

ARCL3001: Archaeometallurgy: Marcos Martinon-Torres

View Online



[1]

Tylecote, R. F., The early history of metallurgy in Europe, vol. Longman archaeology series. London: Longman, 1987.

[2]

Craddock, P. T., Early metal mining and production. Edinburgh: Edinburgh University Press, 1995.

[3]

B. W. Roberts and C. P. Thornton, Eds., Archaeometallurgy in global perspective: methods and syntheses. New York: Springer, 2014 [Online]. Available:
<http://www.vlebooks.com/vleweb/product/openreader?id=UCL&isbn=9781461490173>

[4]

Bayley, J., Crossley, David W., and Ponting, Matthew, Metals and metalworking: a research framework for archaeometallurgy, vol. Occasional publication / Historical Metallurgy Society. London: Historical Metallurgy Society, 2008 [Online]. Available:
<http://hist-met.org/metalsframework1.pdf>

[5]

T. Rehren, 'Metals - Chemical Analysis', in Encyclopedia of Archaeology, Elsevier, 2008, pp. 1614-1616.

[6]

P. T. Craddock, 'Mining and smelting in antiquity', in *Science and the past*, London: British Museum Press, 1991, pp. 57–73 [Online]. Available:
<https://contentstore.cla.co.uk//secure/link?id=05683baf-6336-e711-80c9-005056af4099>

[7]

D. Killick and T. Fenn, 'Archaeometallurgy: The Study of Preindustrial Mining and Metallurgy', *Annual Review of Anthropology*, vol. 41, no. 1, pp. 559–575, 2012, doi: 10.1146/annurev-anthro-092611-145719.

[8]

J. B. Lambert, 'Metals', in *Traces of the past: unraveling the secrets of archaeology through chemistry*, vol. Helix books, Reading, Mass: Addison-Wesley, 1997, pp. 168–213 [Online]. Available:
<https://contentstore.cla.co.uk//secure/link?id=b6834add-6536-e711-80c9-005056af4099>

[9]

'Archaeometallurgy. Guidelines for Best Practice'. Historic England, Apr. 30, 2015 [Online]. Available:
<http://historicengland.org.uk/images-books/publications/archaeometallurgy-guidelines-best-practice/>

[10]

Associazione italiana di metallurgia, *Archaeometallurgy in Europe: international conference*, 24-25-26 September 2003, Milan, Italy : proceedings. Milano: Associazione italiana di metallurgia, 2003.

[11]

Archaeometallurgy in Europe, Associazione italiana di metallurgia, *Archaeometallurgy in Europe: 2nd international conference*, Aquileia, Italy, 17-21 June 2007 : selected papers. Milano: AIM, 2007.

[12]

B. Cech and T. Rehren, Eds., Early iron in Europe, vol. Monographies instrumentum. Montagnac: Éditions Monique Mergoïl, 2014.

[13]

Craddock, P. T. and Lang, Janet, Mining and metal production through the ages. London: British Museum, 2003.

[14]

Archaeometallurgy in Europe, Archaeometallurgy in Europe III: proceedings of the 3rd international conference, Deutsches Bergbau-Museum Bochum, June 29-July 1, 2011, vol. Der Anschnitt. Beiheft. Bochum: Deutsches Bergbau-Museum, 2015.

[15]

J. Hošek, H. Cleere, L. Mihok, R. Pleiner, and Archeologický ústav (Akademie věd České republiky), The archaeometallurgy of iron: recent developments in archaeological and scientific research. Praha: Institute of Archaeology of the ASCR, 2011.

[16]

Humphris, Jane and Rehren, Thilo, The world of iron. London: Archetype, 2013.

[17]

S. La Niece, D. R. Hook, P. T. Craddock, and British Museum, Metals and mines: studies in archaeometallurgy. London: Archetype in association with the British Museum, 2007.

[18]

J. Mei and T. Rehren, Metallurgy and civilisation: Eurasia and beyond : proceedings of the 6th International Conference on the Beginnings of the Use of Metals and Alloys (BUMA VI). London: Archetype, and the Institute for Archaeo-Metallurgical Studies, in association with the University of Science and Technology, Beijing, 2009.

[19]

Mitteldeutscher Archäologentag, Metals of Power – Early gold and silver [Metalle der Macht: Frühes Gold und Silber], vol. Tagungen des Landesmuseums für Vorgeschichte Halle. Halle (Saale): Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt, Landesmuseum für Vorgeschichte, 2014.

[20]

'Archaeometallurgy: Technological, Economic and Social Perspectives in Late Prehistoric Europe (TESME).Trabajos de Prehistoria', Trabajos de Prehistoria, vol. 67, no. 2, 2010.

[21]

J. Bayley and Th. Rehren, 'Towards a functional and typological classification of crucibles', in Metals and mines: studies in archaeometallurgy, S. La Niece, D. Hook, and P. Craddock, Eds. London: Archetype, 2007, pp. 46–55 [Online]. Available: <https://core.ac.uk/download/pdf/1761556.pdf>

[22]

Paul T. Craddock, 'Refractories: Ceramics with a Purpose', The Old Potter's Almanack, vol. 18, no. 2, pp. 9–20, 2013 [Online]. Available: <https://journals.ub.uni-heidelberg.de/index.php/opa/article/view/11962/5817>

[23]

Paul T. Craddock, 'Refractories with a purpose II: ceramics for casting', The Old Potter's Almanack, vol. 19, no. 1, pp. 2–17, 2014 [Online]. Available: <https://journals.ub.uni-heidelberg.de/index.php/opa/article/view/14852/8729>

[24]

I. C. Freestone and M. S. Tite, 'Refractories in the ancient and preindustrial world', in High technology ceramics: past, present, and future : the nature of innovation and change in ceramic technology, W. D. Kingery, Ed. Westerville (OH): The American Ceramic Society, 1986, pp. 35–63.

[25]

T Kearns, M Martínón-Torres, Th Rehren, 'Metal to mould: alloy identification in experimental casting moulds using XRF Available as print journal', Historical metallurgy: journal of the Historical Metallurgy Society, vol. 44, no. 1, pp. 48-58, 2010.

[26]

S. Liu, K. Wang, Q. Cai, and J. Chen, 'Microscopic study of Chinese bronze casting moulds from the Eastern Zhou period', Journal of Archaeological Science, vol. 40, no. 5, pp. 2402-2414, May 2013, doi: 10.1016/j.jas.2012.11.010.

[27]

M. Martínón-Torres and Th. Rehren, 'Technical ceramics', in Archaeometallurgy in global perspective: methods and syntheses, B. W. Roberts and C. P. Thornton, Eds. New York: Springer, 2014, pp. 107-131 [Online]. Available: <https://www.dawsonera.com/guard/protected/dawson.jsp?name=https://shib-idp.ucl.ac.uk/shibboleth&dest=http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9781461490173>

[28]

Th. Rehren, 'Crucibles as reaction vessels in ancient metallurgy', in Mining and metal production through the ages, P. T. Craddock and J. Lang, Eds. London: The British Museum Press, 2003, pp. 207-215.

[29]

P. T. Craddock and D. Hook, 'An economic history of the post-medieval world in 50 ingots: the British Museum collection of ingots from dated wrecks.', The British Museum Technical Research Bulletin, vol. 6, pp. 55-68, 2012.

[30]

'Arch-metals online discussion list'. [Online]. Available: <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=arch-metals>

[31]

'Main Archaeo-Metallurgical Bibliography', 2004. [Online]. Available:
<http://users.ox.ac.uk/~salter/arch-metals/met-bib-ak.htm>

[32]

'Abstract of International Conservation Literature'. [Online]. Available:
<http://aata.getty.edu/Home>

[33]

'HMS Datasheets'. [Online]. Available: <http://hist-met.org/resources/datasheets.html>

[34]

'Archaeometry' [Online]. Available:
[http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1475-4754](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1475-4754)

[35]

'Journal of Archaeological Science - Elsevier' [Online]. Available:
<http://www.journals.elsevier.com/journal-of-archaeological-science/>

[36]

'Archaeological and Anthropological Sciences'. [Online]. Available:
<http://www.springer.com/earth+sciences+and+geography/journal/12520>

[37]

'Historical Metallurgy - The Journal'. [Online]. Available:
<http://hist-met.org/publications/historical-metallurgy-the-journal.html>

[38]

P. T. Craddock, 'Mining and smelting in antiquity', in *Science and the past*, London: British Museum Press, 1991, pp. 57–73 [Online]. Available:
<https://contentstore.cla.co.uk//secure/link?id=05683baf-6336-e711-80c9-005056af4099>

[39]

B. Ottaway, 'Innovation, production and specialization in early prehistoric copper metallurgy', *European Journal of Archaeology*, vol. 4, no. 1, pp. 87-112, 2001 [Online]. Available:

<http://www.swetswise.com/FullTextProxy/swproxy?url=http%3A%2F%2Fopenurl.ingenta.com%2Fcontent%2Fswetsnet-4.1.d341bf2f065c0657e279903cc7f1deed%3Fgenre%3Darticle%26issn%3D1461-9571%26volume%3D4%26issue%3D1%26spage%3D87%26epage%3D112%26aulast%3DOttaway&ts=1385559668384&cs=3364928367&userNa me=8080038.ipdirect&emConId=3344&articleId=165840470&yevoId=1214771&titleId=71962&remoteAddr=144.82.107.165&hostType=PRO>

[40]

Tylecote, R. F., *The early history of metallurgy in Europe*, vol. Longman archaeology series. London: Longman, 1987.

[41]

Craddock, P. T., *Early metal mining and production*. Edinburgh: Edinburgh University Press, 1995.

[42]

Crew, Peter and Crew, Susan, *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*, vol. Plas Tan y Bwlch occasional paper. Tan y Bwlch, Gwynedd: Plas Tan y Bwlch, Snowdonia National Park Study Centre, 1990.

[43]

Agricola, Georgius, Hoover, Herbert, and Hoover, Lou Henry, *De re metallica*. New York: Dover, 1950 [Online]. Available:
<http://www.gutenberg.org/files/38015/38015-h/38015-h.htm>

[44]

Hunt Ortiz, Mark A., Prehistoric mining and metallurgy in South West Iberian Peninsula, vol. BAR international series. Oxford: Archaeopress, 2003.

[45]

D. Killick, 'From ores to metals', in Archaeometallurgy in global perspective: methods and syntheses, B. W. Roberts and C. P. Thornton, Eds. New York: Springer, 2014, pp. 11–46 [Online]. Available:
<https://www.dawsonera.com/guard/protected/dawson.jsp?name=https://shib-idp.ucl.ac.uk/shibboleth&dest=http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9781461490173>

[46]

M. R. Notis, 'Metals', in Archaeometallurgy in global perspective: methods and syntheses, B. W. Roberts and C. P. Thornton, Eds. New York: Springer, 2014, pp. 47–66 [Online]. Available:
<https://www.dawsonera.com/guard/protected/dawson.jsp?name=https://shib-idp.ucl.ac.uk/shibboleth&dest=http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9781461490173>

[47]

O'Brien, William, Bronze age copper mining in Britain and Ireland. Princes Risborough: Shire, 1996.

[48]

C. C. Patterson, 'Native Copper, Silver, and Gold Accessible to Early Metallurgists', American Antiquity, vol. 36, no. 3, pp. 286–321, 1971 [Online]. Available:
<http://www.jstor.org/stable/277716>

[49]

V. C. Piggott and G. Weisgerber, 'Mining archaeology in geological context. The prehistoric copper mining complex at Phu Lon, Nong Khai Province, northeast Thailand', in Metallurgica Antiqua, 1998, pp. 69–76.

[50]

S. Timberlake, 'Early mining research in Britain: the developments of the last ten years', in Mining and metal production through the ages, London: British Museum, 2003, pp. 22–42 [Online]. Available:
<https://contentstore.cla.co.uk//secure/link?id=3de2dbf2-6336-e711-80c9-005056af4099>

[51]

Timberlake, Simon and Mighall, Tim, Excavations on Copa Hill, Cwmystwyth (1986-1999): an early Bronze Age copper mine within the uplands of Central Wales, vol. BAR British series. Oxford: Archaeopress, 2003.

[52]

P. T. Craddock, 'The scientific investigation of early mining and smelting', in Scientific analysis in archaeology and its interpretation, vol. UCLA Institute of Archaeology, archaeological research tools, Oxford: Oxford University Committee for Archaeology, Institute of Archaeology, 1989, pp. 178–212 [Online]. Available:
<https://contentstore.cla.co.uk//secure/link?id=00952456-7636-e711-80c9-005056af4099>

[53]

A. Hauptmann, 'The investigation of archaeometallurgical slag', in Archaeometallurgy in global perspective: methods and syntheses, B. W. Roberts and C. P. Thornton, Eds. New York: Springer, 2014, pp. 91–106 [Online]. Available:
<https://www.dawsonera.com/guard/protected/dawson.jsp?name=https://shib-idp.ucl.ac.uk/shibboleth&dest=http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9781461490173>

[54]

J. Henderson, 'Metals', in The science and archaeology of materials: an investigation of inorganic materials, London: Routledge, 2000, pp. 208–296 [Online]. Available:
http://ls-tlss.ucl.ac.uk/course-materials/ARCL3001_44732.pdf

[55]

J. B. Lambert, 'Metals', in Traces of the past: unraveling the secrets of archaeology through chemistry, vol. Helix books, Reading, Mass: Addison-Wesley, 1997, pp. 168–213 [Online]. Available:

<https://contentstore.cla.co.uk//secure/link?id=b6834add-6536-e711-80c9-005056af4099>

[56]

Scott, David A., *Metallography and microstructure of ancient and historic metals*. [Marina del Rey, CA]: Getty Conservation Institute, 1991 [Online]. Available: http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/metallography.pdf

[57]

M. Radivojević, T. Rehren, E. Pernicka, D. Šljivar, M. Brauns, and D. Borić, 'On the origins of extractive metallurgy: new evidence from Europe', *Journal of Archaeological Science*, vol. 37, no. 11, pp. 2775–2787, Nov. 2010, doi: 10.1016/j.jas.2010.06.012.

[58]

M. Radivojevic, T. Rehren, J. Kuzmanović Cvetković, M. Jovanovic, and P. Northover, 'Tainted ores and the rise of tin bronzes in Eurasia, c. 6500 years ago', *Antiquity*, vol. 87, no. 338, pp. 1030–1045, 2013 [Online]. Available: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9423928&fulltextType=RA&fileId=S0003598X0004984X>

[59]

B. W. Roberts, C. P. Thornton, and V. C. Pigott, 'Development of metallurgy in Eurasia', *Antiquity*, vol. 83, no. 322, pp. 1012–1022, 2009 [Online]. Available: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9437996&fileId=S0003598X00099312>

[60]

E. N. Chernych, 'Some of the most important aspects and problems of early Metal Age studying', in *The beginnings of metallurgy in the old world*, vol. *Forschungen zur Archäometrie und Altertumswissenschaft*, Rahden, Westf: Verlag Marie Leidorf, 2002, pp. 25–31.

[61]

D. Killick, 'Science, Speculation and the Origins of Extractive Metallurgy', in Handbook of archaeological sciences, Chichester: John Wiley, 2001, pp. 483–492 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=9e2e5eae-5736-e711-80c9-005056af4099>

[62]

B. Ottaway, 'Innovation, production and specialization in early prehistoric copper metallurgy', European Journal of Archaeology, vol. 4, no. 1, pp. 87–112, 2001 [Online]. Available: <http://www.maneyonline.com.libproxy.ucl.ac.uk/doi/pdfplus/10.1179/eja.2001.4.1.87>

[63]

T. E. Levy, R. B. Adams, A. Hauptmann, M. Prange, S. Schmitt-Strecker, and M. Najjar, 'Early Bronze Age metallurgy: a newly discovered copper manufactory in southern Jordan', Antiquity, vol. 76, no. 292, pp. 425–437, Jun. 2002, doi: 10.1017/S0003598X00090530.

[64]

M. Martín-Torres, X. J. Li, A. Bevan, Y. Xia, K. Zhao, and T. Rehren, 'Forty Thousand Arms for a Single Emperor: From Chemical Data to the Labor Organization Behind the Bronze Arrows of the Terracotta Army', Journal of Archaeological Method and Theory, 2012, doi: 10.1007/s10816-012-9158-z.

[65]

C. Pulak, 'The copper and tin ingots from the Late Bronze Age shipwreck at Uluburun', Anatolian metal I, vol. Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum, pp. 137–157, 2000.

[66]

V. C. Pigott, 'Reconstructing the copper production process as practised among prehistoric mining/ metallurgical communities in the Khao Wong Prachan Valley of central Thailand', Metals in antiquity, vol. BAR international series, pp. 10–21, 1999.

[67]

Rothenberg, Benno. and Bachmann, H. G., The Ancient metallurgy of copper: archaeology, experiment, theory, vol. Metal in history. London: Institute for Archaeo-Metallurgical Studies [and] Institute of Archaeology, University College, London, 1990.

[68]

Paul. Craddock, 'Paradigms of metallurgical innovation in prehistoric Europe', The Beginnings of Metallurgy, vol. Der Anschnitt. Beiheft, pp. 175–192, 1999.

[69]

Paul T. CRADDOCK, 'From Hearth to Furnace : Evidences for the Earliest Metal Smelting Technologies in the Eastern Mediterranean', *Paléorient*, vol. 26, no. 2, pp. 151–165, 2000 [Online]. Available: <http://www.jstor.org/stable/41496588>

[70]

A. Hauptmann, 'Developments in Copper Metallurgy During the Fourth and Third Millennia BC at Feinan, Jordan', *Mining and metal production through the ages*, pp. 90–100, 2003.

[71]

Hauptmann, Andreas, The archaeometallurgy of copper: evidence from Faynan, Jordan, vol. Natural science in archaeology. Berlin: Springer, 2007.

[72]

V. Kassianidou and A. B. Knapp, 'Archaeometallurgy in the Mediterranean: the social context of mining, technology and trade', *The archaeology of Mediterranean prehistory*, vol. Blackwell studies in global archaeology, pp. 215–251, 2005.

[73]

M. Pearce, 'Reconstructing prehistoric metallurgical knowledge: the Northern Italian Copper and Bronze Ages', *European Journal of Archaeology*, vol. 1, no. 1, pp. 51–70, 1998 [Online]. Available: <http://www.maneyonline.com/doi/abs/10.1179/eja.1998.1.1.51>

[74]

V. C. Pigott and R. Ciarla, 'On the origins of metallurgy in prehistoric Southeast Asia: the view from Thailand', *Metals and mines: studies in archaeometallurgy*, pp. 76–88, 2007.

[75]

Renfrew, Colin, *Before civilization: the radiocarbon revolution and prehistoric Europe*. London: Pimlico, 1999.

[76]

R. Thilo, 'Metals: Chemical analysis', in *Encyclopedia of archaeology*, [Amsterdam?]: ScienceDirect, 2008, pp. 1614–1620 [Online]. Available: <http://linkinghub.elsevier.com/retrieve/pii/B9780123739629001886>

[77]

Bayley, J. and Butcher, S., *Roman brooches in Britain: a technological and typological study based on the Richborough Collection*, vol. Reports of the Research Committee of the Society of Antiquaries. London: Society of Antiquaries of London, 2004.

[78]

D. Dungworth, 'Roman Copper Alloys: Analysis of Artefacts from Northern Britain', *Journal of Archaeological Science*, vol. 24, no. 10, pp. 901–910, 1997, doi: 10.1006/jasc.1996.0169.

[79]

P. J. Bray and A. M. Pollard, 'A new interpretative approach to the chemistry of copper-alloy objects: Source, recycling and technology', *Antiquity*, vol. 86, no. 333, pp. 853–867, 2012 [Online]. Available: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9423556&fullTextType=RA&fileId=S0003598X00047967>

[80]

D. Dungworth, 'Iron Age and Roman Copper Alloys from Northern Britain', *Internet Archaeology* 2, 1997 [Online]. Available: http://intarch.ac.uk/journal/issue2/dungworth_toc.html

[81]

Craddock, P. T., *Early metal mining and production*. Edinburgh: Edinburgh University Press, 1995.

[82]

Mary Van Buren and Barbara H. Mills, 'Huayrachinas and Tocoimbos: Traditional Smelting Technology of the Southern Andes', *Latin American Antiquity*, vol. 16, no. 1, pp. 3–25, 2005 [Online]. Available: <http://www.jstor.org.libproxy.ucl.ac.uk/stable/30042484>

[83]

M. Martín-Torres, N. Thomas, Th. Rehren, and A. Mongiatti, 'Some problems and potentials of the study of cupellation remains: the case of post-medieval Montbéliard', *ArcheoSciences: Revue d'Archeometrie*, vol. 32, pp. 59–70, 2008 [Online]. Available: <http://archeosciences.revues.org/948#text>

[84]

E. Pernicka, Th. Rehren, and S. Schmitt-Strecker, 'Late Uruk silver production by cupellation at Habuba Kabira, Syria', *Metallurgica Antiqua: in honour of Hans-Gert Bachmann and Robert Maddin*, vol. Anschnitt, pp. 123–134, 1998.

[85]

L. Anguilano, Th. Rehren, W. Muller, and B. Rothenberg, 'Silver production at Rio Tinto during Roman occupation', *Proceedings: ISA 2006 : 36th International Symposium on Archaeometry : 2-6 May 2006, Quebec City, Canada*, vol. Cahiers d'archéologie du CELAT., pp. 433–444, 2009.

[86]

J. Bayley, 'Medieval precious metal refining: archaeology and contemporary texts compared', *Archaeology, history and science: integrating approaches to ancient materials*, vol. Publications of the Institute of Archaeology, University College London, pp. 131–150,

2008.

[87]

M. Bartelheim, F. Contreras Cortés, A. Moreno Onorato, M. Murillo-Barroso, and E. Pernicka, 'The silver of the South Iberian El Argar Culture: A first look at production and distribution', *Trabajos de Prehistoria*, vol. 69, pp. 293–309, 2012 [Online]. Available: <http://tp.revistas.csic.es/index.php/tp/article/view/627/649>

[88]

Cochet, André and Pernot, Michel, *Le plomb en Gaule romaine: techniques de fabrication et produits*, vol. Monographies instrumentum. Montagnac: Monique Mergoil, 2000.

[89]

C. R. Cohen, Th. Rehren, and M. Van Buren, 'When the wind blows: environmental adaptability in current day silver production within the Bolivian Andes', *Proceedings: ISA 2006 : 36th International Symposium on Archaeometry : 2-6 May 2006, Quebec City, Canada*, vol. Cahiers d'archéologie du CELAT., pp. 465–475, 2009.

[90]

F. Hunter and M. Davis, 'Early Bronze Age lead - a unique necklace from southeast Scotland', *Antiquity*, vol. 68, no. 261, pp. 824–830, 1994 [Online]. Available: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9423224&fulltextType=RA&fileId=S0003598X00047529>

[91]

S. Murphy and H. Baldwin, 'Early lead smelting sites in the Swaledale area of Yorkshire', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 35, no. 1, pp. 1–22.

[92]

V. Kassianidou, 'Was silver actually recovered from speiss in antiquity?', *Metallurgica Antiqua: in honour of Hans-Gert Bachmann and Robert Maddin*, vol. Anschnitt, pp. 69–76, 1998.

[93]

Rehren, Thilo and Prange, Michael, Teaching Collection (Archaeology / ARCL 3001): Lead metal and patina : a comparison. 1998.

[94]

T. Rehren, J. Schneider, and C. Bartels, 'Medieval lead-silver smelting in the Siegerland, West Germany', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 33, pp. 73–84, 1999 [Online]. Available:
<https://contentstore.cla.co.uk//secure/link?id=ad98f2d5-4a36-e711-80c9-005056af4099>

[95]

T. Rehren, 'The Production of Silver in South America', *Archaeology International*, vol. 13, pp. 76–83, 2011, doi: 10.5334/ai.1318.

[96]

M. Martínón-Torres and M. A. Uribe-Villegas, 'The prehistoric individual, connoisseurship and archaeological science: The Muisca goldwork of Colombia', *Journal of Archaeological Science*, vol. 63, pp. 136–155, Nov. 2015, doi: 10.1016/j.jas.2015.08.014.

[97]

M. Radivojević, T. Rehren, E. Pernicka, D. Šljivar, M. Brauns, and D. Borić, 'On the origins of extractive metallurgy: new evidence from Europe', *Journal of Archaeological Science*, vol. 37, no. 11, pp. 2775–2787, Nov. 2010, doi: 10.1016/j.jas.2010.06.012.

[98]

J. Bayley, D. W. Crossley, M. Ponting, and Historical Metallurgy Society, *Metals and metalworking: a research framework for archaeometallurgy*, vol. Occasional publication / Historical Metallurgy Society. London: Historical Metallurgy Society, 2008.

[99]

E. Blakelock, M. Martín-Torres, H. A. Veldhuijzen, and T. Young, 'Slag inclusions in iron objects and the quest for provenance: an experiment and a case study', *Journal of Archaeological Science*, vol. 36, no. 8, pp. 1745–1757, 2009, doi: 10.1016/j.jas.2009.03.032.

[100]

M. F. Charlton, P. Crew, T. Rehren, and S. J. Shennan, 'Explaining the evolution of ironmaking recipes – An example from northwest Wales', *Journal of Anthropological Archaeology*, vol. 29, no. 3, pp. 352–367, 2010, doi: 10.1016/j.jaa.2010.05.001.

[101]

S. Rovira, M. Lopez-Medina, M. P. Roman-Díaz, and C. Martínez-Padillar, 'Los Callejones: a Roman Republican iron mining and smelting centre in the south east of the Iberian Peninsula', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 38, no. 1, pp. 1–9, 2004 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=b098f2d5-4a36-e711-80c9-005056af4099>

[102]

Sim, David and Ridge, Isabel, *Beyond the bloom: bloom refining and iron artifact production in the Roman world*, vol. BAR international series. Oxford: Archaeopress, 1998.

[103]

H. A. Veldhuijzen and Th. Rehren, 'Slags and the city: early iron production at Tell Hammeh, Jordan and Tell Beth-Shemesh, Israel', *Metals and mines: studies in archaeometallurgy*, pp. 189–201, 2007 [Online]. Available: <http://www.ironsmelting.net/www/smelting/ARC-MetMines-Veldhuijzen.pdf>

[104]

Craddock, P. T., *Early metal mining and production*. Edinburgh: Edinburgh University Press, 1995.

[105]

Humphris, Jane and Rehren, Thilo, *The world of iron*. London: Archetype, 2013.

[106]

Pleiner, Radomír., *Iron in archaeology: the European bloomery smelters*. Praha: Archeologický ústav AVČR, 2000.

[107]

Pleiner, Radomír., *Iron in archaeology: early European blacksmiths*. Praha: Archeologický ústav AV ČR, 2006.

[108]

Benoit, Paul and Fluzin, Philippe, *Paléométallurgie du fer & Cultures*. Paris: Association pour l'Édition et la Diffusion des Etudes Historiques, 1995.

[109]

L. Biggs, B. Bellina, M. Martín-Torres, and T. O. Pryce, 'Prehistoric iron production technologies in the Upper Thai-Malay Peninsula: metallography and slag inclusion analyses of iron artefacts from Khao Sam Kaeo and Phu Khao Thong', *Archaeological and Anthropological Sciences*, vol. 5, no. 4, pp. 311–329, 2013, doi: 10.1007/s12520-012-0115-2.

[110]

M. F. Charlton, E. Blakelock, M. Martín-Torres, and T. Young, 'Investigating the production provenance of iron artifacts with multivariate methods', *Journal of Archaeological Science*, vol. 39, no. 7, pp. 2280–2293, 2012, doi: 10.1016/j.jas.2012.02.037.

[111]

Buchwald, Vagn Fabritius, *Iron and steel in ancient times*, vol. *Historisk-filosofiske skrifter*. Copenhagen: Det Kongelige Danske Videnskabernes Selskab, 2005.

[112]

D. Crossley, 'The blast furnace at Rockley, South Yorkshire', *The Archaeological journal*, vol. 152, pp. 291–380, 1996 [Online]. Available: [http://ucl-primo.hosted.exlibrisgroup.com/primo_library/libweb/action/display.do?tabs=detailsTab&ct=display&fn=search&doc=dedupmrg8304547&indx=1&p;reclds=dedupmrg8304547&recldxs=0&elementId=0&renderMode=poppedOut&displayMode=full&frbrVersion=&dscnt=1&scp.scps=scope%253A%2528LMS_JRNL_S%2529&frbg=&tab=local&dstmp=1390212094493&srt=rank&mode=Basic&dum=true&tb=t&vl\(freeText0\)=The%2520Archaeological%2520Journal%2520&vid=UCL_VU1](http://ucl-primo.hosted.exlibrisgroup.com/primo_library/libweb/action/display.do?tabs=detailsTab&ct=display&fn=search&doc=dedupmrg8304547&indx=1&p;reclds=dedupmrg8304547&recldxs=0&elementId=0&renderMode=poppedOut&displayMode=full&frbrVersion=&dscnt=1&scp.scps=scope%253A%2528LMS_JRNL_S%2529&frbg=&tab=local&dstmp=1390212094493&srt=rank&mode=Basic&dum=true&tb=t&vl(freeText0)=The%2520Archaeological%2520Journal%2520&vid=UCL_VU1)

[113]

G. Gassmann, 'Recent discoveries and excavations of 6th-2nd century BC furnaces in SW Germany', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 36, no. 2, pp. 71–77, 2002.

[114]

Hayman, Richard, *Ironmaking: the history and archaeology of the iron industry*. Stroud: Tempus, 2005.

[115]

Joosten, Ineke, *Technology of early historical iron production in the Netherlands*, vol. Geoarchaeological and bioarchaeological Studies. Amsterdam: Institute for Geo- and Bioarchaeology, Vrije Universiteit, 2004.

[116]

Nørbach, Lars Christian, *Prehistoric and medieval direct iron smelting in Scandinavia and Europe: aspects of technology and society*, vol. Acta Jutlandica. Aarhus: Aarhus University Press, 2003.

[117]

S. Paynter, E. Blakelock, and P. Belford, Eds., 'Iron and Ironworking', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 48, 2014.

[118]

T. Rehren et al., '5,000 years old Egyptian iron beads made from hammered meteoritic iron', *Journal of Archaeological Science*, vol. 40, no. 12, pp. 4785–4792, 2013, doi: 10.1016/j.jas.2013.06.002.

[119]

Rostoker, William and Bronson, Bennet, *Pre-industrial iron: its technology and ethnology*, vol. *Archeomaterials monograph*. Philadelphia, Pa: [Archeomaterials], 1990.

[120]

D. Starley, 'Determining the Technological Origins of Iron and Steel', *Journal of Archaeological Science*, vol. 26, no. 8, pp. 1127–1133, 1999, doi: 10.1006/jasc.1999.0408.

[121]

Tylecote, R. F., *The early history of metallurgy in Europe*, vol. *Longman archaeology series*. London: Longman, 1987.

[122]

J. Waldbaum, 'The coming of iron in the eastern Mediterranean', *The archaeometallurgy of the Asian old world*, vol. *University Museum monograph*, pp. 27–57, 1999.

[123]

Donald. Wagner, 'Chinese blast furnaces from the 10th to the 14th century', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 37, no. 1, pp. 25–37, 2003 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=fee72168-4a36-e711-80c9-005056af4099>

[124]

Wertime, Theodore A. and Muhly, James David, *The coming of the age of iron*. New Haven: Yale University Press, 1980.

[125]

J. Humphris, M. Martín-Torres, T. Rehren, and A. Reid, 'Variability in single smelting episodes – a pilot study using iron slag from Uganda', *Journal of Archaeological Science*, vol. 36, no. 2, pp. 359–369, 2009, doi: 10.1016/j.jas.2008.09.020.

[126]

L. Iles and M. Martín-Torres, 'Pastoralist iron production on the Laikipia Plateau, Kenya: wider implications for archaeometallurgical studies', *Journal of Archaeological Science*, vol. 36, no. 10, pp. 2314–2326, 2009, doi: 10.1016/j.jas.2009.06.023.

[127]

L. Iles and S. T. Childs, 'Ethnoarchaeological and historical methods', in *Archaeometallurgy in Global Perspective: Methods and Syntheses*, B. W. Roberts and C. P. Thornton, Eds. New York: Springer, 2014, pp. 193–216 [Online]. Available: <https://www.dawsonera.com/guard/protected/dawson.jsp?name=https://shib-idp.ucl.ac.uk/shibboleth&dest=http://www.dawsonera.com/depp/reader/protected/external/AbstractView/S9781461490173>

[128]

Schmidt, Peter R., *Iron technology in East Africa: symbolism, science, and archaeology*. Bloomington, IN: Indiana University Press, 1997.

[129]

Bisson, Michael S. and Vogel, Joseph O., *Ancient African metallurgy: the socio-cultural context*. Walnut Creek, Calif: AltaMira, 2000.

[130]

Shadreck Chirikure and Thilo Rehren, 'Ores, Furnaces, Slags, and Prehistoric Societies: Aspects of Iron Working in the Nyanga Agricultural Complex, AD 1300-1900', *The African Archaeological Review*, vol. 21, no. 3, pp. 135–152, 2004 [Online]. Available: <http://www.jstor.org/stable/25130799>

[131]

Herbert, Eugenia W., *Red gold of Africa: copper in precolonial history and culture*. Madison, Wis: University of Wisconsin Press, 1984.

[132]

D. Killick, 'What do we know about African iron working?', *Journal of African archaeology*, vol. 2, no. 1, pp. 97–112, 2004.

[133]

D. Killick, 'Cairo to Cape: The Spread of Metallurgy Through Eastern and Southern Africa', *Journal of World Prehistory*, vol. 22, no. 4, pp. 399–414, 2009, doi: 10.1007/s10963-009-9025-3.

[134]

Duncan E. Miller and Nikolaas J. Van Der Merwe, 'Early Metal Working in Sub-Saharan Africa: A Review of Recent Research', *The Journal of African History*, vol. 35, no. 1, pp. 1–36 [Online]. Available: <http://www.jstor.org/stable/182719>

[135]

K. C. MacDonald, R. Vernet, M. Martínón-Torres, and D. Q. Fuller, 'Dhar Néma: from early agriculture to metallurgy in southeastern Mauritania', *Azania: Archaeological Research in Africa*, vol. 44, no. 1, pp. 3–48, 2009, doi: 10.1080/00671990902811330.

[136]

Th. Rehren, M. Chalton, S. Chirikure, J. Humphris, A. Ige, and H. A. Veldhuijzen, 'Decisions set in slag: the human factor in African iron smelting', *Metals and mines: studies in archaeometallurgy*, pp. 211–218, 2007 [Online]. Available: <http://www.ironsmelting.net/www/smelting/ARC-MetMines-Rehren.pdf>

[137]

T. Thondhlana and M. Martínón-Torres, 'Small size, high value. Composition and manufacture of copper-base beads from Second Millennium AD northern Zimbabwe',

Journal of African archaeology, vol. 7, no. 1, pp. 79–97, 2009.

[138]

J. Woodhouse, 'Iron in Africa: the metal from nowhere', Transformations in Africa: essays on Africa's later past, pp. 160–185, 1998 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=0082cbd6-6436-e711-80c9-005056af4099>

[139]

M. Martínón-Torres and T. Rehren, 'Alchemy, chemistry and metallurgy in Renaissance Europe. A wider context for fire assay remains', Historical metallurgy: journal of the Historical Metallurgy Society, vol. 39, no. 1, pp. 14–31, 2005 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=05725dcf-4a36-e711-80c9-005056af4099>

[140]

M. Martinis-Torres and Th. Rehren, 'Post-Medieval crucible production and distribution: A study of materials and materialities', Archaeometry, vol. 51, no. 1, pp. 49–74, 2009, doi: 10.1111/j.1475-4754.2007.00380.x.

[141]

M. Martínón-Torres, 'The Archaeology of Alchemy and Chemistry in the Early Modern World: An Afterthought', Archaeology International, vol. 15, Dec. 2012, doi: 10.5334/ai.1508.

[142]

M. Ponting, 'Keeping up with the Romans? Romanisation and Copper Alloys in First Revolt Palestine', IAMS, vol. 22, pp. 3–6, 2002 [Online]. Available: http://www.ucl.ac.uk/iams/newsletter/accordion/journals/iams_22/iams_22_2002_ponting

[143]

T. Rehren, 'The same... but different: A juxtaposition of Roman and Medieval brass making

in Central Europe', in *Metals in antiquity*, vol. BAR international series, Oxford: Archaeopress, 1999, pp. 252–257 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=61f8301f-8136-e711-80c9-005056af4099>

[144]

W. Zhou, M. Martín-Torres, J. Chen, H. Liu, and Y. Li, 'Distilling zinc for the Ming Dynasty: the technology of large scale zinc production in Fengdu, southwest China', *Journal of Archaeological Science*, vol. 39, no. 4, pp. 908–921, 2012, doi: 10.1016/j.jas.2011.10.021.

[145]

Craddock, P. T. and British Museum, 2000 years of zinc and brass, Rev. ed., vol. Occasional paper / British Museum. London: British Museum, 1998.

[146]

P. Craddock and K. Eckstein, 'Production of brass in Antiquity by direct reduction', *Mining and metal production through the ages*, pp. 216–230, 2003.

[147]

M. Martín-Torres and Th. Rehren, 'Agricola and Zwickau: theory and practice of Renaissance brass production in SE Germany', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 36, pp. 95–111, 2002 [Online]. Available: http://www.ucl.ac.uk/archaeology/people/staff/martinon_torres/usercontent_profile/Martinon-Torres_Historical_Metallurgy_brass_2002.pdf

[148]

M. Martín-Torres, 'Inside Solomon's House: An Archaeological Study of the Old Ashmolean Chymical Laboratory in Oxford', *Ambix*, vol. 59, no. 1, pp. 22–48, 2012 [Online]. Available: <http://www.maneyonline.com/doi/full/10.1179/174582312X13296104891436>

[149]

M. Martín-Torres, T. Rehren, and S. von Osten, 'A 16th century lab in a 21st century lab: archaeometric study of the laboratory equipment from Oberstockstall', *Antiquity*, 2003.

[Online]. Available: <http://antiquity.ac.uk/projgall/martinon/>

[150]

Th. Rehren, 'Alchemy and fire assay – an analytical approach', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 30, pp. 136–142, 1996.

[151]

T. Rehren and M. Martínón-Torres, 'Naturam ars imitata: European brassmaking between craft and science', in *Archaeology, history and science: integrating approaches to ancient materials*, vol. Publications of the Institute of Archaeology, University College London, Walnut Creek, CA: Left Coast Press, 2008, pp. 167–188 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=842c74d4-7f36-e711-80c9-005056af4099>

[152]

S. Zacharias, 'Brass making in medieval western Europe', *All that glitters: readings in historical metallurgy*, pp. 35–40, 1989.

[153]

S. La Niece and N. Meeks, 'Diversity of Goldsmithing Traditions in the Americas and the Old World', *Pre Columbian gold: technology, style and iconography*, pp. 220–239, 2000 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=2e608bd1-6336-e711-80c9-005056af4099>

[154]

M. Martínón-Torres, R. V. Rojas, J. Cooper, and T. Rehren, 'Metals, microanalysis and meaning: a study of metal objects excavated from the indigenous cemetery of El Chorro de Maíta, Cuba', *Journal of Archaeological Science*, vol. 34, no. 2, pp. 194–204, 2007, doi: 10.1016/j.jas.2006.04.013.

[155]

Ramage, Andrew, Craddock, P. T., and Cowell, M. R., *King Croesus' gold: excavations at*

Sardis and the history of gold refining. London: British Museum Press in association with Archaeological Exploration of Sardis, Harvard University Art Museums, 2000.

[156]

La Niece, Susan and Craddock, P. T., *Metal plating and patination: cultural, technical and historical developments*. Oxford: Butterworth-Heinemann, 1993.

[157]

H. Lechtman, 'The gilding of metals in pre-Columbian Peru', *Application of science in examination of works of art: proceedings of the seminar: June 15-19, 1970, conducted by the Research Laboratory, Museum of Fine Arts, Boston, Massachusetts*, pp. 38-52, 1973.

[158]

H. Lechtman, 'Pre-Columbian Surface Metallurgy', *Scientific American*, vol. 250, no. 6, pp. 56-63, Jun. 1984, doi: 10.1038/scientificamerican0684-56.

[159]

Lleras Pérez, Roberto, *Prehispanic metallurgy and votive offerings in the Eastern Cordillera Colombia*, vol. BAR international series. Oxford: Archaeopress, 1999.

[160]

V. Leusch, B. Armbruster, E. Pernicka, and V. Slavčev, 'On the Invention of Gold Metallurgy: The Gold Objects from the Varna I Cemetery (Bulgaria)—Technological Consequence and Inventive Creativity', *Cambridge Archaeological Journal*, vol. 25, no. 01, pp. 353-376, Feb. 2015, doi: 10.1017/S0959774314001140.

[161]

M. Martín-Torres, J. Cooper, R. V. Rojas, and T. Rehren, 'Diversifying the picture: indigenous responses to European arrival in Cuba', *Archaeology International*, vol. 10, 2006, doi: 10.5334/ai.1008.

[162]

M. Martín-Torres, R. Valcárcel Rojas, J. Sáenz Samper, and M. F. Guerra, 'Metallic encounters in Cuba: The technology, exchange and meaning of metals before and after Columbus', *Journal of Anthropological Archaeology*, vol. 31, no. 4, pp. 439–454, 2012, doi: 10.1016/j.jaa.2012.03.006.

[163]

McEwan, Colin, *Precolumbian gold: technology, style and iconography*. London: British Museum Press, 2000.

[164]

Cardale de Schrimpff, Marianne and Bray, Warwick, *Calima and Malagana: art and archaeology in southwestern Colombia*. Bogotá: Pro Calima Foundation, 2005.

[165]

M. A. U. Villegas and M. Martín-Torres, 'Composition, colour and context in Muisca votive metalwork (Colombia, AD 600-1800)', *Antiquity*, vol. 86, no. 333, pp. 772–791, 2012 [Online]. Available: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9423537&fulltextType=RA&fileId=S0003598X00047918>

[166]

Williams, Dyfri and Ogden, Jack, *Greek gold: jewelry of the classical world*. New York: Abrams, 1994.

[167]

H. Lechtman, 'Traditions and Styles in Central Andean Metalworking', *The beginning of the use of metals and alloys: papers from the Second International Conference on the Beginning of the Use of Metals and Alloys*, Zhengzhou, China, 21-26 October, 1986, pp. 344–378, 1988 [Online]. Available: <https://contentstore.cla.co.uk//secure/link?id=882f6a2d-4f36-e711-80c9-005056af4099>

[168]

I. Shimada, A. Gordus, J. A. Griffin, and J. F. Merkel, 'Sicán alloying, working and use of precious metals: an interdisciplinary perspective', *Metals in antiquity*, vol. BAR international series, pp. 301–309, 1999.

[169]

M. A. U. Villegas and M. Martínón-Torres, 'Composition, colour and context in Muisca votive metalwork (Colombia, AD 600-1800)', *Antiquity*, vol. 86, no. 333, pp. 772–791, 2012 [Online]. Available: <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9423537&fulltextType=RA&fileId=S0003598X00047918>

[170]

D. Killick, 'The relevance of recent iron-smelting practice to reconstructions of prehistoric smelting technology', *Recent trends in archaeometallurgical research*, vol. MASCA research papers in science and archaeology, pp. 47–54, 1991.

[171]

D. Killick, 'Variation in African iron-smelting practice: implications for the study of Prehistoric iron technology in Europe', *Paléoméallurgie du fer & cultures: actes du Symposium international du Comité pour la sidérurgie ancienne de l'Union internationale des sciences préhistoriques et protohistoriques*, Belfort - Sévenans, Institut polytechnique de Sévenans, 1-2-3 novembre 1990, 1995.

[172]

Mary Van Buren and Barbara H. Mills, 'Huayrachinas and Toco chimbos: Traditional Smelting Technology of the Southern Andes', *Latin American Antiquity*, vol. 16, no. 1, pp. 3–25, 2005 [Online]. Available: <http://www.jstor.org.libproxy.ucl.ac.uk/stable/30042484>

[173]

T. Bareham, 'Bronze casting experiments', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 28, no. 2, pp. 112–116 [Online]. Available: <https://contentstore.cla.co.uk/secure/link?id=06725dcf-4a36-e711-80c9-005056af4099>

[174]

P. Crew, 'The experimental production of prehistoric bar iron', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 25, pp. 21–36, 1991 [Online]. Available: <https://contentstore.cla.co.uk/secure/link?id=3a5dcc3c-ff07-e811-80cd-005056af4099>

[175]

Ottaway, Barbara S. and Wang, Quanyu, *Casting experiments and microstructure of archaeologically relevant bronzes*, vol. BAR international series. Oxford: Archaeopress, 2004.

[176]

T. O. Pryce, Y. Bassiakos, M. Catapotis, and R. C. Donna, "'De caerimoniae". Technological choices in copper-smelting furnace design at Early Bronze Age Chrysokamino, Crete', *Archaeometry*, vol. 49, no. 3, pp. 543–557, 2007, doi: 10.1111/j.1475-4754.2007.00319.x.

[177]

P. Craddock, 'The scientific investigation of early mining and metallurgy', *Scientific analysis in archaeology and its interpretation*, vol. UCLA Institute of Archaeology, archaeological research tools, pp. 178–212, 1989 [Online]. Available: http://ls-tlss.ucl.ac.uk/course-materials/ARCL3001_44721.pdf

[178]

Henderson, Julian, *The science and archaeology of materials: an investigation of inorganic materials*. London: Routledge, 2000.

[179]

Lambert, Joseph B., *Traces of the past: unraveling the secrets of archaeology through chemistry*, vol. Helix books. Cambridge, Mass: Perseus, 1997.

[180]

S. Shennan, 'Cost, benefit and value in the organization of early European copper production', *Antiquity*, vol. 73, no. 280, pp. 352–363, 1999 [Online]. Available: <http://search.proquest.com/docview/217558342/fulltext?accountid=14511>

[181]

Roger Matthews and Hassan Fazeli, 'Copper and Complexity: Iran and Mesopotamia in the Fourth Millennium B.C.', *Iran*, vol. 42, pp. 61–75, 2004 [Online]. Available: <http://www.jstor.org/stable/4300663>

[182]

M. Diaz-Andreu and I. Montero, 'Metallurgy and social dynamics in the later prehistory of Mediterranean Spain', in *Metals make the world go round: the supply and circulation of metals in Bronze Age Europe : proceedings of a conference held at the University of Birmingham in June 1997*, Oxford: Oxbow, 2000, pp. 116–132 [Online]. Available: <https://contentstore.cla.co.uk/secure/link?id=6d9ec3d8-fd07-e811-80cd-005056af4099>

[183]

J. Mei, 'Early metallurgy in China: some challenging issues in current studies', *Metallurgy and civilisation: Eurasia and beyond : proceedings of the 6th International Conference on the Beginnings of the Use of Metals and Alloys (BUMA VI)*, pp. 9–16, 2009.

[184]

Stanley B. Alpern, 'Did They or Didn't They Invent It? Iron in Sub-Saharan Africa', *History in Africa*, vol. 32, pp. 41–94, 2005 [Online]. Available: <http://www.jstor.org.libproxy.ucl.ac.uk/stable/20065735>

[185]

A. F. C. Holl, 'Early West African Metallurgies: New Data and Old Orthodoxy', *Journal of World Prehistory*, vol. 22, no. 4, pp. 415–438, 2009, doi: 10.1007/s10963-009-9030-6.

[186]

D. Killick, 'Cairo to Cape: The Spread of Metallurgy Through Eastern and Southern Africa', *Journal of World Prehistory*, vol. 22, no. 4, pp. 399–414, 2009, doi: 10.1007/s10963-009-9025-3.

[187]

F. Begemann, K. Kallas, S. Schmitt-Strecker, and E. Pernicka, 'Tracing tin via isotope analyses', *The beginnings of metallurgy: proceedings of the International Conference 'The Beginnings of Metallurgy'*, Bochum 1995, vol. Der Anschnitt. Beiheft, pp. 277–284, 1999.

[188]

M. Haustein, C. Gillis, and E. Pernicka, 'Tin isotopy - A new method for solving old questions', *Archaeometry*, vol. 52, no. 5, pp. 816–832, Oct. 2010, doi: 10.1111/j.1475-4754.2010.00515.x.

[189]

Giumlia-Mair, Alessandra R. and Lo Schiavo, Fulvia, *The problem of early tin*, vol. BAR international series. Oxford: Archaeopress, 2003.

[190]

Yener, K. Aslihan, *The domestication of metals: the rise of complex metal industries in Anatolia*, vol. Culture and history of the ancient Near East. Leiden: Brill, 2000.

[191]

M. F. Guerra, T. Calligaro, and A. Perea, 'The treasure of Guarrazar: Tracing the gold supplies in the Visigothic Iberian Peninsula', *Archaeometry*, vol. 49, no. 1, pp. 53–74, 2007, doi: 10.1111/j.1475-4754.2007.00287.x.

[192]

M. Martín-Torres and M. A. Uribe-Villegas, 'The prehistoric individual, connoisseurship and archaeological science: The Muisca goldwork of Colombia', *Journal of Archaeological Science*, vol. 63, pp. 136–155, Nov. 2015, doi: 10.1016/j.jas.2015.08.014.

[193]

McEwan, Colin, *Precolumbian gold: technology, style and iconography*. London: British Museum Press, 2000.

[194]

Williams, Dyfri and Ogden, Jack, *Greek gold: jewelry of the classical world*. New York: Abrams, 1994.

[195]

E. Blakelock, M. Martín-Torres, H. A. Veldhuijzen, and T. Young, 'Slag inclusions in iron objects and the quest for provenance: an experiment and a case study', *Journal of Archaeological Science*, vol. 36, no. 8, pp. 1745–1757, Aug. 2009, doi: 10.1016/j.jas.2009.03.032.

[196]

M. P. Coustures, D. Beziat, F. Tollon, C. Domergue, L. Long, and A. Rebiscoul, 'The use of trace element analysis of entrapped slag inclusions to establish ore-bar iron links: Examples from two Gallo-Roman iron-making sites in France (Les Martys, Montagne Noire and Les Ferrys, Loiret)', *Archaeometry*, vol. 45, no. 4, pp. 599–613, Nov. 2003, doi: 10.1046/j.1475-4754.2003.00131.x.

[197]

A.-M. Desaulty et al., 'Does it come from the Pays de Bray? Examination of an origin hypothesis for the ferrous reinforcements used in French medieval churches using major and trace element analyses', *Journal of Archaeological Science*, vol. 36, no. 10, pp. 2445–2462, Oct. 2009, doi: 10.1016/j.jas.2009.07.002.

[198]

L. Host-Madsen and V. F. Buchwald, 'The characterization and provenancing of ore, slag and iron from the Iron Age settlements at Snorup.', *Historical metallurgy: journal of the Historical Metallurgy Society*, vol. 33, pp. 57–67.

[199]

R. Schwab, D. HEGER, B. HOPNER, and E. PERNICKA, 'The provenance of iron artefacts from Manching: A multi-technique approach', *Archaeometry*, vol. 48, no. 3, pp. 433–452, Aug. 2006, doi: 10.1111/j.1475-4754.2006.00265.x.