of work can proceed in two ways: UNDERHAND STOPING from the top of the ore deposit downwards, i.e. removal of ore from below the level, or OVERHAND STOPING, which is the reverse and worked from the bottom of the deposit upward. Underhand stoping was preferred prior to the use of explosives and power tools due to the mechanical advantage conferred by gravity when using hand tools to excavate downwards.

SUMP — A depression at the base of a mine shaft where water accumulates and can be evacuated by pumping or via a drainage adit.

Alluvial mining

ALLUVIAL GOLD — Gold found in riverine sand or gravel deposits (i.e. alluvium) that has been washed and transported by water. It is the most common type of placer deposit and tends to occur in valleys.

GROUND SLUICING — A method of alluvial mining where low-pressure water—such as free-flowing water diverted from a headrace—is directed over auriferous terrace margins and used to break down the deposits. The displaced material can then be channelled to sluice boxes, which trap the gold in riffles for recovery.

HUSHING — A method of alluvial mining where a large volume of stored water is suddenly released from above a deposit and used to remove overburden and expose bedrock. The high pressure created by the quick release of water is achieved by storing water in tanks or reservoirs with a sluice gate at one end to control water flow. This method is most effective when used on steep ground as the force of falling water decreases as the slope lessens. Hushing can be used for both prospection and exploitation.

PLACER MINING — A synonym for alluvial mining used extensively in North American literature to describe the mining of alluvial deposits. Placer mining uses water to wash alluvial gravels to recover gold and various heavy metals. The use of devices such as cradles and sluice boxes trap the heavier gold particles behind riffles whilst the dirt and unwanted material are washed away.

RACE — A watercourse that conveys water to or from a mining site. Also WATER RACE or HEADRACE.

TAILINGS — The solid waste leftover from alluvial mining. Tailings often constitute the dominant feature on old alluvial mining sites and are an indicator of the mining techniques used and the technology available.

Appendix 2

Gazetteer of Mining Sites in Roman Dacia

The purpose of this gazetteer is to provide an English-language catalogue of the known Roman mining sites in Dacia. Very little archaeological research has been conducted on many of these sites. In the interest of comprehensiveness, I have also included some sites for which Roman activity is likely spurious and have noted them as such accordingly.

The following list was compiled primarily from Appendix D in *The Cultural Heritage Baseline Report* commissioned by the Roșia Montană Gold Corporation. The main sources consulted include V. Boroneanț's archaeological catalogue of caves and mines in Romania;[6] the Oxford Roman Economy Project Mines Database;[7] the National Archaeological Record of Romania (RAN);[8] and the relevant volumes of the *Tabula Imperii Romani*.[9] Additional sources of note include (but are not limited to) the archaeological catalogues for Alba,[10] Hunedoara,[11] and the Banat,[12] as well as D. Tudor's and D. Popa's volumes on settlements in Roman Dacia.[13] Full entries for the sources consulted can be found in the bibliography.

Precise geographical coordinates for almost all the mining sites are currently lacking in the secondary literature. Apart from a small handful of sites, most of the geographical coordinates given here are for the village rather than the mining site itself. Longitude and latitude are given in decimal degrees. Most of the coordinates are sourced from the Oxford Roman Economy Project Mines Database and cross-referenced with the data available from the RAN. Additional entries for sub-sites and specific workings or mining-related sites (e.g. settlements, necropoleis, ore-processing areas) are also noted, where more detailed coordinates and information are available. The location of some of the sites have been approximated by eye using Google Earth, based on maps or documentary evidence.

[6] Boroneanț (2000).
[7] Abbreviated here as OxREP DB. http://oxrep.classics.ox.ac.uk/databases/mines_database/
[8] http://ran.cimec.ro/
[9] *TIR L34* and *L35*.
[10] *RepAB*.
[11] Luca (2008).
[12] Luca (2010).
[13] Tudor (1968); Popa (2002).

1 ABRUD

In 1840, a stamped lamp (C. DESSI) was found in Gauri mine. A mining settlement (*Colonia Auraria Maior*) and cemetery are known, with discoveries of moulded stonework, iron scraps, bronze vessels, lamps, a clay medallion depicting Serapis, a funerary medallion, a decorated stele, and four funerary lions. Other epigraphic monuments mentioned in the older archaeological literature are believed to have been brought here from *Alburnus Maior*. The origins of the funerary remains mentioned above are unknown, but the presence of a settlement is secure and is thought to be strongly related to the mining activity at *Alburnus Maior*. A small *castellum* was also located south-west of the town, on a plateau named "Cetățaua" or "Cetățuia".

Descriptive Location:
On the Abrud River, in the Abrudului Depression, Metaliferi Mountains.

Alternative Names:
Abrudbánya, Großschlatten, Grossschlatten, Altenburg

Commune:			
County:	Alba		
Coordinates:	46.266667 23.066667		
Metals Mined:	Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site:	None
Working:	None

Bibliography: Christescu (1929) 12; Popa (2002); RepAB; TIR L34; Tudor (1968) 196.

2 ALBAC

Possible traces of Roman gold washing, but the evidence is ambiguous.

Descriptive Location:
On Albac River (Arieş), at "Gura Rezii" near the local church.

Alternative Names:
Fehérvölgy, Allenbach. Formerly Râul Mare

Commune:	Albac		
County:	Alba		
Coordinates:	46.453429 22.949816		
Metals Mined:	Au	**Mine Type**:	Alluvial Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: CHBR (2006); OxREP DB; Popa (2002); RepAB; TIR L34.

3 ALMAŞU MARE

Numerous Roman mining exploitations can be seen in the heights north and north-west of the village, as well as traces of a mining settlement. The main exploitation points were at Valea Turnului or Runcului; the peak of Bojerița massif, with the largest working; and the peak of Tuțuman (Cucuman) massif. There is evidence of Roman gold extraction at the Alexandru, Sever, and Adriana veins, and at Corneatca (Toți Sfinții mining point). Associated sites include Coronți (Baba Hill), Piatra Seacă, and Dorul Negrii (Negrii Hill). Statues of Jupiter and Iunona were found at Negrii Hill, and the possible mining settlement at Haneș Hill, on the road to Zlatna. Traces of mining activity and constructions thought to be miners' housing were also mentioned at Almașu Mic.

See also Cib, Poiana, Stănija, Techereu, Valea Dosului, Vălișoara, Zlatna.

Descriptive Location:

On the plateau between the Runcu Massiv, Bojenița Hill, and the springs of the Criș and Ampoi Rivers, in the Metaliferi Mountains.

Alternative Names:
Almașul Mare, Almaș, Nagyalmás, Mereștii Mari, Groß-Obstdorf

Commune:	Almașu Mare		
County:	Alba		
Coordinates:	46.110667 23.116399		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Verified

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 12, 16, 19; Davies (1935) 201; OxREP DB; Popa (2002); RepAB; TIR L34; Tudor (1968) 189–90; Wollmann (1996) 137–8, 213.

4 ALUN

Traces of iron exploitation in galleries in the Roman and medieval periods, as well as a modest mining settlement.

See also Ghelari, Hunedoara, Ruda, Teliucul Inferior.

Descriptive Location:

Near Ghelari, on the left bank of the Mureș tributary in the Cerna valley, the Poiana Ruscă Mountains.

Alternative Names:
Álun

Commune:	Bunila		
County:	Hunedoara		
Coordinates:	45.707500 22.687500		
Metals Mined:	Fe	**Mine Type**:	Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2008); Popa (2002); RAN 89044.02; TIR L34; Tudor (1968) 111; Wollmann (1996) 234.

5 AVRAM IANCU - VIDRA DE SUS

Possible traces of Roman gold-washing facilities and stamping mills for crushing ore were identified on the right bank of the Arieș.

See also Câmpeni, Vidra.

Descriptive Location:

On the right bank of the Arieș River.

Alternative Names:
Felsővidra

Commune:	Avram Iancu		
County:	Alba		
Coordinates:	46.345392 22.873996		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: CHBR (2006); OxREP DB; Popa (2002); RepAB; TIR L34; Tudor (1968) 202.

6 BAIA DE ARIEŞ

Noted in the older literature as one of the most important gold-washing centres in the Arieș Valley. Gallery mining (e.g. Petru și Pavel, gallery Emerici) and traces of mining settlements have also been identified, along with tools, stamped lamps, and two *denarii* of Commodus and Severus Alexander. A large surface exploitation, probably Roman in date, existed at Afiniș Hill, near gallery Emerici.

See also Sălciua de Sus, Vidolm.

Descriptive Location:

On the Arieș river.

Alternative Names:
Ofenbaia, Baia, Baia Arieșului, Aranyosbánya, Offenbánya, Kupecbánya, Offera, Offenburg, Umberg, Onimberg, Schwendburg, Schwend, Schlossburg

Commune:	Baia de Arieș		
County:	Alba		
Coordinates:	46.379444 23.279722		
Metals Mined:	Au, Ag	**Mine Type**:	Alluvial Surface opencast Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Christescu (1929) 12; Davies (1935) 203; Popa (2002); RepAB; Wollmann (1996) 146–8.

7 BAIA DE CRIȘ

There is evidence of a Roman gallery at Adamul Vechi measuring 2.00 m high by 0.53 m and 0.35 m in width and length. On the plateau at La Ptincuri Point and Râbița, near Fântâna Borchii, and at Ferede Peak are traces of Roman and medieval mining, and possibly prehistoric mining. G. Téglàs reports water adduction structures at Baia de Criș, and the *TIR* notes water conduits, a water reservoir, and gravel piles from gold washing. Finds include coins (now lost) from Marcus Aurelius and Antoninus Pius as well as mining tools at Caraci (diorite stone and iron hammers, possibly Roman). An important rural settlement developed at Baia de Criș in relation to the gold exploitation and was possibly the seat of a *subprocurator aurariarum*.

See also Caraciu, Ribița, Țebea.

Descriptive Location:

Encompasses the Crișul Alb area of Măgura Caraci, Țebea, and Baia de Criș. Mining occurred at Ptincuri Plateau south of the commune and at Feredeului Peak.

Alternative Names:
Körösbánya, Fehérkörösbánya, Nagybánya, Altenburg

Commune:	Baia de Criș		
County:	Hunedoara		
Coordinates:	46.176799 22.711600		
Metals Mined:	Au	**Mine Type**:	Alluvial Hydraulic? Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Verified

Sub-Site:	Baia de Criș Baia de Criș – Căraci
Working:	Baia de Criș – La Ptincuri (Râbița) gold mine (RAN 87754.05) Căraci – Adamul Nou mine (RAN 87772.03)

Bibliography: CHBR (2006); Christescu (1929) 12, 13; Davies (1935) 202, 203; Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 192; Wollmann (1996) 132–4.

8 BARBURA

Several underground galleries with modern and possibly Roman exploitation are known in Barbura village. Most are in a poor state of preservation. A Roman hoard containing 83 pieces was discovered in 1915 in the outskirts of the city, in an unknown location (RAN 88118.01).

See also Băița, Căinelul de Sus, Crăciunești, Fizeș, Hărțagani, Ormindea, Trestia.

Descriptive Location:

Near Băița, between Cornet and Sfredel Hills. In the Mureș river basin, Metaliferi Mountains.

Alternative Names:
Bárbura

Commune:	Băița		
County:	Hunedoara		
Coordinates:	46.005278 22.900278		
Metals Mined:	Uncertain	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	Barbura
Working:	Barbura-Dealul Mialu Grimm gallery (RAN 88118.02) Barbura-Dealul Mialu Iosefi gallery (RAN 88118.03) Barbura-Dealul Mialu Gallery +50 (RAN 88118.04) Barbura-Dealul Pițiguș (RAN 88118.05)

Bibliography: RAN.

9 BĂIȘOARA

Unclear whether gold was exploited here in the Roman period (possibly only silver), but traces of gold exploitation were reported west of Băișoara in the Ierții valley, where mining implements (hammers, pickaxes, crushing mill, lamps) as well as a human skeleton in shackles (?) were found, which may indicate Roman gold washing and a mining settlement. Traces of Roman buildings were also reported near Iara in the 19th century but are no longer extant. Signs of mining and habitation are also known in Făgetu Ierii and Surduc. Ancient exploitation probably concentrated around the principal Sf. Iosif gallery, located near Mount Băișorii.

See also Făgetu Ierii, Iara, Surduc, Valea Ierii.

Descriptive Location:

West of Băișoara, on the tributary of the Ierța (Iara, Arieș) in the basin of the Mureș and valley of the Arieș Rivers.

Alternative Names:
Banya, Járabánya, Kisbánya, Baia Mică, Kleingrub

Commune:	Băișoara		
County:	Cluj		
Coordinates:	46.575556 23.467500		
Metals Mined:	Au, Ag	**Mine Type**:	Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Boroneanț (2009), CHBR (2006); OxREP DB; Popa (2002); RepCJ; TIR L34; Tudor (1968) 202; Wollmann (1996) 148–9.

10 BĂIȚA

Underground mining galleries, especially for silver, are located on the Măgura Massif. Some measure 2 m high by 0.56 to 0.65 m wide. Hydraulic installations were still observable in the 19th century, as were traces of stone and brick masonry. Chance discoveries include tiles, mosaics, traces of murals, a lamp (stamped MVRRI), water conduits, hoard (Trajan to Septimius Severus), pots, and mining tools. Evidence of a Roman settlement between the Cornet and Sfredel Hills at Fizeș village is known. A wooden wheel found in a mine is possibly from Fizeș.

See also Barbura, Căinelul de Sus, Crăciunești, Fizeș, Hărțagani, Ormindea, Trestia.

Descriptive Location:

15 km away from Vețel (Micia). Near Băița tributary in the Mureș basin, Metaliferi Mountains.

Alternative Names:
Boița (colloq.), Boica, Medvepataka, Pernseifen, Boicza

Commune:	Băița		
County:	Hunedoara		
Coordinates:	45.911944 22.567708		
Metals Mined:	Au, Ag	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Verified

Sub-Site: Băița – Câinele de Sus
Băiță – Măgura
Dealul Ghergheleului

Working: Băița – Câinele de Sus Roman gold mining (RAN 88109.05)
Băița-Măgura mining centre (RAN 88109.03)
Băița-Dealul Ghergheleului Roman gallery 1 (RAN 88109.04)
Băița-Dealul Ghergheleului Roman gallery 2 (RAN 88109.07)
Băița-Dealul Ghergheleului Roman gallery 3 (RAN 88109.08)
Băița-Dealul Ghergheleului Roman gallery 4 (RAN 88109.09)
Băița-Dealul Ghergheleului Roman gallery 5 (RAN 88109.10)

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 12, 17, 19; Davies (1935) 202; Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 191; Wollmann (1996) 130–1.

11 BĂLAN

Now defunct, Bălan was one of Transylvania's most important copper-mining centres in the early modern and contemporary periods. Its iron deposits were depleted by the beginning of the 18th century, but copper was subsequently discovered. Reports of Roman activity are probably spurious as no other Roman finds are known.

Descriptive Location:

In the Ciuc Depression, close to the source of the Mureș and Olt rivers, in the Hășmaș Mountains.

Alternative Names:
Kupferbergwerk, Balánbánya, Csíkbalánbánya

Commune:	Sândominic		
County:	Harghita		
Coordinates:	46.583750 25.791500		
Metals Mined:	Cu	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Spurious

Sub-Site:	None
Working:	None

Bibliography: Christescu (1929) 30; Davies (1935) 207; RAN 85779.02; Wollmann (1996) 150.

12 BERZOVIA

Remnants of an earth mound, possibly from gold washing, or remains of slag dumps from smelting. The Roman fort of *Bersobis*, where *Legio IV Flavia Felix* was stationed, was located here. Late-Roman ore reduction kilns from the 3rd–4th centuries AD have also been found at Valea Stoicoane and Ibor, and a settlement from the same period at Grădinile Popii, 2 km south-east from the commune in Pârâului Fizeș valley.

Descriptive Location:

Bârzava River, west of Bocșa and the Dognecea Mountains.

Alternative Names:
Berzobia, Bersobis, Berzobis, Zsidovin

Commune:	Berzovia		
County:	Caraș-Severin		
Coordinates:	45.433056 21.615000		
Metals Mined:	Au, Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Luca (2010); TIR L34; Wollmann (1996) 235.

13 BISTRA

Traces of Roman gold washing reported in the 19th century, along with finds of mining tools and objects and a coin from Caracalla (AD 212–218).

Descriptive Location:

On the Bistra River.

Alternative Names:
Bisztra

Commune:	Bistra		
County:	Alba		
Coordinates:	46.378701 23.102108		
Metals Mined:	Au	**Mine Type**:	Alluvial Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: CHBR (2006); Christescu (1929) 12; Davies (1935) 203 n. 3; OxREP DB; Popa (2002); RepAB; TIR L34; Wollmann (1996) 148 n. 99.

14 BOCȘA

Mostly iron mining, from the Roman to modern period, but gold, silver, and tin were also exploited. Finds include lamps, iron bars, hoes, hammers, wedges, bricks stamped with *Legio IV Flavia Felix*, and a hoard (AD 70–251).

See also Dognecea.

Descriptive Location:

At Cracul cu Aur mining point, in the Bârzava river valley (Mureș), the Dognecei Mountains.

Alternative Names:
Boksánbánya, Bokschan, Neuwerk, Pogschan, Bogșa

Commune:

County: Caraș-Severin

Coordinates: 45.371910
21.719919

Metals Mined:	Au, Ag, Fe	**Mine Type**:	Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Verified

Sub-Site: Bocșa
Working: Bocșa – Cracul cu Aur gold mine (RAN 50978.15)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB; RAN; Wollmann (1996) 235.

15 BOLVAŞNIȚA

Possible traces of gold extraction, with some evidence of ore-washing installations. Ceramics and Roman coins from the 3rd century were also found, as well as a Roman rural settlement. Gold washing is reported as having occurred since prehistoric times.

See also Borlova.

Descriptive Location:

5 km upstream from the Roman camp at Mehadia on the Bolvașnița tributary (Timiș). Located in the Mehadia River valley, in the Cerna Mountains.

Alternative Names:
Bolvás, Bolwaschnitza, Polvaschniza

Commune:	Bolvașnița		
County:	Caraș-Severin		
Coordinates:	45.345189 22.308985		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	Yes	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB; TIR L34.

16 BORLOVA

Traces of gold extraction in mines and through washing. An installation for washing gold ore was found, as well as ceramics and a hoard containing hundreds of coins, the latest dating to Constantius in the 3rd century. Gold washing is reported as having occurred since prehistoric times.

See also Bolvaşnița.

Descriptive Location:

On the Sebeș tributary, in the Timiș River valley, the Țarcului Mountains.

Alternative Names:
Borló

Commune:	Turnu Ruieni		
County:	Caraș-Severin		
Coordinates:	45.366667 22.350000		
Metals Mined:	Au	**Mine Type**:	Alluvial Underground?
Prehistoric Activity:	Yes	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Probable

Sub-Site:	None
Working:	None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB; TIR L34.

17 BUCIUM

Extensive surface mining of gold (Ieruga, Maria Loretto), as well as evidence of underground works (Petru și Pavel). In the underground galleries, water lifting wheels were found in 1929 at Bucium. Remains of a canal leading from Breaza Mountain and water reservoirs for collecting water suggest hydraulic mining methods like that used in Spain were being employed at the surface mines. Exploitation points, unprocessed ore, and basins and channels for ore processing are still visible on Vulcoi-Corabia. Plentiful mining-related artefacts have been found in the general area. Finds include mining tools, ore-crushing equipment, a stamped lamp (FESTI), and a votive altar dedicated to Zeus Kimistenos. A mining settlement and large necropolis are known at Vulcoi-Corabia near the surface mines but have not been thoroughly researched since the mid-20th century. Amongst the grave inventories were coins from Trajan, Hadrian, and Antoninus Pius.

Descriptive Location:

Located south and south-east from Bucium commune in the Breaza and Corabia Mountains, Arieș river valley, Metaliferi Mountains.

Alternative Names:
Buciumile

Commune:	Bucium		
County:	Alba		
Coordinates:	46.264000 23.176000		
Metals Mined:	Au	**Mine Type**:	Surface opencast Hydraulic Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	Limited	**Reliability**:	Researched

Sub-Site:	Citera Slăveșoi Vulcoi-Corabia
Working:	Citera Slăveșoi – Sf. Petru și Pavel gallery (RAN 3468.03) Vulcoi-Corabia – Ieruga opencast Vulcoi-Corabia – Gaura Perii opencast Vulcoi-Corabia – La Poduri ore processing Vulcoi-Corabia – Boteș necropolis Vulcoi-Corabia – La Poduri necropolis

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 19-20; Davies (1935) 198–201; OxREP DB; Popa (2002); RAN; RepAB; TIR L34; Tudor (1968) 196–7; Wollmann (1996) 140–2, 156–8, 225–8.

18 BUCUREŞCI

Possible traces of Roman gold extraction were discovered at the village's border. Popa (2002) mentions gold washing.

Descriptive Location:

East of Crișcior. In the Crișul Alb river valley, the Metaliferi Mountains.

Alternative Names:
Bukuresd

Commune:	Bucureșci		
County:	Hunedoara		
Coordinates:	46.128056 22.903056		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	None
Working:	None

Bibliography: Luca (2008); Popa (2002); RAN 88877.01; TIR L34.

19 CARACIU

During the Roman period, Caraciu was an important gold-exploitation centre of the westernmost sector of the Crișul Alb valley. A Roman mining settlement, galleries, and gravel heaps from ore washing are known at Măgura Hill. Sand and gravel mounds from ore washing can also be seen at Valea Șteampurilor, whereas surface mining occurred at Marcul. Mining tools have also been found.

See also Baia de Criș, Ribița, Țebea.

Descriptive Location:

Măgura Hill, in the Crișul Alb river valley, the Metaliferi Mountains.

Alternative Names:
Căraci

Commune:	Baia de Criș		
County:	Hunedoara		
Coordinates:	46.189402 22.701549		
Metals Mined:	Au	**Mine Type**:	Alluvial Surface opencast
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Verified

Sub-Site: Baia de Criș – Căraci
Working: Căraci – Valea Șteampurilor (RAN 87772.02)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); Popa (2002); TIR L34; Tudor (1968) 193; Wollmann (1996) 132–3.

20 CĂINELUL DE SUS

Part of the mining activity occurring in Băița commune. Téglàs reported traces of mining in the surrounding hills and in the precincts of the modern villages of Căinelul, Trestia, Ruda, Măgura-Caraci, Dealul Ungurului, Fericiaua, and Poiana Techeruc. Chance finds of Roman bricks and coins suggest the presence of a mining settlement. The older specialist literature reported traces of exploitation north of Băița, towards Valea Câinelui, and a Roman settlement beneath the modern village at Căinelu de Jos. An antique mining map from 1777 locates the ancient exploitation in the mining area belonging to the "Simon și Iuda" association, where the entrance to a collapsed ancient gallery that exploited an Au-Ag vein can be found next to the abandoned medieval galleries.

See also Băița, Barbura, Crăciunești, Fizeș, Hărțagani, Ormindea, Trestia.

Descriptive Location:

Near Băița mining spot. Basin of the Mureș River, the Metaliferi Mountains.

Alternative Names:
Căineni, Kayanthw, Kayantheu, Kayanfew

Commune:	Băița		
County:	Hunedoara		
Coordinates:	46.047252 22.893703		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	Căinelu de Sus – Tailings heap Căinelu de Sus NE
Working:	Căinelu de Sus Gallery 1 (RAN 88127.01) Căinelu de Sus Gallery 2 (RAN 88127.02) Căinelu de Sus Gallery 3 (RAN 88127.03) Căinelu de Sus Gallery 4 (RAN 88127.04) Căinelu de Sus – Gherghina Roman galleries (RAN 88127.05) Căinelu de Sus – Josefi Roman gallery (RAN 88127.06)

Bibliography: Boroneanț (2000); CHBR (2006); Davies (1935) 206; Luca (2008); Popa (2002); RAN; Tudor (1968) 192; Wollmann (1996) 132.

21 CÂMPENI

Traces of gold washing in the form of gravel heaps, ditches, and pits on both banks of the Arieș. Roman coins were also found close to the village and in the heights of this locale.

See also Avram Iancu-Vidra de Sus, Vidra.

Descriptive Location:

North of Abrud and Roșia Montană, in the Arieș river valley, the Metaliferi Mountains.

Alternative Names:
Cîmpeni, Topesdorf, Topánfalva

Commune:

County:	Alba		
Coordinates:	46.362500 23.045556		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Christescu (1929) 12; Davies (1935) 203 n. 3; RepAB; TIR L34; Tudor (1968) 202.

22 CIB

Traces of numerous gold and mercury exploitations in the village's territory, as well as the discovery of digging tools. Roman ceramics attest the presence of some mining settlements at Fața Măgurii at the village's border, and at Ruptura in Cib-Chei hamlet, 3 km south of Cib. Numerous Roman material remains were found in these places and collected in a local collection.

See also Almașu Mare, Poiana, Stănija, Techereu, Valea Dosului, Vălișoara, Zlatna.

Descriptive Location:

Near Cheile Glodului. In the Metaliferi Mountains, south-west of Zlatna.

Alternative Names:
Cseb, Tropfbach, "Pârâul care picură"

Commune:	Almașu Mare		
County:	Alba		
Coordinates:	46.060833 23.190000		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	None
Working:	None

Bibliography: Popa (2002); RepAB; TIR L34; Tudor (1968) 189; Wollmann (1996) 138.

23 CICLOVA MONTANĂ

Copper ores were probably known as early as the Bronze Age or Roman period, but systematic exploitation did not begin until the 18th century under the Hapsburgs (1718–1719). Mining was modernised after 1854 by the Austrian company, STEG, and exploitation continued into the 20th century. Ciclova Montană and neighbouring Oravița—which Davies notes was also one of the principal mines of the Banat—constitute the same copper ore field.

See also Ciclova Romană.

Descriptive Location:

In Ciclova valley, Caraș river basin, the Aninei Mountains.

Alternative Names:
Csiklovabánya, Csiklóbánya, Németcsiklova, Montan-Tschiklowa, Deutsch-Tschiklowa

Commune:	Ciclova Română		
County:	Caraș-Severin		
Coordinates:	45.025870 21.732040		
Metals Mined:	Cu	**Mine Type**:	Uncertain
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site:	Ciclova Montană
Working:	Ciclova Montană copper mining

Bibliography: Boroneanț (2000); Davies (1935) 207; Luca (2010); RAN 51136.04.

24 CICLOVA ROMÂNĂ

Exploitation of iron deposits in the Roman and medieval periods. Modernisation occurred after 1854 under the Austrian company STEG (Staatseisenbahn Geselschaft). A Dacian-Roman settlement was discovered at the end of the meadow, at the border with Răcășdia. Another Daco-Roman settlement dating to the 3rd–4th centuries AD with remains of iron metallurgy and a 14th-century medieval settlement can be found at Dealul Mare. The 4th-century settlement at Sălișteor Vraniul Mare also had traces of iron metallurgy.

See also Ciclova Montană.

Descriptive Location:

In the Ciclova valley, the Aninei Mountains.

Alternative Names:
Csiklófalu, Csiklólu, Tschiklowa

Commune:	Ciclova Română		
County:	Caraș-Severin		
Coordinates:	45.009444 21.705833		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2010); RAN 51957.05; TIR L34; Tudor (1968) 62; Wollmann (1996) 235.

25 CÎRŞU

The *TIR* notes the presence of mineral exploitation here. Traces of ancient ruins and a *sestertius* of Trajan have also been reported.

Descriptive Location:

On Râieni stream, tributary of the Motru river (Jiu river valley).

Alternative Names:
Carsisu, Cârsisu, Cârciu, Carciu

Commune:	Bala		
County:	Mehedinți		
Coordinates:	44.900000 22.824722		
Metals Mined:	Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: TIR L34; Tudor (1968) 307.

26 CRĂCIUNEŞTI

Possible traces of Roman mining activity. D. Tudor, citing M. Pálfy (1910), claims that mining occurred at Crăciunești; this is mentioned in some documents but is not well known. This may be the same mine as the one at Băița-Crăciunești.

See also Băița, Barbura, Căinelu de Sus, Fizeș, Hărțagani, Ormindea, Trestia.

Descriptive Location:

Geoagiu tributary (Mureș) in the Mureș river valley, the Metaliferi Mountains.

Alternative Names:
Krecsunesd

Commune:	Băița		
County:	Hunedoara		
Coordinates:	46.012535 22.868160		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	Dealul Sfredel Băița – Crăciunești
Working:	Dealul Sfredel – Fățuța slope (RAN 88136.11) Dealul Sfredel – Surface working 1 (RAN 88136.12) Dealul Sfredel – Surface working 2 (RAN 88136.14) Dealul Sfredel – Surface working 3 (RAN 88136.15) Crăciunești – Pârâul Băița (RAN 88136.05)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; RAN; TIR L34; Tudor (1968) 191.

27 CRICIOVA

Iron was exploited here. Roman remains were found on the south-eastern outskirts of Criciova in the 19th century. At Râtul lui Mocrean, a Daco-Roman reduction kiln was found in the settlement, which was located on a high terrace above the Timiș, 300–350 m west of the Găvojdia–Nădrag railway. Traces of a Roman construction (*villa rustica*) from the 3rd century AD were also identified at Tramnic on the margin of the commune, 300 m away from the national road.

Descriptive Location:

In the Timiș valley, the Poiana Ruscă Mountains.

Alternative Names:
Kricsó

Commune:	Criciova		
County:	Timiș		
Coordinates:	45.633056 22.066667		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	None
Working:	None

Bibliography: Boroneanț (2000); Luca (2010); RAN 156543.02; Tudor (1968) 61.

28 CRIȘCIOR

V. Wollmann identified several old mining works in Valea Arsului (Arz Valley) using 19th century mining maps in 1962–63 and 1979. A series of surface workings followed Steovina vein on the left bank of Valea Arsului. Another row of old, collapsed mines was identified between Prislop and Barza, but all traces have since disappeared. Also found in this area was an iron mortar for crushing gold ore that is generally believed to be Roman, but there are no discernible grounds for the Roman date. Some of the older literature attributes the mortar's find spot to Crișcior village. The TIR associates the mortar with Roman gold-washing activity in the area, which also occurred in the medieval period.

Descriptive Location:

Near Brad. In the Crișul Alb river valley, the Metaliferi Mountains.

Alternative Names:
Cristior, Kristyor

Commune:	Crișcior		
County:	Hunedoara		
Coordinates:	46.123472 22.866127		
Metals Mined:	Au	**Mine Type**:	Alluvial Surface opencast Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site:	Valea Arsului Crișcior
Working:	Valea Arșului – Crișcior mine (Petru și Pavel) (RAN 87399.01) Crișcior gold mining (RAN 87371.02)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 192; Wollmann (1996) 136.

29 DOGNECEA

Traces of shafts for gold, silver, copper, lead, and iron exploitation at Iuda și Simon mining zone that continued into the medieval, modern, and contemporary periods. Lead was used for melting and separating the gold ore. At the border of Izvorul Alb, close to the road crossing the mountain to Reșița, three reduction kilns for ore and pottery dated to the 4th century were discovered in 1978. A Daco-Roman settlement dating from the 3rd–4th centuries AD was also located here.

See also Bocșa.

Descriptive Location:

On the tributary of the Caraș (Danube), in Dognecea Valley in the Dognecea Mountains.

Alternative Names:
Dognácska

Commune:	Dognecea		
County:	Caraș-Severin		
Coordinates:	45.266667 21.750000		
Metals Mined:	Au, Ag, Pb, Cu, Fe	**Mine Type**:	Alluvial Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site:	Dognecea
Working:	Dognecea – Mining zone Iuda și Simon (RAN 52703.02) Dognecea – Izvorul Alb

Bibliography: Boroneanț (2000); CHBR (2006); Davies (1935) 207; Luca (2010); OxREP DB; RAN; TIR L34; Tudor (1968) 62, Wollmann (1996) 152–3.

30 DUMBRAVA

Iron ore was exploited near Peșterii cu Apă during the Roman period.

Descriptive Location:

Near Raul Peștișul, Cerna river valley, the Poiana Ruscă Mountains.

Alternative Names:
Erdőhát

Commune:	Peștișu Mic		
County:	Hunedoara		
Coordinates:	45.803060 22.784720		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Luca (2008); RAN 90486.02.

31 EIBENTHAL

Copper was exploited here in the Roman period, as well as the medieval, modern, and contemporary periods. Ceramics, canals, and water conduits were also found. After 1875, the mine was re-opened when the area was colonised by Bohemians (Czech) and is still in use today.

See also Tisovița.

Descriptive Location:

Eibenthal stream, in the Danube river valley, the Almaș Mountains.

Alternative Names:
Tisové Údolí, Eibentál, Jeventál

Commune:	Dubova (Plavișevița)		
County:	Mehedinți		
Coordinates:	44.620910 22.257680		
Metals Mined:	Cu	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2010); RAN 112931.12; TIR L34; Tudor (1968) 66.

32 FĂGETU IERII

Traces of gold washing in the village's territory, which may possibly be Roman.

See also Băişoara, Iara, Surduc, Valea Ierii.

Descriptive Location:

Near Băișoara. On the Iara River, in the Mureș basin.

Alternative Names:
Făgetul Ierii, Bicălat, Bicalat, Bikalat

Commune:	Iara		
County:	Cluj		
Coordinates:	46.538611 23.522500		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	None
Working:	None

Bibliography: Popa (2002); TIR L34; Tudor (1968) 202; Wollmann (1996) 149.

33 FIZEŞ

Traces of gold mines and Roman mining settlements between Cornet and Sfredel Hills were reported here in 1906 by K. Papp. A hub of a water-lifting wheel for mine drainage was also found in the general area.

See also Băița, Barbura, Căinelu de Sus, Crăciunești, Hărțagani, Ormindea, Trestia.

Descriptive Location:

Near Băița, between Cornet and Sfredel Hills. In the Brăniștea Valley in the Mureș river basin, Metaliferi Mountains.

Alternative Names:
Füzesd, Fyzesd

Commune:	Păuliș		
County:	Hunedoara		
Coordinates:	45.996398 22.882238		
Metals Mined:	Au	**Mine Type**:	Surface opencast Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Probable

Sub-Site: Fizeș
Working: Fizeș Roman mine and settlement (RAN 88145.02)
Fizeș Roman gold mining (RAN 88145.03)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 191; Wollmann (1996) 130.

34 GHELARI

Evidence for Roman exploitation of iron includes pits, subterranean workings, and mining tools (spade, chisel, hammer-pickaxe). Other finds included a stamped lamp (FESTI), a human skeleton, and coins. An iron foundry with several workshops for preparing metal for export is also known. A mining settlement was also identified here. The extent and scale of Roman mining cannot be determined, however, as intense activity during the medieval through to the modern period has destroyed the earlier remains. S. Fridwalski reported that the mine was in operation in 1767. Before 1861, the subterranean galleries were abandoned, and mining took place on the surface only. Underground exploitation began again in 1863.

See also Alun, Hunedoara, Ruda, Teliucul Inferior.

Descriptive Location:

On a left tributary of the Mureș, Cerna river valley, the Poiana Ruscă Mountains.

Alternative Names:
Ghelar, Gyalár

Commune:	Ghelari		
County:	Hunedoara		
Coordinates:	45.709700 22.789720		
Metals Mined:	Fe	**Mine Type**:	Surface opencast Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	Limited	**Reliability**:	Verified

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 30, 77; Davies (1935) 208; Luca (2008); Popa (2002); RAN 86892.04; TIR L34; Tudor (1968) 111; Wollmann (1996) 233–4.

35 HĂRȚĂGANI

Faint evidence for mining activity on Măgura Băii and Cărbunarilor Hill around the main vertical fissure locally known as Vâlva Mică, Vâlva Mare, and Vâlva Roșie. The chance find of a coin of Antoninus Pius around Sf. Andrei gallery suggests a Roman presence. The Romans presumably used the spring near Sf. Andrei's gallery, which was still in use in 1717.

See also Băița, Barbura, Căinelu de Sus, Crăciunești, Fizeș, Ormindea, Trestia.

Descriptive Location:

Basin of the Crișul Alb, the Metaliferi Mountains.

Alternative Names:
Hercegány

Commune:	Băița		
County:	Hunedoara		
Coordinates:	46.058208 22.943132		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site:	Măgura Băii Hărțăgani
Working:	Hărțăgani – Măgura Băii mining gallery 1 (RAN 88154.02) Hărțăgani – Măgura Băii mining gallery 2 (RAN 88154.04) Hărțăgani – Măgura Băii Roman gallery (RAN 88154.05) Hărțăgani – Măgura Băii surface exploitation (RAN 88154.06) Hărțăgani Roman gold mine (RAN 88154.03)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 192; Wollmann (1996) 132.

36 HONDOL

Roman exploitation of a gold vein occurred at Coranda Hill, on the town's periphery. Traces of old mining works were visible in the 19th century on the western slope of Măgura-Toplița, about 20 m from the banks of Toplița. The Hondol and Săcărâmb mines constitute the same complex.

See also Măgura-Toplița, Săcărâmb.

Descriptive Location:

Geoagiu valley, in the Mureș river basin, the Metaliferi Mountains.

Alternative Names:
Hondolen

Commune:	Certeju de Sus		
County:	Hunedoara		
Coordinates:	45.989259 22.984224		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: Hondol
Working: Hondol Roman gold mining (RAN 89286.03)
Hondol – Coranda (RAN 89286.02)

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 191; Wollmann (1996) 131.

37 HUNEDOARA

Traces of a settlement, necropolis, military guard post, and iron exploitation. Finds include a large hoard, with the latest pieces dating to Constantine, as well as remnants of Roman buildings and stamped brick tiles near Corvin Castle. A Roman settlement and legionary guard post were probably present there. Plentiful Dacian and Roman ceramic material were also found at Sânpetru Hill. A funerary altar and remains of a Roman brick sarcophagus found on the road to Simeria to the north of Hunedoara, near the C.G.R.R. railway station, indicate the existence of a necropolis.

See also Alun, Ghelari, Ruda, Teliucul Inferior.

Descriptive Location:

In the foothills of Sânpetru, in the confluence of the Cerna and Zlași rivers.

Alternative Names:
Hunyad, Vajdahunyad, Eisenmarkt, Hanedejn, Thurndorf, Târgu Fierului

Commune:

County:	Hunedoara		
Coordinates:	45.784165 22.930441		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Luca (2008); Popa (2002); TIR L34; Tudor (1968) 111.

38 IARA

Traces of Roman buildings, *tegulae mammatae*, and ceramics were found at Groapa lui Papa on the road to Băișoara, indicating a settlement of miners related to the mining activity observed in neighbouring Băișoara. Two coins were found within the village: one was a *denarius* of Severus Alexander, and the other a bronze coin of Plotina.

See also Băișoara, Făgetu Ierii, Surduc, Valea Ierii.

Descriptive Location:
South-east of Băișoara, on the Iara River, in the Arieș basin.

Alternative Names:
Alsójára, Jahren

Commune:	Iara		
County:	Cluj		
Coordinates:	46.553146 23.516727		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Popa (2002); TIR L34; Tudor (1968) 202; Wollmann (1996) 149.

39 ISCRONI

Traces of extraction in the Vulcan Mountains and gold washing on the upper course of the Jiu dating to the Roman period. Gold washing also occurred in the medieval period.

See also Lupeni, Petroșani, Uricani.

Descriptive Location:

Jiu Valley, Vulcan Mountains.

Alternative Names:
Alsóbarbatyeniszkrony

Commune:	Aninoasa		
County:	Hunedoara		
Coordinates:	45.409798 23.314381		
Metals Mined:	Au	**Mine Type**:	Alluvial Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible
Sub-Site:	None		
Working:	None		

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN 87237.01; TIR L34; Tudor (1968) 111.

40 LUPENI

The Romans exploited the iron resources here. According to some authors, gold was exploited since the Bronze Age. Traces of medieval gold washing have also been found in the area.

See also Iscroni, Petroșani, Uricani.

Descriptive Location:

On Jiul de Vest, in the Petroșani basin, the foothills of the Retezat and Vâlcan Mountains.

Alternative Names:
Lupény, Schylwolfsbach. Formerly Farcaşfalău, Farkaslaka.

Commune:

County:	Hunedoara		
Coordinates:	45.352145 23.210820		
Metals Mined:	Au, Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Luca (2008); RAN 87068.04; Wollmann (1996) 234.

41 LUPȘA

Evidence for gold washing consists of mounds and pits in the Arieș valley. Possible traces of Roman settlement at Hădărău (Ralii Creek) may be linked to the exploitation of gold. Roman ceramics and objects were found in the alluvial deposits there.

Descriptive Location:

Near Baia de Arieș.

Alternative Names:
Nagylupsa, Wolfsdorf

Commune:	Lupșa		
County:	Alba		
Coordinates:	46.369096 23.206326		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: CHBR (2006); Christescu (1929) 12; Davies (1935) 203 n. 3; OxREP DB; Popa (2002); RepAB; TIR L34.

42 MAIDAN

Roman gold mining probably took place here along with the exploitation of the copper veins, as well as the possible exploitation of other metals. Mining also occurred in the medieval period. Stone building remains—possibly Roman—and coins were also found. Traces of a Daco-Roman settlement and remains of iron metallurgy from the 3rd–4th centuries were found at Cetate and Ogașul Liubii.

Descriptive Location:

Caraș basin, Aninei Mountains.

Alternative Names:
Bradișoru de Jos (as of 1924)

Commune:	Oravița		
County:	Caraș-Severin		
Coordinates:	45.078333 21.714444		
Metals Mined:	Au, Cu	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB; RAN 51163.06; TIR L34; Wollmann (1996) 152.

43 MARGA

Traces of gold extraction, and possibly the exploitation of other metals. *Mansio* Mp. XV before Roman *Sarmizegetusa* was located here on the border with Voislova.

Descriptive Location:

Bistra river valley, in the Timiș valley, Muntele Mic.

Alternative Names:
Márga

Commune:	Marga		
County:	Caraș-Severin		
Coordinates:	45.504625 22.518912		
Metals Mined:	Au	**Mine Type**:	Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible
Sub-Site:	None		
Working:	None		

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB; RAN 53229.02; TIR L34; Tudor (1968) 44.

44 MĂGURA-TOPLIȚA

Possible Roman gold extraction. Gold mines are known at the village periphery, 20 m from the bank of Toplița stream, on the west slope of the hill. A Roman funeral urn was also found.

See also Hondol, Săcărâmb.

Descriptive Location:

Geoagiu river valley (Mureș), in the Mureș basin, Metaliferi Mountains.

Alternative Names:
Măgura, Maguren

Commune:	Certeju de Sus		
County:	Hunedoara		
Coordinates:	45.979816 22.937010		
Metals Mined:	Au	**Mine Type**:	Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN 89295.02; TIR L34; Tudor (1968) 191; Wollmann (1996) 131.

45 MĂNERĂU

D. Tudor mentions the rural exploitation of iron here. A *villa rustica* is known at the border of Rovina or Cărămizi point, on the right bank of the brook that crosses the village.

See also Peștișu Mare, Peștișu Mic.

Descriptive Location:

At the eastern foot of the Poiana Ruscă Mountains, in the Cerna valley, a tributary of the Mureș.

Alternative Names:
Magyarosd

Commune:	Peștișu Mic		
County:	Hunedoara		
Coordinates:	45.788400 22.883510		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2008); RAN 90501.02; Tudor (1968) 113.

46 MESTEACĂN (BRAD)

Traces of Roman gold extraction found in the village's perimeter, but no precise date identified. Martón Roska believed that the gold deposits were mined in the Bronze Age and medieval periods as well.

Descriptive Location:

Downstream from Brad, in the hills near the Crișul Alb alluvial plain.

Alternative Names:
Mesztákon, Nyírfalva

Commune:

County: Hunedoara

Coordinates: 46.152200
22.765250

Metals Mined:	Au	**Mine Type**:	Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: CHBR (2006); Luca (2008); OxREP DB; Popa (2002); RAN 87317.02; TIR L34; Tudor (1968) 192.

47 MESTEACĂN (RĂCHITOVA)

Traces of Roman and medieval gold mining were found at the outskirts of the village. It is possible that the RAN and Luca (2008) have listed the site twice, in which case the Mesteacăn village in Răchitova is more likely to have been incorrectly reported as a gold-mining site.

Descriptive Location:

Eastern part of the Poiana Ruscă Mountains.

Alternative Names:
Nyiresfalva

Commune:	Răchitova		
County:	Hunedoara		
Coordinates:	45.634000 22.736940		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Luca (2008); RAN 90789.01.

48 MOLDOVA NOUĂ

Evidence for extensive mining, possibly of iron, but the extraction of gold, silver, copper and lead also occurred. The main mining points were at Ogașul Băieșului and Cânepiște, where functional Roman and medieval galleries were also discovered. Partly destroyed housing and substructures of workshops from the 2nd–3rd centuries, along with traces of a necropolis, were uncovered at the confluence of the Bătrânei and Ogașul Băieșului valleys. A 3rd–4th century rural settlement on the Roman road on the Danube's left bank has also been identified at Seliște or Săliște, as well as a small stone fort without towers (*statio*?). Another settlement dating to the same period was discovered at În Vii.

See also Vărad.

Descriptive Location:

Clisura Dunării in the Boșneag Valley, Locvei Mountains.

Alternative Names:
Újmoldova, Nová Moldava, Neumoldowa, Nova Moldava, Boșniak

Commune:

County:	Caraș-Severin		
Coordinates:	44.726451 21.661303		
Metals Mined:	Au, Ag, Pb, Cu, Fe	**Mine Type**:	Underground
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	Limited	**Reliability**:	Verified

Sub-Site: Cânepiște
Working: Ogașul Băieșului and Cânepiște (RAN 51065.17)

Bibliography: Boroneanț (2000); Bozu (2010); CHBR (2006); Christescu (1929) 12; Davies (1935) 207–8; Luca (2010); OxREP DB; RAN; TIR L34; Tudor (1968) 61, 65–6; Wollmann (1996) 150–2.

49 MORAVIȚA

Traces of Roman mining existed in Moravița commune, but no precise information is known. Some remains of Roman rural settlement can be found in the marshland where the rivers Moravița and Semnica meet.

Descriptive Location:

Near the Romanian-Serbian border on the Moravița River, a tributary of the Timiș.

Alternative Names:
Temesmóra, Moravicza, Morawitz

Commune:	Moravița		
County:	Timiș		
Coordinates:	45.255833 21.270000		
Metals Mined:	Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: TIR L34; Tudor (1968) 54.

50 NERA

The location of Nera is not precisely known, but Boroneanț believes it to be Slatina-Nera. Traces of mining, possibly ancient, and remains of a Roman road known. No confirmed Roman exploitation, but there was a pre-Roman settlement and medieval mining at Slatina-Nera. Gold washing probably also occurred. Traces of 3rd–4th century metallurgical activity were found at Câmpul Petrilei, and a 2nd–3rd century settlement on the right side of the Ciuchici–Sasca Montană road, 1 km away from Slatina-Nera.

Descriptive Location:

Nera river valley, Locvei Mountains.

Alternative Names:
Slatina-Nera, Néraszlatina

Commune:	Sasca Montană		
County:	Caraș-Severin		
Coordinates:	44.915833 21.689444		
Metals Mined:	Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); RAN 53844.05; TIR L34.

51 ORMINDEA

Reported Roman mining gallery that has been built over and transformed into a garage. Part of mining activity in Băița commune.

See also Băița, Barbura, Căinelu de Sus, Crăciunești, Fizeș, Hărțagani, Trestia.

Descriptive Location:

On the Ormindea River, a tributary of the Căian, in the Mureș basin, Metaliferi Mountains.

Alternative Names:
Õrményes, Ormindya, Ormingya

Commune:	Băița		
County:	Hunedoara		
Coordinates:	46.056111 22.853333		
Metals Mined:	Uncertain	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: Ormindea
Working: Ormindea Roman gallery (RAN 88172.01)

Bibliography: RAN.

52 PEŞTERA – "LA PODURI"

A mine of uncertain date is in a cave at La Poduri. Possibly spurious. Boroneanț lists Peștera as located in Cluj county; however, the closest village with the same name is in Alba, in the area bordering Cluj, and the location of the site has been approximated accordingly.

Descriptive Location:

North-east of Peștera on the left bank of the Ocoliș (Arieș). In the Arieș river valley and the basin of the Mureș.

Alternative Names:

Commune:	Ocoliș		
County:	Alba		
Coordinates:	46.476513 23.477960		
Metals Mined:	Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	None
Working:	None

Bibliography: Boroneanț (2000); CHBR (2006); OxREP DB.

53 PEŞTIŞU MARE

Iron exploitation occurred during the Roman period. A rural *vicus* is located to the east of Cerna near the road at Valea lui Ignat, where ceramic material, art objects, inscriptions, and housing remains were also found. A funerary lion was found in the village's territory, and a votive altar on the bank of the Cerna.

See also Mănerău, Peștișu Mic.

Descriptive Location:

On a tributary of the Mureș, Carnei river valley, the Poiana Ruscă Mountains.

Alternative Names:
Peștișul Mare, Alpestes, Unter-Peschtendorf

Commune:	Peștișu Mare		
County:	Hunedoara		
Coordinates:	45.802778 22.928056		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2008); RAN 86874.07; TIR L34; Tudor (1968) 113.

54 PEŞTIŞU MIC

Traces of Roman building foundations, coins, pottery, and two inscriptions (*CIL III*, 1409 and 1410) were found at Valea Bicheului. Historical bibliography from the 19th–20th centuries notes that iron was exploited at Peștișu Mic.

See also Mănerău, Peştişu Mare.

Descriptive Location:

On a tributary of the Mureș, Cerna river valley, the Poiana Ruscă Mountains.

Alternative Names:
Peștișul Mic, Felsőpestes

Commune:	Peștișu Mic		
County:	Hunedoara		
Coordinates:	45.798611 22.885833		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2008); RAN 90440.04; TIR L34; Tudor (1968) 113.

55 PETREŞTI

Traces of Roman mining, as well as bricks have been found.

See also Pianu de Sus / Pianu de Jos.

Descriptive Location:

On the Sebeș River. South of Sebeș and east of Pianu de Sus.

Alternative Names:
Petrifalău, Sânpetru, Petrești-Alba, Péterfalva, Piterschterf, Pitterštref, Pitešdref, Petersdorf

Commune:

County:	Alba		
Coordinates:	46.006944 22.523889		
Metals Mined:	Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: TIR L34.

56 PETROȘANI

Traces of gold extraction and gold washing in the Petroșani basin. A Dacian citadel was located at Druglu Mare, and exploitation probably started in the pre-Roman period. The deposits were worked during the Roman, and possibly also during the medieval, period. According to N. Maghiar and Ș. Olteanu, a bust of Ares was found in one of the washing installations. Roman remains—possibly a military camp—were identified at Gropile lui Pyrrhus at the border of the village, under Capra Mountain, not far from Malea Stream. Between 1868–1869, 2923 Greek and Roman coins were discovered at various locations in the village. Many coins of the 4th century BC were also found here.

See also Iscroni, Lupeni, Uricani.

Descriptive Location:

Jiu river valley, Vulcan Mountains.

Alternative Names:
Petroșeni, Petrozsény, Petroscheni

Commune:
County: Hunedoara
Coordinates: 45.412222
23.373333

Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Davies (1935) 204; Luca (2008); OxREP DB; Popa (2002); RAN 87004.05; TIR L34; Tudor (1968) 110, 113.

57 PIANU DE SUS / PIANU DE JOS

Rural settlement and signs of intense gold extraction using Roman hydraulic mining methods in the hills above the neighbouring villages of Pianu de Sus and Pianu de Jos. Gold washing occurred at Margini, Bora, Carpiniș, Gruiu, Cruele, Căpriș, Tecănel, Cornu, Boanta, and Șarmag. The oldest traces are located at Strungari, south of Pianu de Sus. Mining remains still extant include water reservoirs and numerous channels, mounds, pits, and waste dumps from Roman-period exploitation. A settlement related to the mining yielded discoveries of bricks, ceramics, axes, spearheads, a gold Roman *fibula* (2nd–3rd century), small bronze objects, and an urn. A votive relief was also found in the south-east of Pianu de Jos along with other Roman objects and ceramics. Traces of a Roman building on the outskirts of Pianu de Sus, bordering Săliștea and Vințu de Jos, could be evidence of a *villa rustica.*

See also Petrești.

Descriptive Location:

On the Pianu River, a tributary of the Mureș, in the foothills of the Șureanu Mountains.

Alternative Names:
Pianu de Sus: Pianul Românesc, Pianul din Sus, Felsőpián, Oláhpián, Bleschpien, Rumänisch Pien, Wallachisch-Pien
Pianu de Jos: Alsópián, Szászpián, Detschpien, Pîn, Pin, Deutsch-Pian

Commune:	Pianu		
County:	Alba		
Coordinates:	45.896111 23.483611		
Metals Mined:	Au	**Mine Type**:	Alluvial Hydraulic
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Probable

Sub-Site	Pianu de Jos Pianu de Sus
Working:	Pianu de Jos – La Margini (RAN 6235.03) Pianu de Sus hydraulic gold mining

Bibliography: Christescu (1929) 13; Davies (1935) 203–4; Popa (2002); RAN; RepAB; TIR L34; Tudor (1968) 136; Wollmann (1996) 149–50.

58 POIANA

Traces of rural settlement (wall remains, tiles, and ceramic fragments) and associated gold mining from the Roman and medieval periods were found at the border of the village.

See also Almașu Mare, Cib, Stănija, Techereu, Valea Dosului, Vălișoara, Zlatna.

Descriptive Location:

On the outskirts of Poiana. Near Techereu, in the Metaliferi Mountains.

Alternative Names:
Pojána, Pohlendorf

Commune:	Balșa		
County:	Hunedoara		
Coordinates:	46.086389 23.055278		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site:	None
Working:	None

Bibliography: Luca (2008); Popa (2002); RAN 87923.01; TIR L34.

59 POIANA VADULUI

Traces of gold washing near the village on a small tributary of the Arieș.

Descriptive Location:

18 km west of Câmpeni, in the Arieș valley, the Metaliferi Mountains.

Alternative Names:
Neagra (until 1968), Nyágra, Schwarzenthal, Feketevölgy

Commune:	Poiana Vadului		
County:	Alba		
Coordinates:	46.395556 22.883056		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Christescu (1929) 12 n. 13, 13; Davies (1935) 203 n. 3; TIR L34; Tudor (1968) 202.

60 RIBIȚA

S. Rákóczy reported in 1906 traces of gold exploitation in the vicinity, in the form of a mine opening dug into rock and the washing of gold. Exploitation also took place in the medieval period.

See also Baia de Criș, Caraciu, Țebea.

Descriptive Location:

In the Crișul Alb valley, Metaliferi Mountains.

Alternative Names:
Râbița, Ribice

Commune:	Ribița		
County:	Hunedoara		
Coordinates:	46.183056 22.766389		
Metals Mined:	Au, Uncertain	**Mine Type**:	Alluvial Surface opencast Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible
Sub-Site:	None		
Working:	None		

Bibliography: Boroneanț (2000); Christescu (1929) 13; Davies (1935) 203; Luca (2008); Popa (2002); RAN 90814.02; TIR L34; Tudor (1968) 193; Wollmann (1996) 134.

61 ROȘIA MONTANĂ

This was the main centre of gold exploitation in Transylvania and the site of Roman *Alburnus Maior*. The Trajanic period saw the arrival of at least one specialist mining community (*Pirustae*) from neighbouring provinces, and the most substantial period of Roman mining activity at Roșia Montană. The five main sectors with evidence of Roman activity are Cârnic, Cetate, Orlea-Țarina-Carpeni, Coș-Lety, and Jig-Văidoaia. Of these, Cârnic is the most important and richest in gold, and the best studied, with evidence for complex mining networks consisting of adits, stopes, chambers, stepped accessways, helical staircases, etc. and application of the fire setting technique. Underground galleries were exploited in the method described by Pliny, with pillars left for support in the larger working chambers. Large surface opencasts can be found at Cetate Massif, and evidence for Roman drainage wheels at Paru Carpeni and at Cătălina Monulești in the Coș-Lety sector. Along with extensive evidence for underground and surface mining works, tools, mining artefacts, and a rich array of religious monuments have also been found, as well as several necropoleis and wax tablets attesting the employment of free labour in the Roman mines. The main caches of wax tablets were discovered in 1854 in the Sf. Ladislau gallery and the Sf. Simion and Ferdinand mines. Mining continued into the modern times, and the region still contains Romania's largest gold and silver reserves.

Descriptive Location:

In the hills Cetatea Mare and Cetatea Mică, the Arieș valley, the Metaliferi Mountains.

Alternative Names:
Alburnus Maior, Verespatak, Goldbach

Commune:	Roșia Montană		
County:	Alba		
Coordinates:	46.300000 23.133333		
Metals Mined:	Au	**Mine Type**:	Surface opencast Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	Yes	**Reliability**:	Researched

Sub-Site:
Cârnic
Cârnicel
Cetate
Coș-Lety
Găuri-Hop-Hăbad-Tăul Țapului
Jig-Văidoaia
Nanului Valley
Orlea-Țarina-Carpeni
Tăul Cornei
Tăul Secuilor

Working:

Cârnic – Big Network (1-2-3-4-8-9-10-15) (RAN 6770.01)
Cârnic – Piatra Corbului (Cârnic 6 to 25)
Cârnic – Cănțăliște sector
Cârnic – Corhori sector
Cârnic – Napoleon sector
Cârnicel – Cârnicel mining galleries
Cetate – Cetate opencasts
Coș-Lety – Cătălina Monulești Roman galleries (RAN 6770.11)
Găuri – Găuri Roman mining and settlement
Găuri – Hop-Găuri necropolis (RAN 6770.02)
Găuri – Tăul Găuri necropolis (RAN 6832.02)
Hăbad – Hăbad Roman mining
Hăbad – Hăbad sanctuary (RAN 6832.03)
Hăbad – Hăbad-Brădoaia Roman settlement (RAN 6770.08)
Jig-Văidoaia – Jig-Piciorag necropolis and ore processing (RAN 6770.03)
Nanului Valley – Dalea sanctuary (RAN 6770.16)
Nanului Valley – Drumuș sanctuary
Nanului Valley – Szekely sanctuary
Orlea-Țarina-Carpeni – Păru Carpeni galleries, settlement, necropolis (RAN 6770.05)
Orlea-Țarina-Carpeni – Orlea Roman galleries (RAN 6770)
Orlea-Țarina-Carpeni – Țarina necropolis, ore processing (RAN 6770.04)
Taul Secuilor – Pârâul Porcului necropolis (RAN 6770.06)
Taul Cornei – Taul Cornei necropolis (RAN 6770.12 and 6832.01)
Taul Țapului – Taul Țapului Roman settlement and necropolis (RAN 6770.15 and 6770.17)

Bibliography:

AM I (2003); *AM II* (2005); *AM III* (2008); Boroneanț (2000); Cauuet (2004); Cauuet (2008); Cauuet (2009); Cauuet (2014); Cauuet et al. (2002); Cauuet and Tamaș (2012); CHBR (2006); Christescu (1929) 12, 14, 16, 18, 21, and 24 ff.; Davies (1935) 198–201, 205; OxREP DB; Popa (2002); RAN; RepAB; TIR L34; Tudor (1968) 184, 194–204; Wollmann (1996) 143–6.

62 RUDA

Iron mining took place here in galleries during the Roman, and possibly medieval, period. Luca (2008) also reports a settlement of gold washers during the Roman and medieval periods.

See also Alun, Hunedoara, Ghelari, Teliucul Inferior.

Descriptive Location:

Near Ghelari. Near Ritișoara stream, Cerna river valley, Poiana Ruscă Mountains.

Alternative Names:

Commune:	Ghelari		
County:	Hunedoara		
Coordinates:	46.152200 22.765250		
Metals Mined:	Au, Fe	**Mine Type**:	Alluvial Underground Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible
Sub-Site:	None		
Working:	None		

Bibliography: Luca (2008); Popa (2002); RAN 86927.03; TIR L34; Tudor (1968) 111; Wollmann (1996) 234.

63 RUDA-BRAD

The Roman settlement at Brad depended on neighbouring Ruda and its large gold mines. Roman exploitation concentrated on the southern and northern slopes of Ruda Massif, forming the Ruda-Zdraholț complex. Underground gold mining is attested at many extraction points on hills in Ruda-Brad (Barza, Mreci), with exploitation continuing into the modern period. Galleries with steps exist at Sf. Ana mine, where the water wheel remains were discovered. Two Roman galleries (Ruda 12 Apostoli and Zdrahonț-Sfântul Ioan) measuring about 1.0m high and 0.60–0.70m wide were identified; one ran for 180 m, and the other 160 m. Some scholars believe that the narrow galleries may suggest the use of child labour (*CIL* III.3 and 7). Finds include water-lifting wheels, tools for crushing ore, clay lamps (AOE), pots, coins, and an inscription on a rock (VEP). Traces of Roman activity related to the gold mining have also been identified at the border of Muncelu, where a necropolis of Illyrian miners and funerary stele were found at La Petronești / La Petrinești.

Descriptive Location:

Located 6km south-east of Brad. In the Crișul Alb river valley, Metaliferi Mountains.

Alternative Names:
Ruda

Commune:	Brad		
County:	Hunedoara		
Coordinates:	46.09905 22.81963		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Verified

Sub-Site: Ruda-Brad
Working: Ruda-Brad – Ruda 12 Apostoli & Zdrahonț-Sf. Ioan (RAN 87335.04)
Ruda-Brad – Muncelu (RAN 87335.02)

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 12, 17; Davies (1935) 202; Luca (2008); OxREP DB; RAN; TIR L34; Tudor (1968) 191, 192; Wollmann (1996) 134–5.

64 SASCA MONTANĂ / SASCA ROMÂNĂ

Gold, silver, copper, lead, and iron mining as well as a miners' settlement (3rd–4th century AD). Wollmann notes the exploitation of copper, either started or continued in the Roman period. Exploitation has been found in Besedin Hill, where an inscription was discovered in 1776. Mining also occurred in the medieval period. Traces of a Roman road were also found on the left side of Camenița Valley, about 50 m away from the stream.

See also Știnăpari.

Descriptive Location:

Nera river valley, Locvei Mountains.

Alternative Names:
Szászkabánya

Commune:	Sasca Montană		
County:	Caraș-Severin		
Coordinates:	44.892222 21.724444		
Metals Mined:	Au, Ag, Pb, Cu, Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site:	Sasca Montană – Dealul Tecla
Working:	Sasca Montană Roman mine (RAN 53808.01)

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 12; Davies (1935) 207; Luca (2010); RAN 53835.19; TIR L34; Tudor (1968) 61–2; Wollmann (1996) 152.

65 SĂCĂRÂMB

Roman underground mining of gold tellurium that was visible to the naked eye. Possible Roman exploitation at the southern end of Cetraș Massif, at an altitude of 780 m, of which 25 m was explored by M.J. Ackner in the 19th century. The galleries he saw were small and opened by fire-setting. Gold mining also occurred in the medieval period. V. Boroneanț notes that V. Christescu—followed later by D. Tudor—mentions the gold mine at Săcărâmb, which was not well studied at the time of publication in 1924. Săcărâmb was exploited in the 18th century along with the mines at Băița, Abrud, and Rodna. In 1934, with the richest veins depleted, exploitation shifted to re-working old dumps via washing. Copper was worked in the Roman, medieval, modern, and contemporary periods according to the RAN.

See also Hondol, Măgura-Toplița.

Descriptive Location:

Geoagiu river valley, in the Mureș basin, Metaliferi Mountains.

Alternative Names:
Săcărîmb, Secărâmb, Nagyág, Gross-Astdorf

Commune:	Certeju de Sus		
County:	Hunedoara		
Coordinates:	45.973336 23.041518		
Metals Mined:	Au, Cu	**Mine Type**:	Surface opencast Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Verified

Sub-Site: Săcărâmb
Working: Săcărâmb gold mining (RAN 89311.02)
Săcărâmb copper mine (RAN 89311.03)

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 12; Luca (2008); OxREP DB; Popa (2002); RAN 89311.01; TIR L34; Tudor (1968) 191; Wollmann (1996) 131.

66 SĂLCIUA DE SUS

I. Téglàs reported traces of Roman gold washing on the banks of the Arieș, between the villages of Sălciua de Sus and Sălciua de Jos in the 19th century. Coins dating to the 2nd–3rd century (Marcus Aurelius, Septimius Severus, Severus Alexander) were found, but find spots are unknown. In the wider area, Téglàs also identified gold washing and an underground exploitation destroyed by a road at Lunca Arieșului, 9 km north of Sălciua de Jos, as well as Roman substructures at Cerneuri. Several Roman coins were found at Jidovina or Jidovul, where Téglàs recorded local reports of two digging tools (săpăligi) probably used for processing the alluvial gravel.

See also Baia de Arieș, Vidolm.

Descriptive Location:

On the Arieș River.

Alternative Names:
Felsőszolcsva

Commune:	Sălciua		
County:	Alba		
Coordinates:	46.39432 23.40113		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: CHBR (2006); Christescu (1929) 12; Davies (1935) 203 n. 3; OxREP DB; Popa (2002); RepAB; TIR L34; Tudor (1968) 202; Wollmann (1996) 147.

67 SCĂRIŞOARA

Possible gold-washing installation from the Roman period along the Arieș, which the RepAB reports as alleged stamps for gold washing.

Descriptive Location:

Along the Arieș River.

Alternative Names:
Aranyosfő, Skerischora

Commune:	Scărișoara		
County:	Alba		
Coordinates:	46.466667 22.877500		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: CHBR (2006); OxREP DB; Popa (2002); RepAB; TIR L34; Tudor (1968) 202.

68 SLATINA-TIMIŞ

Exploitation of gold and probably other metals. Mining activity also occurred in the medieval period. The Roman settlement of *Masclianis* is thought to be at Slatina-Timiș. *Masclianis* was also a *mansio* on the *Dierna – Tibiscum* road, and Mp. XIV from *Tibiscum*. A grave inscription as well as traces of a Roman road were found.

Descriptive Location:

Slatina Valley, in the Timiș river valley, Semenic Mountains.

Alternative Names:
Slatina, Masclianis

Commune:	Slatina-Timiș		
County:	Caraș-Severin		
Coordinates:	45.259722 22.283056		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); RAN 54065.05; TIR L34.

69 STĂNIJA

V. Boroneanț reports that G. Téglàs (1906) and N. Macarovici (1946) identified traces of gold mining in all the hills, but especially in the southern area around the village. Galleries opened by pickaxe are known in Dealul Ungurului, Dealul Măgura, Valea Coacăzelor, and on Fericiaua, and are the westernmost workings of the Crișul Alb valley. Associated finds include rotted fragments of wooden gallery propping in the Roșia mine, and bricks, Roman ceramics, mortars, and lamps near the villages. A mining settlement was also identified in association with the gold mines. J. Fridwalsky reported that the Stănija mine operated as a dependent of Zlatna. Copper was also apparently exploited at Stănija in the Roman and medieval periods.

See also Almașu Mare, Cib, Poiana, Techereu, Valea Dosului, Vălișoara, Zlatna.

Descriptive Location:

Geoagiu river valley, in the Mureș basin, the Metaliferi Mountains.

Alternative Names:
Sztanizsa, Stannsdorf

Commune:	Buceș		
County:	Hunedoara		
Coordinates:	46.173056 22.984722		
Metals Mined:	Au, Cu	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Verified

Sub-Site:	Stănija Stănija – Dealul Ungurilor, Măgura & Ferigeaua
Working:	Stănija copper mine (RAN 88840.02) Stănija gold mining (RAN 88840.01)

Bibliography: Boroneanț (2000); Davies (1935) 201; Luca (2008); Popa (2002); RAN; TIR L34; Tudor (1968) 193; Wollmann (1996) 136–7.

70 SURDUC

Traces related to Roman gold washing of the auriferous sand was found in the centre of the village.

See also Băișoara, Făgetu Ierii, Valea Ierii.

Descriptive Location:

Iara tributary, in the Arieș river valley, Muntele Mare.

Alternative Names:
Járaszurduk, Szurdok

Commune:	Iara		
County:	Cluj		
Coordinates:	46.540278 23.545833		
Metals Mined:	Au	**Mine Type**:	Alluvial Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Popa (2002); TIR L34; Tudor (1968) 202; Wollmann (1996) 149.

71 SURDUCU MARE

Gold, silver, copper, and lead exploitation, especially copper and silver mined using vertical, open shafts. The Roman camp of *Centum Putea* was located 1.5 km away at Rovină, north of the commune and in the outskirts of Cîmpinii, where bricks and roof tiles with the stamp of *Leg. IIII F.F.* were found. A necropolis and traces of the *Lederata – Tibiscum* road are also known.

Descriptive Location:

Cornereț tributary, in the Caraș river valley, Dognecea Mountains.

Alternative Names:
Surducul Mare, Nagy Szurdok, Centum Putea, Centum Putei

Commune:	Forotic		
County:	Caraș-Severin		
Coordinates:	45.273528 21.599833		
Metals Mined:	Au, Ag, Pb, Cu	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 30; Davies (1935) 207 n. 12; Luca (2010); OxREP DB; RAN 52892.06; TIR L34; Tudor (1968) 48.

72 ŞTINĂPARI

Roman iron mine at Dealul Chelu, about 3 km north-east of Știnăpari.

See also Sasca Montană / Sasca Română.

Descriptive Location:

North of Cărbunari, Locvei Mountains.

Alternative Names:

Commune:	Cărbunari		
County:	Caraș-Severin		
Coordinates:	44.84572 21.73405		
Metals Mined:	Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: RAN 51868.01.

73 ŞURA MICĂ

Traces of a surface exploitation of an iron-ore deposit related to a rural settlement located in the north-west of Șura Mică commune in Râșloavelor Valley established in the first decades of the 2nd century BC, and persisting until at least the beginning of the 4th century AD. The settlement at Râșloava reached its peak in the Roman period, with remains of dwellings, middens, and plentiful pottery (*terra sigillata*, local Dacian ware). A bronze coin from Hadrian (AD 123–128) was also found in the settlement. Remnants from the 4th–9th century indicate that the area continued to be inhabited after the withdrawal of the Romans from Dacia.

Descriptive Location:

11 km north-west of Sibiu, crossed by the Șura Mică, Ruscior, and Râșnoave streams, in the Cibin Depression.

Alternative Names:
Parvum Horreum, Kiscsűr, Kleinscheuern, Klišeirn, Klišeern

Commune:	Șura Mică		
County:	Sibiu		
Coordinates:	45.832500 24.053611		
Metals Mined:	Fe	**Mine Type**:	Surface opencast
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	Limited	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Popa (2002); TIR L35; Tudor (1968) 138.

74 TECHEREU

Traces of gold exploitation and miners' houses were discovered at the end of the 19th century at the end of the village, in the upper part of the Techereu Valley (Valea Techereului) at Dealul Fericeu. The surface workings consisted of a series of shallow shafts and dumps. Exploitation continued in the medieval period.

See also Almașu Mare, Cib, Poiana, Stănija, Valea Dosului, Vălișoara, Zlatna.

Descriptive Location:

On Valea Mare stream, Mureș river valley, Metaliferi Mountains.

Alternative Names:
Tekerő, Deckendorf

Commune:	Balșa		
County:	Hunedoara		
Coordinates:	46.092222 23.071667		
Metals Mined:	Au	**Mine Type**:	Surface opencast Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site:	None
Working:	None

Bibliography: Davies (1935) 206; Luca (2008); Popa (2002); TIR L34; Wollmann (1996) 136–7.

75 TELIUCUL INFERIOR

Administrative centre of Roman iron mining in Dacia. An inscription found here mentions two *conductores ferrariarum* (G. Garius Gaurianus and Flavius Satericus) who were members of the imperial cult of Marcus Aurelius and probably also a *societas* (*IDR* III/3, 37). Iron was exploited as early as the Dacian period, through to the contemporary period. Under the Romans, iron was mined in opencasts and galleries. Several shafts worked with hammer and chisel were discovered in 1897. Eight were on the border of Ploțca commune and one on Dumbrava Hill. Another five were on the border of Hunedoara commune: three were in the perimeter of the modern St. Stephen's mine, and two in the Grenzenstein mine, where the Roman remains were discovered whilst the mine was in operation. Underground galleries were later discovered at Teliucul Inferior, 20 m east of the modern surface mines. A chiselled inscription was found in a stope measuring 6 m long, 4.5 m wide, and 3 m high. The ancient access gallery on the Cerna's bank was found in 1904 and provided examples of some of the most representative mining tools from Roman Dacia. Traces of a mining settlement were also identified in 1904 at Ploțca Hill south of the commune, in the form of building substructures, a stone altar, and coins from Hadrian to Caracalla. Rural exploitation also occurred at the *villa rustica* at Cinciș. The Cinciș necropolis is located close to the mines.

See also Alun, Ghelari, Hunedoara, Ruda.

Descriptive Location:

Mureș tributary, in the Cerna river valley, Poiana Ruscă Mountains.

Alternative Names:
Teliuc, Teliucu Inferior, Teliucul de Jos, Alsótelek, Telek, Untertelek, Eisenhammer

Commune:	Teliucul Inferior		
County:	Hunedoara		
Coordinates:	45.717778 22.886944		
Metals Mined:	Fe	**Mine Type**:	Surface opencast
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	Yes	**Reliability**:	Researched

Sub-Site:	Teliucu Inferior Cinciș-Cerna
Working:	Teliucu Inferior iron mine (RAN 86945.03) Ploțca (RAN 86945.02) Cinciș – Teliuc iron mine (RAN 86954.05) Cinciș – La Țelină Roman necropolis (RAN 86954.02) Cinciș – La Popeasca villa rustica (RAN 86954.01)

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 30–2; Davies (1935) 208; Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 110–1; Wollmann (1996) 232–3.

76 TINCOVA

Traces of Roman iron exploitation were found. Tudor (1968) notes that gold was also exploited here along the upper reaches of the Timiș valley.

Descriptive Location:

In the Timiș valley, the Poiana Ruscă Mountains.

Alternative Names:

Commune:	Sacu		
County:	Caraș-Severin		
Coordinates:	45.571667 22.140833		
Metals Mined:	Fe, Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Luca (2010); RAN 53782.04; TIR L34; Tudor (1968) 61.

77 TISOVIȚA

Copper was exploited here during the Roman period. Traces of mining (presumably copper?) and water conduits have been found. Medieval mining also known. The modern mine has been here since 1718, when the area was colonised by Bohemians (Czechs).

See also Eibenthal.

Descriptive Location:

On the Tisovița stream of the Danube valley, the Almaș Mountains.

Alternative Names:
Dubova-Tisovița, Disoviza

Commune:	Dubova (Plavișevița)		
County:	Mehedinți		
Coordinates:	44.62091 22.25768		
Metals Mined:	Cu	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); Davies (1935) 207; Luca (2010); RAN 112931.13; TIR L34; Tudor (1968) 66.

78 TRESTIA

Chained skeletons and Roman lamps were reported by G. Téglàs (1883) in collapsed galleries in the Sibilla, Maria Victoria, and Istvan mines. According to V. Boroneanț, the mine was listed amongst the smaller mines. Mining also occurred in the medieval period, and Trestia is mentioned by S. Köleseri in 1717.

See also Băița, Barbura, Căinelu de Sus, Crăciunești, Fizeș, Hărțagani, Ormindea.

Descriptive Location:

South-east of Băița, on the upper course of Văii Fizeșului, Cârteju tributary in the Geoagiu river valley. Part of the Mureș basin, Metaliferi Mountains.

Alternative Names:
Tresztia, Rohrbach

Commune:	Băița		
County:	Hunedoara		
Coordinates:	46.020016 22.933759		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site: Dealul Mialu
Working:
Trestia-Dealul Mialu Roman gallery 1 (RAN 88207.03)
Trestia-Dealul Mialu Roman gallery 2 (RAN 88207.04)
Trestia-Dealul Mialu Roman gallery 4 (RAN 88207.06)
Trestia-Dealul Mialu Roman gallery 5 (RAN 88207.07)

Bibliography: Boroneanț (2000); CHBR (2006); Christescu (1929) 17; Davies (1935) 202; Luca (2008); OxREP DB; RAN; TIR L34; Tudor (1968) 191–2; Wollmann (1996) 131–2.

79 TURNU ROŞU

Traces of Roman copper exploitation on the banks of the Olt south of Turnu Roșu by means of galleries, in front of Cozia Monastery. Finds include isolated coin finds, a hoard (Hadrian to Philip the Arab), and a Dacian lamp.

Descriptive Location:

On the banks of the Olt, near the Turnu Roșu Pass, 24 km south of Sibiu and 79 km south of Mediaș.

Alternative Names:
Rubra Turris, Ridenturm, Rothenturm, Vöröstorony, Verestorony

Commune:	Turnu Roșu		
County:	Sibiu		
Coordinates:	45.642778 24.298611		
Metals Mined:	Cu, Uncertain	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Davies (1935) 206, 207; Popa (2002); TIR L35; Tudor (1968) 61; Wollmann (1996) 150.

80 TURNU RUENI

Traces of gold washing, possibly as early as the prehistoric period, and remains of a Roman road. Roman remains were also found at Dealul Stârminița, 1 km north-east of the commune.

Descriptive Location:

Downstream from Borlova on the Sebeș river, in the northern foothills of Muntele Mic.

Alternative Names:
Sebesromorl

Commune:	Turnu Rueni		
County:	Caraș-Severin		
Coordinates:	45.390556 22.335556		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Luca (2010); TIR L34; Tudor (1968) 61.

81 ȚEBEA

Roman mining galleries running 20 m long have been found on Măgura Hill (Măgura-Caraci) in an area known under various names as Marcul, Șesul Răchitei, and Baia Popilor. The gold vein was followed by directional galleries, as identified by the modern mines of Iosif la Tufe (Iosif Tufa), O Adam (Adamul Vechi), or Petru și Pavel and analysis of the sterile surrounding dumps. Roman mining was preserved in the upper parts of O Adam mine when it was re-opened, with gallery dimensions identical to those reported in the older literature. Water drains have been identified in the O Adam mine. The surface alluvial deposits at Baia de Criș-Țebea were also worked, and several coins from the time of Antoninus Pius and Marcus Aurelius were discovered in the alluvial-mining remains.

See also Baia de Criș, Caraciu, Ribița.

Descriptive Location:

One of the villages of Baia de Criș. Located in the Crișul Alb area.

Alternative Names:
Țebia, Cebe, Czebe

Commune:	Baia de Criș		
County:	Hunedoara		
Coordinates:	46.165616 22.728298		
Metals Mined:	Au	**Mine Type**:	Alluvial Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Verified

Sub-Site: Baia de Criș – Țebea
Working: Țebea – Dealul Măgura mine (RAN 87825.02)

Bibliography: CHBR (2006); Christescu (1929) 12; Davies (1935) 202, 203; Luca (2008); OxREP DB; Popa (2002); RAN; TIR L34; Tudor (1968) 192; Wollmann (1996) 132–4.

82 URICANI

Gold washing occurred in the medieval—and presumably also in the Roman—period. Roman archaeological remains indicate the presence of a settlement, and also at neighbouring Lupeni where Roman remains and traces of medieval gold washing have been found.

See also Iscroni, Lupeni, Petroșani.

Descriptive Location:

On Jiul de Vest, in the Petroșani basin, the foothills of the Retezat and Vâlcan Mountains.

Alternative Names:
Urikány, Hobicaurikány

Commune:

County:	Hunedoara		
Coordinates:	45.336389 23.152500		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: Luca (2008); RAN 87148.02; TIR L34; Tudor (1968) 110.

83 VALEA DOSULUI

Traces of rural settlement and underground mining tunnels on the south-eastern and north-western slopes of Dumbrava Hill, probably dating to the Roman period.

See also Almașu Mare, Cib, Poiana, Stănija, Techereu, Vălișoara, Zlatna.

Descriptive Location:

North-west of Zlatna. Geoagiu river valley, in the Mureș basin, the Metaliferi Mountains.

Alternative Names:
Izvorul Ampoiului (current name)

Commune:	Izvorul Ampoiului		
County:	Alba		
Coordinates:	46.166667 23.166667		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: CHBR (2006); OxREP DB; Popa (2002) *s.v.* Izvoru Ampoiului; RepAB; TIR L34; Tudor (1968) 185.

84 VALEA IERII

Traces of mining from the Roman period, at an unspecified location.

See also Băişoara, Făgetu Ierii, Surduc.

Descriptive Location:

On the Iara river (Arieș tributary), the Apuseni Mountains.

Alternative Names:
Járavize

Commune:	Valea Ierii		
County:	Cluj		
Coordinates:	46.647778 23.346944		
Metals Mined:	Au Uncertain	**Mine Type**:	Alluvial Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Popa (2002); TIR L34.

85 VĂLIŞOARA

Traces of gold mining of uncertain date. A Roman *denarius* was also found in the outskirts of the village. The activity at Porcurea was related to *Almașu Mare* and *Ampelum*, and intensive mining flourished in antiquity on the western slope of Măgura Hill. Exploitation may have also occurred in the Bronze Age and the medieval period according to Luca (2008).

See also Almașu Mare, Cib, Poiana, Stănija, Techereu, Valea Dosului, Zlatna.

Descriptive Location:

Near Hărțăgani, the Metaliferi Mountains.

Alternative Names:
Valisora, Kőfalu, Steindorf, Porcurea (until 1956), Porkura, Schweinsdorf

Commune:	Vălișoara		
County:	Hunedoara		
Coordinates:	46.058473 22.994530		
Metals Mined:	Au	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Davies (1935) 206; Luca (2008); Popa (2002) *s.v.* Porcurea; RAN 91946.01; TIR L34; Tudor (1968) 189; Wollmann (1996) 138.

86 VĂRAD

Gold, silver, copper, and iron exploitation, with Roman cemeteries near the mines. Mining objects (lamps, fragments of silver ore and pyragyrite) were later discovered in 1848. Cohort *I Vindelicorum* was garrisoned nearby. It also had a civil settlement and was a *statio* on the *Lederata – Tibiscum* road. Mining is also believed to have occurred in the pre-historic, Dacian, and medieval periods.

See also Moldova Nouă.

Descriptive Location:

North of Valea Vărad village and north-east of Coronini, in the Clisura Dunării.

Alternative Names:
Valea Văradului

Commune:	Coronini		
County:	Caraș-Severin		
Coordinates:	44.681553 21.700361		
Metals Mined:	Au, Ag, Cu, Fe	**Mine Type**:	Uncertain
Prehistoric Activity:	Yes	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB; RAN 53498.12; TIR L34.

87 VÂRCIOROVA

Possible evidence of Roman mining. V. Boroneanț specifies the exploitation of auriferous sand. Traces of a Roman building were found at La Copaci, about 1.5–2 km south of Vârciorova.

Descriptive Location:

Small village near Porțile de Fier dam. Bolvașnița river valley, in the Timiș basin, Muntele Mic.

Alternative Names:
Gura Văii - Vârciorova, Verciorova, Wertzerova

Commune:	Drobeta-Turnu Severin		
County:	Mehedinți		
Coordinates:	44.734325 22.375058		
Metals Mined:	Uncertain	**Mine Type**:	Alluvial Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site:	None
Working:	None

Bibliography: Boroneanț (2000); CHBR (2006); Luca (2010); OxREP DB.

88 VEȚEL

Possible Roman copper mining near Vețel, on the left bank of the Mureș, with exploitation also occurring in the medieval period. The *castrum* and *vicus* of *Micia* were located nearby at Grădiște. Elsewhere in Vețel commune, small rural settlements linked to the exploitation of stone and gold can be found in the valleys and southern parts of the Zarand Mountains

Descriptive Location:

On the Mureș river, north-west of Deva.

Alternative Names:
Vecel, Witzel

Commune:	Baia de Criș		
County:	Hunedoara		
Coordinates:	45.904722 22.800000		
Metals Mined:	Au, Cu, Uncertain	**Mine Type**:	Uncertain
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Christescu (1929) 30; Luca (2008); RAN 91991.04; Tudor (1968) 120–9, especially 126 and 128; Wollmann (1996) 149.

89 VIDOLM

19th-century reports of Roman gold-washing installations along the Arieș River. Finds include an iron axe, possibly Roman, and chance finds of coins dating from the 2nd–3rd century AD, indicating the existence of a mining settlement.

See also Baia de Arieș, Sălciua de Sus.

Descriptive Location:

On the upper Arieș.

Alternative Names:
Vidaly, Vidally

Commune:	Ocoliș		
County:	Alba		
Coordinates:	46.480108 23.511795		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Possible

Sub-Site: None
Working: None

Bibliography: CHBR (2006); OxREP DB; Popa (2002); RepAB; TIR L34; Tudor (1968) 202; Wollmann (1996) 148.

90 VIDRA

Traces of gold washing at Vidra de Jos and de Sus in the form of large gravel mounds and pits on both banks of the Arieș, probably from the Roman period.

See also Avram Iancu-Vidra de Sus, Câmpeni.

Descriptive Location:

Near Câmpeni and the Arieșul Mare stream, the Apuseni Mountains.

Alternative Names:
Vidra de Jos, Vidra de Sus, Alsóvidra, Kisaranyos

Commune:	Vidra		
County:	Alba		
Coordinates:	46.367500 22.888056		
Metals Mined:	Au	**Mine Type**:	Alluvial
Prehistoric Activity:	No	**Post-Roman Activity**:	No
Researched:	No	**Reliability**:	Uncertain

Sub-Site: None
Working: None

Bibliography: Christescu (1929) 13; Davies (1935) 203 n. 3; Popa (2002); RepAB; TIR L34; Tudor (1968) 202.

91 ZLATNA

The centre of Roman gold-mining administration in the Apuseni Mountains, and the seat of the *procurator aurariarum*. There are few workings in the immediate environs of the village, of unconfirmed date, but Roman mining has been identified in the wider area at Baia din Față, Almașu Mare, Valea Dosului, Tuțuman, Dosul Negrii, Stănija, etc. The ruins of ancient *Ampelum* are located south-east of Zlatna along the Ampoi valley, and its necropolis touches the border of Pătrînjeni (Pătrângeni). A sanctuary of Asclepius is thought to exist at the border of Pătrînjeni-Orlea (*CIL* III, 1278–1280), under Mount Jidovin. There is also evidence of a miner's colony on the north-western slopes of Mount Breaza, 4 km from Zlatna and near the hamlet of Icăești at the head of Feredeu Valley, where remains of housing, various objects, and a triangular reservoir with traces of *corrugi* were found.

See also Almașu Mare, Cib, Poiana, Stănija, Techereu, Valea Dosului, Vălișoara.

Descriptive Location:
At the confluence of the Ampoi River and Valea Morilor creek, in the Zlatna depression between the Metaliferi and Trascău Mountains.

Alternative Names:
Ampelum, Ampeium, Zlacna, Zlagna, Zalatna, Kisbánya, Klein Schlatten, Klein-Schlatten, Goldmarkt, Goldenmarkt

Commune:			
County:	Alba		
Coordinates:	46.158889 23.221111		
Metals Mined:	Au	**Mine Type**:	Underground
Prehistoric Activity:	No	**Post-Roman Activity**:	Yes
Researched:	Limited	**Reliability**:	Probable

Sub-Site: None
Working: None

Bibliography: Christescu (1929) 12, 13; Davies (1935) 201; RepAB; TIR L34; Tudor (1968) 184–90; Wollmann (1996) 136–40.