

RESEARCHING THE WORLD'S BEADS: AN ANNOTATED BIBLIOGRAPHY

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BEADMAKING: TECHNICAL ASPECTS

This section of the bibliography deals with beadmaking technology, ancient and modern, around the world. To facilitate searches, the entries have been assigned to the following categories: Glass; Faience; Ceramic, Clay, and Terra Cotta; Metal; Stone; Amber; Shell; Eggshell; Bone, Ivory, Antler, and Horn; Wood, Seeds and Nuts; and Mixed Materials.

GLASS

Agyei, I.K., J. Adu-Agyem, and R. Steiner

2012 Exploring Traditional Glass Bead Making Techniques in Jewellery. *Journal of Science and Technology* 32(3):103-112; <https://www.researchgate.net/publication/272332103>.

Discusses the techniques and materials used to produce powdered-glass beads in present-day Ghana.

Ajithprasad, P. and Marco Madella

2017 Early Harappan Bead Production in Gujarat: Technology, Adaptation and Contacts. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo, pp. 277-292. Indian Institute of Technology, Gandhinagar.

Akçora, Elçin

2013 Görece'de Nazar Boncuğu. *Akdeniz Sanat Dergisi* 6(11):11-22; <https://dergipark.org.tr/tr/download/article-file/275427>.

Describes the production of furnace-wound evil eye beads in Görece, western Turkey.

Anderson, Nicole

2017 *The Glory of Beads: The Rise and Fall of the Società Veneziana per l'Industria delle Conterie*. Self published, Dexter, MI.

The *Conterie* was the principal producer of glass seed beads on Murano in the Venetian lagoon from 1898 to 1992. Among other things, this book discusses glass chemistry and the machinery

and technology involved in producing drawn beads. There is also a section on the art of lampworked beads.

Babalola, Abidemi Babatunde

2015 Archaeological Investigations of Early Glass Production at Igbo-Olokun, Ile-Ife (Nigeria). Ph.D. dissertation. Department of Anthropology, Rice University, Houston. Describes the deposits (12th-15th centuries) and the recovered materials in significant detail. Using chemical and physical analyses of the glass beads and glass production debris, the competing hypotheses of local primary glass production or re-melting of imported glass to create beads are explored in detail.

2021 Glass Bead Technology, Ile Ife. In *The Encyclopedia of Ancient History: Asia and Africa*, edited by D.T. Potts, Ethan Harkness, Jason Neelis, and Roderick McIntosh. John Wiley and Sons, Hoboken. <https://www.academia.edu/62394737/>. Discusses beadmaking at Ile Ife in Nigeria during the early 2nd millennium CE, including the composition of the glass.

Babalola, Abidemi Babatunde, Susan Keech McIntosh, Laure Dussubieux, and Thilo Rehren

2017 Ile-Ife and Igbo Olokun in the History of Glass in West Africa. *Antiquity* 91(357):732-750. Glass beads and associated production materials recovered from a site in Nigeria have shed light on early glass manufacturing techniques in West Africa between the 11th and 15th centuries AD.

Babalola, Abidemi and Thilo Rehren

2016 The 11th-15th Century AD Glass Crucibles from Ile-Ife, Southwest Nigeria. Paper presented at the 23rd biannual Society of Africanist Archaeologist conference, Toulouse, France. <https://www.researchgate.net/publication/306017012>. Presents the results of the classification, macro/microstructural, and compositional analyses carried out on glass-working and possibly glassmaking crucibles excavated at Igbo Olokun, Ile-Ife. Drawn-bead production waste was also recovered.

Babalola, Abidemi Babatunde, Thilo Rehren, Akinlolu Ige, and Susan McIntosh

2018 The Glass Making Crucibles from Ile-Ife, SW Nigeria. *Journal of African Archaeology* 16:1-29; <https://www.researchgate.net/publication/325492856>. Provides an in-depth examination of numerous crucible fragments recovered from deposits dating to the 11th-15th centuries in order to understand the quality of the crucibles, their typology, and their functions in glassworking/making. Compositional analysis of a sample of the thousands of glass beads from the excavations indicates that the crucibles were used to melt the glass for their production.

Barroso-Solares, S., E. Estalayo, J. Aramendia, E. Rodriguez-Gutierrez, C. Sanz-Minguez, A. C. Prieto, J. M. Madariaga, and J. Pinto

2024 A Multi-technique Approach to Unveil the Composition and Fabrication of a Pre-Roman Glass Masterpiece: A Double-faced Human-head Shape Polychrome Glass Pendant (2nd-1st c. BC). *Archaeological and Anthropological Sciences* 16, 153;
<https://www.researchgate.net/publication/383566467>.

Reports on the chemical composition and fabrication sequence of a Phoenician face bead/pendant uncovered at Pintia in northern Spain.

Basa, Kishor

1993 Manufacturing Methods of Monochrome Glass Beads in South Asia. *Man and Environment* 18(1):93-100.

1993 A Note on the Drilling Method of Glass Bead Making. *Archaeomaterials* 7(1):53-56. Examination of silicone rubber impressions of the perforations of two Iron Age glass beads from Ban Don Ta Phet, Thailand, shows evidence that they were drilled by lapidary methods more associated with stone beads.

Bayley, J.

2003 Glass Bead-Making in Viking York. *Current Archaeology* 16(6)186:252-253. Mentions the use of ceramics as melting plates in the production of glass beads.

Bedel Özek, Serap

2017 Geçmişten Günümüze Afrika Cam Boncukları [African Beads from Past to Present]. M.A. thesis. Fine Arts Institute, Anadolu University, Eskişehir, Turkey.
<https://www.academia.edu/36654927/>.

Examines the production techniques and tools utilized to produce glass beads in Africa, past and present. English abstract.

Bellintani, Paolo, Mauro Cesaretto, and Giovanna Residori

2003 Progetto “I materiali vetrosi nella protostoria dell’Italia del Nord”. Archeologia, archeometria, etnoarcheologia e approccio sperimentale. In *Archeologie sperimentali. Metodologie ed esperienze fra verifica, riproduzione, comunicazione e simulazione, Atti del convegno: Comano Terme-Fiavè (Trento, Italy) 13-15 settembre 2001*, edited by P. Bellintani and L. Moser, pp. 311-335. Provincia autonoma di Trento.
<https://www.academia.edu/991789/>.

Reports on experimental production replication of Bronze Age glass and faience beads found in northern Italy.

Bertini, Martina, Rajmund Mokso, and Eva M. Krupp

2014 Unwinding the Spiral: Discovering the Manufacturing Method of Iron Age Scottish Glass Beads. *Journal of Archaeological Science* 43:256-266;
<https://www.academia.edu/59046227/>.

The innovative application of X-ray micro-computed-tomography (μ CT) with synchrotron light permitted the identification of characteristic features and markings typical of specific low temperature glass-working techniques, and also added to the evidence for local manufacture.

Blair, Elliot H., L.S.A. Pendleton, and P. Francis, Jr.

2009 *The Beads of St. Catherines Island*. American Museum of Natural History Anthropological Papers 89. <https://www.academia.edu/26473504/>.

A substantial monograph that describes and discusses in detail the numerous beads recovered from a Spanish Franciscan mission on St. Catherines Island, Georgia, which was occupied during the late 16th and 17th centuries. The beads are of glass as well as metal, amber, jet, and rock crystal. There is much on manufacturing techniques and the likely origin of the beads. Excellent color macro photos supplement the descriptions. *See* Marrinan (2008) for a review.

Brendle, Tobias

2005 Glasperlen des frühen Mittelalters. Experimentelle Beobachtungen zur Herstellungstechnik. Bajuwarenhof Kirchheim, *Jahresschrift* 2004.

Experimental observations on the techniques used to manufacture glass beads during the early Middle Ages.

Buddikasiri, P.R.A and A.K.R. 2 Madhumali

2020 Glass Bead Making Technology in Ancient Sri Lanka. *TRIVALENT: Journal of Archaeology, Tourism & Anthropology* 1(2):144-165; <https://trivalent.sljol.info/articles/10.4038/tjata.v1i2.45/galley/57/download/>.

Describes the production of wound and drawn beads as currently practiced in North India.

Burchell, Alan David

2018 The Mystery of the Viking Glass Bead Furnaces. Viking Glass Bead Furnaces Used between the 8th-10th Centuries A.D.: Research Into Viking Period Glass Bead Furnaces through Experimentation. M.A. thesis. University of Exeter.

Based on archaeological finds in Denmark and Sweden, presents research into small Viking-period furnaces used to produce glass beads.

Busch, Jürgen

2012 Kiffa Beads of Mauritania: A Fall from Grace. *Ornament* 36(2):56-61.

Reports the sad news that the disastrous drought in West Africa has caused the cessation of powder-glass beadmaking in Mauritania. The process is described.

Callmer, Johan and Julian Henderson

1991 Glassworking at Åhus, S. Sweden (Eighth Century AD). *Laborativ arkeologi* 5:143-154; <https://www.academia.edu/37566915/>.

Examines the beadmaking technology and chemical composition of the recovered glass beads.

Carroll, B. Harvey, Jr. with Jamey D. Allen

2004 Bead Making at Murano and Venice. *Beads: Journal of the Society of Bead Researchers* 16:17-37; <https://www.academia.edu/27507653/>.

This article reproduces a rare eyewitness account of beadmaking at Murano/Venice, Italy, towards the end of the First World War and documents the technology of the time as well as what impact the war had on the industry. Carroll's report takes us through the various steps in the production of drawn or tube beads and also provides a historical perspective of the industry. Although the report presents much useful information, we now know much more about most aspects of glass beadmaking and endnotes provide much additional information and clarification.

Demir, İsa

2009 Türkiye'de cam boncuk sanatı. M.A. thesis. Selçuk University, Konya.

<https://acikerisim.selcuk.edu.tr/items/c1f94463-9a24-4f92-8ba9-d0862d3e71f1>.

Discusses traditional glass beadmaking technology at several centers in Turkey and their products. English summary.

Dobrova, O.P.

2018 Техники производства стеклянных бусин по материалам Гнёздова (Смоленская область) [The Technology of Manufacturing Glass Beads at Gnezdovo, Smolensk Region.] *Ethnology and Anthropology of Eurasia* 46(2):100-105.
<https://journal.archaeology.nsc.ru/jour/article/view/357>.

Over 12,000 glass beads from medieval burials at Gnezdovo, western Russia, generally fall into nine technological groups including those formed on a copper pipe. In Russian and English.

Eluyemi, Omotoso

1986 Technology of Ife Glass Beads: Excavations at Igbo-Olokun, Ile-Ife, Nigeria. In *The Social and Economic Contexts of Technological Change: The World Archaeological Congress, September 1-7, 1986*. Allen and Unwin, London.

1987 The Technology of the Ife Glass Beads: Evidence from the Igbo-Olokun. *Odu* 32:200-216.

Provides a partial inventory of the Olokun beads and discusses their composition and dating. The contemporary fabrication of drawn and rolled beads in Ile-Ife, Nigeria, which uses crushed glass, is also discussed.

Francis, Peter, Jr.

1993 West African Powder Glass Beads. *Ornament* 16(4):96-97, 100-101.

Illustrated account of the manufacture and history of various kinds of beads made from pulverized glass.

Gam Aschenbrenner, Tine

1990 Perlmager af fag. *Skalk Aarhus* 34:12-15.

Experiments in 8th-century glass beadmaking at Ribe, Denmark.

- 1990 Prehistoric Glass Technology – Experiments and Analyses. *Journal of Danish Archaeology* 9:103-213; <https://doi.org/10.1080/0108464X.1990.10590044>.
This valuable article reconstructs the methods for making various kinds of furnace-wound beads.
- 1991 Glasperlefremstilling i yngre romersk jernalder og vikingetid. In *Eksperimentel arkæologi. Studier i teknologi og kultur* 1, edited by B. Madsen, pp. 153-176. Historical-Archaeological Experimental Center, Lejre.
On glass bead manufacture in the Late Roman Iron Age and Viking period.
- 1993 Experiments in Glass – Present and Future. *Annales du 12^e Congrès de l'Association Internationale pour l'Histoire du Verre, Vienne 26-31 août 1991*, pp. 261-270. Amsterdam.
On the author's archaeo-experiments in glass beadmaking.
- 1995 Should We Believe in Experiments? In *Glass Beads: Cultural History, Technology, Experiment and Analogy*, edited by M. Rasmussen, U.L. Hansen, and U. Näsman, pp. 123-128. Historical-Archaeological Experimental Center, Studies in Technology and Culture 2.
- 1997 Glasperlenherstellung – Wie könnte sie vor sich gegangen sein? In *Perlen: Archäologie, Techniken, Analysen*, edited by Uta von Freeden and Alfred Wieczorek, pp. 315-320. Kolloquien zur Vor- und Frühgeschichte 1.
Experimentation has shown how wound beads from an 8th-century workshop at Ribe, Denmark, could have been made, though the furnace construction is still debatable.
- 1999 Shards or Beads? *Journal of Danish Archaeology* 13(1):121-132; <https://tidsskrift.dk/jda/issue/view/9148/1473>.
Do shards of blown glass vessels found on Scandinavian settlement sites represent vessels broken accidentally on site, or cullet imported for local glass bead production?
- 2010 Glasperlenherstellung in Südsandinavien... oder: Notruf aus der Feuerstelle.... *Experimentelle Archäologie in Europa, Bilanz 2010*, Heft 9:163-172. Europäische Vereinigung zur Förderung der Experimentellen Archäologie, Oldenburg.
Experimental archaeology: glass bead manufacture in southern Scandinavia.

Gott, Suzanne

- 2014 Ghana's Glass Beadmaking Arts in Transcultural Dialogues. *African Arts* 47(1):10-29.
Discusses the various beadmaking traditions in modern Ghana.

Government of India, Geographical Indications Registry

- 2014 Varanasi Glass Beads - G.I. Application No 177. *Government of India, Geographical Indications Journal* 61:7-13;
www.ipindia.nic.in/writereaddata/Portal/IPOJournal/1_67_1/gi-journal-61.pdf

This Application for the Registration of a Geographical Indication contains information regarding the modern-day glass-bead industry in Varanasi, Uttar Pradesh, northern India, and the materials and techniques utilized.

Greiff, S. and E. Nallbani

2008 When Metal Meets Beads. Technological Study of Early Medieval Metal Foil Beads from Albania. *Mélanges de l'Ecole française de Rome, Moyen Âge* 120(2):355-375; <https://www.academia.edu/1621584/>.

An in-depth examination of foil beads from the Bukël site in Albania using chemical analysis and optical microscopy. The beads date to the 7th-9th centuries.

Grimbe, Jannika

2010 Making Glass Beads from the Past. *euroREA: Journal for (Re)construction and Experiment in Archaeology* 7:19-22; <https://www.academia.edu/66961708/>.

Reports on experiments to replicate the technology used to produce glass beads during the Scandinavian Iron Age.

Gu, Zhou, Jian Zhu, Yaoting Xie, Tiqiao Xiao, Changsui Wang, and Yimin Yang

2016 Production Technology of Faience Beads from Peng State Cemetery, Shanxi Province, China. In *Recent Advances in the Scientific Research on Ancient Glass and Glaze*, edited by Fuxi Gan, Qinghui Li, and Julian Henderson, pp. 553-532. World Century Publishing, Hackensack, NJ, and World Scientific Publishing, Singapore.

Heaser, Sue

2018 Anglo-Saxon Glass Beadmakers: A New Look at the Tools, Materials and Techniques. <https://www.researchgate.net/publication/339178110>.

Beadmaking in early medieval England.

2020 Dark Ellipsoid Beads with Opaque Glass Thread Decoration Found in Britain. *Archeologia Polski* 65:116-129; <https://www.researchgate.net/publication/347711932>.

Describes four such beads in detail, compares them with similar finds elsewhere, and investigates how they were made.

2021 Early Anglo-Saxon Glass Beadmaking in Britain: Reconstructing the Past through Craft. *Ornament* 42(1):28-33.

Discusses beads found in cemeteries dating to the 5th-6th centuries AD, including how they were made.

2021 Glasperlen-Herstellung im frühen Mittelalter / Early Medieval Glass Beadmaking. In *Experimentelle Archäologie / Experimental Archaeology*, edited by WMB Weinviertel Museum Betriebs GmbH, pp. 16-21, 166-171. Mistelbach. <https://www.academia.edu/83812530/>.

An investigation into the techniques of hot-glass beadmakers in the early first millennium CE.

2022 Anglo-Saxon Beads: Redefining the “Traffic Lights.” *EXARC Journal* 2022/4; <https://exarc.net/ark:/88735/10664>.

Uses replicative technology to determine how polychrome beads in red, yellow, and green glass were made and provides a more detailed typology for this distinctive bead group.

2022 *Bead Furnaces in Anglo-Saxon Britain: An Investigation into the Likely Sources of Heat Used by Beadmakers in the 5th to 7th Centuries CE*. Self published, Wortham, England. <https://www.academia.edu/87256874/>.

A case is made that Anglo-Saxon beadmakers primarily used lampwork techniques to produce their finely decorated polychrome beads and these required small heat sources such as volcano furnaces and open hearths.

2023 Testing Roman Glass in the Flame. *EXARC Journal* 2023/4; <https://exarc.net/issue-2023-4/at/testing-roman-glass-flame>.

A quantity of Roman glass cullet from English sites was put to a range of tests, including compositional analysis and beadmaking, to investigate the behavior of the glass in the flame.

Henderson, Julian

1995 A Response to R. Lierke’s Paper. In *Glass Beads: Cultural History, Technology, Experiment and Analogy*, edited by M. Rasmussen, U.L. Hansen, and U. Näsman, pp. 121-123. Historical-Archaeological Experimental Center, Studies in Technology and Culture 2.

Response to Lierke et al. (1995).

1996 Note on the Technology of the Glass Beads. In *Guernsey, an Island Community of the Atlantic Iron Age*, by B. Burns, B. Cunliffe, and H. Sebire, pp 113-114. Oxford University Committee on Archaeology Monograph 43, Guernsey Museum Monograph 6. United Kingdom.

Henderson, Julian, Torben Sode, and Yvette Sablerolles

2019 Early Medieval Tesserae from Scandinavia and the Netherlands: A Case for Recycling. In *Early Medieval Tesserae in Northwestern Europe*, edited by L. Van Wersch, L. Verslype, D. Strivay, and F. Theuws, pp. 68-95. Merovingian Archaeology in the Low Countries 6.

Considers the possibility of the use of tesserae for glass bead production in Scandinavia and the Netherlands during the 8th-9th centuries, from both archaeological and compositional points of view.

Hird, F.

1998-1999 Venetian Beads. *Beads: Journal of the Society of Bead Researchers* 10-11:57-62; <https://www.academia.edu/24326605/>.

An account, originally published in *The Girl's Own Paper* in 1896, of the techniques and conditions under which glass beads were made in Venice, Italy, during the latter part of the 19th century.

Hložeka, M. and T. Trojek

2015 Millefiori Glasswork Technique in the Migration Period: Investigation of Beads with the Use of Nondestructive X-Ray Fluorescence Micro-Analysis. *Radiation Physics and Chemistry* 116:332-334; <https://api.semanticscholar.org/CorpusID:94302364>.

Analysis centered on determining the composition and the production technology of a unique millefiori bead that was found in a burial ground in Kyjov (Hodonin district, Czech Republic) dating back to the Migration Period.

Hodgkinson, Anna and Miriam Bertram

2019 *Experimental Bead-Making at Amarna, 2017, 2018*. British Mission to Tell el-Amarna. https://www.amarnaproject.com/pages/recent_projects/excavation/beadwork/.

Investigation of the courtyard of houses M50.14-16 in the Main City South uncovered some small fireplaces which appeared to have been used for the manufacture of wound glass beads. Experiments were conducted to confirm this.

2010 Working with Fire: Making Glass Beads at Amarna Using Methods from Metallurgical Scenes. *Journal of Archaeological Science: Reports* 33, 102488; <https://doi.org/10.1016/j.jasrep.2020.102488>.

Experiments, based on iconographic evidence from metal-working scenes chiefly in Old and Middle Kingdom tombs, demonstrate that it is possible to carry out small-scale glass working, particularly the manufacture of beads, at a household level using simple fire pits ventilated with blowpipes.

Holland, S. and T. Holland

2006 Folded Glass Beads: An Islamic Innovation. *Ornament* 29(4):34-37.

Replicates the production of folded beads which appear at the end of the Roman period in the eastern Mediterranean. A few previous articles had tried to describe how they were made but some basic steps were lacking.

Kankam-Dwumfour, Eunice

2009 Recycled Glass Bead Production in Selected Towns in Ashanti (Darbaa, Asuofia Asamang and Akropong). M.P. thesis. Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Detailed study of modern powder-glass bead production in southern Ghana.

Kanungo, Alok Kumar

2001 Glass Beads in India: Lamp Winding and Moulding Techniques. *Man and Environment* 26(2):99-108.

2004 Glass Beads in Ancient India and Furnace-Wound Beads at Purdalpur: An Ethnoarchaeological Approach. *Asian Perspectives* 43(1):123-150.

Glass beads are presently a major product of India in at least three different locations, using altogether different techniques. Each production process leaves behind debitage unique to its individual manufacturing process. Archaeologically, it is imperative to identify and record the production techniques of glass bead manufacture and to identify the various specific waste products rather than merely speaking of beads and production centers on the basis of statistics.

2016 *Mapping Indo-Pacific Beads vis-à-vis Papanaidupet*. Aryan Books International, New Delhi. <https://www.academia.edu/99308389/>.

The only surviving traditional Indo-Pacific bead industry for at least the last two hundred year is at Papanaidupet, Andhra Pradesh, India. Having retained many traditional production methods, it has been crucial in answering many archaeological questions relating to glass in general and glass beads in particular.

2019 Chevron and Millefiorie in India. *Journal: Borneo International Beads Conference* 2019:69-88.

This paper records the process of making millefiori beads as practiced in Purdilnagar as a model for interpreting associated archaeological findings.

Karklins, Karlis

1982 Guide to the Description and Classification of Glass Beads. In *Glass Beads*, Parks Canada, History and Archaeology 59:83-117. <https://www.academia.edu/35225917/>.

Provides concise descriptions of the manufacture of drawn, wound, blown, mold-pressed, wound-on-drawn, and Prosser-molded beads. An updated and expanded version appears in Karklins (2012).

1993 The *a Speo* Method of Heat Rounding Drawn Glass Beads and its Archaeological Manifestations. *Beads: Journal of the Society of Bead Researchers* 5:27-36; <https://www.academia.edu/12781067/>.

Describes the method generally used for rounding large glass beads in European glasshouses from the early 17th century to the latter part of the 18th century.

2005 Die “a speo”-Methode zur Rundung gezogener Glasperlen durch Erhitzen und ihre archäologische Erscheinungsformen. *Der Primitivgeldsammler* 26(1):3-8.

German translation of Karklins (1993) with different (and color) images.

2012 Guide to the Description and Classification of Glass Beads found in the Americas. *Beads: Journal of the Society of Bead Researchers* 24:62-90; <https://www.academia.edu/38130799/>.

Provides concise descriptions of the manufacture of drawn, wound, blown, mold-pressed, wound-on-drawn, and Prosser-molded beads.

Karklins, Karlis with Carol F. Adams

1990 Dominique Bussolin on the Glass-Bead Industry of Murano and Venice (1847). *Beads: Journal of the Society of Bead Researchers* 2:69-84;
<https://www.academia.edu/12780248/>.

Translation from a French book of 1847 by the noted glassmaker Dominique (Domenico) Bussolin on Venetian bead manufacture and trade. Italy.

Karklins, Karlis and Derek Jordan

2009 An Early 19th-Century Account of Beadmaking in Murano and Venice. *Beads: Journal of the Society of Bead Researchers* 21:73-74. Reprinted from *The Bead Forum* 17:5-8 (1990); <https://www.academia.edu/39087830/>.

In 1816, two German botanists recorded one of the first accounts of drawn beadmaking in Venice, Italy. This version corrects several errors that appear in an earlier translation.

Koch, Leonie C.

2020 The Large Glass Beads of Leech Fibulae from Iron Age Necropoli in Northern Italy. *Beads: Journal of the Society of Bead Researchers* 32:3-14;
<https://www.academia.edu/45187054/>.

Provides an overview of these adornments as well as insights into their production technology, chemical composition, and origin. The wide variety of these objects suggests the existence of several local glass workshops.

Kock, Jan and Torben Sode

1995 *Glass, Glass Beads and Glassmakers in Northern India*. THOT, Vanlose, Denmark. Copiously illustrated study, covering traditional beadmaking in Firozabad, Jalesar, and Purdalpur, all near Agra, India. Tools and furnaces used in making raw glass, beads, and bangles are covered.

Kradolfer, Philippe J. and Nomoda E. Djaba

2020 *The Art of Recycled Glass Beads*. PJ&R Publications / Ghana Art Publications, North Salt Lake, UT.

Describes the techniques currently used to produce powder-glass beads in Ghana, and provides information concerning their history and cultural significance.

Krzyżanowska, Marta and Mateusz Frankiewicz

2015 An Archaeological Experiment with Early Medieval Glass Bead Production in an Open Hearth – The Results. *Slavia Antiqua* LVI:109-127;
<https://www.academia.edu/25109434/>.

The aim of this research was to verify the hypothesis of glass bead production in an open hearth, based on archeological evidence from Viking Age Ribe, Denmark, where the remains of “glass” hearths were discovered.

2017 “Paciorki mozaikowe w otwartym palenisku?”. Kontynuacja badań / Mosaic Beads in an Open Hearth. Continued Research. *Slavia Antiqua* LVIII:41-54;
<https://www.academia.edu/76693694/>.

Reports on an experiment intended to confirm that Scandinavian beadmakers could craft complex mosaic glass beads. English abstract.

Küçükerman, Önder

1987 *Glass Beads: Anatolian Glass Bead Making: The Final Traces of Three Millennia of Glass Making in the Mediterranean Region*. Turkish Touring and Automobile Association, Istanbul.

Furnace-wound beadmaking in western Turkey.

Lababidi, Lesley, Abidemi Babatunde Babalola, Bernard Gratuze, Joëlle Rolland, Emmanuel Véron, and Aurélien Canizares

2022 The Making of *Bikini* Glass in Bida, Nigeria: Ethnography, Chemical Composition, and Archaeology. *African Archaeological Review* 40(2):397-424;
<https://www.academia.edu/93464609/>.

Analysis of raw glass and beads made by Masagá glassmakers provides new compositional and technological data for the history of glass and its techniques.

Lierke, Rosemarie, F. Birkhill, and P. Molnar

1995 Experimental Reproduction of Spiral Beads. In *Glass Beads: Cultural History, Technology, Experiment and Analogy*, edited by M. Rasmussen, U.L. Hansen, and U. Näsman, pp. 117-121. Historical-Archaeological Experimental Center, Studies in Technology and Culture 2.

See Henderson (1995) for a response.

Liu, Robert K.

1989 Mosaic Face Beads. *Ornament* 12(3):22-23.

On Roman, Venetian, and modern Indian methods of manufacture.

2001 Bodom and Related Beads. Investigating African Powder-Glass Technology. *Ornament* 25(2):42-47; <https://www.academia.edu/38300029/>.

Proposes a possible methodology for the production of powder-glass beads.

Mannion, Mags

2019 Glass Beads: Production and Decorative Motifs. In *Insular Iconographies: Essays in Honour of Jane Hawkes*, edited by Meg Boulton and Michael D.J. Bintley. Martlesham, United Kingdom.

Medieval England.

Matthes, Christian, Martin Heck, Claudia Theune, Peter Hoffmann, and Johan Callmer
2004 Produktionsmechanismen frühmittelalterlicher Glasperlen. *Germania* 82(1):109-157;
<https://www.academia.edu/3541458/2004>.

Evidence of classical traditions in the manufacture of glass beads can be proven as late as the Merovingian period. This development, however, does not occur without its own dynamic and innovations; changes are particularly evident in the later Merovingian period. English abstract.

Moretti, Cesare

2001 Le materie prime dei vetrai veneziani rilevate nei ricettari dal XIV alla prima metà del XX secolo. II parte: elenco materie prime, materie sussidiarie e semilavorati. *Rivista della Stazione Sperimentale del Vetro* 31(3):17-32.

Part II of Moretti and Moretti (1999). This part presents a full list of the primary and secondary raw materials and intermediate products, culled from recipe books of the 14th-20th centuries, found mainly in private collections. The nature, chemical formula, and function of the recipes are indicated with additional historical information and sources, where known.

Moretti, Cesare, Bernard Gratuze, and Sandro Hreglich

2013 Le verre aventurine (« avventurina ») : son histoire, les recettes, les analyses, sa fabrication / Goldstone or Aventurine Glass: History, Recipes, Analyses, and Manufacture. *ArcheoSciences: Revue d'Archéométrie* 37:135-154;
<https://www.academia.edu/65826698/>.

Colored with minute flakes of copper, aventurine was probably discovered accidentally at the beginning of the 17th century in a Murano glass factory. This article evaluates ancient recipes and chemical analyses to propose a technical interpretation of the production process.

Moretti, C. and S. Moretti

1999 Le materie prime dei vetrai veneziani. Natura, lessico e fonti di approvvigionamento rilevate dai ricettari dal XIV al XIX secolo. *Rivista della Stazione Sperimentale del Vetro* 29(1):31-42.

Lists all the raw materials found in ca. 70 Venetian manuscripts of the 14th-19th centuries along with the name of the original manuscript and its date. Also provides chemical formulae and the source or origin of the materials when possible.

Moretti, Cesare and Tullio Toninato

2011 *Glass Recipes of the Renaissance*. Watts Publishing, London.

Provides a transcription of an anonymous Venetian manuscript from the mid-16th century along with an English translation with notes by David C. Watts and Cesare Moretti. Many recipes are specifically for beads.

Moretti, Gianni

2005 La Rosetta. Storia e tecnologia della perla di vetro veneziana più conosciuta al mondo / The Chevron Bead. History and Technology of the World Best Known Venetian Bead. *Rivista della Stazione Sperimentale del Vetro* 1:27-47.

Provides a detailed description of the production process, as well as a bit of historical background. In Italian and English.

Morris, Carole

1994 Powder Glass Beads from Dunkwa, Gold Coast (Ghana). *Bead Society of Great Britain Newsletter* 25:9-10.

A complete “kit” for making powder glass beads collected in the 1930s is in the Beck Collection, Cambridge.

Neri, Antonio

2002-2007 *L'arte vetraria/The Art of Glass*. 3 vols. Translated and annotated by Paul Engle. Heiden and Engle, Hubbardston, MA.

Published in three instalments, this is a new translation of the original, which was first published in 1612, and is generally recognized as a seminal work. An inset facsimile page of the original in 17th-century Italian accompanies each page of the translation. At the end of each volume is a glossary, full notes, a select bibliography, and appendices.

Neuwirth, Waltraud

1993 *Farbenglas I/Color in Glass I*. Self published, Vienna.

While not dealing directly with beads, this well-illustrated English/German volume will be of interest to anyone concerned with color in glass. There are hundreds of formulae from the 18th-20th centuries for the researcher or glass artist. The colors covered are white, black, yellow, and green.

1994 *Perlen aus Gablonz: Historismus, Jugendstil /Beads from Gablonz: Historicism, Art Nouveau*. Self published, Vienna.

This major work presents a detailed and well illustrated account of the Bohemian beads industry including history, technology, and numerous color plates that illustrate the various products. Text is in German and English.

1998 *Farbenglas II: Farbenpaletten blau, rot, Index/Color in Glass II: Color Pallets Blue, Red, Index*. Self published, Vienna.

Similar to Neuwirth (1993) but the colors covered are blue and red.

2011 Beads from Gablonz. *Beads: Journal of the Society of Bead Researchers* 23.

This publication reprints the revised English text of Dr. Neuwirth's (1994) treatise on the Bohemian bead industry complete with all 50 color plates.

Nightingale, Georg

2002 Aegean Glass and Faience Beads: An Attempted Reconstruction of a Palatial Mycenaean High-tech Industry. In *Hyalos, Vitrum, Glass. History, Technology and Conservation of Glass and Vitreous Materials in the Hellenic World*, edited by George Kordas, 47-54. Glasnet, Athens. <https://www.researchgate.net/publication/312033660>.

Summarizes the various techniques used to make beads in the Aegean region.

Ngan-Tillard, D., H. Huisman, F. Corbella, and A. van Nass

2018 Over the Rainbow? Micro-CT Scanning to Non-Destructively Study Roman and Early Medieval Glass Bead Manufacture. *Journal of Archaeological Science* 98:7-21; <https://www.academia.edu/85699043/>.

Explores the potential of desktop micro-CT scanners for inspecting and quantifying the microstructure of glass beads from two sites in the Netherlands to determine manufacturing techniques.

Nykonenko, Dmytro, Oleh Yatsuk, Laura Guidorzi, Alessandro Lo Giudice, Francesca Tansella, Ludovica Pia Cesareo, Giusi Sorrentino, Patrizia Davit, Monica Gulmini, and Alessandro Re

2023 Glass Beads from a Scythian Grave on the Island of Khortytsia (Zaporizhzhia, Ukraine): Insights Into Bead Making through 3D Imaging. *Heritage Science* 11, 238; <https://doi.org/10.1186/s40494-023-01078-0>.

Four glass beads were subjected to 3D imaging using micro-CT and photogrammetry in order to reconstruct the process used to produce and decorate them by detecting and interpreting the traces left by the technological processes on the bead surface and in the glass body. It turned out that all the beads were produced by winding hot glass around a mandrel.

Opper, Marie-José and Howard Opper

1993 Powdered-Glass Beads and Bead Trade in Mauritania. *Beads: Journal of the Society of Bead Researchers* 5:37-54; <https://www.academia.edu/18176358/>.

Includes a description of the manufacturing technology of Kiffa beads.

1996-1997 Imitation Pearls in France. *Beads: Journal of the Society of Bead Researchers* 8-9:23-34; <https://www.academia.edu/24324291/>.

Describes the different ways of making “false pearls” and illustrates some of the various styles, with a focus on the 20th century and Rousselet, a Parisian beadmaking firm.

Peake, James R.N. and Ian C. Freestone

2012 Cross-Craft Interactions between Metal and Glass Working: Slag Additions to Early Anglo-Saxon Red Glass. In *Integrated Approaches to the Study of Historical Glass – IAS12*, edited by Wendy Meulebroeck, Karin Nys, Dirk Vanclooster, and Hugo Thienpont, pp. 1-12. Proceedings of the International Society for Optical Engineering 8422.

SEM-EDS analysis of glass beads from the early Anglo-Saxon cemetery complex at Eriswell, southeast England, has provided insights into the production and technology of opaque red glass.

Pérez Pérez, Carolina, Yolanda Porto Tenreiro, and Comba Torre Castro

2010 Conxunto de doas de “pasta vítrea” do Museo do Castro de Viladonga. *CROA: Boletín da Asociación de Amigos do Castro de Viladonga* 20:50-63;
<https://www.academia.edu/47738799/>.

Discusses 17 types of paste beads donated to the museum from nearby excavations at Castro de Viladonga, a Celtic settlement in Galicia, Spain, occupied from the 3rd to the 5th century AD. Included are monochrome, eye, and gold-glass beads of various forms. Information is provided concerning the composition of the beads and the likely technique of manufacture.

Peterson, Neil

2017 Kicking Ash, Viking Glass Bead Making. *EXARC Journal* 2017/4;
<https://exarc.net/issue-2017-4/ea/kicking-ash>.

Reports on experiments that test a variety of chimney and furnace top shapes for furnaces that existed at Viking-era Ribe, Denmark, to determine their impact on ash in the working areas.

2019 The Mother of All Bead Furnaces: Testing a Hypothesis about a Natural Draft Bead Furnace. *EXARC Journal* 2019/2; <https://exarc.net/ark:/88735/10418>.

The goal of this experiment was to gather a preliminary understanding of a rather radical interpretation of the unusually larger hearth at Ribe, a Viking-era marketplace in southwestern Denmark.

Peterson, N., S. Backa, J. Ross, and R. Schweitzer

2014 Glass on Fire: Temperatures in Reconstructed Viking Era Bead Furnaces. In “*Can These Bones Come to Life?*,” Vol. 2, edited by Michael A. Cramer, pp. 27-44. Freelance Academy Press, Wheaton, IL. <https://www.academia.edu/15486278/>.

On the glass-working temperatures achieved in different types of reconstructed furnaces.

The Pottery Gazette

2009 How Beads are Made – 1890. *Beads: Journal of the Society of Bead Researchers* 21:111-114. Reprinted from *The Bead Forum* 11:2-8 (1987);
<https://www.academia.edu/39087830/>.

This article on the production of drawn glass beads on the Island of Murano, Venice, Italy, is most notable for the drawings of the various steps in the production process. A discussion of the manufacture of false pearls is also presented.

Purowski, Tomasz

2007 Evidence of Winding Technique on Glass Beads Discovered at the Lusatian Culture Stronghold in Wicina, Site 1. *Archaeologia Polona* 45:27-34;
<https://www.academia.edu/6826555/>.

Dated to late Hallstatt C and Hallstatt D, ca. 850 glass beads from Wicina 1 site in Poland were examined and 22% were found to be made by the winding technique.

- 2008 Badania techniki wyrobu paciorków szklanych okresu halsztackiego metodami petrograficznymi [Petrographic Methods in the Study of Hallstatt Glass Bead Manufacturing Techniques]. *Archeologia Polski* LIII(1):7-24; <https://www.academia.edu/6832649/>.

The examination of petrographic thin sections of five glass beads from the Wicina stronghold have demonstrated beyond doubt the usefulness of the method in determining beadmaking techniques attributed to the Halstatt period. English summary.

- 2012 *Wyroby szklane w kulturze lużyckiej w międzyrzeczu Noteci i środkowej Odry* [Glass Products of Lusatian Culture in the Noteć and Middle Oder River Interfluve]. Instytut Archeologii i Etnologii Polskiej Akademii Nauk, Warsaw.

A thorough study of the objects, including a wide range of beads. Includes information regarding bead production techniques. Poland.

- 2022 Glass Beadmaking Techniques from the Bronze Age Based on Finds from Poland. *Journal of Glass Studies* 64:249-253.

Discusses the two production methods: winding and bending.

- 2022 Identifying Bronze Age Glass Production Centres through Bead Making Techniques. *Archeologia Polski* LXVII:61-80; <https://www.academia.edu/96646748/>.

Discusses the chemical composition, production technology, and form of Bronze Age glass beads found in the territory of present-day Poland.

Råhländer, Moa

- 2014 Spår av tillverkningsmetoder i glas. En studie av redskapsspår i glas från Birka. B.A. thesis. Archaeology, Stockholm University, Stockholm. <https://www.academia.edu/33512045/>.

Experiments were conducted to recreate the techniques used in the production of various styles of wound glass beads recovered from excavations at Viking Age Birka, Sweden.

- 2017 *How Beads Come Together: Late Iron Age Glass Beads as Past Possessions and Present Sources*. M.A. thesis. Archaeology, Stockholm University, Stockholm. <https://www.academia.edu/33510378/>.

Investigates processes of glass bead production in Scandinavia and Anglo-Saxon England during the 6th-9th centuries.

- 2020 *A Chaîne Opératoire of Concentric Circles: A Different Approach to Glass Beads, their Production and Categorisation*. *Archaeological Review of Cambridge* 35(1):194-207; <https://www.academia.edu/45438669/>.

Reconstructs the *chaîne opératoire* of three visually similar beads decorated with eye-like concentric circles from the Scandinavian Iron Age (ca. 500 BC-AD 1100). By exploring differences in the production techniques, we may gain insight into not only how the beads were made but also the traditions that govern decisions in the creative process.

Risom, Thomas

2020 *The Bead Maker from Ribe: The Story of a Viking Craftsman*. Forlaget Trælår, Ribe. This is the story of a fictional glass beadmayer at Ribe, Denmark, and his technology based on archaeological and historical information, as well as the author's own beadmayer experiments and craftwork.

Rolland, Joëlle

2017 L'artisanat du verre dans le monde celtique au second âge du Fer : approches archéométriques, technologiques et sociales [Glass Craftsmanship in the Celtic World during the Second Iron Age: Archeometric, Technological and Social Approaches]. Ph.D. dissertation. Université Paris 1 - Panthéon-Sorbonne, Paris.
<https://www.academia.edu/36639117/>.

Approaches La Tène glassmaking through a socio-economic perspective. Includes the *chaîne opératoire* for glass beads.

2020 Gestes, savoir-faire et décisions : regards techniques sur l'évolution de la production de parures en verre au second âge du Fer. In *La spécialisation des productions et les spécialistes. Actes de la séance de la Société préhistorique française de Paris (juin 2018)*, edited by R. Peake, S. Bauvais, C. Hamon, and C. Mordant, pp. 85-108. Séances de la Société préhistorique française 16. <https://www.academia.edu/44620754/>.

Combines an ethnoarchaeological and experimental approach to reconstruct a realistic hypothetical *chaîne-opératoire* for almost all types of La Tène glass objects, beads included.

2021 *Le verre de l'Europe celtique : Approches archéométriques, technologiques et sociales d'un artisanat du prestige au second âge du Fer*. Sidestone Press, Leiden.
<https://www.academia.edu/51092032/>.

Combines archaeological data with archaeometry and technological approaches developed with modern glassmakers to reconstruct, step by step, the *chaîne opératoire* of bead and bangle production, from raw glass production, its transformation into beads and bracelets, as well as its distribution and consumption by La Tène societies.

Ross, Lester A.

2005 Late 19th- and Early 20th-Century Manufacture of Drawn Glass Tubing for Glass Beads. *Beads: Journal of the Society of Bead Researchers* 17:35-51;
<https://www.academia.edu/27508770/>.

An examination of hundreds of U.S. patents reveals that the mechanized production of drawn beads could have occurred as early as the late 19th century, but more likely, they were not mass produced until the end of World War I, after the invention of the Danner process for mechanically drawing glass tubing. These beads sometimes have multiple sides and/or distinctive polyhedral perforations.

Ross, Lester A. with Barbara Pflanz

1989 Bohemian Glass Beadmaking: Translation and Discussion of a 1913 German Technical Article. *Beads: Journal of the Society of Bead Researchers* 1:81-94;
<https://www.academia.edu/12877692/>.

Provides technical information on Bohemian glass beadmaking during the late 19th and early 20th centuries. The article concentrates on the manufacture of mold-pressed beads, secondarily describing methods for producing wound, blown, and drawn beads.

Sablerolles, Yvette, J. Henderson, and W. Dijkstra

1997 Early Medieval Glass Bead Making in Maastricht (Jodenstraat 30), The Netherlands. An Archaeological and Scientific Investigation. In *Perlen: Archäologie, Techniken, Analysen*, edited by Uta von Freeden and Alfred Wiczorek, pp. 291-213. Kolloquien zur Vor- und Frühgeschichte 1.

Glassworking, together with other high-temperature industries, was practiced in Merovingian Maastricht. A pit of the late 6th to early 7th centuries in the Jodenstraat yielded comprehensive evidence for glass beadmaking and some interesting technological information.

Schultz, Sarah and Heather Walder

2016 Technologies of Refired Glass Pendant Production: Experimental Replication Results. *The Wisconsin Archeologist* 97(2):29-48.

Drawing on ethnohistoric sources and the material properties of refired glass pendants recovered from 17th-18th-centuries sites across the Plains and Midwest regions of North America, investigates the production process.

Sode, Torben

1997 Contemporary Anatolian Glass Beads. An Experimental Study. In *Perlen: Archäologie, Techniken, Analysen*, edited by Uta von Freeden and Alfred Wiczorek, pp. 321- 324. Kolloquien zur Vor- und Frühgeschichte 1.

Photographs and sketches show how contemporary Anatolian glass beadmakers get their effects with the simplest technology. This has relevance for archaeological bead studies. Turkey.

2004 Glass Bead Making Technology. In *Ribe Excavations 1970-76, Vol. 5*, edited by Mogens Bencard, Aino Kann Rasmussen, and Helge Brinch Madsen, pp. 83-102. Jutland Archaeological Society Publications 46.

The important 8th-century trading center of Ribe, Denmark, has produced many bead finds and much evidence regarding local beadmaking.

Sode, Torben, Claus Feveile, and Ulrich Schnell

2010 An Investigation on Segmented, Metal-Foiled Glass Beads and Blown, Mirrored Glass Beads from Ribe, Denmark. In *Zwischen Fjorden und Steppe: Festschrift für Johan Callmer zum 65. Geburtstag*, edited by Claudia Theune, Felix Biermann, Ruth Struwe, and Gerson H. Jeute, pp. 319-328. Internationale Archäologie, Studia Honoraria 31.

A substantial number of the glass beads excavated at Ribe are imported beads, especially prevalent in the late 8th and beginning of the 9th century. Manufacturing techniques are discussed.

Sode, Torben and Jan Kock

- 2008 Traditional Glass Making in India, an Ethno-Archaeological Study. In ICOM Committee for Conservation, 15th Triennial Conference New Delhi 22-26 September 2008, vol. 1, edited by Janet Bridgland, pp. 232-236. Allied Publishers, New Delhi.
<https://doi.org/10.4000/ceroart.1218>.

Discusses the contemporary production of glass beads (including mosaic, square, and chevron types) and micro beads at Purdilpur, India.

Spaer, Maud

- 1993 Gold-Glass Beads: A Review of the Evidence. *Beads: Journal of the Society of Bead Researchers* 5:9-25; <https://www.academia.edu/18176164/>.

Describes the types and methods of manufacture of these beads from the 3rd century BC using gold foil. Rhodes is at present the sole known production site. In parts of eastern Europe, these beads lasted into the early 13th century AD.

Sprague, Roderick and An Jiayao

- 1990 Observations and Problems in Researching the Contemporary Glass-Bead Industry of Northern China. *Beads: Journal of the Society of Bead Researchers* 2:5-13; <https://www.academia.edu/27514446/>.

The authors visited several factories and describe the manufacture of various bead types in an industry now changing under pressure from the plastic bead industry.

Staššiková-Štukovská, Danica

- 2009 K Technikám spájania dvoj- a trojfarebných skiel v 7.-10. storočí. Podľa nálezov korálikov z územia Slovenska a Moravy [On Technologies of Sealing of Dichromic and Trichromic Glasses in the 7th-10th Centuries. According to Finds from the Territory of Slovakia and Moravia]. *Študijné zvesti. Archeologického Slovenskej Akadémie Vied* 45:201-211; <https://www.academia.edu/64315679/>.

Discusses several methods of decorating early medieval glass beads excavated in Slovakia and Moravia, including wrapping colored glass strands around a bead, adding dots, metal-in-glass, and glass-granulation. German summary.

Staššiková-Štukovská, Danica and Alfonz Plško

- 2015 Unusual Early Medieval Glass Technologies and their Origin. In *East European Glass from Antiquity to the beginning of the 20th Century*, edited by P.G. Gaidukov, pp. 279-285. Nestor-History, St. Petersburg. <https://www.academia.edu/28771809/>.

Three unusual beadmaking technologies employed in the region of Slovakia during the 7th-10th centuries are discussed: 1) utilizing glass impurities for ornamentation, 2) decorating with minute balls using binder, and 3) the use of “glass-crystalline” or “glass-quartz” techniques.

Stolyarova, Ekaterina

2010 К вопросу о технологии изготовления стеклянных золоченых бус домонгольского периода [Concerning Technology of Production of Gold-Glass Beads in the Pre-Mongol Period]. *Brief Reports, Academy of Sciences, Institute of Archaeology* 224:323-333; <https://www.academia.edu/12744473/>.

The author posits two production periods for metal-in-glass beads which are associated with different technological patterns and production centers. Beads of the 9th-10th centuries were made from drawn glass tubes in workshops of the Near East, while beads of the 11th-13th centuries were made in Byzantium and Rus' by twisting a glass rod. Russia.

2018 The Technology of Manufacturing Gold-Glass Beads of the Pre-Mongolian Period in Ancient Rus. In *The Historical Glass: A Multidisciplinary Approach to Historical Glass III*, edited by Danica Staššiková-Štukovská, pp. 155-164. Slovak Archaeological Society, Bratislava. <https://www.academia.edu/43436560/>.

Describes the four main production techniques and their chronological position. Some compositional analysis is also provided.

Tamura, Tomomi and Katsuhiko Oga

2014 Distribution of Lead-Barium Glasses in Ancient Japan. *Crossroads* 9:63-82; <https://www.researchgate.net/publication/303486321>.

Categorizes lead-barium beads and pendants from tomb of the Yayoi and Kofun periods based on form, manufacturing methods, and chemical composition, and discuss each production area and distribution route.

Teruzzi, Giorgio and Anna Alessandrello (eds.)

2007 *Trade Beads: From Venice to the Gold Coast*. Centro Studi, Archeologia Africana, Milano. <https://www.researchgate.net/publication/317741176>.

This exhibition catalog provides a brief overview of the Venetian bead industry including well-illustrated descriptions of the two major glass beadmaking processes (drawn and wound) and the various styles/types of beads (some on sample cards) that were produced for trade in Africa as well as elsewhere.

Theune, C., J. Callmer, M. Heck, and P. Hoffmann

1997 Glasperlenproduktion im Frühmittelalter. *Ethnographisch-Archäologische Zeitschrift* 38:225-234.

On glass bead production in the early Middle Ages.

Uboldi, Marina

2017 Perle di vetro: tecniche e percorsi di indagine. In *Nei panni degli altri. Costumi e accessori inconsueti nella Lombardia antica*, edited by C. Miedico and G. Tassinari, pp. 87-100. Emme Effe, Varese. <https://www.academia.edu/47782151/>.

Discusses the various techniques used to manufacture glass beads, especially the characteristics of the most ancient productions, with particular reference to the proto-history of northern Italy.

Volkmann, Armin and Claudia Theune

2001 Merowingerzeitliche Millefioriperlen in Mitteleuropa. *Ethnographisch-Archäologische Zeitschrift* 4:521-554; <https://www.academia.edu/1224495/>.

On Merovingian millefiori beads in Central Europe with information on production techniques.

Wang, Dong, Rui Wen, Julian Henderson, Xingjun Hu, and Wenying Li

2020 The Chemical Composition and Manufacturing Technology of Glass Beads Excavated from the Hetian Bizili Site, Xinjiang. *Heritage Science* 8:127; <https://www.academia.edu/44830891/>.

Located on the southern route of the Silk Road in western China, the Hetian Bizili site was a trade and cultural hub between the East and the West in ancient times. The methods used to produce eye and other beads are discussed.

Wiesenberg, Frank

2016 Prinzipstudie Perlenofen: Glasperlen und Fläschchen. In *Experimentelle Archäologie: Studien zur römischen Glastechnik*, Band 1, edited by Bettina Birkenhagen and Frank Wiesenberg, pp. 110-126. Schriften des Archäologieparks Römische Villa Borg 7.

Experimenting with a bead furnace to replicate Roman-period beads and vials. In German and English.

Willoughby, J.

2005 *Glass Bead Making in Turkey and Ghana*. Ends of the Earth, Hampton.

This DVD shows detailed stages in making fused and powder-glass beads at Krobo and Asiofia, Ghana, and furnace-worked beads at Kurudere, Turkey.

Yamahana, Kyoko and Yasunobu Akiyama

2022 Replicating Glass Beads from the Tokai University Andean Collection. *Glass* 66:35-48; <https://www.academia.edu/77269915/>.

Reports on the chemical composition and likely method of manufacture of early 20th-century beads comprising a necklace collected in the Andean region of South America. In Japanese with English summary.

FAIENCE

Bazzini, Marco, Gian Piero Devoti, Angelo Ghiretti, Enrico Giannichedda, Renata Perego, and Stefano Provini

2008 Un'officina per la lavorazione della steatite (X-XII secolo) ed un granaio carbonizzato (inizi XI) al Monte Castellaro di Gropallo (comune di Farini, media valle del Nure, Piacenza). Prima campagna di scavo (2006-2007). *Archeologia Medievale* XXXV:453-489; <https://www.academia.edu/1782500/>.

Discusses the *chaîne opératoire* for the production of faience beads at a workshop at Monte Castellaro di Gropallo in northern Italy during the 10th-12th centuries.

Bellintani, Paolo, Mauro Cesaretto, and Giovanna Residori

- 2003 Progetto “I materiali vetrosi nella protostoria dell’Italia del Nord”. Archeologia, archeometria, etnoarcheologia e approccio sperimentale. In *Archeologie sperimentali. Metodologie ed esperienze fra verifica, riproduzione, comunicazione e simulazione, Atti del convegno: Comano Terme-Fiavè (Trento, Italy) 13-15 settembre 2001*, edited by P. Bellintani and L. Moser, pp. 311-335. Provincia autonoma di Trento.
<https://www.academia.edu/991789/>.

Reports on experimental production replication of Bronze Age glass and faience beads found in northern Italy.

Boonstra, Stephanie L.

- 2019 Scarab and Seal Amulet Production in the Early Eighteenth Dynasty: An Analysis of the Materials, Technology, and Surface Characteristics to Determine Seal Amulet Workshops. Ph.D. dissertation. Classics, Ancient History, and Archaeology, University of Birmingham. <https://etheses.bham.ac.uk/id/eprint/9730/1/Boonstra2019PhD.pdf>.

Analyzes 876 seal amulets made of stone, glazed steatite, glazed composition (Egyptian faience, frit, and glass), precious metals, and other materials recovered from seven sites of Ancient Egypt in order to identify “typological” workshops (those based on shared characteristics) and “material” workshops (archaeological evidence of production) of the seal amulets of the period.

Brill, Robert H.

- 1993 Glass and Glassmaking in Ancient China, and Some Other Things from Other Places. In *The Toledo Conference, 1993 Journal*, edited by Ron Glowen, pp. 56-59. The Glass Art Society, Seattle.

Includes a discussion of how faience beads associated with burials of the Western Zhou dynasty (11th-8th centuries BC) in Shaanxi province were made. Comparisons are made with faience beads from Iran and Egypt.

Hatton, G.D., A.J. Shortland, and M.S. Tite

- 2008 The Production Technology of Egyptian Blue and Green Frits from Second Millennium BC Egypt and Mesopotamia. *Journal of Archaeological Science* 35(6):1591-1604.

Reports on the microstructure and chemical composition of some 55 Egyptian blue and green frit samples (including bead fragments) from New Kingdom Egypt and 15th-century-BC Mesopotamia. The findings suggest that frit cakes were the primary product, and that these were ground to produce powder which was then molded to shape and refired to produce vessels and beads.

Kenoyer, J. Mark

- 2005 Steatite and Faience Manufacturing at Harappa: New Evidence from Mound E Excavations 2000-2001. *Museum Journal* (National Museum of Pakistan) III-IV:43-56.
- Discusses a workshop where various objects of steatite and faience were made, including beads. The findings suggest that the beads may have been quite important as symbols of value since they were being made in relatively controlled contexts.

Minotti, Mathilde

2017 La faïence aux périodes nagadiennes à Adaïma. Les balbutiements d'une innovation technique pour la parure? *Archéonil* 27:27-48; <https://www.academia.edu/35588601/>.

This study highlights the macroscopic characteristics of each method known for faience production (application, efflorescence, and cementation) based on beads and pendants recovered from 4th-millennium Naqadian tombs at Adaima in Upper Egypt.

Nicholson, Paul T.

2007 *Brilliant Things for Akhenaten. The Production of Glass, Vitreous Materials and Pottery at Amarna Site O45.1.* Egypt Exploration Society, London.

<https://www.academia.edu/1236775/>.

Chapter 7 reviews the evidence for the steps in the production of faience beads and other objects at site O45.1 and to make some observations about its practice elsewhere at Amarna.

Shortland, A.

2003 Making a Talisman. *British Archaeology* (May):21.

Scottish and English prehistoric faience beads were made somewhat differently. In Scotland seaweed was used, and jabbing a sharp tool into the side of a paste cylinder formed segmented beads. In England, other kinds of plant ash were used and the beads were formed by rolling a cylinder against a shaper.

Shortland, A.J., N. Shishlina, and A. Egorkov

2007 Origins and Production of Faience Beads in the North Caucasus and the Northern Caspian Sea Region in the Bronze Age. In *Les cultures du Caucase: leur relations avec le Proche-Orient*, edited by B. Lyonnet, pp. 269-283. CNRS Editions, Paris.

Stocks, Denys A.

1997 Derivation of Ancient Egyptian Faience, Core and Glaze Materials. *Antiquity* 71(271):179-182.

An essential ingredient of the lovely blues in ancient Egyptian materials (faience, glazes, frits) is copper. How did the knowledge of that copper use arise? There is a telling congruence with Egyptian stone-drilling techniques and the characteristics of the powder drilled out.

Tajeddin, Zahed

2014 Egyptian Faience: Ancient Making Methods and Consideration of Technical Challenges in Sculptural Practice. PhD thesis. University of Westminster.

Discusses the structure and composition of Egyptian faience objects, and also provides a description of how faience beads and other objects are currently made in Qom, Iran.

Tite, M.S. and M. Bimson

1986 Faience: An Investigation of the Microstructures Associated with the Different Methods of Glazing. *Archaeometry* 28(1):69-78.

Towards discovering which of the three principal manufacturing methods (efflorescence, cementation, application) used in antiquity for glazing faience beads, etc., was used on a particular object.

Tite, M.S., P. Manti, and A.J. Shortland

2007 A Technological Study of Ancient Faience from Egypt. *Journal of Archaeological Science* 34(10):1568-1583; <https://doi.org/10.1016/j.jas.2006.11.010>.

The chemical composition and microstructure of 35 faience objects spanning the period from the Middle Kingdom through to the 22nd dynasty were determined using analytical scanning electron microscopy in order to determine with certainty whether ancient faience was glazed by efflorescence, cementation, or application.

Tite, M.S. and A.J. Shortland

2008 *Production Technology of Faience and Related Early Vitreous Materials*. Oxford University School of Archaeology Monograph 72. <https://www.academia.edu/11588854/>.

Provides an overview of faience production in Europe, the Near East, and the Indus Valley. Beads enter into the discussion, including their chemical composition.

Yamahana, Kyoko

2022 Historical Consideration of Ancient Egyptian Faience through a Craftsman's Point of View. *Journal of the Ceramic Society of Japan* 130(8):512-518; <https://www.academia.edu/84061868/>.

Describes the three distinct methods of faience production (efflorescence, cementation, and application) as it relates to small objects such as beads and pendants through replicative experimentation. The latter revealed that while cementation produced the best results, it was also the most labor intensive (expensive).

Zhang, Zhiguo and Qinglin Ma

2009 Faience Beads of the Western Zhou Dynasty Excavated in Gansu Province, China: A Technical Study. In *Ancient Glass Research along the Silk Road*, edited by Fuxi Gan, Robert Brill, and Tian Shouyun, pp. 275-289. World Scientific Publishing, Singapore. Discusses the chemical composition and manufacturing technology of the beads.

Zhou, Gu, Jian Zhu, Yaoting Xie, Tiqiao Xiao, Changsui Wang, and Yimin Yang

2016 Production Technology of Faience Beads from Peng State Cemetery, Shanxi Province, China. In *Recent Advances in the Scientific Research on Ancient Glass and Glaze*, edited by Fuxi Gan, Qinghui Li, and Julian Henderson, pp. 553-532. World Century Publishing, Hackensack, NJ, and World Scientific Publishing, Singapore.

CERAMIC, CLAY, AND TERRA COTTA

Bains, Roseleen, Milena Vasić, Daniella E. Bar-Yosef Mayer, Nerissa Russell, Katherine I. Wright, and Chris Doherty

2013 A Technological Approach to the Study of Personal Ornamentation and Social Expression at Çatalhöyük. In *Substantive Technologies at Çatalhöyük: Reports from the 2000-2008 Seasons*, edited by I. Hodder, pp. 331-364. Monumenta Archaeologica 31. <https://www.academia.edu/32379930/>.

Focuses on the technology and methods of manufacture of the recovered Neolithic beads, pendants, and preforms of stone, bone, shell, and clay from a major site in Turkey.

Nourisson, Pascale

2001 *Une aventure industrielle: La manufacture de Briare (1837-1962)*. Alan Sutton, Saint-Avertin, France.

Presents a thorough discussion of the “tile” or “Prosser-molded” bead industry initiated by Jean-Félix Bapterosses in Briare, France, in 1864; bead production ceased in 1962.

METAL

Adrimi-Sismani, Vassiliki, Maria Filomena Guerra, and Philippe Walter

2009 La tombe mycénienne de Kazanaki (Volos) et le mythe de la Toison d’or / The Mycenaean Tomb of Kazanaki (Volos) and the Myth of the Golden Fleece. *ArcheoSciences* 33:135-141; <https://www.academia.edu/40109979/>.

Reports on the production techniques of gold necklace beads found at a Mycenaean tholos tomb at Volos, Greece, and dated to 1350 BC.

Anselmi, Lisa Marie

2003 New Materials, Old Ideas: Native Use of European-Introduced Metals in the Northeast. Ph.D. dissertation. Department of Anthropology, University of Toronto, Toronto. <https://www.bac-lac.gc.ca/eng/services/theses/Pages/item.aspx?idNumber=57638484>.

Presents a detailed comparative study of the use of copper-alloy metals by the Wendat/Huron and Iroquois to produce – among other things – diverse forms of beads and pendants. The study is based on material recovered from 68 sites and includes descriptions of the various production techniques.

2008 *Native Peoples Use of Copper-Based Metals in NE North America: Contact Period Interactions*. VDM Verlag Dr. Mueller E.K., Saarbrücken, Germany.

Similar content to the previous item.

Ashkenazi, D., H. Gitler, A. Stern, and O. Tal

2017 *Metallurgical Investigation on Fourth Century BCE Silver Jewellery of Two Hoards from Samaria*. Scientific Reports 7, 40659; <https://www.academia.edu/30990531/>.

Provides a better understanding of technological abilities in the province of Samaria during the late Persian period as regards the production of beads, pendants, and other ornaments. Israel.

Bennett, Anna

2017 *The Ancient History of U Thong: City of Gold*. River Books, Bangkok.

Examines the various gold ornaments of the Dvāravatī period recovered from the ancient city of U Thong in Thailand. Includes information regarding manufacturing techniques.

Betancourt, Philip P., James D. Muhly, and Susan C. Ferrence

2017 A Gold and Lapis Lazuli Bead from Petras, Crete. In *Overturning Certainties in Near Eastern Archaeology: A Festschrift in Honor of K. Aslihan Yener*, edited by Çiğdem Maner, Mara T. Horowitz, and Allan S. Gilbert, pp. 67-81. Brill, Leiden.
<https://www.academia.edu/69532889/>.

A house tomb at the site of a Minoan palace in northeastern Crete yielded a gold and lapis lazuli bead of unusual form. Its production technology is discussed.

Bonomo, Mariano, Edgardo D. Cabanillas, and Ricardo Montero

2017 Archaeometallurgy in the Paraná Delta (Argentina): Composition, Manufacture, and Indigenous Routes. *Journal of Anthropological Archaeology* 47:1-11;
<https://www.academia.edu/31536441/>.

Concludes that the metal pendants and beads recovered from 12th-15th-century sites in the Paraná Delta were manufactured from copper by casting in open molds and hammering.

Childs, S. Terry

1994 Native Copper Technology and Society in Eastern North America. In *Archaeometry of Pre-Columbian Sites and Artifacts: Proceedings of a Symposium Organized by the UCLA Institute of Archaeology and the Getty Conservation Institute, Los Angeles, California, March 23-27, 1992*, edited by D.A. Scott and P. Meyers, pp. 229-253. The Getty Conservation Institute, Los Angeles.
http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/archaeometry.pdf accessed 31 December 2014.

Among other things, this article examines the cultural and non-cultural factors that influenced the effects of native copper production and use on different Native American societies over time. Beads are discussed.

Děd, Jiří, Estelle Ottenwelter, and Ludmila Šejvlová

2015 Early Medieval Silver Pearl from Lumbe's Garden Cemetery at Prague Castle: Composition, Manufacture, Deterioration and Conservation. *Studies in Conservation* 61:174-183; <https://www.academia.edu/15346392/>.

Presents a detailed study of an openwork silver bead found with the burial of a wealthy female interred during the 9th century. Czechia.

Dubreucq, Emilie, Pierre-Yves Milcent, Maryse Blet-Lemarquand, Barbara Armbruster, Bernard Gratuze, and Laurent Olivier

2018 L'or Hallstattien en France et Suisse occidentale: approches typologiques, technologiques et analytiques. In *Early Iron Age Gold in Celtic Europe: Society, Technology and Archaeometry. Proceedings of the International Congress (Toulouse, France, 11-14 March 2015)*, edited by Roland Schwab, Pierre-Yves Milcent, Barbara Armbruster, and Ernst Pernicka. Marie Leidorf, Rahden.
<https://www.academia.edu/87719480/>.

This typological, technological, and analytical study of Hallstattian gold ornaments from France and western Switzerland includes a short section on beads and pin heads.

Ehrhardt, Kathy, Samuel K. Nash, and Charles P. Swann

2000 Metal-Forming Practices among the Seventeenth Century Illinois, 1640±1682. *Materials Characterization* 45:275-288; <https://www.academia.edu/23839144/>.

A sample of 64 copper-based metal artifacts (including beads and pendants) excavated at the Haas/Hagerman Site, Clark County, Missouri, were examined metallographically to identify manufacturing techniques and technical processes employed by the Illinois to produce these new forms.

Francis, Peter, Jr.

1992 West African Perspective: Lost-Wax Brass Casting. *Ornament* 15(4):98f.

An account of old methods still in use, with a photograph of an unusual, very large, intricate elbow bead of brass "netting."

Gates, Marie-Henriette

1995 Archaeology in Turkey. *American Journal of Archaeology* 99:207-255.

Early Neolithic copper beads are found to have been heat-treated (p. 212).

Giumlia-Mair, Alessandra R., Susan C.Ferrence, James D. Muhly, and Philip P.Betancourt

2021 New Evidence for Sophisticated Goldworking Techniques from Middle Minoan Crete. In *Proceedings of the 5th International Conference "Archaeometallurgy in Europe," 19-21 June 2019, Miskolc, Hungary*, edited by Béla Török and Alessandra Giumlia-Mair, pp. 405-416. Monographies Instrumentum 73. <https://www.academia.edu/83221530/>.

Discusses the technology involved in the production of the various forms of gold beads and pendants recovered from the cemetery of house tombs at Petras near Sitia in eastern Crete, Greece.

Golani, Amir

2019 Technological Observations on Two-Part Stone Jewelry-Casting Molds of the Late Bronze Age in the Near East. *Journal of Eastern Mediterranean Archaeology and Heritage Studies* 7(1):44-62; <https://www.academia.edu/38732370/>.

Surveys finds of molds used to produce metal beads, pendants, and other adornments. Includes information regarding the casting techniques used to produce the ornaments.

Hansen, Svend

2016 Beads of Gold and Silver in the 4th and 3rd Millennium BC. In *From Bright Ores to Shiny Metals: Festschrift for Andreas Hauptmann on the Occasion of 40 Years Research in Archaeometallurgy and Archaeometry*, edited by Gabriele Körlin, Michael Prange, Thomas Stöllner, and Ünsal Yalçın, pp. 37-48. Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum 210.

Discusses metal beads in southern Europe with emphasis on narrow elongated specimens. Includes a section on beadmaking technology.

Harrison, Ainslie

2011 *Fabrication Techniques of Pre-Columbian Gold Beads*. Smithsonian Museum Conservation Institute Report 6100.3.

Investigates the technology as well as the elemental composition of gold beads recovered from sites in Panama. Comparisons are made with beads from sites in Central and South America.

Konstantinidi-Syvridi, Eleni, Nikolas Papadimitriou, Anna Philippa-Touchais, and Akis Goumas

2014 Goldworking Techniques in Mycenaean Greece (17th /16th-12th century BC): Some New Observations. In *Metalle der Macht – Frühes Gold und Silber / Metals of Power – Early Gold and Silver*, edited by Harald Meller, Roberto Risch, and Ernst Pernicka, pp. 335-348. Tagungen des Landesmuseums für Vorgeschichte Halle 11(1).

The techniques discussed include granulation, the anticlastic technique, and “gold embroidery.” Beads are included in the discussion.

Lazarovici, Gheorghe and Cornelia-Magda Lazarovici

2020 A Workshop Specialized in Gold Jewellery from the Copper Age. In *Beauty and the Eye of the Beholder: Personal Adornments across the Millennia*, edited by M. Mărgărit and A. Boronean, pp. 323-342. Editura Cetatea de Scaun, Targoviște.

Located in Peștera Ungurească, Cheile Turzii, Romania, the workshop operated between 4150 and 3800 cal BC. Its products included beads, gold plaques, and pieces applied to clothing or armor. Information about the production process is provided.

Leusch, Verena, Barbara Armbruster, Ernst Pernicka, and Vladimir Slavčev

2015 On the Invention of Gold Metallurgy: The Gold Objects from the Varna I Cemetery (Bulgaria) – Technological Consequence and Inventive Creativity. *Cambridge Archaeological Journal* 25(1):353-376; <https://www.academia.edu/84111764/>.

Comprehensive analysis of gold beads and other items from the Varna I cemetery (4550-4450 cal. BC) sheds new light not only on the technical expertise of the so-far earliest known fine metalworkers within the Southeast European Chalcolithic, but also on the general context and potential prerequisites in which the invention of gold metallurgy may be embedded.

Leusch, Verena, Ernst Pernicka, and Barbara Armbruster

2014 Chalcolithic Gold from Varna – Provenance, Circulation, Processing, and Function. In *Metalle der Macht – Frühes Gold und Silber / Metals of Power – Early Gold and Silver*, edited by Harald Meller, Roberto Risch, and Ernst Pernicka, pp. 165-182. Tagungen des Landesmuseums für Vorgeschichte Halle 11(1).

Discusses some aspects of early goldworking and use on the basis of new analyses of gold objects (including beads) from the Late Chalcolithic cemetery, Varna I, in Bulgaria.

Liu, Yan, Jianjun Yu, Junchang Yang, and Wenying Li

2021 Long-Distance Relationship with the Mediterranean World? Gold Beech-Nut Pendants Found in the Early Iron Age China and the Eurasian Steppe. *Mediterranean Archaeology and Archaeometry*. 21(2):259-280; <https://www.academia.edu/51097652/>.

Presents a micro-analytical study of an array of gold pendants excavated from the burial site at Dongtaledé (9th-7th centuries BCE) in the Altai region of Xinjiang, northwestern China. Includes information re: chemical composition and manufacturing techniques.

Loepp, David and Alexander Maass

2017 Experimental Replication of a Granulated Gold Bead from an Ancient Tomb at Bat, Oman. *Metalla* 23(1):29-38; <https://www.academia.edu/112074311/>.

Composed of 96 gold granules and dating to between the 3rd and the 1st millennium BC, experimentation revealed that the bead was likely produced using a combination of autogenous welding and brazing with copper salts to construct and join the individual units.

Martinón-Torres, Marcos, Roberto Valcárcel Rojas, Juanita Sáenz Samper, and María Filomena Guerra

2012 Metallic Encounters in Cuba: The Technology, Exchange and Meaning of Metals before and after Columbus. *Journal of Anthropological Archaeology* 31:439-454; <https://www.academia.edu/44720469/>.

Presents the results of the first analytical program focused on metal artifacts (beads and pendants included) recovered from a range of Taíno sites in Cuba. Includes compositional analysis and observations on production processes.

McCoy, T.J., A.E. Marquardt, John T. Wasson, Richard D. Ash, and Edward P. Vicenzi

2017 The Anoka, Minnesota Iron Meteorite as Parent to Hopewell Meteoritic Metal Beads from Havana, Illinois. *Journal of Archaeological Science* 81:13-22.

Delves into the composition and manufacture of the beads, as well as the source of the material.

Miller, Duncan E. and Nikolaas J. van der Merwe

1994 Early Iron Age Metal Working at the Tsodilo Hills, Northwestern Botswana. *Journal of Archaeological Science* 21(1):101-115.

Describes Early Iron Age metal working at the sites of Divuyu and Nqoma including the fabrication of forged square wire and flat sheets of inhomogeneous iron and steel which were subsequently cut into strips for beads and other ornaments.

Morero, Elise and Romain Prévalet

2015 Technological Transfer of Luxury Craftsmanship between Crete and the Orient during the Bronze Age. In *There and Back Again – the Crossroads II, Proceedings of an International Conference Held in Prague, September 15-18, 2014*, edited by Jana Mynářová, Pavel Onderka, and Peter Pavúk, pp. 59-83. Charles University in Prague. <https://www.academia.edu/19368730/>.

Reveals that Cretan technical processes such as goldworking were not exclusively the result of transfer. Indeed, the ancient techniques were also developed from a series of local innovations, craftsmanship stimulation through networking, and reciprocal contacts. Goes on to reconstruct the techniques and tools used in the production of gold ornaments, including beads and pendants.

Natuniewicz-Sekuła, Magdalena

2017 The Craft of the Goldsmith in Wielbark Culture in the Light of the Finds from the Cemetery at Weklice, Elbląg Commune and Other Necropolis of Roman Period from Elbląg Heights. Technological Studies of Selected Aspects. *Sprawozdania Archeologiczne* 69:185-233; <https://www.academia.edu/34825917/>.

Thorough discussion of the chemical composition and production techniques of gold, silver, and copper-alloy beads and pendants from sites in northern Poland. The techniques include casting, forging, filigree, granulation, gilding, and soldering.

2019 The Craft of the Goldsmith in the Society of the Wielbark Culture from the Roman Period – Case Study of the Cemetery at Weklice. In *Interacting Barbarians: Contacts, Exchange and Migrations in the First Millennium AD*, edited by Adam Ciećliński and Bartosz Kontny, pp. 297-307. *Neue Studien zur Sachsenforschung* 9. <https://www.academia.edu/41028423/>.

A condensed version of the previous article omitting the compositional information.

Ottenwelter, Estelle

2020 Mikulčice Elite Jewellery: A Technical Study of *Gombiky*. In *Great Moravian Elites from Mikulčice*, edited by Lumír Poláček et al., pp. 309-315. Czech Academy of Sciences, Institute of Archaeology, Brno. <https://www.academia.edu/49778144/>.

Examines how hollow metal pendants unearthed in a Moravian cemetery of the 9th century were made.

Ottenwelter, E., L. Barčáková, C. Josse, L. Robbiola, Š. Krupíčková, J. Frolík, and L. Poláček

2020 Technological Characterisation of Early Medieval Gilded Copper Hollow Pendants (*gombiky*), from Mikulčice (Moravia) and Prague Castle (Bohemia). *Archaeological and Anthropological Sciences* 12(7); <https://www.academia.edu/43475080/>.

The pendants, dating from the 9th-10th centuries, were examined to identify the technology of gilding and the material chosen as the substrate. Czechia.

Ottenwelter, Estelle, Jiří Děd, and Ludmila Barčáková

2014 Technical Study of Jewellery from the Lumbe Garden Cemetery at Prague Castle. In *Castrum Pragense 12. Cemetery in the Lumbe Larden at Prague Castle. Part II. Studies*, edited by Jan Frolík, pp. 163-287. Prague. <https://www.academia.edu/20798546/>.

Investigates the composition, construction, and decorative techniques of various metal ornaments including hollow spherical pendants with and without enamel inlays (*gombiky*) and beads. Czechia.

2016 Early Medieval *Gombiky* from the “Lumbe Garden” Cemetery, Prague Castle. *Materials and Manufacturing Processes*; <https://www.academia.edu/36739714/>.

Presents a typological and technical study of hollow spherical pendants (*gombiky*) from a cemetery where members of the nobility were interred during the 9th century. Czechia.

Peterson, Neil

2017 Kicking Ash, Viking Glass Bead Making. *EXARC Journal* 2017/4; <https://exarc.net/ark:/88735/10310>.

A consistent problem in previous beadmaking experiments has been an excess of ash embedded in the glass beads produced. This experiment sequence is designed to enable testing of a variety of chimney and furnace top shapes to determine their impact on ash in the working areas.

Peterson, Neil, Sarah Backa, Jean Ross, and Robert Schweitzer

2014 Glass on Fire: Temperatures in Reconstructed Viking Era Bead Furnaces. In *Can These Bones Come to Life? Insights from Reconstruction, Reenactment, and Re-creation*, Vol. II, edited by Michael a Cramer. Freelance Academy Press, Wheaton, IL. <https://www.academia.edu/15486278/>.

Using data from excavations of Norse production sites coupled with experimental archaeology, the authors test three possible furnace reconstructions, with particular emphasis on temperature patterns and ranges.

Pozza, Jacqueline M.

2016 Investigating the Functions of Copper Material Culture from Four Oneota Sites in the Lake Koshkonong Locality of Wisconsin. M.A. thesis. Department of Anthropology, The University of Wisconsin-Milwaukee. <https://www.academia.edu/31152262/>.

Provides a detailed catalog of the recovered beads, pendants, and tinkling cones with information concerning production techniques.

2016 Peering Past the Patina: An Analysis of Copper Artifacts from Four Oneota Sites in the Lake Koshkonong Area. Student Paper Competition, 2016 Midwest Archaeological Conference, Iowa City. <https://www.academia.edu/29157842/>.

Within the range of manufacturing styles for beads in the site assemblages, there appear to be two clearly variant traditions.

- 2019 Approaching a Vast and Varied Copper Collection: An Analysis of Oneota Copper Artifacts of the Lake Koshkonong Region in Southeastern Wisconsin. *Journal of Archaeological Science: Reports* 25:632-647; <https://www.academia.edu/83157818/>.

A closer look at copper bead manufacturing techniques shows a stark difference in invested labor between two subgroups of this artifact type.

Prévalet, Romain

- 2009 Preliminary Observation on Three Late Bronze Age Gold Items from Ras Shamra-Ugarit (Syria). *ArchéoSciences* 33:129-133.

Describes the technical characteristics of the filigree and granulation of two gold beads, as well as the joining processes that were employed by the craftsmen of a famous Levantine kingdom at the end of the 2nd millennium BC.

- 2010 La Granulation en Méditerranée Orientale à l'Âge du Bronze. *Les Annales Archéologiques Arabes Syriennes* XLIX-L:31-44; <https://www.academia.edu/261983/>.

Explains the evolution of the granulation process in gold jewelry production, its use, and spread in the Eastern Mediterranean during the second half of the 3rd millennium through some revealing examples.

- 2013 La décoration des pièces d'orfèvrerie-bijouterie en Méditerranée orientale à l'âge du Bronze: techniques, productions, transmissions. Ph.D. dissertation. Université Paris 1 Panthéon-Sorbonne.

A detailed study of the technology and production of gold ornaments, including beads and pendants, in the Eastern Mediterranean during the Bronze Age and the transmission of the techniques.

- 2014 Bronze Age Syrian Gold Jewellery – Technological Innovation. In *Metalle der Macht – Frühes Gold und Silber / Metals of Power – Early Gold and Silver*, edited by Harald Meller, Roberto Risch, and Ernst Pernicka, pp. 423-433. Tagungen des Landesmuseums für Vorgeschichte Halle 11(2); <https://www.academia.edu/10086975/>.

Presents an overview of the manufacture of gold jewelry in Syria during the Bronze Age, beads included.

- 2014 Étude technique d'une perle en or de Tell Banat (Syrie) et réflexion sur la diffusion des savoirs au III^e millénaire av. J.-C. *Syria* 91:247-260.

Reconstructs the technical processes employed in the 3rd millennium BC to produce a gold bead decorated with filigree and granulation at Tell Banat, Syria.

Schorsch, D.

- 1995 The Gold and Silver Necklaces of Wah: A Technical Study of an Unusual Metallurgical Joining Method. In *Conservation in Ancient Egyptian Collections*, edited by C.E. Brown, F. Macalister, and M. Wright, pp. 127-135. Archetype Publications, London.

Ball beads of gold and of silver were investigated by X-ray, EDS/SEM, and other analytical methods, revealing how joins were made with the help of flanges. Ancient Egypt.

Siklósi, Zsuzsanna, Eszter Horváth, Igor Maria Villa, Stefano Nisi, Viktória Mozgai, Bernadett Bajnóczi, Péter Csippán, Péter Hornok, and Péter Kiss

2022 The Provenance of the Raw Material and the Manufacturing Technology of Copper Artefacts from the Copper Age Hoard from Magyaregres, Hungary. *PLoS ONE* 17(11):e0278116; <https://www.academia.edu/97838334/>.

Found in a ceramic vessel, the hoard includes 681 small copper beads, 264 limestone beads, 1 *Spondylus* bead, 19 tubular spiral copper coils, and 2 large spectacle-spiral copper pendants.

Soriano, Ignacio, Alicia Perea, Nicolau Escanilla, Fernando Contreras Rodrigo, Yaaqoub Yousif Ali Al Ali, Mansour Boraik Radwan Karim, and Hassan Zein

2018 Goldwork Technology at the Arabian Peninsula. First Data from Saruq al Hadid Iron Age Site (Dubai, United Arab Emirates). *Journal of Archaeological Science: Reports* 22; <https://www.academia.edu/82621858/>.

Describes the techniques used to produce the various bead forms recovered from the earliest recorded workshop on the Arabian Peninsula where gold was fashioned into ornaments.

Tate, Jim, Katherine Eremin, Lore G. Troalen, Maria Filomena Guerra, Elizabeth Goring, and Bill Manley

2019 The 17th Dynasty Gold Necklace from Qurneh, Egypt. *ArchéoSciences* 33:121-128; <https://www.academia.edu/1118080/>.

Describes the necklace and also provides information concerning its production techniques and the composition of the metal.

Trifonov, Viktor, Natalia Shishlina, Anastasia Loboda, Vladimir Khvostikov, Ekaterina Kovalenko, Elena Tereschenko, and Ekaterina Yatsishina

2023 Tricky Technology of Making Silver Seed Beads in the Early Bronze Age, NW Caucasus. *Archaeometry*; <https://www.academia.edu/108124140/>.

Reconstructs the *chaîne opératoire* of the production process using beads recovered from Kurgan 2 at the Tsarskaya site, southeastern Russia.

Trifonov, V.A., N.I. Shishlina, A.Yu. Loboda, N.N. Kolobylna, E.Yu. Tereshchenko, and E.B. Yatsishina

2018 Золотые тонкостенные бесшовные бусы из дольмена раннего бронзового века в кургане № 2 у станицы Царская, Северо-Западный Кавказ: технология изготовления и культурно-исторический контекст [Gold Thin-walled Seamless Beads from a Dolmen of the Early Bronze Age in Kurgan No. 2 near the Cossack Village of Tsarskaya, Northwestern Caucasus: The Technology of Manufacturing and Cultural Historical Context]. *Archaeological News* 24:68-82; <https://www.researchgate.net/publication/329160839>.

The site is in southern Russia. English summary.

- 2019 The Production of Thin Walled Jointless Gold Beads from the Maykop Culture Megalithic Tomb of the Early Bronze Age at Tsarskaya in the North Caucasus: Results of Analytical and Experimental Research. *Archaeometry* 61(1):117-130; <https://www.academia.edu/86852839/>.

Reconstructs the technical *chaîne opératoire* of gold beads recovered from a site in southeastern Russia.

Troalen, Lore G., Maria Filomena Guerra, Jim Tate, and Bill Manley

- 2009 Technological Study of Gold Jewellery Pieces Dating from the Middle Kingdom to the New Kingdom in Egypt. *ArchéoSciences* 33:111-119; <https://www.academia.edu/35998229/>.

This preliminary study illustrates the Ancient Egyptian goldsmiths' skills in working with wires, granulation, and joining techniques, and provides information about the evolution of alloy composition and the use of alluvial gold.

Yule, Paul

- 2020 Gold Beads of the Samad Late Iron Age, Sultanate of Oman. In *Arabian Antiquities. Studies Dedicated to Alexander Sedov on the Occasion of His Seventieth Birthday*, edited by I.V. Zaitsev, pp. 285-294. The State Museum of Oriental Art, Moscow. <http://archiv.ub.uni-heidelberg.de/propylaeumdok/4931/>.

One of the most striking finds to be excavated from the multi-period cemeteries at Samad al-Ša'n in east-central Oman is a suite of gold beads uncovered in a Late Iron Age grave. Includes information about the production techniques involved.

STONE

Alarashi, Hala

- 2014 La parure épipaléolithique et néolithique de la Syrie (12e au 7e millénaire avant J.-C.): Techniques et usages, échanges et identités. Ph.D. dissertation. Université Lumière-Lyon, Lyon.

On the Epipalaeolithic and Neolithic personal adornments excavated at various sites in Syria (12th-7th millennia BC). Includes production technology, uses, and trade.

- 2016 Butterfly Beads in the Neolithic Near East: Evolution, Technology and Socio-Cultural Implications. *Cambridge Archaeological Journal* 26(3):493-512; <https://www.researchgate.net/publication/304823710>.

Includes a section on the production technology of the beads which first appeared during the 10th millennium cal. BC.

Altınbilek, Ç., G. Coşkunsu, Y. Dede, M.R. Iovino, C. Lemorini, and C. Özdoğan

- 2001 Drills from Çayönü. A Combination of Ethnographic, Experimental and Use-Wear Analysis. In *Beyond Tools: Redefining the PPN Lithic Assemblages of the Levant*, edited

by I. Caneva, C. Lemorini, D. Zampetti, and P. Biagi, pp. 137-144. *Studies in Early Near Eastern Production, Subsistence, and Environment* 9.

Delves into stone bead production technology at a site in southeastern Turkey.

Amblard, Sylvie

1984 *Tichit-Walata (R.I. Mauritanie): Civilisation et industrie lithique*. Éditions Recherche sur les civilisations, Paris.

Contains detailed remarks on beads from Mauritania, including stone bead manufacturing techniques (pp. 191-200).

Andrieu, Chloé, Edna Rodas, and Luis Luin

2014 The Values of Classic Maya Jade: A Reanalysis of Cancuen's Jade Workshop. *Ancient Mesoamerica* 25:141-164.

Presents a technological reanalysis of material (beads included) recovered from a large jade preform production area in Guatemala and shows that the quality and color of the raw material corresponds to very different production processes, values, and distribution within the site.

Aurisicchio, C.

1995 Analisi chimico-mineralogica di una perlina in "steatite" proveniente dal sito del Neolitico finale di Quadrato di Torre Spaccata (Roma). *Origini* 19:305-307.

SEM and electronic microsound analyses reveal the tools used for perforating and polishing a Late Neolithic steatite bead found in Rome, Italy. The stone probably came from some distance away: the Ligurian Alps or Tuscan-Emilian Appennines.

Bains, Roseleen

2012 The Social Significance of Stone Bead Technologies at Neolithic Çatalhöyük, Turkey. Ph.D. dissertation. University College London, London.
<https://discovery.ucl.ac.uk/id/eprint/1368215/>.

Examines technological practices and choices, reconstructs the manufacturing process, and analyzes production contexts in order to determine the organization of stone-bead production at a major Neolithic settlement.

Bains, Roseleen, Milena Vasić, Daniella E. Bar-Yosef Mayer, Nerissa Russell, Katherine I. Wright, and Chris Doherty

2013 A Technological Approach to the Study of Personal Ornamentation and Social Expression at Çatalhöyük. In *Substantive Technologies at Çatalhöyük: Reports from the 2000-2008 Seasons*, edited by I. Hodder, pp. 331-364. *Monumenta Archaeologica* 31.
<https://www.academia.edu/32379930/>.

Focuses on the technology and methods of manufacture of the recovered Neolithic beads, pendants, and preforms of stone, bone, shell, and clay from a major site in Turkey.

Baird, Douglas, Andrew Garrard, Louise Martin, and Katherine Wright

1992 Prehistoric Environment and Settlement in the Azraq Basin: An Interim Report on the 1989 Excavation Season. *Levant* 24(1):1-31.

Discusses the form and method of manufacture of the stone, shell, and bone beads recovered from PPNB and Late Neolithic contexts at sites Azraq 31 and Wadi el-Jilat 32 in Jordan.

Barthélemy de Saizieu, B., and M. Casanova

1991 Semi-Precious Stones Working at Mundigak: Carnelian and Lapis Lazuli. *Proceedings of South Asian Archaeology* 11:17-30.

On the production of stone beads at a site of the 5th-2nd centuries BC in Kandahar, Afghanistan.

Baysal, Emma L.

2014 Findings Relating to the Manufacture and Use of Stone Beads at Neolithic Boncuklu Höyük. *Colloquium Anatolicum* 13:57-79.

Discusses the production technology of the beads recovered from this site in Turkey.

Belcher, Ellen H.

2011 Halaf Bead, Pendant and Seal 'Workshops' at Domuztepe: Technological and Reductive Strategies. In *The State of the Stone Terminologies, Continuities and Contexts in Near Eastern Lithics*, edited by Elizabeth Healey, Stuart Campbell, and Osamu Maeda, pp. 135-143. *Studies in Early Near Eastern Production, Subsistence, and Environment* 13

Examines some of the technological aspects of stone beads, pendants, and seals from a large 6th-millennium BC site in southeast Turkey in terms of both the utilization of raw materials and the evidence for the methods of manufacture of final products.

Behera, Pradeep K. and Sakir Hussain

2017 Early Historic Gemstone Bead Manufacturing Centre at Bhutiapali, the Middle Mahanadi Valley, Odisha. *Heritage: Journal of Multidisciplinary Studies in Archaeology* 5:269-282.

Located in east-central India, the site yielded evidence of the production of beads from precious and semi precious stones.

Bernabò Brea, M., M. Miari, P. Bianchi, A. Ghiretti, R. Micheli, and J. Tirabassi

2006 Manufatti litici d'adorno in Emilia tra neolitico ed età del Bronzo: tipologia, tecnologia, distribuzione. *Atti della XXXIX Riunione Scientifica*, Vol. II:697-712. Firenze.

Discusses the typology, technology, and distribution of stone ornaments (including beads and pendants) excavated in Emilia, northern Italy, made between the Neolithic and the Bronze Age.

Bernier, Hélène

2005 Étude archéologique de la production artisanale au site Huacas de Moche, côte nord du Pérou. Ph.D. dissertation. Department of Anthropology, University of Montreal.=1.

Discusses stone bead and pendant production technology at Huacas de Moche on the north coast of Peru.

Bhan, Kuldeep K.

2017 Stone Bead Production through the Ages in Gujarat. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo, pp. 255-276. Indian Institute of Technology, Gandhinagar, India.

2018 Some Important Aspects of Technology and Craft Production in the Indus Civilization with Specific Reference to Gujarat. In *Walking with the Unicorn: Social Organization and Material Culture in Ancient South Asia. Jonathan Mark Kenoyer Felicitation Volume*, edited by Dennys Frenez, Gregg M. Jamison, Randall W. Law, Massimo Vidale, and Richard H. Meadow, pp. 48-67. Archaeopress, Oxford.
<https://www.academia.edu/109834418/>.

Includes a discussion of stone beadmaking during the Harappan phase of the Indus Tradition in Gujarat State, west-central India.

Bhan, Kuldeep K., Jonathan Mark Kenoyer, and Massimo Vidale

2017 Living Tradition: Stone Bead Production in Khambhat – An Ethnoarchaeological Approach. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo, pp. 167-190. Indian Institute of Technology, Gandhinagar. <https://www.academia.edu/38492147/>.

Presents a detailed study of current beadmaking at Khambhat (Cambay) in west-central India, one of the largest stone bead-working centers in the world.

Boonstra, Stephanie L.

2019 Scarab and Seal Amulet Production in the Early Eighteenth Dynasty: An Analysis of the Materials, Technology, and Surface Characteristics to Determine Seal Amulet Workshops. Ph.D. dissertation. Classics, Ancient History, and Archaeology, University of Birmingham. <https://etheses.bham.ac.uk/id/eprint/9730/1/Boonstra2019PhD.pdf>.

Analyzes 876 seal amulets made of stone, glazed steatite, glazed composition (Egyptian faience, frit, and glass), precious metals, and other materials recovered from seven sites of Ancient Egypt in order to identify “typological” workshops (those based on shared characteristics) and “material” workshops (archaeological evidence of production) of the seal amulets of the period.

Bril, Blandine, Valentine Roux, and Gilles Dietrich

2000 Habilités impliquées dans la taille des perles en calcédoine: caractéristiques motrices et cognitives d’une action située complexe. In *Cornaline de l’Inde: des pratiques techniques de Cambay aux techno-systèmes de l’Indus*, edited by V. Roux, pp. 211-329. Éditions de la Maison des sciences de l’homme, Paris.
<https://books.openedition.org/editionsmsmh/8725>.

Delves into the skills involved in knapping chalcedony beads at Cambay, India.

Bruhns, Karen O.

1987 Los talleres de cristal de roca en Pirincay, provincia del Azuay. *Miscelánea Antropológica Ecuatoriana* 7:91-100.

Discusses the production of beads from rock crystal at the Formative period site of Pirincay in the highlands of Ecuador.

Brunet, Olivier

2009 Bronze and Iron Age Carnelian Bead Production in the UAE and Armenia: New Perspectives. *Proceedings of the Seminar for Arabian Studies* 39:57-68.

This technological study reveals the existence outside the Indus Valley of different productions and levels of technical skill. Included are discussions of heat treatment, knapping and finishing phases, and drilling.

2014 Les éléments de parure en pierre de la péninsule omanaise du 6e au 2e millénaire av. J.-C. : Production, circulation, valeurs. 3 vols. Ph.D. dissertation. Archéologie, Université Paris 1 Panthéon-Sorbonne.

Exhaustive study of the production, circulation, and value of stone beads and other ornaments from the Oman Peninsula during the 6th to 2nd millennium BC.

Calegari, Giulio

1993 Le perle in «corniola» di Taouarde. L'arte e l'ambiente del Sahara preistorico: dati e interpretazioni. *Memorie della Società Italiana di Scienze Naturali e del Museo Civici di Storia Naturale di Milano* 25(2):117-120.

Describes the shaping and perforation of prehistoric carnelian beads based on finds near Taouardei, Mali.

2003 Un petit atelier de perles en quartz de Taouardei. Préhistoire Art e Sociétés – Mélanges Jean Gaussen. *Bulletin de la Société Préhistorique Ariège-Pyrénées* LVIII:233-236.

Discusses a small workshop for making quartz beads at Taouardei, Mali.

Calley, Sylvie

1989-1990 L'atelier de fabrication de perles de Kumartepe: quelques observations technologiques. *Anatolica* 16:157-184.

Discusses a workshop in a Neolithic settlement in Turkey with debris and unfinished carnelian disc beads at various stages of manufacture. These illustrate the techniques of production.

Calley, Sylvie and Roger Grace

1988 Technology and function of micro-borers from Kumartepe (Turkey). In *Industries lithiques tracéologie et technologie*, edited by S. Beyries, pp. 69-81. BAR International Series 411.

Dated to the 6th millennium, a Neolithic bead workshop at Kumartepe provides evidence for the production sequence of both flint micro-borers and carnelian beads.

Ciarlo, Nicolás C., Patricia Solá, and Cristina Bellelli

2010 Caracterización de cuentas líticas provenientes del valle del Río Manso (Provincia de Río Negro). In *La arqueometría en Argentina y Latinoamérica*, edited by Silvana Bertolino Roxana Cattáneo Andrés D. Izeta, pp. 159-164. Facultad de Filosofía y Humanidades, Universidad Nacional de Córdoba, Córdoba.

Microscopic and analytical examination reveal that two stone beads found in central Argentina are made of a fine-grained metamorphic rock, possibly phyllite or slate. Comments regarding production techniques are provided.

Clark, J.D.

1990 Why Change? An Example of the Technology from India's Enduring Past. *Bulletin of Deccan College* 49:83-98.

Proposes links between micro-blade and beadmaking techniques.

Coşkunsu, Güner

2008 Hole-Making Tools of Mezraa Teleilat with Special Attention to Micro-Borers and Cylindrical Polished Drills and Bead Production. *Neo-Lithics, The Newsletter of Southwest Asian Neolithic Research* 8(1):25-36.

Typo-technological analysis, use-wear analysis, and experimentation are used to illustrate two major technological and cultural shifts at Mezraa Teleilat, Turkey, towards the end of the Pre-Pottery Neolithic B (PPNB) and the beginning of the Pottery Neolithic (PN): 1) the use of micro-borers and cylindrical polished drills, which are the two most distinctive hole-making tools among the site's flint assemblage, and 2) bead manufacturing.

Cristiani, Emanuela and Cristina Lemorini

2002 Stones, Bones and Other Grave Goods in a Techno-Functional Perspective. In *Sand, Stones, and Bones. The Archaeology of Death in The Wadi Tanezzuft Valley (5000-2000 BP)*, edited by Savino di Lernia and Giorgio Manzi, pp. 197-216. Arid Zone Archaeology Monographs 3. <https://www.academia.edu/6092657/>.

Proposes the production process for beads of hard and soft stone and ostrich eggshell from Wadi Tanezzuft funerary contexts, Libya.

Critchley, P.

2000 Stone Bead Production at Wadi Jilat 25, a Neolithic site in Eastern Jordan: Technical, Economic, Social and Symbolic Aspects. M.A. thesis. Institute of Archaeology, University College London.

Archaeological, ethnographic, and experimental evidence is used to investigate the technology of stone bead production at the site. The approach used is the *chaîne opératoire* – how the production process is embedded in socio-economic and socio-cultural organization. Exchange networks, aspects of economic and craft specialization, and symbolic and aesthetic aspects of bead production are briefly described.

Curcija, Zachary S.

2016 An Evaluation of Prehistoric Southwestern Disc Bead Manufacturing. M.A. thesis. Department of Anthropology, Northern Arizona University, Flagstaff.

2020 Tiny Perforations in Minute Beads from the Prehistoric Southwest: An Experimental Case for Lithic Minute Microdrills. *Kiva* 86(4):502-516.
<https://www.academia.edu/103987820/>.

Presents an experimental case for the use of minute flaked-stone microdrills in the American Southwest to create the tiny perforations in disc beads.

Curcija, Z. and D. Wescott

2014 Manufacturing Stone Disc Beads in the Tradition of the Prehistoric Southwest. *Bulletin of Primitive Technology* 47:38-42.

Dal Santo, Nicola, Paola Mazzieri, Roberto Micheli, and Sara Ziggotti

2021 La produzione dei vaghi di collana in steatite a Benefizio (Parma). Tra dati archeologici e ricostruzione sperimentale. In *Vasi a bocca quadrata. Evoluzione delle conoscenze nuovi approcci interpretativi*, edited by Elisabetta Mottes, pp. 383-396. Provincia autonoma di Trento, Soprintendenza per i beni culturali, Ufficio beni archeologici, Trento.
<https://www.academia.edu/108815020/>.

Presents the experimental production of short cylindrical steatite necklace beads based on the evidence of artifacts found in the prehistoric settlement of Benefizio (Parma, Italy) attributed to the first phase of the Square Mouthed Pottery Culture.

de Mille, C.N. and T.L. Varney

2003 A Preliminary Investigation of Saladoid Stone Bead Manufacturing. In *Proceedings of the XIX International Congress for Caribbean Archaeology, Aruba, 2001*, edited by L. Alofs and R. Dijkhoff, pp. 43-53. Publications of the Museo Arqueologica Aruba 9. Antigua.

de Mille, C.N., T.L. Varney, and M. Turney

2008 Saladoid Lapidary Technology: New Methods for Investigating Stone Bead Drilling Techniques. In *Crossing the Borders: New Methods and Techniques in the Study of Material Culture in the Caribbean*, edited by C.L. Hofman, M.L.P. Hoogland, and A. Gijn, pp. 78-89. University of Alabama Press, Tuscaloosa.

The investigation focuses on the examination of manufacturing traces on the bore walls of stone beads from Antigua in addition to other attributes such as bore hole shape and size.

d'Errico, Francesco, Valentine Roux, and Yveline Dumond

2000 Identification des techniques de finition des perles en calcédoine par l'analyse microscopique et rugosimétrique. In *Cornaline de l'Inde: des pratiques techniques de Cambay aux techno-systèmes de l'Indus*, edited by V. Roux, pp. 95-113. Éditions de la Maison des sciences de l'homme, Paris. <https://books.openedition.org/editionsmsmh/8723>.

Uses microscopic analysis and measurements of roughness to identify the techniques used to polish chalcedony beads at Cambay, India.

Dimopoulou, N.

1997 Workshops and Craftsmen in the Harbour-Town at Poros-Katsambas. In *TEXNH: Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age. Proceedings of the 6th International Aegean Conference, Philadelphia, 1996*, edited by R. Laffineur and P.P. Betancourt, pp. 433-438. Aegaeum 16.

Preliminary account of an important excavation of workshops at the harbor linked with the Minoan palace at Knossos, Crete. Finds include raw materials and finished beads, tools, and items such as abrasives and molds.

Domanski, Marian and John Webb

2007 A Review of Heat Treatment Research. *Lithic Technology* 32(2):153-194.

Discusses the heat treatment of stone beads to alter their color, appearance, and hardness.

Domínguez-Bella, Salvador

2019 Hispaniae Callais. The Use of Iberian Variscite in Jewellery and Mosaics in Roman Times. In *La parure en callaïs du Néolithique européen*, edited by Guirec Querré, Serge Cassen, and Emmanuelle Vigier, pp. 85-102. Archaeopress, Oxford.
<https://www.archaeopress.com/Archaeopress/Products/9781789692808>.

Discusses variscite beads from sites in the region of the western Roman Empire, including the *chaîne opératoire* for their production based on material recovered from a workshop in the area of Palazuelo de las Cuevas in northwestern Spain.

Duhard, J.-P.

2002 Quelques aspects techniques dans la confection des “perles” néolithiques en pierre du Sahara. *Bulletin de la Société Préhistorique Française* 99(2):357-365.

Discusses various aspects of the shaping, drilling, and polishing of Neolithic stone beads based on specimens found in situ in Algeria, Mali, Nigeria, and Mauritania.

2003 Quelques “ateliers” de perles du Mali nord-oriental découverts avec Jean Gaussen. *Préhistoire Art et Sociétés – Mélanges Jean Gaussen. Bulletin de la Société Préhistorique Ariège – Pyrénées*. LVIII:219-231.

Examines several ancient stone-bead workshops discovered in northeastern Mali.

Dung, Nguyen Thi Kim

1996 The Trang Kenh Jewellery Workshop Site: An Experimental and Microwear Study. *Indo-Pacific Prehistory Association Bulletin* 14:161-165.
<https://journals.lib.washington.edu/index.php/BIPPA/article/view/11599>.

The microwear observations on tools, finished nephrite ornaments (including beads), and waste material from the Bronze Age site of Trang Kenh, Vietnam, supported by experiments, indicate a

rather high level of development using quite complex tools for jewelry manufacture during the late 2nd millennium BC in northern Vietnam.

Ekmen, F. Gülden

2021 İnönü Mağarası Kalkolitik Çağ Karnelyan Boncukları / Carnelian Beads of the Chalcolithic Age in İnönü Cave. *Hacettepe University Journal of Faculty of Letters* 38(2):401-413; <https://www.academia.edu/66501812/>.

Describes the various forms of carnelian beads found in a pot at a cave site in western Turkey and how they were produced, then compares them to beads from contemporary sites in the western Black Sea region. In Turkish.

Ekmen, H., C. Diker, F.G. Ekmen, and C. Tunçoğlu

2020 New Evidence of Chalcolithic Age Steatite Beads from İnönü Cave: Typology and Technology Aspects with Archaeometric Techniques. *Mediterranean Archaeology and Archaeometry* 20(2):113-129; <https://www.academia.edu/43123540/>.

SEM-EDS analysis of seven beads was performed to understand steatite bead production techniques during the Chalcolithic Age in western Turkey.

Endo, Hitoshi, Izumi Takamiya, and Renée Friedman

2009 Field Note 3 – Beads and Bead Making at Hierakonpolis. *Archaeology's Interactive Dig*. <http://interactive.archaeology.org/hierakonpolis/field09/3.html>, accessed 18 December 2016.

Stone beadmaking; Ancient Egypt.

Esparza, Rodrigo

2016 The Obsidian Jewelry of the Teuchitlán Tradition: Study and Analysis of an Unknown Lithic Technology. In *Cultural Dynamics and Production Strategies in Ancient Western Mexico. Papers from Symposium on Cultural Dynamics and Production Activities in Ancient Western Mexico, Center for Archaeological Research, Colegio de Michoacán 18-19 September 2014*, edited by Eduardo Williams and Blanca Maldonado, pp. 69-84. Archaeopress, Oxford. <https://www.academia.edu/29037784/>.

Described a kind of obsidian jewelry (mostly pendants), unique in Mesoamerica, called “obsidian lapidary without polishing.” Includes a description of the production process.

Fabiano, M., F. Berna, and E. Borzatti von Lowenstern

2004 Pre-Pottery Neolithic Amazonite Bead Workshops in Southern Jordan. In *Acts of the XIVth World Congress of the Union of Prehistoric and Protohistoric Sciences (UISPP), Liege (Belgium), 2nd-8th September 2001*, edited by the Secrétariat du Congrès, pp. 265-275. British Archaeological Reports, International Series 1303.

Thousands of borers and awls were found together with hundreds of worked and unworked amazonite fragments. A few finished beads of amazonite and sandstone were also found. Experiments demonstrate that the awls were mounted in drills and the majority of the borers were actually drill bits.

Falci, Catarina Guzzo , Maria Magdalena Antczak, Andrzej T. Antczak, and Annelou Van Gijn

2017 Recontextualizing Bodily Ornaments from North-Central Venezuela (AD 900-1500): The Alfredo Jahn Collection at the Ethnologisches Museum Berlin. *Baessler-Archiv* 64:87-112; <https://www.academia.edu/36009673/>.

The collection contains beads and pendants of shell, stone, and ceramic that relate to the Valencioid culture. The pendants include zoo- and anthropomorphic forms. Information is provided regarding manufacturing techniques and use-wear.

Falci, Catarina Guzzo , Alice C. S. Knaf, Annelou van Gijn, Gareth R. Davies, and Corinne L. Hofman

2020 Lapidary Production in the Eastern Caribbean: A Typo-Technological and Microwear Study of Ornaments from the Site of Pearls, Grenada. *Archaeological and Anthropological Sciences* 12, 53; <https://www.academia.edu/42033535/>.

Presents a study of a private collection of semiprecious lithic ornaments which combines raw material identification, typo-technological analysis, and microwear analysis.

Falci, Catarina Guzzo , Dominique Ngan-Tillard, Corinne L. Hofman, and Annelou Van Gijn

2020 The Biographies of Bodily Ornaments from Indigenous Settlements of the Dominican Republic (AD 800-1600). *Latin American Antiquity* 31(1):180-201; <https://www.academia.edu/41995312/>.

Reports on the production sequence and use life of beads and pendants recovered from five sites. Materials include stone, shell, bone, teeth, coral, and ceramic.

Falci, Catarina Guzzo and Maria Jacqueline Rodet

2016 Adornos corporais em Carajás: a produção de contas líticas em uma perspectiva regional [Body Ornaments from the Carajás Region: Stone Bead Production in a Regional Perspective]. *Boletim do Museu Paraense Emílio Goeldi. Ciências Humanas* 11(2):481-503.

Site MMA-02 in the Serra dos Carajás region of Brazil, associated with the Amazonian variant of the Tupiguarani tradition, was a specialized place for the production of body adornments from a raw stone material known as silicified kaolinite. Disc beads were the main product.

Fedorchenko, Alexander Yu.

2015 Каменные украшения VII культурного слоя Ушковских стоянок (Центральная Камчатка): технологический анализ [Stone Ornaments of Cultural Layer VII, Ushki Sites (Central Kamchatka): Technological Analysis]. *Bulletin of the Far East Branch of the Russian Academy of Sciences* 1:100-114; <https://www.academia.edu/17637709/>.

Reports on the series of stone beads, pendants, and plaques recovered from Cultural Layer VII at the Ushki sites complex in northeastern Siberia, Russia, with emphasis on production technology. English abstract.

Fedorchenko, A. Yu., S.V. Shnaider, M.T. Krajcarz, M.E. Romanenko, A.K. Abdykanova, K.A. Kolobova, S. Alisher kyzy, W. Taylor, and A.I. Krivoshapkin

2018 Технология изготовления каменных украшений из раннеголоценовых комплексов западной части Центральной Азии (по материалам стоянки Обишир-5) [Personal Ornament Production Technology in the Early Holocene Complexes of Western Central Asia: Insights from Obishir-5]. *Archaeology, Ethnology and Anthropology of Eurasia* 46(1):3-15; <https://www.academia.edu/36310410/>.

Located in Kyrgyzstan, Obishir-5 is one of the most important Final Pleistocene to Early Holocene sites in western Central Asia. The Early Holocene component (10,700-8,200 cal BP) yielded one of the oldest and largest assemblages of soft stone ornaments known from the region. It was possible to reconstruct the *chaîne opératoire* of these artifacts which include three pendants, one labret-like ornament, and one ornament blank. English abstract.

Foglini, L. and M. Vidale

2016 The Turquoise Industry. In *Lapis Lazuli Bead Making at Shahr-i Sokhta. Interpreting Craft Production in a Urban Community of the 3rd Millennium BC*, edited by M. Vidale and A. Lazzari. Serie Orientale Roma 6.

Discusses turquoise beadmaking at a Bronze Age site in eastern Iran, including the raw materials and their variability, a reconstruction of the bead reduction sequence, spatial patterning of the turquoise industry across the excavated context, and internal consumption versus production.

Francis, Peter, Jr.

1988 Pecking and Beads. *Lapidary Journal* 42(5):57-62.

Using pecking (spot percussion) for dimpling, perforating, and shaping beads.

Frazier, Si, Ann Frazier, and Glenn Lehrer

1998-1999 A History of Gem Beadmaking in Idar-Oberstein. *Beads: Journal of the Society of Bead Researchers* 10-11:35-47; <https://www.academia.edu/24326278/>.

Discusses the famous stone beadmaking emporium of Idar-Oberstein in west-central Germany. It describes the water-driven cutting mills, the technology, the sources of agate and other gemstone materials, and the harsh working conditions of former times.

Gallaga Murrieta, Emiliano and Emiliano Melgar Tisoc

2016 Las turquesas del Valle de Onavas: Análisis y resultados. In *Sociedades Mineras en América Latina* 1, edited by Abel Rodríguez López, pp. 110-127. Escuela de Antropología e Historia del Norte de México, Chihuahua.

Discusses the production techniques used to shape and perforate turquoise beads and pendants in the Onavas Valley of Sonora, Mexico.

2020 Pasando la turquesa: Objetos Azules del Valle de Ónavas, Sonora, México / Turquoise Passing by: Blue Items from the Onavas Valley, Sonora, Mexico. *Clio Arqueológica* 35(2):122-151; <https://www.academia.edu/44535911/>.

Reports on the composition, possible sources, and manufacturing techniques of 14 turquoise pieces (including pendants, beads, and raw material) recovered during an archaeological survey in northern Mexico. In English.

Garrido Escobar, Francisco Javier

2015 Mining and the Inca Road in the Prehistoric Atacama Desert, Chile. Ph.D. dissertation.

Dietrich School of Arts and Sciences, University of Pittsburgh.

Investigates the social organization and *chaîne opératoire* of turquoise and malachite beads production at camps on the Cachiyuyo de Llampos Mountain and the nature of settlement and associated artifact assemblages along a nearby section of the Inca Road.

Gaussen, J.

1993 Perles néolithiques du Tilemsi et du pays Ioullemedene (Ateliers et techniques). L'Arte e l'ambiente del Sahara preistorico: dati e interpretazioni. *Memorie della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano* XXVI(II):253-256.

Deals with Neolithic beadmaking techniques observed at workshops found at Tilemsi, Mali, and the Ioullemedene region.

Gazzola, Julie

2007 La producción de cuentas en piedras verdes en los talleres lapidarios de La Ventilla, Teotihuacán. *Arqueología* 36:52-70; <https://www.academia.edu/31356377/>.

Investigates the technology and social organization of the lapidary workshops in the La Ventilla neighborhood of Teotihuacán, Mexico, which operated from the Tlamimilolpa phase (AD 200-350) to the Metepec phase (AD 650).

Georjon, Cloé, U. Aung Aung Kyaw, Daw Tin Tin Winb, Daw Thu Thu Win, Baptiste Pradier, Anna Willis, Peter Petchey, Yoshiyuki Iizuka, Eric Gonthier, Jacques Pelegrin, Bérénice Bellina, and T.O. Pryce

2021 Late Neolithic to Early-Mid Bronze Age Semi-Precious Stone Bead Production and Consumption at Oakaie and Nyaung'gan in Central-Northern Myanmar. *Archaeological Research in Asia* 25:100240; <https://www.academia.edu/44683283/>.

Archaeological evidence from the two sites demonstrates not only the presence of semi-precious stone beads, but also their production during the Late Neolithic to Early-Mid Bronze Age.

Production techniques are discussed.

Glover, Lauren and J.Mark Kenoyer

2019 Overlooked Imports: Carnelian Beads in the Korean Peninsula. *Asian Perspectives* 58(1):180-201.

Analyses of a sample of 68 carnelian and agate beads from Korea's late Proto-Three Kingdoms and Three Kingdoms period (CE 100-668) provide evidence for long-distance exchange with South Asia. Much information on drilling techniques.

González-Urquijo, Jesús, Frederic Abbès, Hala Alarashi, Juan José Ibáñez, and Talía Lazuén

2013 Microdrill Use at Khiamian Sites in Central and Northern Levant (Syria and Lebanon). In *Stone Tools in Transition: From Hunter-Gatherers to Farming Societies in the Near East*, edited by Ferran Borrell, Juan José Ibáñez, and Miquel Molist, pp. 177-189. Universitat Autònoma de Barcelona, Servei de Publicaci.
<https://www.researchgate.net/publication/262564948>.

Drills found in the Khiamian levels at Tell Mureybet, Wadi Tumba 1, and Nachcharini were used mainly to perforate stone beads. This is evident from use-wear marks on the active areas and the residue preserved on them. All the evidence points to at least some of them being hafted.

Gorelick, L. and A.J. Gwinnett

1987 The Change from Stone Drills to Copper Drills in Mesopotamia: An Experimental Perspective. *Expedition* 29(3):15-24.

Modern experiments and the detailed study of drill holes place the change in the 3rd millennium BC.

1988 Diamonds from India to Rome and beyond. *American Journal of Archaeology* 92(4):547-552.

Suggests that the use of diamond drills traveled to the Mediterranean region from India in Roman times.

1990 Innovative Lapidary Craft Technique in Neolithic Jarmo. *Archaeomaterials* 4:25-32.
Hard stone beads found in northern Iraq were probably worked with a bow drill and loose abrasive.

1994 Beads from Sipan: A Functional Analysis. In *Archaeometry of Pre-Columbian Sites and Artifacts: Proceedings of a Symposium Organized by the UCLA Institute of Archaeology and the Getty Conservation Institute, Los Angeles, California, March 23-27, 1992*, edited by David A. Scott and Pieter Meyers, pp. 175-180. Getty Conservation Institute, Marina del Rey. <https://www.getty.edu/publications/virtuallibrary/0892362499.html>.

A total of 14 mostly tiny turquoise beads excavated from the royal tomb at Sipan, Peru, were studied to determine the method of manufacture using functional analysis and scanning electron microscopy. Two manufacturing hypotheses and experimental duplication are discussed.

1996 Innovative Methods in the Manufacture of Sasanian Seals. *Iran* 34:79-84.

Further study of ancient drilling techniques based on 124 Sasanian seals in the Metropolitan Museum of Art. Most were perforated using iron drills but the remainder seem to have been drilled using twin diamond-tipped iron drills. Also discusses the technical problems of faceting and speculates on the import of garnet bead blanks drilled at workshops within the Sasanian Empire.

Gorelick, L. and A.J. Gwinnett with I.C. Glover

1996 An Examination of the Methods Used to Make the Semiprecious Stone Beads from Ban Don Ta Phet, Thailand. *Bead Study Trust Newsletter* 28:8-11;
https://www.societyofjewelleryhistorians.ac.uk/bead_study_trust.

The Iron Age beads were found to have been perforated using diamond-tipped drills.

Gourley, Dale R. and David J. Johnson

2016 Nabataean Amethyst Trade: Sources, Production, and Use. In *Studies on the Nabataean Culture II: Refereed Bulletin of the International Conference on the Nabataean Culture*, edited by Nabil I. Khairy, pp. 25-52. Publications of the Deanship of Scientific Research, The University of Jordan, Amman.

Examines the Nabataean amethyst trade in terms of the sources of the raw materials, the archaeological evidence for amethyst use at Petra, the methods of production of amethyst beads, and the ritual and decorative function of amethyst in the Greco-Roman period.

Groman-Yaroslavski, Iris and Daniella E. Bar-Yosef Mayer

2015 Lapidary Technology Revealed by Functional Analysis of Carnelian Beads from the Early Neolithic Site of Nahal Hemar Cave, Southern Levant. *Journal of Archaeological Science* 58:77-88; <https://www.academia.edu/11939655/>.

Use-wear analysis applied to two carnelian beads from the Middle Pre-Pottery Neolithic B period in southern Israel revealed a manufacturing procedure that corresponds to genuine lapidary technologies of contemporary traditional societies.

Groman-Yaroslavski, Iris, Naomi Porat, and Daniella E. Bar-Yosef Mayer

2024 A Neolithic Technological Approach to the Production of Stone Beads: Insights from the Analysis of the Nahal Hemar Cave Assemblage. *Journal of Arid Environments* 225, 105255; <https://doi.org/10.1016/j.jaridenv.2024.105255>.

An assemblage of stone beads from a site in southern Israel was analyzed to reconstruct the technology applied by artisans during the Pre-Pottery Neolithic B (9900-9400 BP). Eleven minerals were identified using SEM-EDS analyses, as well as portable XRF.

Gurova, Maria, Clive Bonsall, Bruce Bradley, and Elka Anastassova

2013 Approaching Prehistoric Skills: Experimental Drilling in the Context of Bead Manufacturing. *Bulgarian e-Journal of Archaeology* 3(2):201-221;
<https://www.academia.edu/48701268/>.

Experimentation on drilling stone of various hardness, as well as shell and bone, using replicated micro-borers and employing manual and mechanical drilling (with a pump drill).

Gurova, Maria, Clive Bonsall, Bruce Bradley, Elka Anastassova, and Pedro Cura

2014 Experimental Approach to Prehistoric Drilling and Bead Manufacturing. In *Technology and Experimentation in Archaeology*, edited by Sara Cura, Jedson Cerezer, Maria Gurova, Boris Santander, Luiz Oosterbeek, and Jorge Cristóvão, pp. 47-55. BAR International Series 2657. <https://www.academia.edu/9745205/>.

Presents experiments in drilling different materials including minerals and rocks, as well as shell and bone, to help understand bead production during the Early Neolithic in the Balkans.

Guzmán Torres, Viridiana

2018 Manufactura de los objetos lapidarios de estilo teotihuacano del Templo Mayor de Tenochtitlan: análisis arqueométricos. M.A. thesis. Department of Archaeology, National School of Anthropology and History, Mexico City.
<https://www.academia.edu/37716852/>.

SEM examination and experimental archeology are used to understand how Teotihuacan-style stone objects (beads and pendants included) found among the offerings at the Templo Mayor, Tenochtitlan, central Mexico, were made.

Gwinnett, A. John and Leonard Gorelick

1986 Evidence for the Use of a Diamond Drill for Bead Making in Sri Lanka, c. 700-1000 A.D. *Scanning Electron Microscopy* 11:473-477;
<https://digitalcommons.usu.edu/electron/vol1986/iss2/14>.

The highly-magnified comparison of quartz beads made using a diamond splinter turned by a bow drill in present-day Cambay, India, to those from archaeological contexts in Sri-Lanka suggests that the latter were similarly manufactured.

1987 The Change from Stone Drills to Copper Drills in Mesopotamia: An Experimental Perspective. *Expedition* 29(3):15-24; <https://www.penn.museum/sites/expedition/14411/>.
Investigates the origin of copper/bronze drilling technology.

1988 A Possible Lapidary Training Piece from Arikamedu, India. *Archeomaterials* 2(2):187-193.

A worked rock crystal, not post-dating AD 300, may be the earliest evidence of diamond drilling technology.

1989 Evidence for Mass Production Polishing in Ancient Bead Manufacture. *Archeomaterials* 3(2):163-168.

Experiments reveal that tumbling was practiced at the important beadmaking center of Mantai in Sri Lanka, ca. AD 700-1000.

1991 Bead Manufacture at Hajar ar-Rayhani, Yemen. *Biblical Archaeologist* 54(4):186-196;
<https://www.jstor.org/stable/3210280>.

Investigation of 64 stone beads (12th century BC to 1st century AD) reveals drilling techniques (Indian connections?) and the earliest evidence for polishing by tumbling (9th-8th centuries BC).

1993 Beads, Scarabs, and Amulets: Methods of Manufacture in Ancient Egypt. *Journal of the American Research Center in Egypt* 30:125-132; <https://www.jstor.org/stable/40000232>.

Illustrates the development of drill technology from predynastic times to Late Antiquity.

1998-1999 A Brief History of Drills and Drilling. *Beads: Journal of the Society of Bead Researchers* 10-11:49-56; <https://www.academia.edu/24326485/>.

Silicone impressions of the perforations of beads, amulets, and seals are interpreted to define the types of drill used; scanning electron micrographs can identify drill holes from the Paleolithic to the present day, and the drills used.

Healey, Elizabeth and Stuart Campbell

2014 Producing Adornment: Evidence of Different Levels of Expertise in the Production of Obsidian Items of Adornment at Two Late Neolithic Communities in Northern Mesopotamia. *Journal of Lithic Studies* 1(2):79-99; <https://doi.org/10.2218/jls.v1i2.966>.

Attempts to determine whether beads and other obsidian ornaments were produced at two sites (Domuztepe and Tell Arpachiyah) in Turkey and Iraq, or were acquired as finished objects (or both).

Heimpel, W., L. Gorelick, and A. Gwinnett

1988 Philological and Archaeological Evidence for the Use of Emery in the Bronze Age Near East. *Journal of Cuneiform Studies* 40(2):195-210.

On the prized abrasive from Egypt, India, and the Greek island of Naxos used from ca. 2000 BC for, inter alia, the manufacture of stone beads.

Hikade, Thomas

2004 Urban Development at Hierakonpolis and the Stone Industry at Square 10N5W. In *Egypt at its Origins. Studies in Memory of Barbara Adams*, edited by S. Hendrickx, R.F. Friedman, K.M. Cialowicz, and M. Chlodnicki, pp. 181-197. *Orientalia Lovaniensia Analecta* 138. <https://www.academia.edu/8910631/>.

Discusses the production techniques of stone beads and pendants found in workshops at a site in Ancient Upper Egypt.

Hina, Ayesha

2021 Etched Carnelian Beads from Gandi Umar Khan Settlement of Indus Civilization. *Sindh Antiquities* 7(1):58-66; <https://www.academia.edu/103111495/>.

Discusses the production process of etched beads recovered from a mature Harappan site in Khyber Pukhtunkhwa province, Pakistan.

Hirsch, Julian, Lisa Janz, and Laure Dubreuil

2024 Carnelian Beads from the Early Bronze Age Fufa Cemetery, Jordan: Aspects of Technology, Use, and Exchange. *Journal of Archaeological Science: Reports* 58, 104700; <https://doi.org/10.1016/j.jasrep.2024.104700>.

This study employs morphometric data and a use-wear framework to explore the relationship between carnelian beads, burial practices, manufacturing processes, and exchange.

Manufacturing traces suggest that the beads were created through a process of knapping and progressive stages of abrasion.

Holé, Clément, Aude Mongiatti, and St John Simpson

2021 Scientific Study of the Etching Process Used on Ancient Carnelian Beads. In *Masters of the Steppe: The Impact of the Scythians and Later Nomad Societies of Eurasia: Proceedings of a Conference Held at the British Museum, 27-29 October 2017*, edited by Svetlana V. Pankova and St John Simpson, pp. 176-197. Archaeopress, Oxford. <https://www.academia.edu/44959538/>.

Focuses on the results of a new scientific project aimed to better understand the processes by which these beads were made and builds directly on ethnographic observations made in India.

2015 Preliminary Investigations Into the Production of Glazed Steatite Beads: Discussing the Use of Turquoise during the Badarian Period in Egypt. *Archéo-Nil* 25:91-121.

Several beads and pendants found in Badarian graves in the Qau-Matmar region of Middle Egypt formerly identified as turquoise are actually glazed steatite.

Horn, Maarten

2015 Preliminary Investigations into the Production of Glazed Steatite Beads: Discussing the Use of Turquoise during the Badarian Period in Egypt. *Archéo-Nil* 25:91-121; <https://www.academia.edu/12205450/>.

Presents several proposed methods for the production of glazed steatite beads in Egypt and the Levant.

Horta Tricallotis, Helena and Wilfredo Faundes Catalán

2018 Manufactura de cuentas de mineral de cobre en Atacama (Chile) durante el período medio (ca. 400-1.000 DC): Nuevas evidencias contextuales y aportes desde la experimentación arqueológica [Manufacture of Copper Ore Beads in Atacama (Chile) during the Middle Horizon (ca. AD 400-1000): New Contextual Evidences and Contributions from Experimental Archeology]. *Chungara. Revista de antropología chilena* 50(3):397-422; <https://www.academia.edu/37318777/>.

Of principal interest is the finding of wooden artifacts that appear to have served as supports for drilling beads.

Hung, Hsiao-chun, Yoshiyuki Iizuka, and Mary Jane Louise A. Bolunia

2018 Greenstone Jewellery Workshops in the Tabon Caves Complex of the Philippines. In *The Archaeology of Portable Art: Southeast Asian, Pacific, and Australian Perspectives*, edited by Michelle Langley, Mirani Litster, Duncan Wright, and Sally K. May, pp. 68-89. Routledge, London. <https://www.academia.edu/36925801/>.

The workshops produced several forms of jade beads and ear pendants during the late Neolithic and the early Metal Age. Includes information regarding production techniques and elemental composition.

Inizan, Marie-Louise

2000 Importation de cornalines et agates de l'Indus en Mésopotamie: Le cas de Suse et Tello. In *Cornaline de l'Inde: Des pratiques techniques de Cambay aux techno-systèmes de*

l'Indus, edited by Valentine Roux, pp. 475-501. Éditions de la Maison des sciences de l'homme, Paris. <http://books.openedition.org/editionsmsmh/8738>

Discusses the importation of carnelian and agate bead from the Indus Valley to Mesopotamia based on material recovered from two sites in Iraq and Iran, with notes on manufacturing technology.

Johnson, Jay K.

2000 Beads, Microdrills, Bifaces, and Blades from Watson Brake. *Southeastern Archaeology* 19(2):95-104.

Description and discussion of the stone beads and the tools used in their manufacture at this Middle Archaic mound site in northern Louisiana.

Kaiser, Michael J.

2003 „funff tusend Punder Korner.“ Das Edelsteingewerbe in Freiburg und Waldkirch im Spiegel archäologischer und historischer Quellen. *Fundberichte aus Baden-Württemberg* 27:1045-1172; <https://www.academia.edu/15367910/>.

Thorough study of the gemstone trade in southwestern Germany as reflected in archaeological and historical sources. Includes sections on the raw materials, beadmaking, and rosaries.

Kanungo, Alok Kumar

2017 Transitions in the Stone Beadmaking at Khambhat: An Ethnohistorical Survey. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo, pp. 191-222. Indian Institute of Technology, Gandhinagar.

2021 Traditional Bead and Bangle Crafts in India. In *Ancient Glass of South Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo and Laure Dussubieux, pp. 101-149. Springer Nature, Singapore.

Discusses the technology of the artisans who make furnace-wound glass beads and bangles in Western Uttar Pradesh and drawn glass beads in the Chittoor district of Andhra Pradesh. They are among the few living craftsmen who have inherited a predominant part of their technological knowhow from their ancestors.

Karanth, R.V.

1988 Silica Bead Industry in Cambay, Gujarat State, India. *Journal of the Geological Society of India* 31:426-431.

1990 The Diamond Drill Used in the Cambay Bead Industry. *Journal of Gemmology* 22:91-96; https://gem-a.com/wp-content/uploads/2023/11/JoG1990_22_2.pdf#page=29.

A simple but very effective diamond-tipped bow drill of indigenous technology is used by the beadmakers at Khambhat, India, to perforate hard silica beads. A single-diamond bit is used to mark the hole, while the actual drilling is carried out employing a double-diamond bit.

1992 The Ancient Gem Industry in Cambay. *Man and Environment* 17(2):62-70.
Discusses basic Cambay (India) beadmaking techniques with clear line drawings of the processes.

Karklins, Karlis, Alicia Hawkins, Heather Walder, and Scott Fairgrieve

2018 Florida Cut-Crystal Beads in Ontario. *Beads: Journal of the Society of Bead Researchers* 30:44-51; <https://www.academia.edu/40475947/>.

Discusses three faceted rock-crystal beads generally termed Florida Cut-Crystal which were found in the legacy collections of two 17th-century Huron-Wendat sites in southern Ontario. Includes details about their manufacture and chemical composition.

Kelly, Gwendolyn O.

2013 Craft Specialization, Technology and Social Change: A Study of Material Culture in Iron Age and Early Historic South India (c. 1200 BCE-400 CE). Ph.D. dissertation. University of Wisconsin, Madison. <https://www.academia.edu/9067046/>.

An in-depth study of stone bead and ornament production and technology in South India.

2016 Heterodoxy, Orthodoxy and Communities of Practice: Stone Bead and Ornament Production in Early Historic South India (c. 400 BCE-400 CE). *Archaeological Research in Asia* 6:30-50; <https://www.academia.edu/91381609/>.

Argues that the South Indian producers of stone beads and ornaments should be considered as a single community of practice, not as distinct ethnic groups, as suggested by some. Also deals with beadmaking techniques.

Kenoyer, J. Mark

1992 Lapis Lazuli: Beadmaking in Afghanistan and Pakistan. *Ornament* 15(3):70-73, 86f.
Detailed account of the methods used, some of which may go back millennia.

2003 Stone Beads and Pendant Making Techniques. In *A Bead Timeline. Vol. 1: Prehistory to 1200 CE*, edited by James W. Lankton, pp. 14-19. The Bead Museum, Washington, D.C.
A general survey of stone beadmaking techniques.

2005 Bead Technologies at Harappa 3300-1900 BC: A Comparative Summary. In *South Asian Archaeology 2001*, edited by C. Jarrige and V. Lefèvre, pp. 157-170. Editions Recherche sur les Civilisations – ADPF, Paris.

The analysis of beads from different periods and areas of Harappa, Pakistan, have made it possible to define specific trade networks and the organization of production as well as changing patterns of interaction over the history of the site.

2005 Steatite and Faience Manufacturing at Harappa: New Evidence from Mound E Excavations 2000-2001. *Museum Journal* (National Museum of Pakistan) III-IV:43-56.

Discusses a workshop where various objects of steatite and faience were made, including beads. The findings suggest that the beads may have been quite important as symbols of value since they were being made in relatively controlled contexts.

- 2011 Comments on the SEM Images of Silicon-Based Impressions of Beads Holes. In *Excavations of Farmana, District Rohtak, Haryana, India: 2006-2008*, edited by V. Shinde, T. Osada, and M. Kumar, pp. 469-470. Indus Project Research Institute for Humanity and Nature, Kyoto.

- 2016 Bead Drill Hole SEM Analysis. In *Tell F6 on Failaka Island: Kuwaiti-Danish Excavations 2008-2012*, by Flemming Højlund and Aiysha Abu-Laban, pp. 199-206. Jutland Archaeological Society Publications 92.

Reports on the techniques used to drill stone beads of the late 3rd millennium BC at a site in Kuwait.

- 2017 Using SEM to Study Stone Bead Technology. In *History, Science & Technology of Stone Beads*, edited by Alok Kanungo, pp. 409-437. Gandhinagar & Aryan Press, Ahmedabad and Delhi.

Presents a detailed discussion of the use of scanning electron microscopy to garner details regarding bead production techniques and how to prepare specimens for study. Also provides an overview of the various recorded drilling techniques with SEM images of each.

- 2017 History of Stone Beads and Drilling: South Asia. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo, pp. 127-150. Indian Institute of Technology, Gandhinagar.

- 2020 Bleached Carnelian Beads of the Indus Tradition, 3rd Millennium BC: Origins and Variations. In *In Context: the Reade Festschrift*, edited by Irving Finkel and St John Simpson, pp. 169-182. Archaeopress, Oxford.

A critical assessment of earlier studies suggests that new terms and ways of studying and documenting bleached beads should be developed. The use of experimental replication is also proposed as an important avenue for research in order to develop a more robust interpretive framework for comparing these beads within the Indus, as well as adjacent, regions.

- 2021 Glazed Steatite and Faience Technology at Harappa, Pakistan (>3700-1900 BCE): Technological and Experimental Studies of Production and Variation. In *Ancient Glass of South Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo and Laure Dussubieux, pp. 39-100. Springer Nature, Singapore.

Focuses on the discoveries of glazed steatite and faience slag from the Ravi Phase occupations (>3700-2800 BCE) and the development of more complex glazing and faience technologies during the subsequent Kot Diji Phase (2800-2600 BCE) to produce beads and pendants.

Kenoyer, J. Mark, Asa Cameron, Dashzeveg Bukhchuluun, Chunag Amartuvshin, Batdalai Byambatseren, William Honeychurch, Laure Dussubieux, and Randall Law

2021 Carnelian Beads in Mongolia: New Perspectives on Technology and Trade.

Archaeological and Anthropological Sciences 14(6);

<https://www.academia.edu/72339382/>.

The technological, stylistic, and chemical analyses of carnelian beads from several sites in Mongolia provide evidence for local production and use of such beads from the Late Bronze Age (ca. 1400-1000 BCE) through the Xiongnu period (ca. 250/200 BCE-CE 150). Beads dating to the historical Mongol Empire (ca. 12th-14th centuries) demonstrate expanding trade networks that link eastern Eurasia to South Asia and beyond.

Kenoyer, J. Mark and Dennys Frenez

2018 Stone Beads in Oman during the 3rd to 2nd Millennia BCE: New Approaches to the

Study of Trade and Technology. *Beads: Journal of the Society of Bead Researchers*

30:63-76; <https://www.academia.edu/38078404/>.

Archaeological collections in Oman were documented to determine the range of variation in the finished objects and if there is evidence for local production of carnelian and other hard-stone beads. Also provides a chronological discussion of the different techniques used to drill stone beads and pendants.

2020 Carnelian and Agate Beads in the Oman Peninsula during the Third to Second Millennium

BC. In *In the Shadow of the Ancestors: The Prehistoric Foundations of the Early*

Arabian Civilization in Oman, edited by Serge Cleuziou and Maurizio Tosi, pp. 397-410.

Archaeopress, Oxford. <https://www.academia.edu/78555743/>.

Provides an overview of some major styles of lithic beads from Oman and the UAE including information about production techniques and sourcing the raw materials.

Kenoyer, J. Mark and Massimo Vidale

1992 A New Look at Stone Drills of the Indus Valley Tradition. In *Materials Issues in Art and*

Archaeology, III, edited by P. Vandiver, J.R. Druzick, G.S. Wheeler, and I. Freestone, pp.

495-519. Materials Research Society Proceedings 267.

Summarizes the state of drilling research and defines two categories of drills that were used in antiquity: tapered cylindrical drills and constricted cylindrical drills. Directions for future research on the relationship between drilling and other contemporaneous technologies are discussed. India, Pakistan.

Kenoyer, J. Mark, M. Vidale, and K.K. Bhan

1991 Contemporary Stone Beadmaking in Khambhat, India: Patterns of Craft Specialization

and Organization of Production as Reflected in the Archaeological Record. *World*

Archaeology 23(1):44-63; <https://www.academia.edu/3561638/>.

Presents preliminary results of ethno-archaeological and experimental studies of the stone-bead industry of Khambhat.

- 1994 Carnelian Bead Production in Khambhat, India: An Ethnoarchaeological Study. In *Living Traditions: Studies in the Ethnoarchaeology of South Asia*, edited by Bridget Allchin, pp. 281-306. Oxbow Books, New Delhi.

Detailed description of the contemporary stone bead industry at Khambhat and the entire production process.

Konasukawa, Ayumu, Hitoshi Endo, and Akinori Uesugi

- 2011 Chapter 7. Minor Objects from the Settlement Area. In *Excavations at Farmana: District Rohtak, Haryana, India, 2006-08*, edited by V. Shinde, T. Osada, and M. Kumar, pp. 369-526.

Indus Project, Research Institute for Humanity and Nature, Kyoto.

The site yielded a wide variety of beads but especially those of terra cotta and various types of stone. They are attributed to the Harappan and Historical periods. Includes information regarding the drilling technology used based on silicone casts of the perforations.

Kovacevich, Brigitte

- 2011 The Organization of Jade Production at Cancuen, Guatemala. In *The Technology of Maya Civilization: Political Economy and Beyond in Lithic Studies*, edited by Zachary X.

Hruby, Geoffrey E. Braswell, and Oswaldo Chinchilla Mazariegos, pp. 149-161.

Combines ethnographic, ethnohistorical, and archaeological data to identify, describe, and interpret the material correlates and social processes surrounding the production of jade beads and other ornaments at a Late Classic Maya site in Guatemala.

Krzyżanowska, Marta and Mateusz Frankiewicz

- 2017 “Paciorki mozaikowe w otwartym palenisku?” Kontynuacja badań [Mosaic Beads in an Open Hearth. Continued Research]. *Slavia Antiqua* LVIII:41-54.

Experiments were conducted to determine if Early Medieval Scandinavian beadmakers were capable of crafting complex mosaic glass beads. In Polish with English abstract.

Law, Randall

- 2018 The Art of the Harappan Microbead - Revisited. In *Walking with the Unicorn: Social Organization and Material Culture in Ancient South Asia. Jonathan Mark Kenoyer Felicitation Volume*, edited by Dennys Frenez, Gregg M. Jamison, Randall W. Law, Massimo Vidale, and Richard H. Meadow, pp. 327-342. Archaeopress, Oxford.
<https://www.researchgate.net/publication/347149827>.

New observations of steatite microbeads from Zhekhada in northern Gujarat, India, strongly suggests that Harappan craftspeople made the beads by cutting, drilling, and grinding solid steatite rock rather than by forming them from a ground steatite paste as was previously thought.

Lebedintsev, Alexander I., Pavel S. Grebenyuk, Alexander Yu. Fedorchenko, Boris A. Malyarchuk, and Dmitry V. Selin

- 2019 New Results of Research into the Tokarev Culture of Northern Sea of Okhotsk Region. *Problems of Archaeology, Ethnography, Anthropology of Siberia and Neighboring Territories* XXV:432-439; <https://www.researchgate.net/publication/338149320>.

Describes the stone pendants recovered from the Spafaryev site (mid 2nd millennium BC to the 1st millennium AD) and describes their production sequence. In Russian with English abstract.

Lertcharnrit, Thanik, Wannaporn Rienjang, Alison Carter, Jonathan Mark Kenoyer, and Randall W. Law

2024 Prehistoric Stone Ornaments from Phromtin Tai, Central Thailand: New Perspectives on Workshop Traditions through the Study of Drilling Methods. *Asian Perspectives* 63(1); <https://muse.jhu.edu/article/923662>.

Fifty-seven stone beads from a site occupied from the Late Bronze Age (ca. 700-500 BCE) through early historic periods (ca. CE 500-900) were examined using qualitative and quantitative methods, revealing the presence of multiple stone ornament workshop traditions. Examination of their perforations indicates the use of metal drills with abrasives and diamond drills.

Li, Xiaoguang, Haozhong Xue, Xinhua Wu, Dahai Qin, Daiming Chen, Jiangyan Yuan, and Zihua Tang

2023 Artificial Coloration of Ancient Agate Beads: A Mineralogical Study. *Heritage Science* 11, 195; <https://doi.org/10.1186/s40494-023-01039-7>.

The mineral structure of eight ancient agate beads from the Xinjiang Uygur Autonomous Region of northwestern China was analyzed using a variety of analytical techniques to determine the intricate techniques employed to artificially color them.

López Campeny, Sara M. L. and Patricia S. Escola

2007 Un verde horizonte en el desierto: producción de cuentas minerales en ámbitos domésticos de sitios agropastoriles. Antofagasta de la Sierra (Puna Meridional Argentina). In *Producción y Circulación Prehispánicas de Bienes en el Sur Andino*, edited by A. Nielsen, M.C. Rivolta, V. Seldes, M. Vázquez, and P. Mercolli Comp. Editorial Brujas, Córdoba, Argentina. <https://www.academia.edu/11857973/>.

Detailed study of the production of mineral beads in domestic environments of agropastoral sites in the microregion of Antofagasta de la Sierra in northwestern Argentina.

Ludvik, Geoffrey

2012 Stone Beads of Ancient Afghanistan: Stylistic and Technical Analysis. *Field Notes: A Journal of Collegiate Anthropology* 3(1):1-8; <https://www.academia.edu/1545210/>.

This study addresses antique stone beads made of agate, carnelian, turquoise, jasper, and lapis lazuli, and focuses on stylistic and morphological features as well as manufacturing techniques, specifically the nature of drilling used to perforate the beads.

Ludvik, Geoffrey, J. Mark Kenoyer, Magda Pieniążek, and William Aylward

2015 New Perspectives on Stone Bead Technology at Bronze Age Troy. *Anatolian Studies* 65:1-18; <https://www.academia.edu/40107755/>.

Eighteen carnelian and two rock-crystal beads from the site of Troy, Turkey, were studied to better understand lapidary technology and trade during the 3rd-2nd millennium BC in western Anatolia.

Ludvik, Geoffrey, Magda Pieniążek, and J.M. Kenoyer

2014 Stone Bead-Making Technology and Beads from Hattuša: A Preliminary Report. In *Die Arbeiten in Boğazköy-Hattuša 2013*, edited by A. Schachner, pp. 147-153. Archäologischer Anzeiger 2014/1.

The beads uncovered at Hattuša, the capital of the Hittite Empire during the late Bronze Age in what is now Turkey, were manufactured from soft stones, like serpentine or limestone, as well as hard stones such as lapis lazuli, rock crystal, and variations of chalcedony such as agate, carnelian, and onyx.

Lume Pereira, Federica, Giuseppe Guida, Ulrike Müller, and Massimo Vidale

2017 The Bead-Maker's Toolkit: The Circulation of Drilling Technologies and Gemstones in the "Middle Asian Interaction Sphere." In *The Exploitation of Raw Materials in Prehistory: Sourcing, Processing and Distribution*, edited by Telmo Pereira, Xavier Terradas, and Nuno Bicho, pp. 520-537. Cambridge Scholars Publishing, Newcastle upon Tyne.

Addresses technological transmission in the context of newly established exchange mechanisms of the Early Bronze Age in the Near East and South Asia by focusing on a number of beads recovered from Gonur Depe (Turkmenistan) – the best known urban center of the so-called Oxus civilization (BMAC).

Maury, J.

1986 Des Mèches à foret pour la fabrication des perles chalcolithiques sur le site de Camprouch (Caylar, Hérault). *Travaux de l'Institut d'Art Préhistorique* XXVIII:131-137. Discusses stone drill bits for perforating necklace beads at Camprouch, a Chalcolithic site in southern France.

Mazzieri, Paola and Roberto Micheli

2007 Parma-Benefizio, struttura 11: resti di un atelier di lavorazione dei vaghi di collana in steatite del Neolitico medio. *Padusa* XLIII, n.s.:7-23.

Reports on the existence of a steatite disk bead workshop at a Middle Neolithic settlement in northern Italy during the Square Mouthed Pottery phase. The recovered material allows the complete reconstruction of the disk bead manufacturing sequence.

Meena, Rajesh Kumar

2018 Stone Beads Production in Khambhat, Gujarat: An Ethno-Archaeological Study. *Indian Journal of Archaeology* 7(3):52-63; <http://ijarch.org/Abstract.aspx?articleno=180>. Presents the *chaîne opératoire* of present-day beadmakers at Khambhat in northwestern India.

Meirelles, Anna Cristina Resque

2011 Muiraquitã e contas do Tapajós no imaginário indígena: uma análise químico-mineralógica dos artefatos dos povos pré-históricos da Amazônia. Ph.D. dissertation. Geologia e Geoquímica, Universidade Federal do Pará, Belém, Brazil. <https://repositorio.ufpa.br/jspui/handle/2011/14594>.

Investigates a group of frog-shaped pendants and plain beads of various stones from the lower Amazon, including their morphology, production technology, and chemical composition. In Portuguese and English.

Melgar Tísoc, Emiliano Ricardo

2020 Geografía de las técnicas artesanales en turquesa de Arizona y Nuevo México texto. In *Ambiente, Bienestar y Desarrollo en los Desiertos. Memorias del IV Coloquio de las Culturas del Desierto, Tercera Parte*, edited by Adán Cano Aguilar and Gracia Emelia Chávez Ortiz, pp. 72-95. Dospuntotres, Ciudad Juárez Chihuahua, México.
<https://www.academia.edu/45592179/>.

Investigates production techniques used to produce turquoise beads and pendants in Arizona and New Mexico.

Melgar Tísoc, Emiliano R. and Iris del Rocío Hernández Bautista

2013 La lapidaria en el Nevado de Toluca. Tipología y tecnología. In *Bajo el Volcán. Vida y ritualidad en torno al Nevado de Toluca*, edited by Silvina Vigliani and Roberto Junco, pp. 125-151. Instituto Nacional de Antropología e Historia, México, D.F.

Discusses the typology and technology of lapidary objects (including beads) recovered at Nevado de Toluca, Mexico.

Melgar Tísoc, Emiliano Ricardo and Frances Joan Mathien

2019 Production Marks on Turquoise Objects and Lapidary Technology at Chaco Canyon (New Mexico, USA): An Experimental Archaeology Approach. In *A Taste for Green: A Global Perspective on Ancient Jade, Turquoise and Variscite Exchange*, edited by Carlos Rodríguez-Rellán, Ben A. Nelson, and Ramón Fábregas Valcarce, pp. 1-20. Oxbow Books, Oxford. <https://www.academia.edu/44250362/>.

Presents a new approach that characterizes and compares production marks on bead blanks, beads, and pendants made using experimental archaeological techniques with those seen on artifacts.

Melgar Tísoc, Emiliano Ricardo and José Luis Ruvalcaba

2014 Technological Analysis of the Calcite Beads from the Great Temple of Tenochtitlan. *Materials Research Society Symposium Proceedings* 1618:97-107;
<https://www.academia.edu/107201697/>.

The chemical and technological analyses of greenstone beads from a votive context dated to AD 1440-1469 permitted the identification of the raw materials and the tools employed to produce the beads. Mexico.

Melgar Tísoc, Emiliano Ricardo, José Luis Ruvalcaba Sil, Kilian Laclavetine, Estela Martínez Mora, and Guillermo Córdova Tello

2014 Procedencia y manufactura de las turquesas de Pajones, El Bajío y Cerro Moctehuma, Chalchihuites, Zacatecas. *Tiempo y Región. Estudios Históricos y Sociales* 7:191-221;
<https://www.academia.edu/9943709/>.

On the origin and manufacture of turquoise beads and other objects from pre-Hispanic sites in Zacatecas, Mexico.

Melgar Tísoc, Emiliano R. and Reyna Beatriz Solís Ciriaco

2018 Caracterización mineralógica y tecnológica de lapidaria de Teopancazco. In *Teopancazco como centro de barrio multiétnico de Teotihuacan. Los sectores funcionales y el intercambio a larga distancia*, edited by Linda R. Manzanilla, pp. 621-672. Universidad Nacional Autónoma de México, México DF. <https://www.academia.edu/37891704/>.

Reports on the chemical analysis and manufacturing techniques of stone ornaments recovered from a neighborhood of Teotihuacan, central Mexico.

Melgar Tísoc, Emiliano R., Reyna Beatriz Solís Ciriaco, Hervé V. Monterrosa Desruelles, María Jesús Puy y Alquiza, and Juan Carlos Meléndez Mollinedo

2021 Presencia de lapidaria de estilo maya fuera de la región maya [A Maya Lapidary Tradition Found outside the Mayan Area]. *Revista Española de Antropología Americana* 51:11-32; <https://www.academia.edu/49619663/>.

Presents the technological analysis of 243 Maya lapidary items, such as beads and pendants, from several Mexican sites such as Teotihuacan, Monte Albán, Teteles, Tula, Tamtoc, and Tenochtitlan. These objects show similar production signatures to ones identified on ancient Maya ornaments, suggesting that these highly valued exotic greenstones, found in pre-Hispanic burials and offerings located at sites outside of the Maya area, were long-distance wealth goods and sacred/prestige items belonging to the elite.

Melgar, Emiliano, Reyna Solís, and José Luis Ruvalcaba

2012 Technological and Material Characterization of Lapidary Artifacts from Tamtoc Archaeological Site, Mexico. *Materials Research Society Symposium Proceedings* 1374:103-114; <https://www.academia.edu/8019650/>.

The aim of this work is to measure the composition of the recovered stone beads and other artifacts for provenance study and to establish the manufacturing technique and tools used to produce them.

Menon, Jaya

2014 The Transmission of Craft Technologies in the Bronze Age. *Studies in People's History* 1(2):127-141; <https://doi.org/10.1177/2348448914549894>.

This article looks at different drilling technologies in the Bronze Age from Egypt to the Indian subcontinent. The adoption or rejection of different types of drilling mechanisms in different regions reminds us that technologies have to be socially acceptable in the first place before they could be adopted.

Miller, Heather M.-L.

2008 The Indus Talc-Faience Complex: Types of Materials, Clues to Production. In *South Asian Archaeology 1999, Proceedings of the Fifteenth International Conference of the European Association of South Asian Archaeologists, Universiteit Leiden, 5-9 July, 1999*,

edited by Ellen M. Raven, pp. 111-122. Egbert Forsten, Groningen.
<https://www.academia.edu/1555115/>.

The classification of talc-faience complex materials is difficult as they are almost identical in appearance even under low magnification. This article provides comparative, descriptive terminology for these various materials which should facilitate more uniform descriptions in the future. Also provided is an overview of the probable processes of the manufacture of these materials and the objects created from them.

Mohanty, Rabindra Kumar

1999 Significance of a Bead Manufacturing Centre at Mahurjhari, District Nagpur, Maharashtra, India. *Man and Environment* (24):79-89.

The site was an extensive primary beadmaking center in central India during the Iron Age and Early Historic period.

2003 The Importance of Mahurjhari in the Archaeology of Stone Bead Manufacturing Centres in Ancient India. *Bead Study Trust Newsletter* 41:8-15;
https://www.societyofjewelleryhistorians.ac.uk/bead_study_trust.

Mahurjhari, an extensive primary beadmaking center in central India during the Iron Age and Early Historic period, has provided evidence of all stages of the manufacturing processes.

Mohanty, R.K. and Tilok Thakuria

2016 *Indian Beads: History and Technology*. Pentagon Press, New Delhi.

Provides a detailed account of non-glass bead manufacture and trade in India from the upper paleolithic to early history. Includes information about manufacturing techniques, raw materials, and manufacturing centers in ancient India, as well as traditional bead manufacturing at Khambhat, Gujarat.

Monterrosa Desruelles, Hervé Victor

2018 La presencia maya en el Templo Mayor de Tenochtitlan. El análisis tecnológico de los objetos de jadeíta verde imperial. Ph.D. dissertation. Escuela Nacional de Antropología e Historia, Mexico DF. <https://www.academia.edu/81066342/>.

Provides a technological analysis of Mayan imperial-green jadeite objects (including beads and pendants) recovered from the Great Temple of Tenochtitlan in central Mexico.

Monterrosa Desruelles, Hervé Victor and Emiliano Melgar Tísoc

2006 Tecnología de cuentas en piedra caliza del área Mezcala, Guerrero. *Tecuani. Boletín del Centro INAH Guerrero* 2(7):4-6; <https://www.academia.edu/5843887/>.

Reports on the technological aspects of limestone bead production in the Mezcala area of Guerrero, southern Mexico.

Moorey, P.R.S.

1994 *Ancient Mesopotamian Materials and Industries: The Archaeological Evidence*. Eisenbrauns, Winona Lake, IN.

The chapter on “The Stoneworking Crafts: Ornamental Stones” contains a section on beads and the types of stones used to produce them.

Needham, Andy, Aimée Little, Chantal Conneller, Diederik Pomstra, Shannon Croft, and Nicky Milner

2018 Beads and Pendant. In *Star Carr. Volume 2: Studies in Technology, Subsistence and Environment*, edited by Nicky Milner, Chantal Conneller, and Barry Taylor, pp. 463-477. White Rose University Press, York.

Chapter 33 discusses the small group of ornaments recovered from the important Mesolithic site of Star Carr in North Yorkshire, England, United Kingdom. They include shale disc beads, a possible bird-bone bead, a perforated amber fragment, perforated red deer teeth, and a unique, engraved shale pendant which represents the earliest form of Mesolithic art in Britain. Insight is provided regarding the manufacture of the ornaments.

Noain Naura, María José

1996 Las cuentas de collar en variscita de las minas prehistóricas de Gavà (Can Tintorer). Bases para un estudio experimental. *Cuadernos de Prehistoria y Arqueología de la Universidad Autónoma de Madrid* 23:37-86;
<https://revistas.uam.es/cupauam/article/download/1285/1259>.

Reconstructs the manufacturing sequence for Neolithic variscite necklace beads in the province of Barcelona, Spain.

1997 El proceso de fabricación de las cuentas de collar en variscita. *Boletín de Arqueología Experimental* 1:10-11.

Describes the process for making variscite necklace beads.

1999 Las cuentas de collar en variscita de las minas prehistóricas de Gavà (Can Tintorer). Bases para un estudio experimental. *Il Congrès del Neolític a la Península Ibérica, SAGVNTVM-PLAV*, Extra-2:171-178.
<https://cefd.uv.es/index.php/saguntumextra/article/download/2774/2353>.

Similar content to Noain Naura (1996).

Nyland, Astrid J.

2020 Karismatisk bergkrystall fra Ryfylkeheiane? Smykkestein som identitetsmarkør i yngre jernalder. *VIKING: Norsk Arkeologisk Årbok* LXXXIII:57-83;
<https://www.academia.edu/44485830/>.

Discusses rock crystal deposits and sites where crystals were transformed into beads in southwestern Norway during the Stone and the Late Iron ages, and provides the *chaîne opératoire* for their production. Concentration is focused on rock crystal beads from Late Iron Age graves in Rogaland. English abstract.

Otis Charlton, Cynthia

1993 Obsidian as Jewelry: Lapidary Production in Aztec Otumba, Mexico. *Ancient Mesoamerica* 4:231-243; <https://www.academia.edu/4329751/>.

Includes a section on beads.

Pascual Benito, Josep Lluís

2014 Los adornos de Quintaret. La fabricación de cuentas discoidales de caliza y de lignito. *Archivo de Prehistoria Levantina* XXX:183-188; <https://www.academia.edu/10124688/>.

Discusses the manufacturing techniques utilized to create beads of calcite and lignite at the Late Neolithic and Bell Beaker site of Quintaret in southeastern Spain.

Pelegrin, Jacques

2000 Technique et méthodes de taille pratiquées à Cambay. In *Cornaline de l'Inde: des pratiques techniques de Cambay aux techno-systèmes de l'Indus*, edited by V. Roux, pp. 53-93. Éditions de la Maison des sciences de l'homme, Paris.
<https://books.openedition.org/editionsmsmh/8720>.

Expounds on stone-bead knapping methods and techniques practiced at Cambay, India.

Peschaux, Caroline and Bertrand Ligouis

2023 From the Jura Arc to the Paris Basin: Exploitation of Jet as Black Raw Material for Making Ornamental Objects during the Magdalenian in the Northwest Europe. *Archaeological and Anthropological Sciences* 15, 66; <https://doi.org/10.1007/s12520-023-01763-y>.

A multidisciplinary study of jet ornaments reveals the exclusive use of jet for the production of symbolic objects (geometric beads, figurative pendants, and elements of portable art) and shows that jet-working techniques were adapted to the specific mechanical properties of the material (percussion and meticulous grooving, scraping, and abrasion techniques).

Prabhakar, V.N.

2012-2013 Analysis of Beads from Sanauli Burials. *Prāgdhārā* 23:63-93;
<https://www.researchgate.net/publication/339739713>.

Describes the beads of stone and faience recovered from a Harappan site in northern India and discusses the drilling technology.

2016 An Overview of the Stone Bead Drilling Technology in South Asia from Earliest Times to Harappans. *Heritage: Journal of Multidisciplinary Studies in Archaeology* 4:47-74;
<https://www.academia.edu/66331357/>.

Discusses the various drilling techniques used to perforate the various bead forms that were produced in what is now northwestern India and eastern Pakistan.

2017 Documentation and Analysis of Stone Drills from Dholavira. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok

Kumar Kanungo, pp. 293-316. Indian Institute of Technology, Gandhinagar. <https://www.researchgate.net/publication/339740388>. Discusses the drills and bead forms excavated at Dholavira in northwestern India where beadmaking proliferated during the Harappan and Late Harappan phases.

2018 Decorated Carnelian Beads from the Indus Civilization Site of Dholavira (Great Rann of Kachchha, Gujarat). In *Walking with the Unicorn: Social Organization and Material Culture in Ancient South Asia. Jonathan Mark Kenoyer Felicitation Volume*, edited by Dennys Frenez, Gregg M. Jamison, Randall W. Law, Massimo Vidale, and Richard H. Meadow, pp. 475-485. Archaeopress, Oxford. <https://www.researchgate.net/publication/339740388>.

Discusses carnelian beads which are decorated with etched/bleached designs and the technology involved in their production. India.

2024 Understanding the Bead Drilling Technology of the Harappans and the Technological Transformations over Time. *Indian Journal of History of Science*; <https://doi.org/10.1007/s43539-024-00144-1>.

This paper highlights some key aspects of Harappan bead drilling technology and its continuity into the late Harappan and historical periods. In particular, the evidence from Vadnagar in northwestern India is discussed to understand the continuity.

Prabhakar, V.N., R.S. Bisht, R.W. Law and J.M. Kenoyer

2012 Stone Drill Bits from Dholavira – A Multi-Faceted Analysis. *Man and Environment* XXXVII(1):8-25; <https://www.researchgate.net/publication/339739711>.

A detailed study of the large collection of Harappan drill bits excavated at Dholavira, Gujarat, India, which were used in the production of stone beads. Mostly made of “Ernestite,” the drills played a major role in the advancement of technology in the perforation of beads made of siliceous materials.

Queffelec, Alain, Pierrick Fouéré, Céline Paris, Christian Stouvenot, and Ludovic Bellot-Gurlet

2018 Local Production and Long-Distance Procurement of Beads and Pendants with High Mineralogical Diversity in an Early Saladoid Settlement of Guadeloupe (French West Indies). *Journal of Archaeological Science: Reports* 21:275-288; <https://www.academia.edu/37314734/>.

Presents an integrated study of the mineralogy and typo-technology of the ornaments which date to 250-400 cal. AD. The materials used include serpentine, amethyst, turquoise, sudoite, rock crystal, calcite, feldspar, diorite, jasper, aventurine, chlorite, paragonite, and nephrite. Production waste represents several stages of the *chaîne opératoire*.

Quinn, Colin Patrick

2006 Vital Signs: Costly Signaling and Personal Adornment in the Near Eastern Early Neolithic. M.A. thesis. Department of Anthropology, Washington State University, Pullman.

Discusses stone bead production techniques during the Early Neolithic in the Southern Levant at the site of Dhra', Jordan, with emphasis on hole drilling.

Raad, Danielle

2015 The Production of Stone Beads at the Pre-Pottery Neolithic Site of el-Hemmeh, Jordan. S.M. thesis. Department of Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge. <https://dspace.mit.edu/handle/1721.1/98733>.

Patterns of typology, color, and material are systematically explored, and manufacturing methods are reconstructed based on the close examination of perforations, polishing, and tool marks on ten PPNA beads carefully selected as case studies.

Raad, Danielle R. and Cheryl A. Makarewicz

2019 Application of XRD and Digital Optical Microscopy to Investigate Lapidary Technologies in Pre-Pottery Neolithic Societies. *Journal of Archaeological Science: Reports* 23:731-745; <https://www.academia.edu/47343950/>.

Utilizes XRD and 3D digital optical microscopy to investigate raw material selection and bead manufacturing technology at the Pre-Pottery Neolithic (PPN) settlement of el-Hemmeh, Jordan.

Rabbani, Mubariz Ahmed

2020 The Typology, Production and Adornment of Gandharan Beads during the mid-3rd Century BCE–1st Century CE: Preliminary Results from Barikot, Swat, Pakistan. *Archaeological Research in Asia* 24:100228.; <https://doi.org/10.1016/j.ara.2020.100228>.

Provides new perspectives on the typology and technological methods of stone bead production in use at the site.

Raymond, Madeleine, Pierrick Fouéré, Ronan Ledevin, Yannick Lefrais, and Alain Queffelec

2022 Analysis and Reproduction of the Techniques of Perforation of Quartz and Amethyst Beads from the Ceramic Period in the Antilles. SocArXiv, a5tgp, ver. 4; <https://doi.org/10.31235/osf.io/a5tgp>.

Drilling replication experimentation has revealed that it is possible to produce perforations in hard stone with cactus thorns and crushed quartz as an abrasive powder.

2022 Technological Analysis and Experimental Reproduction of the Techniques of Perforation of Quartz Beads from the Ceramic Period in the Antilles. *Peer Community Journal* 2, e66; <https://peercommunityjournal.org/item/10.24072/pcjournal.184/>.

Essentially the same content as the previous entry.

Ricou, Christian, Thimus Esnard, and Luc Laporte

- 2009 Archéologie expérimentale: Éléments de comparaison ethnographiques et archéologiques [Experimental Archeology: Elements for Comparing Ethnographic and Archaeological Data]. In *Des premiers paysans aux premiers métallurgistes sur la façade atlantique de la France (3500-2000 av. J.-C.)* [From the First Farmers to the First Metallurgists on the French Atlantic Coast (3500-2000 cal. B.C.)], edited by Luc Laporte, pp. 506-520. Édition Association des Publications Chauvinoises, Mémoire XXXIII.
- Reports on the experimental replication of stone and shell beads found on Artenacian sites in west-central France.

Rienjang, Wannaporn

- 2022 A Study of Shapes and Drilling Technology of Gem Stone Beads from Ban Phromthin Tai Archaeological Site, Lopburi Province. In *Ancient Finds Ancient Ban Brahma in the South*, pp. 11-25. <https://www.academia.edu/71725707/>.
- The site is located in central Thailand and was primarily occupied during the Iron Age and Dvāravatī period. In Thai.

Rienjang, Wannaporn Kay, Jonathan Mark Kenoyer, and Margaret Sax

- 2017 Stone Beads from the Relic Deposits: A Preliminary Morphological and Technological Analysis. In *Charles Masson and the Buddhist Sites of Afghanistan: Explorations, Excavations, Collections*, edited by Elizabeth Errington, pp. 52-57. The British Museum, London. <https://www.academia.edu/35450130/>.
- Beads made of a variety of hard stones, as well as lapis lazuli, were found in relic caskets with other offerings or associated with relic deposits in stupas in three areas of Afghanistan. The various methods utilized in their production are discussed, as is evidence of use wear. Appendix 3 (pp. 231-234) presents Documentation of Bead Morphology, Manufacture and Use Wear.

Rigaud, Solange and Veerle Rots

- 2018 Analyse microscopique de quatre perles provenant de la tombe T.200 (N° 26) de Chagar Bazar (Syrie). In *Chagar Bazar (Syrie) VIII. Les Tombes Ordinaires de l'Âge Du Bronze Ancien et Moyen Des Chantiers D-F-H-I (1999-2011). Études Diverses*, edited by Önhan Tunca and Abd el-Massih Baghdo, pp. 149-154. Peeters, Leuven, Belgium.
- A microscopic examination of four talc beads from a tomb in Syria dated to the early Bronze Age (ca. 2800-2000 / 2700-1900 BC) reveals the *chaîne opératoire*.

Rochette, Erick T.

- 2007 *Investigación sobre Producción de Gienas de Prestigio de Jade en el Valle Medio del Motagua, Guatemala*. Foundation for the Advancement of Mesoamerican Studies, Los Angeles.
- Archaeological surveys and excavations were conducted in the Middle Motagua Valley of southern Guatemala, centering on the region around the Lower Lato River Valley, to understand the distribution, organization, and technological process of jadeite artifact production (primarily beads). English abstract.

2009 The Late Classic Organization of Jade Artifact Production in the Middle Motagua Valley, Zacapa, Guatemala. Ph.D. dissertation. Department of Anthropology, Pennsylvania State University, State College, PA.

The archaeological evidence demonstrates widespread production of jade artifacts in the only positively identified jade source for prehispanic Mesoamerica. Discusses the technology involved.

2010 Jade in Full: Prehispanic Domestic Production of Wealth Goods in the Middle Motagua Valley, Guatemala. In *Housework Craft Production and Domestic Economy in Ancient Mesoamerica*, edited by Kenneth G. Hirth, pp. 205-224. Archeological Papers of the American Anthropological Association 19.

Presents evidence for non-elite, household production of jadeite items (particularly beads) in the study area.

Rodet, M.J., D. Duarte-Talim, and C.G. Falci

2014 A produção de contas líticas na Amazônia a partir da perspectiva teórico-metodológica da Escola Francesa clássica (exemplo da Serra dos Carajás, Pará). In *Indústrias Líticas na América do Sul: Abordagens teóricas e metodológicas*, edited by A. Lourdeau, S. Viana, and M.J. Rodet. Editora da UFPE, Recife, Brazil.

The production of stone beads in the Amazon at Serra dos Carajás, Pará, Brazil, from the theoretical and methodological perspective of the classical French School.

Rodet, M.J., D. Duarte-Talim, M.I. da Silveira, E.R. de Oliveira, and M.L. da Costa

2014 The Production of Beads and Lithic Pendants in the Salobo Riverbasin, Pará, Brazil. In *Traceology Today: Methodological Issues in the Old World and the Americas*, edited by M.E. Mansur, M.A Lima, and Y. Maigrots, pp. 61-68. BAR International Series 2643. <https://www.academia.edu/37471211/>.

Rollefson, Gary

2002 Bead-Making Tools from LPPNB al-Basit, Jordan. *Neo-Lithics* 2/02:5-7; <https://www.academia.edu/29507101/>.

By analogy with other settlements in the Levant, the presence of large numbers of drills at al-Basit argues for a bead industry despite the glaringly small number of ornaments that have been recovered.

Rollefson, Gary and M. Parker

2002 Craft Specialization at al-Basit, Wadi Musa, Southern Jordan. *Neo-Lithics* 1/02:21-23. Analysis of material recovered from the large LPPNB settlement at al-Basit, near Petra in southern Jordan, demonstrates a focus on drill production, ostensibly for the manufacture of beads.

Rosenberg, Danny, Branden Cesare Rizzuto, Florian Klimscha, and Tristan Carter

2022 The Obsidian Beads from Middle Chalcolithic Tel Tsaf (ca. 5,200-4,700 cal. BC), Jordan Valley, Israel: Technology, Provenance, and Socio-Economic Significance. *Archaeological and Anthropological Sciences* 14, 113; <https://www.academia.edu/81360209/>.

This paper details the obsidian bead assemblage (the richest so far in the southern Levant), its morphometric and technological characteristics, and the raw material sources based on chemical compositions. It then discusses the assemblage's broader socioeconomic significance, and the possible means through which members of the community came to procure the beads.

Roux, Valentine

2000 Contexte historique et ethnographique [Historical and Ethnographical Context]. In *Cornaline de l'Inde: des pratiques techniques de Cambay aux techno-systèmes de l'Indus*, edited by V. Roux, pp. 19-50. Éditions de la Maison des sciences de l'homme, Paris. <https://books.openedition.org/editionsmsmh/8718>.

Presents a historical and ethnographical introduction to the Cambay stone bead industry including a synopsis of manufacturing techniques; India.

Roux, Valentine (ed.)

2000 *Cornaline de l'Inde: Des pratiques techniques de Cambay aux techno-systèmes de l'Indus*. Éditions de la Maison des sciences de l'homme, Paris. <https://books.openedition.org/editionsmsmh/8706>.

Contains nine articles on various aspects of stone beadmaking technology in the Indus Valley of India and Pakistan, as well as related topics. The nine articles are listed individually in the respective sections of this bibliography. See Glover (2002) for a review.

Roux, V., B. Bril, and G. Dietrich

1995 Skills and Learning Difficulties Involved in Stone Knapping: The Case of Stone-Bead Knapping in Khambhat, India. *World Archaeology* 27(1):63-87.

New methods of recording manufacturing processes throw light on the makers of long carnelian beads and their high value in the Harappan civilization.

Roux, V. and P. Matarasso

1999 Crafts and the Evolution of Complex Societies: New Methodologies for Modeling the Organization of Production, a Harappan Example. In *The Social Dynamics of Technology: Practice, Politics, and World Views*, edited by M.-A. Dobres and C.R. Hoffman, pp. 46-70. Smithsonian Institution Press, Washington.

Harappan stone-bead technology; Pakistan and India.

2000 Les perles en cornaline harappéenne, pratique technique et techno-système. In *Cornaline de L'Inde: Des pratiques techniques de Cambay aux techno-systèmes de l'Indus*, edited by V. Roux, pp. 413-438. Éditions de la Maison des sciences de l'homme, Paris.

On the technology of Harappan carnelian beads; Pakistan, India.

Roux, V. and J. Pelegrin

1989 Taille des perles et spécialisation artisanale: enquête ethnoarchéologique dans le Gujarat. *Techniques et Cultures* 14:23-49; <https://www.researchgate.net/publication/30453479>.
An ethno-archaeological investigation of stone-bead production in Gujarat, India.

Salvatori, S., M. Vidale, G. Guida, and E. Masioli

2009 Ilgynly-Depe (Turkmenistan) and the 4th Millennium BC Metallurgy of Central Asia. *Paléorient* 35(1):47-67.
Surface finds include a number of copper beads as well as a silver example. Their production and composition are discussed.

Sax, Margaret and Nigel Meeks

2009 The Manufacture of a Small Crystal Skull Purported to be from Ancient Mexico. *British Museum Technical Research Bulletin* 3:47-55.
Close examination of the techniques used in the production of a small perforated quartz skull reveal that the object is not pre-Columbian but was made between the late 16th century and the mid-19th century when it was acquired.

Schultz, Sarah and Heather Walder

2016 Technologies of Refired Glass Pendant Production: Experimental Replication Results. *The Wisconsin Archeologist* 97(2):29-47; <https://www.academia.edu/31501671/>.
Examines the archaeological evidence for the re-forming of glass trade beads into larger glass pendants which have been recovered from sites of the 17th-18th centuries across the Plains and Midwest regions of North America.

Seeberger, F.

1992 Zur Herstellung der neolithischen Kalkröhrenperlen und Kettenschieber. *Archäologisches Korrespondenzblatt* 22:41-45.
Neolithic working debris and flint drills from a site on Lake Constance, Germany, inspired experiments in reconstructing stone-bead manufacture using flint bits and a bow drill. Calculations about the time required suggest that only the upper levels of society could afford beads.

Sela, Antonio and Valentine Roux

2000 La perforation des perles en calcédoine: approche mécanique des techniques harappéennes. In *Cornaline de l'Inde. Des pratiques techniques de Cambay aux techno-systèmes de l'Indus*, edited by V. Roux, pp. 173-204. Éditions de la Maison des sciences de l'homme, Paris. <https://books.openedition.org/editionsmsmh/8725>.
A technical approach to perforating Harappan chalcedony beads (India).

Shinohara, Yūichi

2011 Stone Ritual Items and the Stones of Okinoshima Island in the Fifth Century. In *Okinoshima Island and Related Sites in the Munakata Region, Study Report I*, pp. 435-

489. World Heritage Promotion Committee of Okinoshima Island and Related Sites in the Munakata Region, Fukuoka, Japan.

The ritual items include beads in comma-shaped, cylindrical, round, disc, and mortar-shaped forms. Thorough report which includes information about manufacturing techniques and chronology.

Solís Ciriaco, Reyna Beatriz

2015 Esferas de producción y consumo de objetos lapidarios en las estructuras aledañas del Templo Mayor de Tenochtitlan. Ph.D. dissertation. Universidad Nacional Autónoma de México, México DF. <https://www.academia.edu/18993557/>.

This dissertation provides a comprehensive study of the numerous lapidary objects (including beads and pendants) recovered from structures surrounding the Great Temple of Tenochtitlan in Mexico City. It identifies the raw materials and the production techniques involved, and also addresses the theoretical concepts of production organization, production spheres, tradition, and style.

Solís Ciriaco, Reyna Beatriz and Emiliano Melgar

2017 Technological Analysis of Greenstone Objects from the Structures Surrounding the Great Temple of Tenochtitlan. In *Playing with the Time. Experimental Archeology and the Study of the Past*, edited by Rodrigo Alonso, Javier Baena, and David Canales, pp. 125-130. Servicio de Publicaciones de la Universidad Autónoma de Madrid. <https://www.academia.edu/35005621/>.

A detailed technological analysis of greenstone beads, pendants, and other ornaments excavated in central Mexico permitted the highly accurate identification of the tools and techniques employed in their production. Three technological patterns were identified.

Solís Ciriaco, Reyna Beatriz, Emiliano Melgar, and Bertina Olmedo Vera

2021 Análisis tecnológico de objetos lapidarios de la Sala Mexica dentro de la bóveda del Museo Nacional de Antropología, México. *Boletín de Arqueología Experimental* 14:38-57; <https://www.academia.edu/53268497/>.

Investigates the manufacturing techniques used to produce prehispanic objects, such as beads and pendants, in the collections of the National Museum of Anthropology in Mexico City.

Stocks, Denys A.

1989 Ancient Factory Mass-Production Techniques: Indications of Large-Scale Stone Bead Manufacture during the Egyptian New Kingdom Period. *Antiquity* 63(240):526-531; <https://doi.org/10.1017/S0003598X00076493>.

Among the craftworkers depicted in Egyptian tomb-painting are drillers of beads going about their work. An experimental study of bead-drilling leads to an assessment of the industrial nature of the enterprise.

2003 *Experiments in Egyptian Archaeology: Stoneworking Technology in Ancient Egypt*. Routledge, London.

A very illuminating book with a whole chapter devoted to early beadmaking techniques. Detailed discussion of the mass-production techniques depicted in Egyptian tombs and then of the author's attempts to replicate them (pp. 203-224). The most highly skilled workers could produce up to five beads at a time. Other parts of the book deal with drills, abrasives, etc.

Takács, József

2016 Gemstone Objects from Burma: Gemmological Tests and Investigation of Production Technology. In *Burmese Gemstone Amulets and Talismans, Vol. 1*, edited by Terence Tan, Susan Conway, József Takács, and István Zelnik, pp. 30-41. Hungarian Southeast Asian Research Institute, Budapest.

A thousand or so Burmese gemstone objects at the Department of Mineralogy of the Eötvös Loránd University and at the Hungarian Southeast Asian Research Institute were examined to identify the materials used, establish the techniques used in their production, and determine whether they are authentic, ancient pieces.

Thakuria, T. and R.K. Mohanty

2010 A Stone Bead Manufacturing Centre in Peninsular India: Preliminary Study of Manufacturing Debitage from Trench F of Mahurjhari Excavations, Maharashtra. *Tamil Civilization* 23:15-38; <https://www.academia.edu/10705131/>.

Discusses the bead forms encountered and the production process. The material likely dates to the Early Iron Age Megalithic period.

Thuesen, Mette Bangsberg

2018 The Stone Bead Production at Shubayqa 6 and the Meaning of Personal Ornamentation in Early Neolithic Societies. M.A. thesis. University of Copenhagen, Copenhagen.

Detailed study of the production of greenstone beads at a Pre-Pottery Neolithic A site in Jordan.

Thuesen, Mette Bangsberg, Hala Alarashi, Anthony Ruter, and Tobias Richter

2023 Nascent Craft Specialization in the Pre-Pottery Neolithic A? Bead Making at Shubayqa 6 (Northeast Jordan). *PLoS ONE* 18(12), e0292954; <https://doi.org/10.1371/journal.pone.0292954>.

Thousands of pieces ofdebitage, roughouts, and finished greenstone beads exhibit signs of standardized production that was probably geared towards exchange. This suggests incipient skilled craft production that was likely part-time and seasonal. The production sequence is discussed.

Tosi, M. and M. Vidale

1990 4th Millennium BC Lapis Lazuli Working at Mehrgarh, Pakistan. *Paléorient* 16(2):89-99; <https://www.jstor.org/stable/41492423>.

Describes the lapis lazuli bead industry and beadmaking process at Mehrgarh based on material surface collected at site MR2. This find represents one of the earliest lapis lazuli beadmaking assemblages in South Asia and shows the involvement of the Kachi Plain region in the production of luxury ornaments since comparatively ancient periods.

Tsoraki, Christina with Matilda Siebrecht

2017 Ground Stone Technologies. In *Çatalhöyük 2017 Archive Report*, edited by Scott D. Haddow, pp. 227-237. <https://www.academia.edu/38168268/>.

Burial fill (Sk 22623) in the North Area of a large Neolithic and Chalcolithic settlement in southern Turkey contained a variety of stone beads, primarily carnelian, that comprised anklets and bracelets. The contribution by Siebrecht considers how variability in raw material properties may have influenced the selection of techniques and tool kits employed for the production of beads made from different materials.

Uesugi, Akinori, Ambily C.S., Ajit Kumar, Abhayan G.S., and Rajesh S.V.

2019 Stone Beads from Megalithic Burial at Niramakulam, Kerala. In *Human and Heritage: An Archaeological Spectrum of Asiatic Countries (Felicitation to Professor Ajit Kumar)*, Vol. 1, edited by Rajesh S.V., Abhayan G.S., P. Nayar, and E.R. Ilahi, pp. 1-22. New Bharatiya Book Corporation, New Delhi. <https://www.academia.edu/40920972/>.

Examines the beads from a burial in South India in terms of their morphological and technological features.

Uesugi, Akinori, Manmohan Kumar, and Vivek Dangi

2018 Indus Stone Beads in the Ghaggar Plain with a Focus on the Evidence from Farmana and Mitathal. In *Walking with the Unicorn: Social Organization and Material Culture in Ancient South Asia. Jonathan Mark Kenoyer Felicitation Volume*, edited by Dennys Frenez, Gregg M. Jamison, Randall W. Law, Massimo Vidale, and Richard H. Meadow, pp. 568-591. Archaeopress, Summertown, Oxford. <https://www.academia.edu/37229869/>.

Presents a thorough analysis of the stone beads recovered from two Urban Indus sites in northern India, including a reconstruction of the bead production process.

Uesugi, Akinori and Jenee Peter

2019 Stone Beads from Kunnukara Urn Burial in Kerala. *Heritage: Journal of Multidisciplinary Studies in Archaeology* 7:29-69; <https://www.academia.edu/40921002/>.

Examines the morphological and technological features of 88 agate/carnelian and quartz (rock crystal) beads of the South Indian Megalithic culture found at a site in southern India. The specimens exhibit diverse morphological types and unique drilling technologies.

Uesugi, Akinori, Virag Sontakke, Shrikant Ganvir, and Shantanu Vaidya

2020 Early Historic Stone Beads from Nagardhan, Maharashtra. *Heritage: Journal of Multidisciplinary Studies in Archaeology* 8(20):193-214; <https://www.academia.edu/75298713/>.

Examines the morphological features and drilling technologies of stone beads from Nagardhan in central India.

Uesugi, Akinori and Wannaporn Kay Rienjang

2018 Stone Beads from Stupa Relic Deposits at the Dharmarajika Buddhist Complex, Taxila. *Gandhāran Studies* 11:53-83.

Silicone casts made of the perforations of stone beads recovered from an early 1st millennium site in northern Pakistan provide information concerning the various drilling techniques used.

Usai, Donatella

2016 Bead-Making in Neolithic Sudan. In *Ghaba: An Early Neolithic Cemetery in Central Sudan, Vol. 1*, edited by S. Salvatori, D. Usai, and Y. Lecoq, pp. 59-70. Africa Magna, Frankfurt a.M. <https://www.academia.edu/47753649/>.

Describes the technology used to produce the stone beads found in graves at the Ghaba cemetery.

Van Gijn, Annelou

2006 Ornaments of Jet, Amber and Bone. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 cal BC*, edited by L.P. Louwe Kooijmans and P.F.B. Jongste, pp. 195-205. *Analecta Praehistorica Leidensia* 37/38.

Discusses the beads and their production techniques.

2008 De ornamenten van Ypenburg. In *Ypenburg-locatie 4. Een nederzetting met grafveld uit het Midden-Neolithicum in het West-Nederlandse kustgebied*, edited by Hans Koot, Lauren Bruning, and Rob A. Houkes, pp. 277-288. Hazenberg Archeologie, Leiderdorp.

Discusses the amber and jet beads recovered from a Middle Neolithic site in the western Netherlands with an account of production techniques.

2008 Toolkits and Technological Choices at the Middle-Neolithic Site of Schipluiden, The Netherlands. In *'Prehistoric Technology' 40 Years Later: Functional Studies and the Russian Legacy*, edited by Laura Longo and Natalia Skakun, pp. 217-225. BAR International Series 1783. <https://www.academia.edu/81895484/>.

Discusses the local production of beads fashioned from jet, amber, and bird bone.

2013 Ornaments of Jet, Amber and Bone. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 CAL BC*, edited by Leendert P. Louwe Kooijmans and Peter F.B. Jongste, pp. 195-206. *Analecta Praehistorica Leidensia* 37/38.

Provides descriptions of the recovered beads and pendants, as well as details concerning their production.

2014 Beads and Pendants of Amber and Jet. In *A Mosaic of Habitation at Zeewijk (the Netherlands): Late Neolithic Behavioural Variability in a Dynamic Landscape*, edited by E.M. Theunissen, O. Brinkkemper, R.C.G.M. Lauwerier, B.I. Smit, and I.M.M. van der Jagt, pp. 119-128. *Nederlandse Archeologische Rapporten* 47.

Utilizes a biographical approach to the study of ornaments, including a characterization of the raw material, a reconstruction of the production processes, and examination of its use life, and a

study of the context of deposition. The material dates to the Late Neolithic. See García-Díaz (2014) for stone beads from the site.

Vassanelli, Alice, Cristiana Petrinelli Pannocchia, and Elisabetta Starnini

2023 The *Chaîne Opératoire* Approach for Interpreting Personal Ornament Production: Marble Beads in Copper Age Tuscany (Italy). *Open Archaeology* 9(1):20220334; <https://doi.org/10.1515/opar-2022-0334>.

Through an experimental approach, this study presents the actions and choices made by the artisans to produce marble beads and tries to determine the role and socio-cultural meaning that these items had for the Copper Age communities in Tuscany.

Vidale, Masimo

1987 Some Aspects of Lapidary Craft at Moenjodaro in the Light of the Surface Record of the Moneer S.E. Area. In *Interim Reports Vol. 2. Reports on Fieldwork Carried out at Mohenjo-Daro, Pakistan 1984-1986 by the IsMEO-Aachen-University Mission*, edited by M. Jansen and G. Urban, pp. 113-150. German Research Project “Mohenjo-Daro,” Aachen. <https://www.academia.edu/5624873/>.

Reports on the stone beads and their production techniques.

1995 Early Beadmakers of the Indus Tradition: The Manufacturing Sequence of Talc Beads at Mehrgahr in the 5th Millennium BC. *East and West* 45(1-4):45-80; <https://www.academia.edu/3829121/>.

Reconstructs the techniques used by ancient artisans to make steatite disc beads at Mehrgahr, Pakistan. Excellent illustrations and SEM photos.

Vidale, M., L. Foglini, and G. Guida

2016 The Lapis Lazuli Beads Manufacturing Sequence, and Spatial Patterning of its Record. In *Lapis Lazuli Bead Making at Shahr-i Sokhta. Interpreting Craft Production in a Urban Community of the 3rd Millennium BC*, edited by M. Vidale and A. Lazzari. Serie Orientale Roma 6.

Discusses the various aspects of beadmaking at a Bronze Age site in eastern Iran.

Vidale, Massimo, Maurizio Mariottini, Giancarlo Sidoti, and Muhammad Zahir

2017 Early Evidence of Beadmaking at Mehrgahr, Pakistan: A Tribute to the Scientific Curiosity of Catherine and Jean-Francois Jarrige. In *Stone Beads of South and Southeast Asia: Archaeology, Ethnography and Global Connections*, edited by Alok Kumar Kanungo, pp. 233-254. Indian Institute of Technology Gandhinagar. <https://www.academia.edu/38492223/>.

Deals with the archaeological material recovered from a Chalcolithic craft center. The emphasis is on lapis lazuli and chert drill heads.

Villalobos García, Rodrigo, Carlos P. Odriozola, Germán Delibes de Castro, Manuel Santonja Gómez, Rosario Pérez Martín, Nicolás Benet Jordana, J. Francisco Fabián García, Elisa Guerra Doce, and Pilar Zapatero Magdaleno

2018 Cadena operativa y análisis tecno-tipológico de los adornos prehistóricos de variscita del centro-sur-occidente de la Meseta Norte Española. Historia de una tradición artesanal. *Complutum* 29(1):59-77; <https://www.academia.edu/108160437/>.

Fully reconstructs the *chaîné opératoire* of variscite beads in the Spanish North Plateau during the Late Neolithic and Early Copper Age.

Viola, Stefano

2016 Significato sociale della *parure* in pietra tra l'età del Rame e il Bronzo Antico dell'Italia settentrionale. Un approccio tecno-funzionale attraverso la sperimentazione archeologica. D.Sc. thesis. University of Geneva.

On the social meaning of stone jewelry (including beads and pendants) from sites in northern Italy dating from the Copper to Early Bronze ages. Includes a detailed account of the manufacturing processes.

Viola, Stefano, Maria Adelaide Bernabo' Brea, Dino Delcaro, Federica Gonzato, Cristina Longhi, Giorgio Gaj, Roberto Macellari, Luciano Salzani, Alessandra Serges, James Tirabassi, and Marie Besse

2017 Types and Gesture. The Jewellery of the Copper Age in the Alps in a Techno-Typological Study. In *Materials, Productions, Exchange Network and their Impact on the Societies of Neolithic Europe*, edited by Marie Besse and Jean Guilaine, pp. 69-82. Archaeopress Publishing, Oxford.

Compares jewelry artifacts (mainly stone beads) from sites in northern Italy dating from the Copper Age to the Early Bronze Age to determine the technology and tools used to produce them, as well as how to differentiate wear marks from technological traces.

Viola, Stefano, Giorgio Gaj, Dino Del Caro, and Marie Besse

2020 Techno-Functional Study of the Personal Ornaments in Lignite of the Boira Fusca Cave (Cuorgnè, Torino-Italy). EXARC 3; <https://exarc.net/ark:/88735/10523>.

Proposes a *chaîne opératoire* for the production of lignite beads found in northern Italy during the Chalcolithic period (mostly during the Bell Beaker phase) and Early Bronze Age.

Volkov, P.V., O.A. Mitko, Yu. S. Gubar, R.V. Davydov, and I.S. Polovnikov

209 Технологический анализ украшений из бирюзы (по материалам находок из могильника скифского времени Ак-Даг I в Тыве). *Vestnik NGU. Series: History and Philology* 18(7):74-86; <https://www.academia.edu/100796579/>.

Reports on the elemental composition and manufacturing technology of turquoise jewelry found in Barrow 1 of the Scythian Ak-Dag I burial ground in Tyva, southern Siberia.

Wartke, R.-B.

1991 Handwerk und Technologie im Alten Orient. 1. Teil: Ver- und Bearbeitung von Ton und Stein. 2. Teil: Ver- und Bearbeitung von Metall und Glas. *Antike Welt* 22:35-48, 82-96.
Succinct account of the techniques for making stone beads (shaping, boring, etching) in the ancient Orient, and some remarks pertinent to beadmaking in metal and various vitreous materials.

Williams, L.

1984 *A New Approach to the Study of Bead-Making Workshop Practices with Special Reference to Carnelian and Agate Beads from Ban Don Ta Phet, Thailand*. University of London, Institute of Archaeology.
Stone bead technology.

Wright, Katherine I. (Karen)

2008 Craft Production and the Organisation of Ground Stone Technologies. In *New Approaches to Old Stones: Recent Studies of Ground Stone Artefacts*, edited by Y. Rowan and J. Ebeling, pp. 130-143. Equinox Archaeology, London.
Discusses the massive evidence for the production of beads made of green, red, and black “Dabba marble” at the Late Neolithic sites of Jilat 13 and 25 in eastern Jordan.

Wright, K.I., P. Critchley, A.N. Garrard, R. Bains, D. Baird, and S. Groom

2008 Stone Bead Technologies and Early Craft Specialization: Insights from Two Neolithic Sites in Eastern Jordan. *Levant* 40(2):131-165; <https://www.academia.edu/5852118/>.
Stone bead production and exchange in Wadi Jilat and the Azraq Basin, Jordan.

Wright, Katherine I. and Andrew Garrard

2003 Social Identities and the Expansion of Stone Bead-Making in Neolithic Western Asia: New Evidence from Jordan. *Antiquity* 77(296):267-284.
Discusses evidence for stone bead production and use at six seasonally occupied aceramic neolithic campsites in the Wadi Jilat region of eastern Jordan. Most of the beads were made from a local colored stone, so-called “Dabba Marble,” but varieties of flint, silicified sandstone, white limestone/chalk, white quartz/calcite were also used. Long-distance imports were limited to two beads of malachite and turquoise, and a small number of Red Sea shells and mother-of-pearl beads.

Yamahana, Kyoko and Yasunobu Akiyama

2017 Reproduction of Ancient Egyptian Sulfur Necklace: As an Example of Interdisciplinary Collaboration. *Civilizations* 22:5-34; <https://www.academia.edu/37003663/>.
Reports on the replication of a necklace composed of several forms of sulfur beads made during the Ptolemaic to early Roman periods. In Japanese with English abstract.

2020 Ancient Egyptian Sulfur Beads. *Beads: Journal of the Society of Bead Researchers* 32:15-24; <https://www.academia.edu/49044984/>.

Reports on the compositional analysis of sulfur beads in the Ancient Egyptian and Near Eastern Collection at Tokai University, Japan, and investigates potential production techniques.

Yang, Y., M. Yang, Y. Xie, and C. Wang

2008 Application of Micro-CT: 3D Reconstruction of Tool Marks on an Ancient Stone Bead and its Implication for Jade Drilling Techniques. In *Proceedings of the 37th International Symposium on Archaeometry, 13th-16th May 2008, Siena, Italy*, edited by Isabella Turbanti-Memmi, pp. 343-347. Springer.

The specimen examined is a black stone bead from a tomb of the “Peng” Nation, Western Zhou Dynasty (1046-771 BC).

Xia, Nai

2024 Carnelian Beads with Etched Patterns that Were Excavated in China. In *Studies in Silk Road Archaeology*, by Nai Xia, translated by Yili Luo and Mi Li, pp. 207-215. Springer Nature, Singapore.

Originally published in 1974, this article discusses the method of etching the beads, and their chronological and geographical distribution in China.

AMBER

Angelini, Ivana and Massimo Vidale

2020 The Bronze Age Amber Industry in Northern Italy in Light of High-Resolution 3D Imaging. *ArchéoSciences: Revue d'archéométrie* 44(2):237-249; <https://doi.org/10.4000/archeosciences.8024>.

Summarizes the results of the experimental application of high-resolution 3D imaging to the study and reconstruction of the *chaîne opératoire* of amber beadmaking in the northern Italian peninsula in the 2nd millennium BC.

Beck, Curt W. and S. Shennan

1991 *Amber in Prehistoric Britain*. Oxbow Monograph 8.

Definitive and indispensable study with a catalog of the beads (with many drawings and sections), spectrographic analysis results, and a discussion of manufacturing techniques, social significance, and chronology.

Bellintani, Paolo, Luciano Salzani, Gianni de Zuccato, Marilena Leis, Carmela Vaccaro, Ivana Angelini, Chiara Soffritti, Marco Bertolini, and Ursula Thun Hohenstein

2015 L'ambra dell'insediamento della tarda Età del bronzo di Campestrin di Grignano Polesine (Rovigo). In *Preistoria e Protostoria del Veneto*, edited by Giovanni Leonardi and Vincenzo Tiné, pp. 419-426. Studi di Preistoria e Protostoria 2. <https://www.academia.edu/80259236/>.

Discusses the late Bronze Age amber-working site of Campestrin di Grignano Polesine in northeastern Italy and provides a reconstruction of the *chaîne opératoire* of “Tiryns type” beads.

Bērziņš, Valdis and Agnese Čakare

2022 Pattern and Variation in Jewellery Production Sequences: Analysis of 4th Millennium BC Amber Assemblages from the Latvian Coast. *Documenta Praehistorica* 49:2-17; <https://doi.org/10.4312/dp.49.5>.

Presents an in-depth study of the production sequence of amber beads and pendants recovered from Sārnate and Siliņupe, two Neolithic sites on the coast of Latvia. Differences between the two sites in terms of the relative frequency of items discarded in various production stages may be related to the degree of integration into exchange networks.

Du Gardin, Colette

2015 Du nodule à la parure: l'artisanat de l'ambre à l'âge du Bronze en Europe occidentale [From Raw Material to Ornament: Amber Working in Western Europe during the Bronze Age]. In *Artisanats et productions à l'âge du bronze. Actes de la journée de la Société Préhistorique Française, Nantes, 8 Octobre 2011*, edited by Sylvie Boulud-Gazo and Théophane Nicolas, pp. 45-61. Séances de la Société Préhistorique Française 4. https://www.prehistoire.org/offres/file_inline_src/515/515_P_37032_55f181d83b9dd_4.pdf.

A comparative observation of the beads produced by the most important Bronze Age cultural groups confirms the existence of workshops with different degrees of specialization which produced the beads from amber imported from Northern Europe.

Hüpscher, Erica

2020 Hanzeatisch goud in Brugse context. Een onderzoek naar het gebruik en de bewerking van amber voor paternosters op basis van productieafval uit twee laatmiddeleeuwse sites. M.A. thesis. Department of Archeology, Gent University. <https://www.academia.edu/43594598/>.

Delves into the use and working of amber for rosary beads in Bruges during the late Middle Ages based on production waste from two sites. Includes information regarding the production process. English abstract.

Ivakin, G., V. Ivakin, I. Zotsenko, V. Baranov, and O. Zhurukhina

2016 Намисто з поховань Києва X-XI ст. (за матеріалами розкопок 2016 року) [Beads from Kyiv Burials of the 10th-11th Centuries (Based on 2016 Excavation Materials)]. *Opus Muxtum* 4:218-223; <https://www.academia.edu/36089185/>.

Materials include glass, faience, and semi-precious stone. Ukraine.

Kleijne, J.P., O. Brinkkemper, R.C.G.M. Lauwerier, B.I. Smit & E.M. Theunissen (eds.)

2013 *A Matter of Life and Death at Mienakker (the Netherlands): Late Neolithic Behavioural Variability in a Dynamic Landscape*. Nederlandse Archeologische Rapporten 45.

Among other things, this report deals with the production of amber beads.

Nesterovskiy, V.A. and O.Yu. Zhurukhina

2017 Технологія обробки бурштину у давньоруський час [Technology of Amber Processing in Old Rus']. *Archeology and Ancient History of Ukraine* 22(1):310-31; <https://www.academia.edu/38394319/>.

Discusses the production technology of amber beads and pendants recovered from a workshop of the 12th-early 13th centuries in the Kyiv Podil district of Ukraine. English abstract.

Popkiewicz, Eryk

2010 Eksperymentalne rekonstrukcje techniki i technologii obróbki bursztynu dla wczesnego średniowiecza [Experimental Reconstructions of Amber Processing Techniques and Technology for the Early Middle Ages]. *Stargardia* V:25-45; <https://www.academia.edu/11468826/>.

Based on theoretical, archaeological, and ethnographic knowledge and experiments, this article reconstructs an amber workshop in Pomerania during the Middle Ages along with processing techniques. In Polish with German abstract.

2012 Rekonstrukcje narzędzi, technik i technologii obróbki bursztynu z epoki kamienia [Reconstruction of Tools, Techniques and Technologies for Processing Amber during the Stone Age]. *Prace Muzeum Ziemi* 50:91-100; <https://www.academia.edu/11468978/>.

The reconstruction of tools and technologies is based on archaeological artifacts and ethnographic analogies, while the technique is mostly based on ethnographic patterns. English abstract.

2016 Jakimi sposobami i narzędziami obrabiano paciorki bursztynowe z obiektów obrzędowych Pucharów Dzwonowatych z Supraśla [Techniques and Tools Used for Processing Amber Beads from Bell Beaker Ritual Features Located in Supraśl]. In *Studia i Materiały do Badań nad Neolitem i Wczesną Epoką Brązu na Mazowszu i Podlasiu* VI, edited by Ryszard F. Mazurowski, Dariusz Manasterski, and Katarzyna Januszek, pp. 53-74. Instytut Archeologii Uniwersytetu Warszawskiego, Warsaw.

Replicative experimentation revealed that the tools used to process amber beads excavated in northeastern Poland were made of metal, most likely copper alloys. In Polish with substantial English abstract.

Popkiewicz, Eryk and Janusz Czebreszuk

2016 Wiedza i umiejętności rzemieślników obrabiających bursztyn w epoce brązu. Studium archeologii eksperymentalnej na przykładzie produkcji bursztynowego pectorału kultury mykańskiej [The Knowledge and Skills of Amber Processing Artisans in the Bronze Age. The Study in Experimental Archaeology Illustrated with an Example of Manufacturing an Amber Pectoral]. *Fontes Archaeologici Posnanienses* 52:81-101; <https://www.academia.edu/34942268/>.

Experimentally investigates the methodology required to produce an elaborate amber necklace known from, among others, the Mycenaean culture. In Polish with English summary.

Strafella, A., I. Angelini, G. Guida, S. Ferrari, M. Cupitò, M.R. Giuliani, and M. Vidale

2017 Micromorphologies of Amber Beads: Manufacturing and Use-Wear Traces as Indicators of the Artefacts' Biography. *Praehistorische Zeitschrift* 92(1):144-160;
<https://www.academia.edu/113237371/>.

Microscopic examination of a group of Bronze Age amber beads from two different sites in northern Italy revealed the use of a red-hot punch to create the perforations.

Van Gijn, Annelou

2006 Ornaments of Jet, Amber and Bone. In *Schipluiden: A Neolithic Settlement on the Dutch North Sea Coast c. 3500 cal BC*, edited by L.P. Louwe Kooijmans and P.F.B. Jongste, pp. 195-205. *Analecta Praehistorica Leidensia* 37/38.

Discusses the beads and their production techniques.

2008 De ornamenten van Ypenburg. In *Ypenburg-locatie 4. Een nederzetting met grafveld uit het Midden-Neolithicum in het West-Nederlandse kustgebied*, edited by Hans Koot, Lauren Bruning, and Rob A. Houkes, pp. 277-288. Hazenberg Archeologie, Leiderdorp.

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Utilizes a biographical approach to the study of ornaments, including a characterization of the raw material, a reconstruction of the production processes, and examination of its use life, and a study of the context of deposition. The material dates to the Late Neolithic. See García-Díaz (2014) for stone beads from the site.

SHELL

Alarashi, Hala

2021 New Insights Into the Technological Management of the Neolithic Cowrie Beads in the Levant. An Experimental and Traceological Approach. In *Beyond Use-Wear Traces: Going from Tools to People by Means of Archaeological Wear and Residue Analyses*, edited by Sylvie Beyries, Caroline Hamon, and Yolaine Maigrot, pp. 171-184. Sidestone Press, Leiden. <https://www.researchgate.net/publication/350879446>.

Investigates the technology involved in the production of cowrie beads that were employed in the construction of belts and diadem-like ornaments at the Pre-Pottery Neolithic B (PPNB) village of Tell Halula in northern Syria.

André, Lino

2016 Análise das técnicas de perfuração e evidências de uso dos adornos da “Vala” (Cabeço da Amoreira, Muge). *Magos: Revista cultural do concelho de salvaterra de Magos* 3:3-24. Provides information regarding perforation techniques and use wear on Mesolithic adornments (primarily beads) from the Cabeço da Amoreira shell midden at Muge, central Portugal. The same content as the next entry.

André, Lino António and Nuno F. Bicho

2016 Perforation Techniques and Traces of Use on the Mesolithic Adornments of the Trench Area at Cabeço da Amoreira Shellmidden (Muge, Central Portugal). *Comptes Rendus Palevol* 15(5):569-580; <https://www.sciencedirect.com/science/article/pii/S1631068315002201>.

Discusses a set of personal adornments made of gastropod shells (beads included), a cervid tooth, and a clay ring fragment. Includes a description of the objects, their distribution in the archaeological context, the techno-typological analysis of the perforations, and the evidence for their use as adornments.

2021 Visual Information in Cabeço da Amoreira, Muge (Portugal): Shell Adornment Technology. In *Foraging Assemblages, Volume 2*, edited by Dušan Borić, Dragana Antonović, and Bojana Mihailović, pp. 567-573. Serbian Archaeological Society, Belgrade; Italian Academy for Advanced Studies in America, Columbia University, New York.

Investigates the technology used to produce perforated shell beads recovered from Mesolithic and Neolithic contexts at a major shell mound.

Arnold, Jeanne E. and Diana Rachal

2002 The Value of Pismo Clam Tube Beads in California: Experiments in Drilling. *North American Archaeologist* 23(3):187-207; <https://doi.org/10.2190/3TED-4T5R-84B8-YGYG>.

Illustrated study of experiments in drilling and other technological aspects of aboriginal production of shell beads along the Pacific coast of California.

Avezuela Aristu, B.

2010 The Personal Ornaments Made from Molluscs at the Middle-Late Magdalenian Site of La Peña de Estebanvela (Segovia, Spain). In *Not only Food: Marine, Terrestrial and Freshwater Molluscs in Archaeological Sites*, edited by E. Álvarez-Fernández and D. Carvajal-Contreras, pp. 48-56. Munibe Suplemento 31.

The ornament collection from the site contains six species of marine molluscs, one freshwater mollusc, and three red deer atrophied canines, all of them perforated. A technological study of

the perforations was undertaken on the molluscs and an experimental comparative collection created.

Avezuela Aristu, B., I. Martín Lerma, J.A. Marín de Espinosa, and F.J. Muñoz Ibáñez

2011 Los adornos-colgantes en el Paleolítico Superior: experimentación sobre las perforaciones en *Littorina obtusata*. In *La investigación experimental aplicada a la Arqueología*, edited by A. Morgado, J. Baena Preysler, and D. Garcia Gonzalez, pp. 263-269. Imprinto Galindo, Ronda, Málaga.

Investigates how a certain species of shell was perforated to form ornaments during the Upper Paleolithic period.

Bains, Roseleen, Milena Vasić, Daniella E. Bar-Yosef Mayer, Nerissa Russell, Katherine I. Wright, and Chris Doherty

2013 A Technological Approach to the Study of Personal Ornamentation and Social Expression at Çatalhöyük. In *Substantive Technologies at Çatalhöyük: Reports from the 2000-2008 Seasons*, edited by I. Hodder, pp. 331-364. Monumenta Archaeologica 31. <https://www.academia.edu/32379930/>.

Focuses on the technology and methods of manufacture of the recovered Neolithic beads, pendants, and preforms of stone, bone, shell, and clay from a major site in Turkey.

Baird, Douglas, Andrew Garrard, Louise Martin, and Katherine Wright

1992 Prehistoric Environment and Settlement in the Azraq Basin: An Interim Report on the 1989 Excavation Season. *Levant* 24(1):1-31.

Discusses the form and method of manufacture of the stone, shell, and bone beads recovered from PPNB and Late Neolithic contexts at sites Azraq 31 and Wadi el-Jilat 32 in Jordan.

Barton, R. Nicholas E. and Alison J. Roberts

2015 Marine Shell Beads from Three Inland Later Mesolithic Sites in Western Britain. In *No Stone Unturned: Papers in Honour of Roger Jacobi*, edited by N. Ashton and C.R.E. Harris, pp. 191-207. Lithic Studies Society, London. <https://www.academia.edu/11811034/>.

The shell beads are represented by three species. In addition to reporting aspects of beadmaking technology, the article reviews the dating evidence at each of the three sites and makes broader comparisons with other finds in Britain and adjacent areas of Ireland and France.

Bar-Yosef Mayer, Daniella E.

2014 Temporal Changes in Shell Bead Technologies Based on Levantine Examples. In *Archaeomalacology: Shells in the Archaeological Record*, edited by Katherine Szabó, Catherine Dupont, Vesna Dimitrijević, Luis Gómez Gastélum, and Nathalie Serrand, pp. 91-100. BAR International Series 2666. <https://www.academia.edu/8848886/>.

The main techniques used for producing shell beads include hammering, gouging, incising, grinding, drilling, the use of naturally perforated shells, or any combination of these techniques.

A temporal study shows the evolution of these techniques and the connection between the way shells were perceived, and the way they were exploited through time.

Basilia, Pauline A., Angel Bautista and Katherine Szabó

2006 Post-Neolithic Shell Beads From Ille Cave, El Nido, Palawan: A Case of Specialization? Paper presented at the 18th Congress of the Indo-Pacific Prehistory Association, Manila. <https://www.academia.edu/1691702/>.

PowerPoint presentation explaining the production of shell beads found at prehistoric sites on Palawan, Philippines, using replication experimentation.

Beldiman, Corneliu and Diana-Maria Sztancs

2007 Depozitele de obiecte de prestigiu aparținând culturii Cucuteni. Studiul artefactelor din materii dure animale. *Materiale și cercetări arheologice* 2:33-74; https://www.persee.fr/doc/mcarh_1220-5222_2007_num_2_1_868.

Prestige items recovered in Romania and attributed to the Cucuteni culture include perforated teeth and beads of bone and *Spondylus* shell. Production techniques are discussed.

Benghiat, Samuel, Darko Komšo, and Preston T. Miracle

2009 An Experimental Analysis of Perforated Shells from the Site of Šebrn Abri (Istria), Croatia. In *Mesolithic Horizons. Papers Presented at the Seventh International Conference on the Mesolithic in Europe, Belfast, 2005*, Vol. 2, edited by Sinéad McCartan, Rick Schulting, Graeme Warren, and Peter Woodman, pp. 730-736. Oxbow Books, Oxford. <https://www.academia.edu/10086295/>.

Focuses on using experimental archaeology to reconstruct the mode of production of perforated *Columbella rustica* shells from an Early Holocene upland camp in Croatia.

Berganza, Eduardo, José Luis Arribas, and Rosa Ruiz Idarraga

2012 Estudio tecnológico de los moluscos marinos perforados de los yacimientos de Lumentxa y Santa Catalina (Lekeitio, Bizkaia). *Munibe Antropologia-Arkeologia* 63:93-104. <https://www.academia.edu/78982288/>.

A technological study of perforated marine molluscs that were recovered from two Magdalenian sites in northern Spain and likely served as beads and pendants.

Bertolini, Marco, Emanuela Cristiani, Marta Modolo, Paola Visentini, and Matteo Romandini

2016 Late Epigravettian and Mesolithic Foragers of the Eastern Alpine Region: Animal Exploitation and Ornamental Strategies at Riparo Biadze (Northern Italy). *Quaternary International* 423:73-91; <https://www.academia.edu/18332661/>.

Discusses the recovered shell beads and the techniques used to perforate them.

Blake, Michelle

2010 Drill Baby, Drill! An Analysis of Late Period Chumash Microdrills from CA-SLO-214. M.A. thesis. Sonoma State University, Rohnert Park, CA.

Presents a study of Chumash shell beads and the microdrills used to produce them in southern California.

Burley, David V. and Travis Freeland

2019 A Shell Disc Bead Maker's Workshop from Kavewa Island, Northern Fiji. *Archaeology in Oceania* 54(2):120-126; <https://doi.org/10.1002/arco.5183>.

Test excavation of an early Lapita colonizing site encountered an abundant assemblage of *Anadara* shell disc beads and preforms, as well as lithic micro-drills for bead perforation. Radiocarbon dates place this assemblage in the interval 2490-2280 calBP.

Campbell, Greg

2017 The Reproduction of Small Prehistoric Tusk Shell Beads. In *Not Just for Show: The Archaeology of Beads, Beadwork and Personal Ornaments*, edited by Daniella E. Bar-Yosef Mayer, Clive Bonsall, and Alice M. Choyke, pp. 168-180. Oxbow Books, Oxford and Philadelphia. <https://www.academia.edu/97339267/>.

Uses replication experimentation to demonstrate how very short (1-3 mm) tusk-shell beads were made during the Epipaleolithic of the Levant.

Camps-Fabrer, Henriette (ed.)

1991 *Fiches typologiques de l'industrie osseuse préhistorique, cahier IV: objets de parure*. Publications de l'Université de Provence, Aix-en-Provence.

A typology for prehistoric bone, shell, and ivory ornaments, including beads, spacers, and pendants. Information concerning production techniques, use/wear, and spacial and temporal distribution is also provided.

Cargill, Sydney, Isha Chavva, Shannon Duffy, Julia Flores, Jennifer Mao, Gabrielle Shvartsman, Cindy Weng, and Sharmitha Yerneni

2015 The Guangala and Manteño-Huancavilca Shell Ornament Production Methods. Drew University, www.drew.edu/govschool/wp-content/uploads/.../T6-Final-Paper.docx, accessed 18 Dec. 2016.

Investigates and compares the methods used to produce *Spondylus*-shell beads in two Ecuadorian cultures.

Carlson, Lisabeth Anne

1993 Strings of Command: Manufacture and Utilization of Shell Beads among the Taino Indians of the West Indies. M.A. thesis. Department of Anthropology, University of Florida, Tallahassee.

Excavations carried out at the Governor's Beach site (GT-2) on the island of Grand Turk, Turks and Caicos Islands, B.W.I., provide the first evidence of specialized shell beadmaking in the Caribbean. Dating between AD 1100 and 1200, the site produced a large sample of complete beads, partially worked pieces, and scrap that have allowed the reconstruction of prehistoric Taino beadmaking techniques.

- 1995 Strings of Command: Manufacture and Utilization of Shell Beads among the Taíno. In *Actas del XV Congreso Internacional de Arqueología de Caribe*, edited by M. Rodríguez and R. Alegría, pp. 97-109. Centro de Estudios Avanzados de Puerto Rico y el Caribe, San Juan.

See above.

Carter, Benjamin

- 2008 Technology, Society and Change: Shell Artifact Production among the Manteño (A.D. 800-1532) of Coastal Ecuador. Ph.D. dissertation. Department of Anthropology, Washington University, Saint Louis, Missouri.

Presents a thorough study of Manteño shell bead production based on a large collection of material recovered from six sites in two geographically and temporally different groups: the southern portion of modern-day Manabí province and from the Santa Elena Península; and Late Guangala/Early Manteño (ca. AD 700-1300) and Late Manteño (ca. AD 1200-post 1532).

Carter, Benjamin and Matthew Helmer

- 2015 Elite Dress and Regional Identity: Chimú-Inka Perforated Ornaments from Samanco, Nepeña Valley, Coastal Peru. *Beads: Journal of the Society of Bead Researchers* 27:46-74; <https://www.academia.edu/21610869/>.

Contains information regarding the techniques utilized in the production of the perforated shell and stone ornaments recovered from a Chimú-Inka period (ca. 1470-1532) elite tomb at Samanco, Peru.

Carter, Robert, Harriet Crawford, Simeon Mellalieu, and Dan Barrett

- 1999 The Kuwait-British Archaeological Expedition to as-Sabiyah: Report on the First Season's Work. *Iraq* 61:43-58.

Flint microdrills found with finished and unfinished shell disc beads confirm a bead manufacturing function for this small, coastal 5th-millennium site in Iraq.

Castillo Velasco, Elva Adriana

- 2020 La producción de objetos de concha recuperados en las ofrendas de Cobá, Quintana Roo. *Estudios de cultura maya* LV:89-119; <https://www.redalyc.org/journal/2813/281364929004/html/>.

Investigates the techniques used to produce shell beads, pendants, and other ornaments found among offerings made at the Maya site of Cobá, Yucatan, between A.D. 250 and 830.

Charpentier, V. and S. Méry

- 2008 A Neolithic Settlement near the Strait of Hormuz: Akab Island, United Arab Emirates. *Proceedings of the Seminar for Arabian Studies* 38:83-102; <https://www.academia.edu/75545365/>.

The site yielded several types of characteristic beads. In particular the occupants of Akab produced discoid beads in *Spondylus* sp., to the extent that this site may be termed one of specialized production. The *chaîne opératoire* for them is provided.

Ciarla, R., F. Rispoli, and P. Yukongdi

2017 Shell Personal Ornaments Craft at the Site of Tha Kae, Lopburi Province, Central Thailand. Tracing the Southward Dispersal of the Drilling Technique. *Journal of Indo-Pacific Archaeology* 41:30-65; <https://www.academia.edu/34006431/>.

Presents the manufacturing cycle for the three main shell-bead types recovered from a Bronze Age site (ca. 1100-500 BCE).

Clark, Geoffrey, Michelle C. Langley, Mirani Litster, Olaf Winter, and Judith Amesbury

2018 Shell Beads as Markers of Oceanic Dispersal: A Rare *Cypraeidae* Ornament Type from the Mariana Islands. In *The Archaeology of Portable Art: Southeast Asian, Pacific, and Australian Perspectives*, edited by Michelle Langley, Mirani Litster, Duncan Wright, and Sally K. May, pp. 142-161. Routledge, London. <https://www.academia.edu/37485984/>.

Discusses ground cowrie shell beads found at the Unai Bapot site on Saipan and their production technology.

Cooke, Richard. G and Luis A. Sánchez H.

1997 Coetaneidad de Metalurgia, Artesanías de Concha y Cerámica Pintada en Cerro Juan Díaz, Panamá. *Boletín del Museo del Oro (Colombia)* 42:57-85.

Discusses shell bead and pendant manufacture at a prehispanic site in Panama.

Cristiani, Emanuela, Ivana Zivaljevic, and Barbara Cvitkušić

2020 Combining Microscopic Analysis and GIS to Analyse Experimental Perforations on *Columbella rustica* Shells. In *Beauty and the Eye of the Beholder: Personal Adornments across the Millennia*, edited by M. Mărgărit and A. Boronean, pp. 27-40. Editura Cetatea de Scaun, Targoviște. <https://www.researchgate.net/publication/344899316>.

Characterizes four different techniques of perforation on *Columbella rustica* shells through the application of qualitative and quantitative approaches.

d'Errico, F., P. Jardón-Giner, and B. Soler-Mayor

1993 Critères à base expérimentale pour l'étude des perforations naturelles et intentionnelles sur coquillages. In *Traces et Fonction. Les Gestes Retrouvés*, edited by P. Anderson, S. Beyries, M. Otte, and H. Plisson, pp. 243-254. Université de Liège, ERAUL 50.

Criteria for experiments to determine if holes in shells are natural or intentional.

Dyrdahl, Eric

2017 Interregional Interaction and Craft Production at Las Orquídeas, Imbabura, Ecuador, during the Late Formative (800 - 400 cal BC). Ph.D. dissertation. Department of Anthropology, Pennsylvania State University. <https://www.academia.edu/34078929/>.

Material recovered from refuse deposits filled with waste from crafting both local and non-local materials provides an unparalleled opportunity to better characterize interregional interaction in the Ecuadorian Late Formative. Ornaments include beads and pendants made of mother-of-pearl, *Spondylus* and other shell, bone, animal teeth, and gold. Production sequences are postulated for the shell items.

Falci, Catarina Guzzo , Maria Magdalena Antczak, Andrzej T. Antczak, and Annelou Van Gijn

2017 Recontextualizing Bodily Ornaments from North-Central Venezuela (AD 900-1500): The Alfredo Jahn Collection at the Ethnologisches Museum Berlin. *Baessler-Archiv* 64:87-112; <https://www.academia.edu/36009673/>.

The collection contains beads and pendants of shell, stone, and ceramic that relate to the Valencioid culture. The pendants include zoo- and anthropomorphic forms. Information is provided regarding manufacturing techniques and use-wear.

Falci, Catarina Guzzo , Dominique Ngan-Tillard, Corinne L. Hofman, and Annelou Van Gijn

2020 The Biographies of Bodily Ornaments from Indigenous Settlements of the Dominican Republic (AD 800-1600). *Latin American Antiquity* 31(1):180-201; <https://www.academia.edu/41995312/>.

Reports on the production sequence and use life of beads and pendants recovered from five sites. Materials include stone, shell, bone, teeth, coral, and ceramic.

Falci, Catarina Guzzo, Annelou Van Gijn, M. Magdalena Antczak, Andrzej T. Antczak, and Corinne L. Hofman

2017 Challenges for Microwear Analysis of Figurative Shell Ornaments from Pre-Colonial Venezuela. *Journal of Archaeological Science: Reports* 11:115-130; <https://www.academia.edu/30221017/>.

Microwear analysis is used to assess technologies of production and use-wear of figurative shell beads and pendants from north-central Venezuela.

Feinman, Gary M. and Linda M. Nicholas

1993 Shell-Ornament Production in Ejutla. *Ancient Mesoamerica* 4(1):103-119.

Reports on the production of shell beads and other adornments from Pacific Coast species during the Terminal Formative/Early Classic periods at a site in Oaxaca, Mexico.

1995 Household Craft Specialization and Shell Ornament Manufacture in Ejutla, Mexico. *Expedition* 37(2):14-25.

Discusses the production of pre-Hispanic marine-shell beads.

Fernández, Mabel M. and Mariano Ramos

2007 hallazgos especiales del sitio Casa de Piedra de Ortega, Provincia de Río Negro. *Anales de Arqueología y Etnología* 61-62:147-164.

The small finds from a site in northern Argentina include glass, bone, stone, and shell beads. Close examination of the shell objects helped to establish manufacturing techniques.

Folb, L.

1993 Marine Shell Beads and Microdrills in Early Woodland New York: Possible Connections between the Prehistoric Middlesex and Bushkill Complexes Suggested by the Analysis of

Use-Wear on Microdrills. Unpublished Senior Project. Department of Anthropology, Bard College, Annandale-on-Hudson, New York.

Francis, Peter, Jr.

1989 The Manufacture of Beads from Shell. In *Proceedings of the 1986 Shell Bead Conference*, edited by Charles F. Hayes III, pp. 25-35. Rochester Museum and Science Center, Research Records 20.

Through experimentation, examination of excavated material, ethnographic observations, and a survey of the literature, techniques for making shell into beads have been identified. These techniques are discussed in their historical contexts, and means of identifying the techniques on archaeological/ethnographic material are discussed.

Frînculeasa, Alin, Monica Mărgărit, Daniel Garvăn, and Adrian Bălăsescu

2023 Industria materiilor dure animale din situl preistoric de la Șoimești-Merez (jud. Prahova) [The Osseous Industry from the Prehistoric Site of Șoimești-Merez (Prahova County)]. *Cercetări arheologice* XXX(2):567-588; <https://www.academia.edu/109152039/>.

Investigates the production technology of shell beads, as well as bone and tooth pendants, recovered from an Early Bronze Age site in Romania.

García-Argudo, Gala

2017 Los ornamentos en concha durante el Magdaleniense. El caso de la Cova del Parco (Alòs de Balaguer, Lleida). M.A. thesis. Departament d'Història i Història de l'Art, Universitat Rovira i Virgili, Tarragona, Spain. <https://www.researchgate.net/publication/321685818>.

A thorough study of the shell ornaments recovered from a Magdalenian site in northeastern Spain, including the *chaîne opératoire* of their production.

García-Argudo, Gala, Xavier Mangado, Oriol Mercadal, Marta Sánchez de la Torre, and Josep M. Fullola

2019 Los ornamentos en concha durante el Paleolítico superior final pirenaico: el caso del yacimiento de Montlleó (prats I sansor, Cataluña). In *Recursos marins en el passat. IV Jornades d'arqueozoologia del Museu de Prehistòria de València*, edited by Josep Lluís Pascual Benito and Alfred Sanchis, pp. 85-105. Museu de Prehistòria de València; <https://www.researchgate.net/publication/325674470>.

Reports on the technological and functional analysis of 50 shell beads of several varieties belonging to the Early Middle Magdalenian that were recovered from the open-air site of Montlleó in northeastern Spain.

Golding-Frankson, Dianne T.

2009 Jamaican Taino 'Shellsmithing' Techniques Explored: A Study in Method. *Caribbean Quarterly* 55(2):43-63. <https://doi.org/10.1080/00086495.2009.11829758>.

Investigates the production process of *Strombus*-shell beads and pendants during the Ceramic Age.

Graesch, Anthony P.

- 2004 Specialized Bead Making among Island Chumash Households: Community Labor Organization during the Historic Period. In *Foundations of Chumash Complexity*, edited by Jeanne E. Arnold, pp. 133-171. Perspectives in California Archaeology 7.

This study focuses on the socioeconomic contexts of Chumash household participation in specialized shellworking industries and the larger regional economy during the period from 1782 to 1819.

Groman-Yaroslavski, Iris, Danny Rosenberg, and Dani Nadel

- 2013 A Functional Investigation of Perforators from the Late Natufian/Pre-pottery Neolithic A Site of Huzuk Musa – A Preliminary Report. In *Stone Tools in Transition: From Hunter-Gatherers to Farming Societies in the Near East*, edited by Ferran Borrell, Juan José Ibáñez, and Miquel Molist, pp. 165-176. Universitat Autònoma de Barcelona, Servei de Publicacions.

Reports on the analysis of the large collection of flint perforators, shell beads, and bead production waste found at a site in Lower Jordan Valley Israel.

Gruet, Yves, Luc Laporte, and Yves Bodeur

- 2009 Objets de parure recueillis sur le site arténacien de Ponthezières [Objects of Ornament Collected on the Artenacian Site of Ponthezières]. In *Des premiers paysans aux premiers métallurgistes sur la façade atlantique de la France (3500-2000 av. J.-C.)* [From the First Farmers to the First Metallurgists on the French Atlantic Coast (3500-2000 cal. B.C.)], edited by Luc Laporte, pp. 470-504. Édition Association des Publications Chauvinoises, Mémoire XXXIII.

Provides a detailed account of the beads fashioned from fresh and fossil shell and stone excavated at Ponthezières, France, along with a discussion of how they were produced.

Guinea, Mercedes

- 2006 Un sistema de producción artesanal de cuentas de concha en un contexto doméstico mantenido: Japoto (provincia de Manabí, Ecuador). *Bulletin de l'Institut Français d'Études Andines* 35(3):299-312; <https://www.academia.edu/90799520/>.

Discusses several hypotheses concerning the production of shell beads at Japoto, an archaeological habitation site of the Integration Period (AD 800-1535) in Ecuador.

- 2011 Artesanía doméstica de cuentas de concha en el Ecuador prehispánico: el montículo J4 de Japoto. *Estudios del hombre* 29:307-332.

The prehispanic J4 mound at Japoto, Ecuador, yielded evidence of the manufacture of shell beads. The article examines the technology, places of manufacture, and bead use.

Hartzell, Leslie L.

- 1991 Archaeological Evidence for Stages of Manufacture of *Olivella* Shell Beads in California. *Journal of California and Great Basin Anthropology* 13:29-39; <https://escholarship.org/uc/item/1wn5g2px>.

The detailed study of shell bead production refuse enhances the ability of archaeologists to determine when and where particular bead types were manufactured.

Harzhauser, Mathias, Eva Lenneis, and Christine Neugebauer-Maresch

2007 Freshwater Gastropods as Neolithic Adornment: Size Selectiveness and Perforation Morphology as a Result of Grinding Techniques. *Annalen des Naturhistorischen Museums in Wien* 108 A:1-13; <https://www.academia.edu/108311910/>.

Documents the methodology of perforating the shells of the fluvial gastropod *Lithoglyphus naticoides* based on experimental comparison. The study focuses on one “population” of piercings found in an early Neolithic (Linear Pottery Culture) grave in Kleinhadersdorf, Austria, to determine whether these artificial openings are a random product of grinding or whether the Neolithic craftsmen already tried to meet distinct parameters.

Heit, Ilia

2014 The Bead Workshop at Site MPS4, Mil Plain, Azerbaijan: Craft Specialization and the Manufacture of Shell Jewelry in the Neolithic. In *Beyond Ornamentation: Jewelry as an Aspect of Material Culture in the Ancient Near East*, edited by Amir Golani and Zuzanna Wygnańska, pp. 21-39. *Polish Archaeology in the Mediterranean* 23(2).

The archaeological remains indicate production of a distinct type of disc bead from one shell species of the genus *Didacna*. Moreover, they allow a closer look at manufacturing techniques and raise questions about craft specialization as well as the presence of a long tradition of shell jewelry in the Circumcaspien region.

Henrickson, Celeste N.

2013 The Archaeology of Cueva Santa Rita: A Late Holocene Rockshelter in the Sierra de la Giganta of Baja California Sur, Mexico. Ph.D. dissertation. Department of Anthropology, University of California, Berkeley.

Chapter 4 deals with the production of *Olivella* shell beads.

Hoareau, Leïla

2021 Experimental Protocol on Shell Ornaments Perforation: Identifying Techniques and Stigma Variability According to the Utilized Species. In *Beyond Use-Wear Traces: Going from Tools to People by Means of Archaeological Wear and Residue Analyses*, edited by Sylvie Beyries, Caroline Hamon, and Yolaine Maigrot, pp. 31-40. Sidestone Press, Leiden. <https://www.academia.edu/47755033/>.

Six perforation techniques (indirect percussion, pressure, sawing, rotation, etching, and grinding) were tested to identify the technical choices adopted by different groups during the Upper Palaeolithic to produce shell beads.

Hoareau, Leïla, Didier Binder, and Sylvie Beyries

2020 Retracer la biographie des objets de parure épigravettiens, de la matière première à la composition ornementale. Approche systémique de la parure en coquille de l’abri Martin (Alpes-Maritimes, France). In *L’art du paraître: apparences de l’humain, de la*

Préhistoire à nos jours / The Art of Human Appearance: from Prehistory to the Present Day, edited by Hala Alarashi and Rosa Maria Dessì, pp. 167-179. Éditions APDCA, Nice. <https://www.academia.edu/103540183/>.

Discusses, by species, the production techniques and use-wear evidence of marine-shell beads recovered from the Epigravettian (22,000- 9,000 cal. BCE) Martin rock shelter in southeastern France.

Hoareau, Leïla, Chiara Zen, Federica Fontana, and Sylvie Beyries

2017 Experimental Approach of Shell Bead Manufacturing Technique during Epigravettian: Efficiency and Variability. Poster; <https://www.academia.edu/34619845/>.

Eight perforation methods were tested to identify their traces and variability depending on the species tested and the origin of the shell.

Hohmann, Bobbi M.

2002 Preclassic Maya Shell Ornament Production in the Belize Valley, Belize. Ph.D. dissertation. University of New Mexico, Albuquerque.

Holley, George R.

1995 Microliths and the Kunnemann Tract: An Assessment of Craft Production at the Cahokia Site. *Illinois Archaeology* 7(1-2):1-68.

Includes a discussion of the production of shell beads.

Howard, Jennifer M.

2008 No Drills, No Problem? The Possible Use of Sea Urchin Spines as Drills on San Nicolas Island: An Experimental Archaeology Project. M.A. thesis. Department of Anthropology, Northern Illinois University, Dekalb.

Disproves the theory that worked sea urchin spines found in association with shell-bead detritus at a site in California's Channel Islands were used to drill *Olivella* shell beads. They may, however, have been used to smooth out the drill perforations after manufacture.

Insoll, Timothy

2021 Marine Shell Working at Harlaa, Ethiopia, and the Implications for Red Sea Trade. *Journal of African Archaeology*; doi: <https://doi.org/10.1163/21915784-20210001>.

Discusses the handful of shell beads recovered from contexts ranging from the 11th to the early 15th century. Includes a discussion of beadmaking techniques, the work areas, and the regional shell trade.

Johnson, Eric Daniel

2023 The *Chaîne Opératoire* of Settler Wampum Manufacture at the David Campbell House in Northern New Jersey. *International Journal of Historical Archaeology* 27:1068-1099; <https://doi.org/10.1007/s10761-023-00702-w>.

Artifact analyses combined with merchant ledger manuscripts reveal the *chaîne opératoire* of settler beadmaking from 1770 to 1900, including temporalities of production, waste, and racial and gendered labor dynamics in transition to factory production.

Koppel, Brent and Katherine Szabó

2013 Report on an Experimental Shell-Working Workshop. *Malaco+Archaeology Group Newsletter* 22:1-6.

One section reports on *Nassarius pullus* bead production using indirect percussion.

Kozuch, Laura

2003 Use of Fire in Shell Bead Manufacture at Cahokia, Illinois. In *Zooarcheology: Papers to Honor Elizabeth S. Wing*, edited by F. Wayne King and C. Porter, pp. 81-90. *Bulletin of the Florida Museum of Natural History* 44(1); <https://www.academia.edu/25206610/>.

Presents evidence for heat-treatment of marine shell in bead manufacture at this Mississippian culture site. Includes a columella bead-working reduction sequence.

2007 Replication of *Busycon* Columella Shell Beads. *Illinois Archaeology* 14/15:142-157; <https://www.academia.edu/5653952/>.

Concentrates on the technology used to produce shell beads found on Mississippian sites in the eastern United States.

2022 Shell Bead Crafting at Greater Cahokia. *North American Archaeologist* 43(1):64-94; <https://doi.org/10.1177/01976931211048205>.

Synthesizes data on shell-bead workshops from Greater Cahokia, along with crafting techniques.

Langley, Michelle C., Shimona Kealy, Mahirta, and Sue O'Connor

2023 Sequins from the Sea: Nautilus Shell Bead Technology at Makpan, Alor Island, Indonesia. *Antiquity* 97(394):810-828; <https://www.academia.edu/116424375/>.

Reports on carefully crafted beads formed from the shell of *Nautilus pompilius* directly dated to ca. 12,000 cal BP. The assemblage includes single-holed disc beads but is dominated by a two-holed type which was sewn onto a material or textile as reflective appliqués.

Langley, Michelle C., Sue O'Connor, and Elena Piotto

2016 42,000-Year-Old Worked and Pigment-Stained *Nautilus* Shell from Jerimalai (Timor-Leste): Evidence for an Early Coastal Adaptation in ISEA. *Journal of Human Evolution* 97:1-16; <https://doi.org/10.1016/j.jhevol.2016.04.005>.

Includes a discussion of earlier *Nautilus* ornaments at the site, including pendants, and the production techniques involved.

Laporte, Luc

1994 Parures et centres de production dans le Centre-Ouest de la France au Néolithique final. Ph.D. dissertation. 2 vols. Histoire de l'Art et Archéologie, Université de Paris I-Panthéon/Sorbonne, Paris.

Presents a technological study of Late Neolithic shell bead production along the west coast of France.

- 1997 Un site de production de parures discoïdes en coquillageau Néolithique final à Ponthezières (Saint-Georges-d'Oléron, Charente-Maritime).
<https://www.academia.edu/2457834/>.

Discusses Late Neolithic production of disc shell beads in western France.

- 1998 Ornament Production Centres along the French Atlantic Coast during the Late Neolithic. In *Craft Specialization: Operational Sequences and Beyond*, edited by Sarah Milliken and Massimo Vidale, pp.17-23. BAR International Series 720.

A condensed version of Laporte (1994).

Leonardt, Sabrina

- 2017 Producción y distribución de cuentas de valva en el holoceno tardío de Patagonia continental Argentina. Ph.D. thesis. Facultad de Filosofía y Letras, Universidad de Buenos Aires, Buenos Aires; <http://repositorio.filo.uba.ar/handle/filodigital/10774>.

On the production and distribution of shell beads in the late Holocene of continental Patagonia, Argentina.

Lindner, Christopher and Lisa Folb

- 1996 *Chert Microdrills from Eastern New York: Use-Wear on Bushkill Tools that Might Have Made Middlesex Beads*. Occasional Publications in Northeastern Anthropology 15.

Replicative experiments focusing on chert microdrills from a Schoharie Creek site argue against a proposed function of drilling holes in shell beads.

Littman, S.L. and W.F. Keegan

- 1991 A Shell Bead Manufacturing Center on Grand Turk, TCI. In *Proceedings of the Fourteenth International Congress for Caribbean Archaeology, Barbados, 22-28 July, 1991*, edited by A. Cummins and P. King, pp. 147-156. Barbados Museum and Historical Society, Bridgetown.

Luca, Sabin Adrian and Ana-Maria Păpureanu

- 2018 Buttons and a Bead Obtained from *Spondylus Gaederopus* L., 1758 Shell Discovered at Tărtăria – Gura Luncii (Romania). *Brukenenthal. Acta Musei XIII*(1):7-20;
<https://www.researchgate.net/publication/330194334>.

Thorough investigation of the recovered items including the manufacturing techniques involved in their production. They are of the Vinča culture and dated between the Early and Late Neolithic.

Manca, Laura, Marjan Mashkour, Sonia Shidrang, Aline Averbouh, and Fereidoun Biglari

2018 Bone, Shell Tools and Ornaments from the Epipalaeolithic Site of Ali Tappeh, East of Alborz Range, Iran. *Journal of Archaeological Science: Reports* 21:137-157; <https://doi.org/10.1016/j.jasrep.2018.06.023>.

Includes a discussion of the production technology and use of the recovered shell beads and pendants.

Mărgărit, Monica

2008 Les perles en valves de *Unio* dans l'habitat énéolithique de Hârșova-tell (département de Constanța). *Annales d'Université "Valahia" Târgoviște, Section d'Archéologie et d'Histoire* X(1):73-77; https://www.persee.fr/doc/valah_1584-1855_2008_num_10_1_1239.

The settlement of Hârșova-tell, Romania, has produced material representing all the stages in the manufacture of disk beads from *Unio* shells. It is attributed to the Gumelnița culture.

2024 Shell Adornments of the 6th-5th Millennia BC in the Romanian Lower Danube Area. *Journal of Archaeological Science: Reports* 54, 104436; <https://doi.org/10.1016/j.jasrep.2024.104436>.

Reviews the ornaments from 22 settlements and 19 necropolises from various aspects: the raw materials and their sources of procurement, the chaîne opératoires, and the ways they were worn.

Mărgărit, Monica and Mădălina Dimache

2019 Personal Adornments from the Eneolithic Necropolis of Chirnogi-Șuviț a Iorgulescu (Romania): A Picture of Symbolism in Prehistoric Communities. *Documenta Praehistorica* XLVI:398-413; <https://www.academia.edu/41204909/>.

The funeral inventory includes small cylindrical, tubular, and biconvex beads made of various raw materials: *Spondylus* shell, bone, malachite, copper, and green slate. At the technical level, attention is drawn to the technological transformation scheme of the raw material.

Mărgărit, Monica, Cristian Virag, and Alexandra Georgiana Diaconu

2020 Were Personal Adornments Just for Women? The Case of the Eneolithic Necropolis from Urziceni-Vamă (Satu Mare County, Romania). In *Beauty and the Eye of the Beholder: Personal Adornments across the Millennia*, edited by M. Mărgărit and A. Boronean, pp. 399-412. Editura Cetatea de Scaun, Targoviște.

Investigates how the small cylindrical beads made of *Spondylus* shell that dominate the assemblage were produced and if the beads were worn before being interred.

Martínez Martínez, Susana Victoria

2015 Os adornos em concha do paleolítico superior da região de Murcia (Espanha). M.A. thesis. Department of Archaeology, University of Algarve, Faro, Portugal. <https://sapientia.ualg.pt/handle/10400.1/8170>.

A study of Upper Paleolithic shell ornaments in the Murcia region of Spain, including notes on manufacturing technology and use-wear.

Mas, Elodie

2018 *La parure en coquille à Sayula, Occident du Mexique: Approche techno-stylistique et rôle dans la dynamique socioculturelle entre 450 et 1000 apr. J.-C.* BAR International Series S2900.

Detailed study of the marine-shell ornaments found at sites dating between AD 450 and 1000 in the Sayula Basin of western Mexico. Much data on production techniques.

2019 Las evidencias de producción en material malacológico: análisis tecnológico de las colecciones de Sayula (Jalisco). *Trace* 76; <https://journals.openedition.org/trace/4527>.

Discusses the techniques used to produce shell beads and pendants at Sayula in western Mexico during the period A.D. 450-1000 .

2021 Comportamientos Técnicos de los Artesanos Prehispánicos de la Concha de la Cuenca de Sayula y del Cañón de Bolaños, Jalisco. *Clio Arqueológica* 36(2):29-63; <https://www.academia.edu/68107517/>.

Investigates the technology used by prehispanic artisans to produce shell pendants and other ornaments in the Sayula Basin and the Bolaños Canyon, Jalisco, western Mexico.

Mayo Torné, Julia del Carmen

2004 *La Industria Prehispánica de Conchas Marinas en “Gran Coclé,” Panamá.* Ph.D. dissertation. Departamento de Historia de América II, Universidad Complutense de Madrid. <https://core.ac.uk/reader/19709950>.

Discusses the production sequence for pre-Hispanic beads and other ornaments from marine shells at the Cerro Juan Díaz site in Panama.

Melgar Tísoc, Emiliano Ricardo

2009 La producción especializada de objetos de concha en Xochicalco. M.A. thesis. Antropología, Universidad Nacional Autónoma de México, México D.F.

In depth study of the specialized manufacture of the shell objects, including beads and pendants, found at a site in central Mexico. Includes experimental technology replication.

2010 Manufacturing Techniques of *Oliva* Pendants at Xochicalco (Morelos, México). In *Not only Food: Marine, Terrestrial and Freshwater Molluscs in Archaeological Sites*, edited by E. Álvarez-Fernández and D.R. Carvajal-Contreras, pp. 216-225. Munibe Suplemento 31.

Identifies the different tools and techniques employed in the production of *Oliva* shell pendants, also known as tinklers, at the Epiclassic (AD 650-900) site of Xochicalco, in the Western Valley of Morelos, México. These pendants once formed necklaces and were part of offerings inside the main structures of the settlement.

2011 Evidencias de producción de objetos de concha en Xochicalco. *Estudios del hombre* 29:153-176.

Presents evidence for the manufacture of shell beads and pendants at Xochicalco, a walled site in Mexico inhabited ca. AD 650-900.

Melgar Tísoc, Emiliano Ricardo and María del Rosario Domínguez Carrasco

2014 Los artesanos de concha y la élite de Calakmul: los objetos elaborados y sus técnicas de manufactura. *Los Investigadores de la Cultura Maya 2013* 22(2):203-219.

Describes shell beadmaking technology based on specimens excavated at Calakmul, Campeche, Mexico.

Micheli, Roberto

2015 Conchiglie affascinanti per ornamenti di prestigio: produzione, distribuzione e impiego dello *Spondylus gaederopus* nella preistoria europea. In *Appunti di archeomalacologia*, edited by A. Girod, pp. 198-212. All’Insegna del Giglio, Sesto Fiorentino.

Investigates the production, distribution, and use of ornaments, including beads, made from the shells of *Spondylus gaederopus* in European prehistory.

Miller, Jennifer M., Hannah M. Keller, Claire Heckel, Potiphar M. Kaliba, and Jessica C. Thompson

2021 Approaches to Land Snail Shell Bead Manufacture in the Early Holocene of Malawi. *Archaeological and Anthropological Sciences* 13(3), 37; <https://www.academia.edu/59537568/>.

Combines experimental and archeological data to resolve the chronology, operational chains, and material properties of land-snail-shell bead manufacture, and then applies a modified ostrich eggshell production sequence to three Later Stone Age assemblages from the Kasitu Valley of northern Malawi.

Miller, Michelle A.

1996 The Manufacture of Cockle Shell Beads at Early Neolithic Franchthi Cave, Greece: A Case of Craft Specialization? *Journal of Mediterranean Archaeology* 9(1):7-37.

Examines the manufacture of one distinct type of disc bead made from marine mollusc shell. The results of this study establish criteria which may be applied to the production of diverse ornaments of various materials and from sites of many regions and dates.

Moore, Jerry D. and Carolina Vilchez

2016 *Spondylus* and the Inka Empire on the Far North Coast of Peru: Recent Excavations at the Taller Conchales, Cabeza de Vaca, Tumbes. In *Making Value, Making Meaning: Techné is the Pre-Columbian World*, edited by Cathy Costin, pp. 221-251. Dumbarton Oaks, Washington.

Presents new archaeological data for the Inka state’s organization of *Spondylus* craft production at Taller Conchales which illuminate the different *châines opératoires* involved in producing *Spondylus* objects such as beads and pendants – production that reflects political decisions, ritual practice, and the techné of artisans.

Mougne, Caroline, Catherine Dupont, Querré Guirec, Patricia Semelier, and Valérie Audé

2018 Perles discoïdes en coquillie marine et en roche de l'âge du Bronze dans le Centre-Ouest de la France : l'exemple du Mas de Champ Redon à Luxé. In *Animal symbolisé, animal exploité : du Paléolithique à la Protohistoire*, edited by Sandrine Costamagno, Lionel Gourichon, Catherine Dupont, Olivier Dutour, and Denis Vialou, pp. 127-161. Édition électronique du CTHS, Paris. <https://www.academia.edu/37705696/>.

A small funerary complex from the Early Bronze Age at the site of Mas de Champ Redon in west-central France yielded 40 discoid beads; 39 of marine shell and one of stone. Includes information about manufacturing techniques.

Murphy, Kirsty

2011 'She Drills Seashells on the Seashore': An Experimental Study – Manufacture-Wear vs. Use-Wear Using Palaeolithic Technologies for the Perforation of Whole Shell Beads. In *Archaeomalacology Revisited: Non-Dietary Use of Molluscs in Archaeological Settings*, edited by Canan Çakırlar, pp. 54-63. Oxbow Books, Oxford.

Analyzes the relative effectiveness of different manufacturing techniques for whole shell bead perforation, using simple technologies that would have been available at the time.

Nigra, Benjamin T. and Jeanne E. Arnold

2013 Explaining the Monopoly in Shell-Bead Production on the Channel Islands: Drilling Experiments with Four Lithic Raw Materials. *Journal of Archaeological Science* 40(10):3647-3659; ; <https://www.academia.edu/10269794/>.

Tests the proposition that Channel Island, California, chert outperforms other lithic materials in drilling efficiency and drill use life.

Pascual Benito, Josep Lluís

2003 Los talleres de cuentas de *Cardium* del Neolítico peninsular. In *Actas del III Congreso del Neolítico en la Península Ibérica*, edited by Pablo Arias Cabal, Roberto Ontañón Peredo, and Cristina García-Moncó Piñeiro, pp. 277-286. Monografías del Instituto Internacional de Investigaciones Prehistóricas de Cantabria 1.

Discusses the process for producing circular beads from *Cardium* shells at two Early Neolithic sites in Spain.

Pauc, Paulette

1997 Reproduction de perles circulaires réalisées en test de *Cerastoderma edule*. In *Journées d'Archéologie Expérimentale. Bilan des années 1996-1997*, edited by Christian Chevillot, pp. 7-66. Parc Archéologique de Beynac, Dordogne, France.

Replicates the technology used to produce circular beads from cockle shells during the Neolithic period.

2000 La production de parures en coquillages marins, dans l'Aude (F.), entre le Néolithique final et le Bronze ancien. In *Pirineus i veïns al 3r mil·lenni AC: XII Col.loqui*

International d'Arqueologia de Puigcerdà, 10-12 de novembre del 2000, pp. 367-376.
Institut d'Estudis Ceretans, Puigcerdà, Spain.

Fifty sites in the department of Aude in southern France have revealed evidence of marine-shell ornament production, mainly circular beads made from the shells of *Cerastoderma edule*.

2010 Introduction of the Third Experimental Necklace of Prehistoric Jewellery Components.
Malaco+Archaeology Group Newsletter 17:7-10.

Jewellery components made in imitation of prehistoric examples were strung on a linen cord and worn for a month. The results are compared with prehistoric jewelry showing different types of wear.

Pauc, Paulette and Alexandre Pauc

2006 Enfilage des coquilles de *Columbella rustica* et de *Trivia europea*. *euroREA* 3:25-30.
The authors have been experimenting with the perforation and threading of beach shells in an attempt to reproduce prehistoric shell necklaces such as found in Early Bronze Age contexts in Switzerland. English and German summaries.

Pauc, P. and J. Reinhard

2002 Protohistoric Shell Bead Manufacture and the Problem of String Suspension: Recent Studies in the Northwestern Mediterranean Region. *Malaco+Archaeology Group Newsletter* 2:2-5.

Pauc, P. with D. Bohic and P. Faure

2004 Brève typologie de l'outillage lithique inhérent à la fabrication de parures protohistoriques en coquillages et les sources de matières. *Bulletin de la Société d'Études Scientifiques de l'Aude* 104:69-76.

Presents a brief description of the stone tools used in the manufacture of Neolithic shell beads and investigates the source of the raw material. France.

Paz Bautista, Clara

2014 Estudio de los ornamentos de concha del Templo de Quetzalcoatl de Teotihuacan. La producción de las indumentarias ceremoniales teotihuacanas. M.A. thesis. Escuela Nacional de Antropología e Historia, Mexico, DF. <https://www.academia.edu/11644514/>.

Presents a taxonomic, typological, and technological study of the shell ornaments that constitute the ceremonial garments of the individuals sacrificed at the consecration of the Temple of the Feathered Serpent.

Pearson, Charles E. and Fred C. Cook

2012 The Bead Maker's Midden: Evidence of Late Prehistoric Shell Bead Production on Ossabaw Island, Georgia. *Southeastern Archaeology* 31(1):87.

Excavation revealed abundant information regarding shell-working technology, including the full range of tools and raw materials used and the sequences involved in the production of shell beads. Replication experiments were conducted to validate the archaeological findings.

Perlès, Catherine

2018 *Ornaments and Other Ambiguous Artifacts from Franchthi: Volume 1, The Palaeolithic and the Mesolithic*. Indiana University Press, Bloomington.

The majority of ornaments recovered from Franchthi Cave in Greece were formed from shell and constitute one of the largest collections in Europe for the temporal periods involved. Analysis of the ornaments has revealed the complete production process.

Perlès, Catherine and Patrick Pion

2020 The *Cerastoderma* Bead Production at Franchthi (Greece): A Case of Apprenticeship? In *Beauty and the Eye of the Beholder: Personal Adornments across the Millennia*, edited by M. Mărgărit and A. Boronean, pp. 223-246. Editura Cetatea de Scaun, Targoviște.

The lack of consistency in the *chaîne opératoire* and the high frequency of broken pieces at this Early Neolithic workshop has led to the inference that this indicates small-scale domestic production by unskilled artisans. The authors contend that the evidence points to the beads being made by both skilled artisans and their apprentices.

Perlès, Catherine and Marian Vanhaeren

2010 Black *Cyclope neritea* Marine Shell Ornaments in the Upper Palaeolithic and Mesolithic of Franchthi Cave, Greece: Arguments for Intentional Heat Treatment. *Journal of Field Archaeology* 35(3):298-309; <https://www.researchgate.net/publication/233652866>.

A reassessment of the ornaments from the site led to the hypothesis that a variable fraction of at least one type of personal ornament (marine-shell beads belonging to the species *Cyclope neritea*) may have been intentionally heated to change their natural whitish color to black.

Perrette, Claire

2011 Value and Shell Artefacts in Melanesia: Analysis of the Assemblage of Bourewa (Viti Levu, Fiji). M.A. thesis. Université de Bourgogne.

This study of 324 shell ornaments (including beads and pendants) associated with the Lapita culture focuses on four major facets of shell artifact production and consumption: (1) raw material choice, (2) shell-working techniques, (3) curation, and (4) implications for value.

Peschaux, Caroline

2012 Los adornos Solutrenses: Identificación de un nuevo procedimiento de perforación de las conchas en Lachaud (Terrasson, Dordona, Francia). *Espacio, tiempo y forma. Serie I: Prehistoria y arqueología* 5:333-349; <https://www.academia.edu/90081639/>.

Reports on a new technique for perforating Solutrean shell beads based on material excavated at Lachaud, Dordogne, France.

Peschaux, Caroline, Pierre Bodu, Pierre Lozouet, and Marian Vanhaeren

2022 Le mont Saint-Aubin à Oisy (Nièvre, France) : un lieu de production d'objets de parure sur coquilles du Badegoulien. *Gallia Préhistoire* 62; <https://hal.archives-ouvertes.fr/hal-03834199/document>.

Discusses the production technology of shell beads recovered from an Upper Paleolithic site in northern France.

Puddu, Valentina

2014 Gli ornamenti personali su conchiglia della necropoli di Anghelu Ruju (Alghero, SS): Aspetti tipologici e tecnologici. *ArcheoArte. Rivista Elettronica di Archeologia e Arte* 3:7-20; <https://ojs.unica.it/index.php/archeoarte/article/view/949/1835>.

Classifies the shell beads and pendants recovered from the Domus de Janas necropolis on the northwest coast of Sardinia, Italy, and provides information concerning production techniques. Eneolithic and Early Bronze Age.

Rick, Torben C.

2004 Red Abalone Bead Production and Exchange on California's Northern Channel Islands. *North American Archaeologist* 25:215-237.

California's Channel Islands were ancient centers of shell bead production and exchange. Research at two historic Chumash villages on the Santa Rosa and San Miguel islands produced large assemblages of red abalone epidermis beads, beads-in-production, and bead blanks. A dearth of finished beads compared to beads-in-production suggests that most of the beads were being manufactured for trade or use outside of the household in which they were produced.

Ricou, Christian and Thimus Esnard

2000 Étude expérimentale concernant la fabrication de perles en coquillage de deux sites artenaciens oléronais. *Bulletin de la Société préhistorique française* 97(1):83-93.

Sites devoted to the manufacture of shell beads from cockle shells on the island of Oléron, France, have yielded evidence for all the production steps.

Ricou, Christian, Thimus Esnard, and Luc Laporte

2009 Archéologie expérimentale: Éléments de comparaison ethnographiques et archéologiques / Experimental archeology: Elements for Comparing Ethnographic and Archaeological Data. In *Des premiers paysans aux premiers métallurgistes sur la façade atlantique de la France (3500-2000 av. J.-C.) / From the First Farmers to the First Metallurgists on the French Atlantic Coast (3500-2000 cal. B.C.)*, edited by Luc Laporte, pp. 506-520. Édition Association des Publications Chauvinoises, Mémoire XXXIII.

Reports on the experimental replication of stone and shell beads found on Artenacian sites in west-central France.

Rigaud, Solange and I. Gutiérrez-Zugastie

2015 Symbolism among the Last Hunter-Fisher-Gatherers in Northern Iberia: Personal Ornaments from El Mazo and El Toral III Mesolithic Shell Midden Sites. *Quaternary International*; doi:10.1016/j.quaint.2015.10.029.

L. obtusata and *Trivia* sp. shells were systematically used for personal ornamentation by groups who occupied northern Iberia during the Mesolithic. The shells from two sites in Asturias, Spain,

offer a unique opportunity for investigating raw material procurement, selection strategies, and manufacturing processes developed by Asturian Mesolithic societies for bead production.

Rodríguez Obregón, Daniela

2017 Los Objetos de Concha en el Norte de Sinaloa. Su Producción y Comercio en el Noroeste de México. M.A. thesis. Escuela Nacional de Antropología e Historia, México, DF.
<https://www.academia.edu/70333092/>.

Describes the various forms of shell beads recovered from pre-Hispanic sites in Sinaloa in northwestern Mexico and the techniques used in their production.

Rosenberg, Danny, Inbar Ktalav, Iris Groman-Yaroslviski, and Florian Klimschad

2022 Unique *Theodoxus jordani* Shell Beads from the Middle Chalcolithic Site of Tel Tsaf (ca. 5200-4700 cal BC), Jordan Valley, Israel. *Archaeological Research in Asia*, art. 100349;
<https://doi.org/10.1016/j.ara.2021.100349>.

Discusses the provenience and morphological characteristics of the beads and the technology used to create the stringing holes.

Salas Rossenbach, Kai

2007 Estudio Tecnológico de 13 collares etnográficos patagónicos [Technological Study of 13 Ethnographic Necklaces from Patagonia]. *Magallania* 35(1):33-41;
<https://www.scielo.cl/pdf/magallania/v35n1/art02.pdf>.

Describes the techniques used to produce the shell beads that comprise the long necklaces worn by the Patagonian Canoe Indians of Chile. English abstract.

Schechter, Heeli C.

2023 Experimenting with Levantine Neolithic Shell-Bead Production and Use – A Low Magnification Perspective. *Journal of Archaeological Science: Reports* 52, 104231;
<https://doi.org/10.1016/j.jasrep.2023.104231>.

Replicated shell beads were examined under low magnification and the traces recognized on them compared to wear traces identified on archaeological Neolithic shell beads from the Southern Levant. The comparison permitted the definition of a specific type of wear associated with the stringing and use of particular shell beads.

Serrand, Nathalie

1995 *Strombus Gigas*: Parts and their Utilization for Artefacts Manufacture: A Case Study from the Tanki Flip Site, Aruba. *Proceedings of the International Association for Caribbean Archaeology* 16:229-240.

Concentrates on beads and pendants specifically made from *Strombus gigas* shells and presents the complete manufacturing sequence. The material dates to ca. AD 1000-1500.

Shaw, Ben and Michelle C. Langley

2017 Investigating the Development of Prehistoric Cultural Practices in the Massim Region of Eastern Papua New Guinea: Insights from the Manufacture and Use of Shell Objects in the Louisiade Archipelago. *Journal of Anthropological Archaeology* 48:149-165.

Shell beads and other objects from five prehistoric sites on two islands (Rossel and Nimowa) in the Louisiade Archipelago are analyzed to determine how they were manufactured and used.

Shephard, Christopher

2015 The Materiality of Politics: Tracking the Production and Circulation of Shell Artifacts in the Algonquian Chesapeake (AD 900-1680). *Journal of Middle Atlantic Archaeology* 31:39-52; <https://www.academia.edu/69828197/>.

Presents the results of a study aimed at assessing the viability of laser ablation inductively coupled plasma-mass spectrometry (LA-ICP-MS) for identifying shell bead production locales throughout the southern Middle Atlantic. Maryland, Virginia, and North Carolina. Also includes information concerning the production sequence for small disc-shaped shell beads.

Soler Mayor, Begoña

1990 Estudio de los elementos ornamentales de la Cova de Papalló. *SAGVNTVM. Papeles del Laboratorio de Arqueología de Valencia* 23(11):39-59; <https://www.academia.edu/108672643/>.

Describes the various forms of shell beads and animal-tooth pendants recovered from an Upper Paleolithic site in east-central Spain, as well as the method of perforation.

Soler Mayor, Begoña, Marc Tiffagom, and J. Emili Aura Tortosa

2013 La cova del Volcán del Faro (Cullera): més preguntes que respostes. Primeres dades sobre els elements ornamentals. In *Animals i arqueologia hui. I Jornades d'arqueozoologia*, edited by Alfred Sanchis Serra and Josep Lluís Pascual Benito, pp. 159-180. Museu de Prehistòria de València. <https://www.researchgate.net/publication/307422882>.

Discusses the shell beads recovered from Paleolithic contexts at a cave site in east-central Spain, including the perforation technology.

Solís del Vecchio, Felipe and Anayensy Herrera Villalobos

2015 Herramientas y adornos de concha en el sitio Jícaro: Un acercamiento a las cadenas operativas, Bahía de Culebra, noroeste de Costa Rica. *Vínculos* 35(2012):67-106; <https://www.academia.edu/20035828/>.

Analysis of the shell beads and pendants recovered from a site occupied during the 10th-15th centuries in northwestern Costa Rica has permitted the reconstruction of the *chaîne opératoire* for the different forms.

Stiner, Mary C., Steven L. Kuhn, and Erksin Güleş

2013 Early Upper Paleolithic Shell Beads at Üçağızlı Cave I (Turkey): Technology and the Socioeconomic Context of Ornament Life-Histories. *Journal of Human Evolution* (2013):1-19.

Ten early Upper Paleolithic layers in Üçağızlı Cave I (41-29 uncalibrated ky BP) on the Hatay coast of southern Turkey preserve a rich and varied record of early upper Paleolithic life, including the production and use of large numbers of shell ornaments. This study examines shell bead production, use, and discard in relation to site function and the diversity of on-site human activities.

Szabó, Katherine

2004 Technique and Practice: Shell Working in the Western Pacific and Island Southeast Asia. Ph.D. thesis. Department of Archaeology and Natural History, Australian National University, Canberra.

Presents a detailed account of shell artifact production at various sites attributed primarily to the Lapita culture. The findings suggest widespread relationships in shell-working practices across the study area that have a considerable time depth. Beads appear to have been made principally from *Conus* shells.

Sztancs, Diana-Maria and Corneliu Beldiman

2010 Wietenberg *Dentalium* Shell Beads Discovered at Cerișor - Cave No. 1, Hunedoara County, Romania. *Analele Universității Creștine "Dimitrie Cantemir,"* Seria Istorie – Serie nouă 1(4):76-89.

Examination of two fossil dentalium-shell beads from the Bronze Age level reveals information about their manufacture and use.

Taborin, Yvette

1991 La parure des Solutréens et des Magdaléniens anciens des Jamblancs. *Paléo* 3(3):101-108.

Discusses the technology for making shell beads and tooth pendants found in the late Solutrean/early Magdalenian levels at Jamblancs, France.

Tátá, Frederico, João Cascalheira, João Marreiros, Telmo Pereira, and Nuno Bicho

2014 Shell Bead Production in the Upper Paleolithic of Vale Boi (SW Portugal): An Experimental Perspective. *Journal of Archaeological Science* 42:29-41.

Focuses on shell bead production during the Upper Paleolithic at the site of Vale Boi in southwestern Portugal as a means of understanding social visual transmission. Experimental replication techniques include scratching, sawing, and hammering using lithic and bone implements on both internal and external sides of the shells.

Tóth, Zsuzsanna

2020 Mixing and Matching Social Value: Personal Adornments Made from Hard Animal Materials in the Late Neolithic Burials of Kisköre-Gat (Hungary). In *Beauty and the Eye*

of the Beholder: Personal Adornments across the Millennia, edited by M. Mărgărit and A. Boronean, pp. 383-398. Editura Cetatea de Scaun, Targoviște.

The assemblage contains real and imitation red-deer canines, usually strung together with limestone and shell beads, as well as *Spondylus* and other shell beads. Includes information concerning their *chaîne opératoire*.

Trubitt, Mary Beth D.

2003 The Production and Exchange of Marine Shell Prestige Goods. *Journal of Archaeological Research* 11(3):243-277.

Approaches the subject from a worldwide perspective. Shell beads and their manufacture enter into the discussion.

Tsuneki, Akira

1989 The Manufacture of *Spondylus* Shell Objects at Neolithic Dimini, Greece. *Orient* XXV:1-21; https://www.jstage.jst.go.jp/article/orient1960/25/0/25_0_1/_article.

Beads are among the objects discussed.

Velázquez Castro, Adrián

2007 *La producción especializada de los objetos de concha del Templo mayor de Tenochtitlan*. Instituto Nacional de Antropología e Historia, México.

Discusses the specialized production of shell beads and other objects at the Great Temple of Tenochtitlan, Mexico City.

2012 The Study of Shell Object Manufacturing Techniques from the Perspective of Experimental Archaeology and Work Traces. In *Archaeology, New Approaches in Theory and Techniques*, edited by Imma Ollich-Castanyer, pp. 229-250. IntechOpen. <https://www.intechopen.com/chapters/36574>.

The techniques employed to manufacture mollusc shell objects in pre-Hispanic Mexico have been little studied to date. Researchers have, therefore, turned to experimental archaeology and the characterization and comparison of manufacturing traces. This article presents the principal results obtained concerning shell pieces found in offerings in the sacred precinct of Tenochtitlan, Mexico City.

Velázquez-Castro, Adrián, Patricia Ochoa-Castillo, Norma Valentín-Maldonado, and Belem Zúñiga-Arellano

2017 A Mother-of-Pearl Shell Pendant from Nexpa, Morelos. In *Not Just for Show: The Archaeology of Beads, Beadwork and Personal Ornaments*, edited by Daniella E. Bar-Yosef Mayer, Clive Bonsall, and Alice M. Choyke, pp. 129-135. Oxbow Books, Oxford and Philadelphia.

Presents the analysis of a shell pendant depicting two lizards excavated in southern Mexico that dates to the Early Formative period. Includes information regarding manufacturing techniques.

Velázquez-Castro, Adrián, Norma Valentín-Maldonado, and Belem Zúñiga-Arellano

2012 Análisis con MEB de las huellas de manufactura de los objetos de concha de Teopancazco. In *Estudios arqueométricos del centro de barrio de Teopancazco en Teotihuacan*, edited by Linda Rosa Manzanilla, pp. 285-310. Universidad Nacional Autónoma de México, México. <https://www.academia.edu/13293578/>.

Reports on the production technology used to produce shell beads, pendants, and other ornaments recovered from the Teopancazco area of Teotihuacan, Mexico.

Vitezović, Selena

2011 Neolithic Decorative Objects from Osseous Materials from the Site Starčevo-Grad.

Zbornik Narodnog muzeja XX(1):11-25.

Examines 20 objects of bone and shell (including beads and pendants) from the Starčevo culture in Serbia from a technological point of view: raw materials, production techniques, form, use, and discard.

Yerkes, Richard W.

1993 Methods of Manufacturing Shell Beads at Prehistoric Mississippian Sites in Southeastern North America. In *Traces et fonction, les gestes retrouvés: Actes du colloque international de Liège 8, 9, 10 décembre 1990*, Vol. 1, edited by Patricia C. Anderson, pp. 235-242. *Études et Recherches Archéologiques de l'Université de Liège* 50.

The processes that prehistoric Mississippian artisans developed to manufacture shell beads have been reconstructed through experimental replication studies, microwear analysis, and ethnographic observations. A survey of ethnographic data on shell-working in southeastern North America is presented, and the results of the replication experiments and microwear analyses are summarized.

EGGSHELL

Barich, Barbara E. and Giulio Lucarini

2014 The Hidden Valley Technological Complex – An Overview. In *From Lake to Sand: The Archaeology of Farafra Oasis, Western Desert, Egypt*, edited by Barbara E. Barich, Giulio Lucarini, Mohamed A. Hamdan, and Fekri A. Hassan, pp. 321-332. Edizioni All'Insegna del Giglio, Florence.

Discusses ostrich eggshell bead production at a mid-Holocene site in Egypt.

Bednarik, Robert G.

1998 The Archaeological Significance of Beads and Pendants. *Man and Environment* 23(2):87-99.

Discusses the subject from the perspective of cognitive human evolution. Posits the presence of beads from the Acheulian period onwards, and presents the results of replicating the manufacture of ostrich eggshell beads.

2011 About Ostrich Eggshell Beads. *The Bead Forum* 59:2-8; <https://beadresearch.org/the-bead-forum-archive/>.

On early disc beads and the replication of their manufacturing techniques.

2015 The Significance of the Earliest Beads. *Advances in Anthropology* 5:51-66.

This paper attempts to explore beyond the predictable and banal archaeological explanations relating to early beads and pendants. It recounts replication experiments to establish aspects of technology so as to better understand what can be learned from the quantifiable properties of these artifacts.

Beyin, Amanuel

2010 Use-Wear Analysis of Obsidian Artifacts from Later Stone Age Shell Midden Sites on the Red Sea Coast of Eritrea, with Experimental Results. *Journal of Archaeological Science* 37(7):1543-1556.

The sites produced large quantities of lithic artifacts in association with mollusc shells and ostrich eggshell beads, but it is unclear if all the stone tools were required for bead and mollusk shell processing. The study involved recording of microfracture damage traces in order to infer the use-material and the manner in which the artifacts were used.

Craig, Caitlin, Benjamin Collins, April Nowell, and Christopher Ames

2020 The Effects of Heating Ostrich Eggshell on Bead Manufacturing: An Experimental Approach. *Journal of Archaeological Science: Reports* 31, 102287; <https://doi.org/10.1016/j.jasrep.2020.102287>.

Investigates whether the range of colors seen in OES beads in South Africa was caused deliberately by anthropogenic action or accidentally by post-depositional taphonomic factors.

Cristiani, Emanuela

2014 Ostrich Eggshell Products from Hidden Valley Village, Farafra Oasis – Contributions from Technological Analysis. In *From Lake to Sand: The Archaeology of Farafra Oasis, Western Desert, Egypt*, edited by Barbara E. Barich, Giulio Lucarini, Mohamed A. Hamdan, and Fekri A. Hassan, pp. 301-306. Edizioni All'Insegna del Giglio, Florence.

Analysis permitted the reconstruction of the *chaîne opératoire* of the ostrich eggshell beads from a mid-Holocene site thanks to the large number of unfinished fragments.

Cristiani, Emanuela and Cristina Lemorini

2002 Stones, Bones and Other Grave Goods in a Techno-Functional Perspective. In *Sand, Stones, and Bones. The Archaeology of Death in The Wadi Tanazzuft Valley (5000-2000 BP)*, edited by Savino di Lernia and Giorgio Manzi, pp. 197-216. Arid Zone Archaeology Monographs 3. <https://www.academia.edu/6092657/>.

Proposes the production process for beads of hard and soft stone and ostrich eggshell from Wadi Tanazzuft funerary contexts, Libya.

Dayet, Laure, Rudolph Erasmus, Aurore Val, Léa Feyfant, Guillaume Porraz

2017 Beads, Pigments and Early Holocene Ornamental Traditions at Bushman Rock Shelter, South Africa. *Journal of Archaeological Science: Reports* 13:635-651.

The ostrich eggshell, giant land snail, and marine-shell beads recovered from the site were subjected to a technological and use-wear study with chemical analyses (SEM-EDS and Raman analyses) of the colored residues they bear. Information concerning production techniques is also provided.

Flexner, J.L., J.B. Fleisher, and A. LaViolette

2008 Bead Grinders and Early Swahili Household Economy: Analysis of an Assemblage from Tumbe, Pemba Island, Tanzania, 7th-10th Centuries AD. *Journal of African Archaeology* 6(2):161-181.

Discarded potsherds or stone cobbles with long grooves abraded into their surfaces are some of the most common artifacts on late 1st-millennium AD coastal sites and are believed to have been utilized to form shell beads. Examination of a large assemblage of grinders from Tumbe suggests that production was unstandardized and decentralized, carried on in individual households.

Hitchcock, Robert K.

2012 Ostrich Eggshell Jewelry Manufacturing and Use of Ostrich Products among San and Bakgalagadi in the Kalahari. *Botswana Notes and Records* 44:93-105;
<http://www.jstor.org/stable/43855563>.

Discusses the production of ostrich eggshell beads by San and Bakgalagadi women.

Jacquet, Agathe

2014 *Expérimentation archéologique: La chaîne opératoire de fabrication des perles discoïdes en test d'oeuf d'autruche au Néolithique dans le Bassin du Gobaad, République de Djibouti*. Espace de Recherches Expérimentales de Cambous (EREC), Société Languedocienne de Préhistoire (SLP), Cahier 1.

Replicates the likely method used to produce Neolithic ostrich eggshell beads in the Gobaad Basin, Republic of Djibouti, Africa.

Kabiru, Angela W.

2016 Beauty and the Bead: Ostrich Eggshell Beads through Prehistory. *Kenya Past and Present* 43:17-24.

An overview of the subject from the prehistoric period to the present day. Includes information regarding production techniques.

Kandel, Andrew W. and Nicholas J. Conard

2005 Production Sequences of Ostrich Eggshell Beads and Settlement Dynamics in the Geelbek Dunes of the Western Cape, South Africa. *Journal of Archaeological Science* 32(12):1711-1721; <https://www.researchgate.net/publication/228969274>.

Focuses on the production, use, and discard of ostrich eggshell beads recovered from Later Stone Age open-air sites in the Geelbek Dunes of the Western Cape, and presents a comprehensive

production chain for analyzing the manufacture of beads and introduces the concept of a heuristic production value for evaluating the degree of completion reflected by an assemblage.

Munene, James K., Abdikadir Kurewa, Wanjage Wairimu, and Micheal Basili

2024 Ostrich Eggshell Bead-making in East Africa: A Study of Crafting in the El Molo Community, Kenya. *Azania: Archaeological Research in Africa*; <https://doi.org/10.1080/0067270X.2024.2415258>.

Documents the entire process of contemporary ostrich eggshell bead manufacture, including the collection of hammer stones, the making of strings for stringing the beads, the breaking of eggshells, shaping and rounding, stringing, and the making of diverse beadwork items.

Orton, Jayson

2008 Later Stone Age Ostrich Eggshell Bead Manufacture in the Northern Cape, South Africa. *Journal of Archaeological Science* 35(7):1765-1775; <https://www.academia.edu/441600/>.

The data from five beadmaking sites of the Later Stone Age in Namaqualand show that most breakage occurs during the drilling stage and that the production process has not changed through the last 4,000 years. The lack of production debris reflecting large beads suggests these were brought into Namaqualand from elsewhere.

Pleurdeau, David, Emma Imalwa, Florent Détroit, Joséphine Lesur, Anzel Veldman, Jean-Jacques Bahain, and Eugène Marais

2012 “Of Sheep and Men”: Earliest Direct Evidence of Caprine Domestication in Southern Africa at Leopard Cave (Erongo, Namibia). *PLoS One* 7(7): e40340.

The recovered ostrich eggshell beads and pendants were produced using three different manufacturing techniques. In Czech with English abstract.

Sherwood, Nicole Leoni and Tim Forssman

2024 Ostrich Eggshell Beads: Hole Drilling Technology at Little Muck Shelter, South Africa. *Journal of Archaeological Science* 172, 106091; <https://doi.org/10.1016/j.jas.2024.106091>.

Experimentation and use-wear evidence reveals that early foragers most likely used micro-lithic drills made from small, but thick, flake blanks that were retouched along the laterals to create a near symmetrical point with a tetrahedral tip.

2025 Assessing Ostrich Eggshell Bead Production at Little Muck Shelter: Experimental Production to Test Efficiency and Success Rates of Pathway 1 and 2. *Journal of Archaeological Science* 173, 106129; <https://doi.org/10.1016/j.jas.2024.106129>.

Two production strategies were used to create OES beads at the shelter, located in South Africa. The authors experimentally created OES beads using the two pathways to determine if one pathway had benefits over the other. They also investigated if heat treatment of the shell had any benefits in the production process.

Suková, Lenka Varadzinová, Zdeňka Sůvová, Václav Čílek, Martin Odler, Petr Pokorný, and Ladislav Varadzin

2015 Diskovité korálky ze skořápek pštrosích vajec z mezolitického sídliště Sfinga (SKB.W-60) v pohoří Sabaloka (centrální Súdán). *Pražské Egyptologické Studie* XIV:67-71; <https://www.academia.edu/74318930/>.

Discusses ostrich eggshell disc beads from the Sphinx Mesolithic site at Jebel Sabaloka in central Sudan and how they were produced.

Sůvová, Zdeňka, Lenka Varadzinová, Václav Čílek, Martin Odler, Petr Pokorný, and Ladislav Varadzin

2018 The Production and Consumption of Ostrich Eggshell Beads at the Mesolithic Site of Sphinx (SBK.W-60), Jebel Sabaloka: View from Trench 2 (2012). In *Nubian Archaeology in the XXIst century: Proceedings of the Thirteenth International Conference for Nubian Studies, Neuchâtel, 1st-6th September 2014*, edited by Matthieu Honegger, pp. 195-202. *Orientalia Lovaniensia Analecta* 273. <https://www.academia.edu/37537188/>.

Presents a detailed analysis of the beads recovered from a site in central Sudan, including the production techniques involved.

Varuku, Mandu

1995 The Technology of Ostrich Eggshell Bead Production. B.A. dissertation. University of Nairobi.

1997 The Technology of Ostrich Eggshell Bead Production. *Kenya Past and Present* 29:49-56. Provides a production sequence for OES beads based on specimens recovered from two sites in Kenya.

Wang, ChunXue, Yue Zhang, Xing Gao, XiaoLing Zhang, and HuiMin Wang

2009 Archaeological Study of Ostrich Eggshell Beads Collected from SDG Site. *Chinese Science Bulletin* 54(21):3887-3895; <https://www.researchgate.net/publication/225987299>.

Discusses the production techniques for the eggshell beads found at the Shuidonggou (SDG) site, Ningxia Province, China, and dated to the Early Holocene (< 10 ka BP).

Werner, J.J. and J.M. Miller

2018 Distinguishing Stone Age Drilling Techniques on Ostrich Eggshell Beads: An Experimental Approach. *Journal of Archaeological Science: Reports* 22:108-114; <https://doi.org/10.1016/j.jasrep.2018.09.020>.

Outline a statistical method for distinguishing ostrich eggshell beads perforated with a hand-turned drill bit and those created with a hafted drill. This distinction has important implications for tracking past beadmaking traditions across space and time, and for tracing the first appearance and spread of hafted drilling.

Wingfield, Chris

2003 Ostrich Eggshell Beads and the Environment, Past and Present. In *Researching Africa's Past: New Contributions from British Archaeologists*, edited by P. Mitchell, A. Haour, and J. Hobart, pp. 54-60. Oxford School of Archaeology.

An in-depth study of the making of ostrich eggshell beads and what can be learned from applying present-day technology to interpreting the past.

2009 Patterns of Connection: Ostrich Eggshell Beads, the Environment and Sociality in the Kalahari. M.A. thesis. Material Anthropology and Museum Ethnography, St. John's College, Oxford. <https://www.academia.edu/29340317/>.

Explores the patterns of connection that emerge around the production of ostrich eggshell beads in the Kalahari region of Southern Africa. Includes a section on modern-day beadmaking techniques at two locations in Botswana.

BONE, IVORY, ANTLER, AND HORN

Acosta, Alejandro A., Natacha Buc, Mariano Ramírez, Francisco Prevosti, and Daniel Loponte

2015 Producción y uso de objetos ornamentales elaborados sobre dientes de carnívoros en contextos arqueológicos del Humedal del Paraná Inferior [Production and Use of Ornamental Objects Made from Carnivore Teeth in Archaeological Contexts of the Lower Paraná Wetland]. *Revista del Museo de Antropología* 8(2):33-46; <https://www.academia.edu/21525081/>.

Delves into the production techniques and use of perforated carnivore canines in northeastern Argentina during the Late Holocene.

Bains, Roseleen, Milena Vasić, Daniella E. Bar-Yosef Mayer, Nerissa Russell, Katherine I. Wright, and Chris Doherty

2013 A Technological Approach to the Study of Personal Ornamentation and Social Expression at Çatalhöyük. In *Substantive Technologies at Çatalhöyük: Reports from the 2000-2008 Seasons*, edited by I. Hodder, pp. 331-364. Monumenta Archaeologica 31. <https://www.academia.edu/32379930/>.

Focuses on the technology and methods of manufacture of the recovered Neolithic beads, pendants, and preforms of stone, bone, shell, and clay from a major site in Turkey.

Baird, Douglas, Andrew Garrard, Louise Martin, and Katherine Wright

1992 Prehistoric Environment and Settlement in the Azraq Basin: An Interim Report on the 1989 Excavation Season. *Levant* 24(1):1-31.

Discusses the form and method of manufacture of the stone, shell, and bone beads recovered from PPNB and Late Neolithic contexts at sites Azraq 31 and Wadi el-Jilat 32 in Jordan.

Beldiman, Corneliu and Diana-Maria Sztancs

2010 Elemente ale simbolismului social-identitar în preistorie: pandantive paleolitice și epipaleolitice descoperite pe teritoriul României. *Analele Universității Creștine "Dimitrie Cantemir," Seria Istorie* 1(2):9-41; <https://www.academia.edu/445113/>.

Reports on the eight oldest stone and bone pendants attributed to the Eastern Gravettian and the Epigravettian/Tardigravettian in Romania. Includes information concerning manufacturing techniques and use wear. French abstract.

Bolus, Michael

2003 Zur Herstellung von Eiszeitschmuck. In *Eiszeitschmuck. Status und Schönheit*, edited by S. Kölbl und N.J. Conard, pp. 51-62. Urgeschichtliches Museum, Blaubeuren. Museumsheft 6.

Describes the production of beads and pendants from mammoth ivory, bone, and animal teeth during the Ice Age.

Brumm, Adam, Michelle C. Langley, Mark W. Moore, Budianto Hakim, Muhammad Ramli, Iwan Sumantri, Basran Burhan, Andi Muhammad Saiful, Linda Siagian et al.

2017 Early Human Symbolic Behavior in the Late Pleistocene of Wallacea. *Proceedings of the National Academy of Sciences* 114(16):4105-4110; <https://www.academia.edu/78570705/>.

Evidence for symbolic activity 30,000-22,000 BCE at Leang Bulu Bettue, a cave and rock-shelter site on the Wallacean island of Sulawesi includes disk-shaped bead blanks on a *Babryrousa* sp. (pig-deer) lower incisor and a perforated bone pendant fashioned from a bear cuscus phalange. Includes information regarding production techniques.

Camps-Fabrer, Henriette (ed.)

1991 *Fiches typologiques de l'industrie osseuse préhistorique, cahier IV: objets de parure*. Publications de l'Université de Provence, Aix-en-Provence.

A typology for prehistoric bone, shell, and ivory ornaments, including beads, spacers, and pendants. Information concerning production techniques, use/wear, and spacial and temporal distribution is also provided.

Cunnar, Geoffrey and Frank Hole

2010 Bone Beads from el-Wad. Poster, 7th International Congress on the Archaeology of the Ancient Near East. <https://www.academia.edu/101299272/>.

Macro and microscopic examination of ten small bone pendants from a site in Israel revealed the method of manufacture, possible thermal alteration, association with ochre, and methods of stringing.

Fedorchenko, Alexander Yu., William T.T. Taylor, Nuriddin N. Sayfulloev, Samantha Brown, William Rendu, Andrei I. Krivoschapkin, Katerina Douka, and Svetlana V. Shnaider

2020 Early Occupation of High Asia: New Insights from the Ornaments of the Oshhona Site in the Pamir Mountains. *Quaternary International* 559:174-187; <https://doi.org/10.1016/j.quaint.2020.07.026>.

Located in Tajikistan, the site yielded three tubular bone beads, a bone pendant, and a perforated mammal-tooth pendant. Includes information concerning production technology.

Francis, Peter, Jr.

1988 Shanidar Cave and Zawi Chemi Shanidar, Iraq: Beads of the Early "Neolithic Revolution." *The Margaretologist* 2(1):3-4; <https://beadresearch.org/resources/the-margaretologist/>.

Discusses the stone and bone beads recovered from the two sites with notes on how the bone beads were produced.

Giering, Karen L.

2018 Elk Ivory Pendants in Alberta. In *The Swing of Things: Contributions to Archaeological Research in Alberta, 2018*, edited by Eric R. Damkjar, pp. 92-101. Archaeological Survey of Alberta Occasional Paper 38. <https://www.researchgate.net/publication/330509108>.

Examines 12 elk-tooth pendants to determine the sex and age of the animals involved, and the method used to produce the perforation. Ethnographic and historic records are used to place the collection in context and understand the significance of elk ivories on the Northern Plains.

Grayger, Jeanne-Marie and François Lévêque

1997 Parure castelperronienne et aurignacienne: étude de trois séries inédites de dents percées et comparaisons. In *Comptes Rendus de l'Académie des Sciences, Sciences de la Terre et des Planètes* 325:537-543; <https://www.academia.edu/1577346/>.

Compares the drilling techniques used to perforate tooth pendants from Castelperronian and Aurignacian components at sites in France.

Heckel, Claire E. and Sibylle Wolf

2023 The Circulation of Ornaments in Aurignacian Contexts. In *Contact, Circulation, Exchange. Proceedings of the Modified Bone & Shell UISPP Commission Conference (2-3 March 2017, University of Trnava)*, edited by Éva David and Erik Hnrčiarik, pp. 13-32. Archaeopress Publishing, Oxford. <https://www.archaeopress.com/Archaeopress/Products/9781803275956>.

Presents a comparison of the Early Upper Paleolithic ornamental assemblages (shell and ivory beads) in the Swabian Jura and Aquitaine regions followed by a discussion of the implications that they have for issues of cultural contact, contexts of circulation, and networks of exchange in the Early Upper Palaeolithic and beyond. Includes information concerning bead production techniques.

Larsson, Lars

- 2006 A Tooth for a Tooth. Tooth Ornaments from the Graves at the Cemeteries of Zvejnieki. In *Back to the Origin. New Research in the Mesolithic-Neolithic Zvejnieki Cemetery and Environment, North Latvia*, edited by Lars Larsson and Ilga Zagorska, pp. 253-287. Acta Archaeologica Lundensia 52. <https://www.academia.edu/36887672/>.

A variety of animal tooth pendants were found with 42 burials attributed to the Mesolithic and Neolithic periods. Includes information regarding the production process and use-wear.

Lázničková-Galetová, Martina

- 2014 The Phenomenon of Gravettian Necklaces – Mammoth Ivory Necklaces from Dolní Věstonice I (Moravia, Czech Republic). *Quaternary International* 359-360:229-239; <https://www.academia.edu/81683648/>.

Seven beads/pendants were examined to determine the state of conservation, manufacturing technology, decorating style, and supposed function. It was possible to partially reconstruct the *chaîne opératoire*.

- 2019 The Symbolism of Breast-Shaped Beads from Dolní Věstonice I (Moravia, Czech Republic). *Quaternary International* 503(B):221-232; <https://doi.org/10.1016/j.quaint.2017.08.035>.

Focuses on the manufacturing technology, decoration, and interpretation of eight breast-shaped beads of mammoth ivory excavated at a Gravettian site in Czechia.

Lbova, Liudmila, Pavel Volkov, Julia Gubar, and Nikolay Drozdov

- 2020 Mammoth Ivory Paleoart Objects from the Upper Paleolithic Assemblage of Ust-Kova (Eastern Siberia): A Technological Approach. *Archaeological Research in Asia* 23, 100196; <https://doi.org/10.1016/j.ara.2020.100196>.

A study of the Ust-Kova material reveals that a complex array of technological methods were used to manufacture personal ornaments and sculptures of ivory in Siberia.

Le Dosseur, Gaëlle

- 2004 Fiche travail de l'os au Proche-Orient durant l'Épipaléolithique récent (Natoufien). In *Fiches de la Commission de nomenclature sur l'industrie de l'os préhistorique. Cahier XI: Matières et techniques*, edited by Denis Ramseyer, pp. 89-112. Éditions Société Préhistorique Française, Paris.

Contains short sections on the manufacture of tubular and globular beads from the bones of birds and mammals, as well as pendants made from mammal canines, in the Middle East during the recent Epipaleolithic (Natufien).

Lubinski, Patrick M.

- 2003 Rabbit Hunting and Bone Bead Production at a Late Prehistoric Camp in the Wyoming Basin. *North American Archaeologist* 24(3):197-214.

Illustrates and discusses evidence for rabbit-bone bead production at the Raptor site in southwestern Wyoming. The site dates to approximately AD 600-1000.

MacGregor, Arthur

1985 *Bone, Antler, Ivory, and Horn: The Technology of Skeletal Materials Since the Roman Period*. Barnes and Noble, Totowa, NJ.

Beads, mostly medieval (pp. 99-102, fig. 58).

Malerba, Giancarla and Giacomo Giacobini

2014 Les objets en ivoire des sépultures gravettiennes de la Barma Grande de Grimaldi (Ligurie, Italie). Étude descriptive et technologique. *L'Anthropologie* 118(3):309-327; <https://www.academia.edu/78494657/>.

Discusses nine decorated claviform pendants and four buttons formerly defined as “double-olive pendants” made of ivory that were found with two Gravettian burials at Barma Grande, Grimaldi, Italy. Includes information regarding manufacturing techniques.

Mannermaa, Kristiina, Riitta Rainio, Evgeny Yu. Giry, and Dmitry V. Gerasimov

2021 Let's Groove: Attachment Techniques of Eurasian Elk (*Alces alces*) Tooth Pendants at the Late Mesolithic Cemetery Yuzhniy Oleniy Ostrov (Lake Onega, Russia). *Archaeological and Anthropological Sciences* 13:3; <https://doi.org/10.1007/s12520-020-01237-5>.

Analyzes the manufacturing techniques of elk tooth pendants found with 84 burials. Most of the teeth were worked by carving one or several grooves around the root tip.

Mărgărit, Monica, Valentin Radu, and Dragomir Nicolae Popovici

2015 From Operculum to Bead: Production of Pearls from Opercular Bones of *Cyprinus carpio* in the Romanian Eneolithic. *Environmental Archaeology*, DOI: <http://dx.doi.org/10.1179/1749631414Y.0000000019>.

Sites of the Gumelnița culture in Romania have produced a significant number of carp opercular bones in the process of being turned into circular beads.

Moreno-García, Marta, Carlos M. Pimenta, Ana Pajuelo Pando, and Pedro M. López Aldana

2010 Archaeological Evidence of Pre-Industrial Worked Bone Activity in 18th Century Seville, Spain. In *Ancient and Modern Bone Artefacts from America to Russia*, edited by Alexandra Legrand-Pineau et al., pp. 183-190. BAR International Series 2136. <https://www.researchgate.net/publication/290445842>.

On the manufacture of lathe-turned bone rosary beads.

Otte, Marcel, V. Chirica, and C. Beldiman

1995 Sur les objets paléolithiques de parure et d'art en Roumanie : une pendeloque en os découverte à Mitoc, district de Botosani. *Préhistoire Européenne* 7:119-152; <https://www.academia.edu/40710733/>.

Detailed discussion of a Paleolithic bone pendant excavated in Romania. Includes production technology.

Picod, C.E.A.

1999 Examen de perles en os tourné des XVIème et XVIIème siècles et expérimentation. In *La tournerie: mémoire et créations*, pp. 31-37. Centre Jurassien du Patrimoine, Lons-le-Saunier, Lavans.

An examination of lathe-turned bone beads of the 16th and 17th centuries with replication experimentation.

Rašková Zelinková, Michaela

2012 Traseologická analýza industrie z tvrdých živočišných materiálů z Hoštice I [Use-Wear Analysis of Hard Animal Material Industry from Hoštice I]. In *Pohřebišť z období zvoncovitých pohárů na trase dálnice D1 Vyškov - Mořice* [Funerary Areas of the Bell Beaker Period on the D1 Vyškov-Mořice Motorway], edited by A. Matějčková and P. Dvořák, pp. 273-280. Pravěk, Supplementum 24. <https://www.academia.edu/44658822/>.

Discusses the technology used to produce V-perforated bone buttons at a Bell Beaker Culture site in Moravia, Czechia. English summary.

Rigaud, Solange, Francesco d'Errico, and Marian Vanhaeren

2010 Los objetos de adorno personal asociados al esqueleto mesolítico Braña-2. In *Los hombres mesolíticos de la Cueva de la Braña-Arintero (Valdeugueros, León)*, edited by J.M. Vidal Encinas and M.E. Parda Marcos, pp. 62-81. Junta de Castilla y León. <https://www.academia.edu/479722/>.

Reports on 24 perforated deer found with Mesolithic burials in a cave in northern Spain including the manufacturing techniques involved.

San Juan-Foucher, Cristina, Pascal Foucher, and Carole Vercoutère

2013 Parures aurignaciennes de Gargas (Hautes-Pyrénées, France): approche typo-technologique d'un nouveau type de perle. In *F. Javier Fortea Pérez. Universitatis Ovetensis Magister: estudios en homenaje*, edited by Marco de la Rasilla Vives, pp. 335-346. Ediciones de la Universidad de Oviedo.

Presents a detailed typo-technological and comparative study of two previously unrecorded items of personal adornment from the Aurignacian deposits at Gargas, France. One is a finished antler bead and the other an ivory bead blank.

Shunkov, M.V., A.Y. Fedorchenko, and M.B. Kozlikin

2023 Early Upper Paleolithic Tubular Beads from the Main Chamber of Denisova Cave. *Archaeology, Ethnology & Anthropology of Eurasia* 51(4):3-14; <https://www.researchgate.net/publication/377197146>.

Reports on how the bone beads were made and used.

Siebrecht, Matilda

2017 Research Project: Perforating Prehistory: An Experimental Project Investigating Bead Technologies at Neolithic Çatalhöyük. In *Çatalhöyük 2017 Archive Report*, edited by Scott D. Haddow, 227-237.

Considers how variability in raw material properties may have influenced the selection of techniques and toolkits employed for the production of beads made from different materials (e.g., whether bone and stone disc beads were created using a similar production process). Turkey.

Smith, Marc B. and John W. Fisher, Jr.

2010 Bone Beads and Bead Production Debitage. In *Precontact Archaeology and Prehistory of the Central Montana High Plains*, edited by Leslie B. Davis, p. 130. Bureau of Land Management Cultural Resources Series 5. Billings, Montana.

Spitzers, Thomas A.

1997 Late Medieval Bone Bead Production: Socio-Economic Aspects Based on material from Constance, Germany. *Anthropozoologica* 25-26:157-164;
<https://www.academia.edu/76822261/>.

Presents the preliminary results of a study of a massive find of bone-bead production refuse from three different production phases dating between the late 13th and the early 16th century.

2006 Market Strategies in a Late Medieval Craft: Bone Bead Production in Constance and Elsewhere. In *Lübecker Kolloquium zur Stadtarchäologie im Hanseraum V: Das Handwerk*, edited by Manfred Gläser, pp. 359-3799. Schmidt-Römhild, Lübeck.
<https://www.academia.edu/31354110/>.

Explores the possibilities of deducing socio-economical information from the production refuse of bone beadmaking.

2009 Die Konstanzer Paternosterleisten: Analyse zur Technik und Wirtschaft im spätmittelalterlichen Handwerk der Knochenperlenbohrer. Ph.D. dissertation. University of Amsterdam.

Presents an analysis of bone beadmaking technology and economics during the late medieval period in Constance, Germany.

2013 Die Konstanzer Paternosterleisten: Analyse zur Technik und Wirtschaft im spätmittelalterlichen Handwerk der Knochenperlenbohrer. *Fundberichte aus Baden-Württemberg* 33:661-940; <https://www.academia.edu/12413795/>.

As above.

Torres, Hilda Ruby, Iris Groman-Yaroslavski, Mina Weinstein-Evron, and Reuven Yeshurun

2020 A Micro-Wear Analysis of Natufian Gazelle Phalanx Beads from el-Wad Terrace, Mount Carmel, Israel. *Journal of Archaeological Science: Reports* 31, 102304;
<https://doi.org/10.1016/j.jasrep.2020.102304>.

Reconstructs the beads' four-step production sequence based on replicative experimentation.

Vandiver, Pamela and Amy Vandiver Gruhl

2011 The Earliest Bead Manufacture in the Americas at the Paleo-Indian Jones-Miller Site, Wray, Colorado. MRS Online Proceedings Library 1319, 703;
<https://doi.org/10.1557/opl.2011.925>.

Analysis of the composition and microstructure of an oil-shale microbead fragment from a bison-kill site dated by radiocarbon testing to 10,200 BP, revealed the production sequence.

Vitezović, Selena

2011 Neolithic Decorative Objects from Osseous Materials from the Site Starčevo-Grad. *Zbornik Narodnog muzeja* XX(1):11-25.

Examines 20 objects of bone and shell (including beads and pendants) from the Starčevo culture in Serbia from a technological point of view: raw materials, production techniques, form, use, and discard.

Walter, Rudolf

2018 Essai d'archéologie expérimentale pour la production de perles à perforation double aurignaciennes [Test in Experimental Archaeology in Order to Produce Aurignacian Double Perforated Beads]. *L'Anthropologie* 122(3):374-384.

Reports on attempts to replicate small double-perforated ivory beads which are an important category of finds in southwestern Germany during the Aurignacian.

White, Randall

1989 Production Complexity and Standardisation in Early Aurignacian Bead and Pendant Manufacture: Evolutionary Implications. In *The Human Revolution: Behavioural and Biological Perspectives on the Origins of Modern Humans*, edited by Christopher Stinger and Paul Mellars pp. 366-390. Edinburgh University Press.

1989 Visual Thinking in the Ice Age. *Scientific American* 261(1):92-99 (July).

Reconstructs ivory bead production during the Aurignacian period in southwestern France.

1995 Ivory Personal Ornaments of Aurignacian Age: Technological, Social and Symbolic Perspectives. In *Travail et l'usage de l'Ivoire au Paléolithique Supérieur*, edited by J. Hahn et al., pp. 29-62. Centre Universitaire Européen pour les Biens Culturels, Ravello, Italy.

Reports on several years of research on Aurignacian personal ornaments, a large proportion of which were manufactured of mammoth ivory. The technology of ivory bead production is shown to have been extraordinarily labor consumptive and to have varied from one European region to the next.

2002 Observations technologiques sur les objets de parure. In *L'Aurignacien de la grotte de Renne: Les fouilles d'André Leroi-Gourhan à Arcy-sur-Cure (Yonne)*, edited by B. Schmider, pp. 257-266. Supplément à Gallia Préhistoire XXXIV.
<https://www.academia.edu/3082987/>.

Discusses the technology of Aurignacian beads and pendants of ivory and animal canines, respectively. Also a perforated gastropod shell. France.

2004 La parure en ivoire des hommes de Cro-Magnon. *Dossier Pour la Science* 43:98-103;
<https://www.academia.edu/3082985/>.

Observation, analysis, and experimentation reveal the techniques used by Aurignacian artisans to produce “basket” beads of mammoth ivory.

2007 Systems of Personal Ornamentation in the Early Upper Palaeolithic: Methodological Challenges and New Observations. In *Rethinking the Human Revolution: New Behavioural and Biological Perspectives on the Origin and Dispersal of Modern Humans*, edited by P. Mellars, K. Boyle, O. Bar-Yosef, and C. Stringer, pp. 287-302. McDonald Institute Monographs, Cambridge.
<https://www.researchgate.net/publication/303837076>.

Discusses the production of Aurignacian beads and pendants. Those from ensemble 2 at the Grotte des Hyènes, Brassempouy, France, were made from various materials including ivory and bone.

Wolf, Sibylle, Claus-Joachim Kind, and Nicholas J. Conard

2013 Schmuck aus dem Aurignacien von der Schwäbischen Alb im Vergleich mit Inventaren aus dem Lahntal und dem Rheinland (Personal Ornaments of the Swabian Aurignacian Compared with Inventories of the Lahn Valley and the Rhineland) *Archäologisches Korrespondenzblatt* 43(3):295-313.

Excavations in six caves of the Swabian Jura (Baden-Württemberg, Germany) have recovered beads and pendants from Aurignacian deposits made by early anatomically modern humans. Illustrates the production process for double-perforated beads of mammoth ivory.

WOOD, SEEDS, AND NUTS

Berganza, Eduardo, Mónica Ruiz-Alonso, and Rosa Ruiz Idarraga

2018 Cuentas de madera magdalenienenses de la cueva de Santa Catalina (Lekeitio, Bizkaia, España). *Munibe Antropologia-Arkeologia* 69:63-73;
<https://www.academia.edu/62049042/>.

About Magdalenian wooden beads found in the cave of Santa Catalina in northern Spain. Information regarding how the beads were manufactured and how they were used is provided.

Fernandes, Henry Luydy Abraham, Ana Gabriela Morim de Lima, and Gabriel Vargas Zanatta

2021 Contas vegetais em dois sepultamentos da Bahia. *Revista de Arqueologia* 34(3):95-121;
<https://www.researchgate.net/publication/354998114>.

Discusses beads made from tiririca (sedge) seeds found with two prehistoric burials in the State of Bahia, Brazil. The production process and the likely use of the beads is explained based on ethnographic evidence.

Oliva Poveda, Mònica

- 2011 Les denes de collar fetes amb *Prunus avium* (cirera) del jaciment de la Draga (Banyoles). In *El poblat lacustre del neolític antic de la Draga: excavacions 2000-2005*, edited by Angel Bosch i Lloret, Júlia Chinchilla, and Josep Tarrús i Galter, pp. 105-1082. Monografies del CASC 9. <https://www.academia.edu/43716465/>.

Flotation of sediment samples from a Neolithic site in northeastern Spain revealed nine perforated *Prunus avium* (sweet cherry) pits that were used as ornaments. Insight into the production process is provided.

Pauc, P., P. Moinat, and J. Reinard

- 2005 Description de la fabrication expérimentale du grain d'enfilage en akène de *Lithospermum* de type 2 et de la pendeloque à ailettes globulaires. *euroREA* 2:40-54. Replicates the production of two types of prehistoric beads made from seeds in Europe.

MIXED MATERIALS

Acosta, Alejandro A., Natacha Buc, and M. Natalia Davrieux

- 2015 Producción y uso de ornamentos en las tierras bajas de Sudamérica: el caso de las poblaciones humanas prehispánicas del extremo meridional de la cuenca del Plata (Argentina) / The Production and Use of Ornaments in the Lowlands of South America: The Case of Pre-Hispanic Human Populations of the Southern End of the La Plata Basin (Argentina). *Munibe Antropologia-Arkeologia* 66:09-325.

The beads and pendants of shell, stone, ceramic, and perforated carnivore canines recovered from several sites are described, focusing on the raw materials used, their acquisition, and other aspects linked to the manufacturing processes. Their possible use as vectors of information transmission is also discussed.

Alarashi, Hala

- 2014 La parure épipaléolithique et néolithique de la Syrie (12^e au 7^e millénaire avant J.-C.): Techniques et usages, échanges et identités. Ph.D. dissertation. Université Lumière-Lyon 2, Lyon. <https://www.researchgate.net/publication/270507486>.

Detailed study of the Epipalaeolithic and Neolithic personal adornments made of shell, stone, bone, and animal teeth excavated at various sites in Syria (12th-7th millennia BC), including their production technology.

Bagherpour Kashani, Natascha

2022 *Depositional Practices at the Natural Sanctuary of Veshnaveh, Central Iran. Jewellery and Watery Caves*. Verlag Marie Leidorf, Bochum.

<https://www.academia.edu/74606881/>.

A special rural sanctuary of pre- and early Zoroastrian cults yielded a variety of glass, stone, amber, and metal beads and pendants. Their typology, production techniques, and chemical composition are discussed.

Bains, Roseleen, Milena Vasić, Daniella E. Bar-Yosef Mayer, Nerissa Russell, Katherine I. Wright, and Chris Doherty

2013 A Technological Approach to the Study of Personal Ornamentation and Social Expression at Çatalhöyük. In *Substantive Technologies at Çatalhöyük: Reports from the 2000-2008 Seasons*, edited by I. Hodder, pp. 331-364. Monumenta Archaeologica 31.

<https://www.academia.edu/32379930/>.

Delves in detail into the technologies and methods used to manufacture beads of stone, clay, shell, and bone at a large Neolithic settlement in southern Anatolia, Turkey.

Breukel, T.W. and C.G. Falci

2017 Experimental Reproduction of Wear Traces on Shell, Coral, and Lithic Materials from the pre-Colonial Caribbean. In *Proceedings of the 26th Congress of the International Association for Caribbean Archaeology*, edited by C.B. Velasquez and J.B. Haviser.

SIMARC Heritage Series15.

Reports on the experimental replication of techniques used for splitting, abrading, carving, and perforating a variety of shell species and rock types using tools made of flint, bone, coral, coarse and fine-grained sandstone, and shell.

Dallaire-Fortier, Coralie

2016 Une étude technologique des ornements abénakis de la période de contact et de la période historique amérindienne retrouvés sur le site archéologique d'Odanak. M.A. thesis.

Département d'Anthropologie, Université de Montréal, Montréal.

<https://papyrus.bib.umontreal.ca/xmlui/handle/1866/19265>.

The Abenaki site at Odanak, Quebec, yielded a variety of beads and pendants fashioned from glass, stone (catlinite and slate), shell (wampum), and bone. The *chaîne opératoire* for objects in each group is provided.

Evely, D.

1992 Stone Vases and Other Objects. In *Well Built Mycenae, fasc. 27: Ground Stone*, edited by W.D. Taylour, E.B. French, and K.A. Wardle, pp.1-34. Oxbow, Oxford.

Describes a stone mold for making gold and vitreous relief-beads (pp. 29-31).

Falci, Catarina Guzzo

2017 Assembling all the Beads: The Production and Use of Late Ceramic Age Beads from Northwestern Dominican Republic. In *Proceedings of the 26th Congress of the*

International Association for Caribbean Archaeology, edited by C.B. Velasquez and J.B. Haviser. SIMARC Heritage Series 15.

Assesses how beads were produced and used by the indigenous peoples of the Caribbean based primarily on finds from the site of El Flaco which dates to the 13th-15th centuries. Included are beads made of igneous rocks, calcite, coral, and shell.

Formigli, Edilberto

1995 *Preziosi in oro, avorio, osso e corno: arte e tecniche degli artigiani etruschi*. Atti del seminario di studi ed esperimenti: Murlo, 26 settembre - 3 ottobre 1992. Nuova Immagine, Siena.

A detailed and amply illustrated study of Etruscan manufacturing methods including gold, ivory, bone, and stone. Much on granulation.

Gurova, Maria and Clive Bonsall

2017 Experimental Replication of Stone, Bone and Shell Beads from Early Neolithic Sites in Southeast Europe. In *Not Just for Show: The Archaeology of Beads, Beadwork and Personal Ornaments*, edited by Daniella E. Bar-Yosef Mayer, Clive Bonsall, and Alice M. Choyke, pp. 159-167. Oxbow Books, Oxford and Philadelphia.
<https://www.academia.edu/84627946/>.

The experiments suggest that, while some beads and necklaces were evidently specialist products, beadmaking could have been a normal household activity among early farming communities in southeastern Europe.

Hutchinson, M.E.

1996 *A Technical Examination of the Non-Glass Beads from Two Anglo-Saxon Cemeteries at Mucking, Essex*. Ancient Monuments Laboratory Report 52/95.

Examines the holes, surfaces, etc., of 557 amber, jet/shale, silver, and quartz beads. A diskette accompanying the report contains two databases describing each bead.

Kenoyer, J. Mark

1986 The Indus Bead Industry: Contributions to Bead Technology. *Ornament* 10(1):18-23. Covers shell, stone, bleached ("etched") carnelian, paste, and faience.

Mathien, Frances J.

1997 Ornaments of the Chaco Anasazi. In *Ceramics, Lithics, and Ornaments of Chaco Canyon: Volume III. Lithics and Ornaments*, edited by Frances Joan Mathien, pp. 1119-1220. Publications in Archeology 18G, Chaco Canyon Studies. National Park Service, Santa Fe.

Inventories the beads and pendants recovered from over 20 sites in Chaco Canyon, New Mexico, which span the period from the Archaic to Pueblo III, as well as Navaho. They are discussed by period with much comparative material. Also notes on beadmaking technology. Materials include various stones and minerals, shell, bone, wood, and seeds.

Miller, Heather M.-L.

2007 *Archaeological Approaches to Technology*. Academic Press, Burlington, MA.

Discusses the technological aspects of the production of beads of stone, shell, faience, and glass, as well as the archaeological determination of the relative value of objects for prehistoric societies, and the relationship between valued objects and status.

Oliva Poveda, Mònica

2002 Els ornaments personals del jaciment prehistòric de Can Roqueta II. De la fi del V mil·lenni a inicis del II cal. Ane. M.A. thesis. Universitat Autònoma de Barcelona, Barcelano. <https://www.academia.edu/43596545/>.

Detailed study of the shell, stone, and bone beads and pendants recovered from an Early Bronze Age site in Spain. Includes details concerning how the various forms were produced.

2004 Els ornaments personals de la primera meitat del segon millenni ane del jaciment de Can Roqueta-II (est), Sabadell. *Cypsela* 15:229-249; <https://www.academia.edu/68375184/>.

Presents a typological and technological study of the shell beads and pendants recovered from excavations at Can Roqueta-II (Sabadell, Barcelona, Spain). The objects are attributed to the beginning of the 2nd millennium BP (Early Bronze Age).

2015 Aprofitament i transformació de matèries primeres per a l'elaboració d'ornaments durant la prehistòria recent (5600-3400 cal. ane) al nord-est de la península Ibèrica. Ph.D. thesis. Universitat Autònoma de Barcelona, Barcelano. <https://www.academia.edu/39820150/>.

A detailed study of the various ornaments of shell, stone, bone, and coral recovered from Late Neolithic to Late Bronze Age sites in the northeast of the Iberian Peninsula. Includes details concerning how the various ornaments were produced.

Pau, Claudia

2015 Los objetos de adorno personales campaniformes de los yacimientos granadinos: El caso de Cerro de la Virgen, Orce, Granada. *Revista Atlantica-Mediterranea* 17:63-271.

Reports on the beads and pendants of bone, shell, and animal teeth from a Bell Beaker site in southeastern Spain, including insight into usage and production technology.

Pauc, Paulette, Patrick Moinat, and Jacques Reinhard

2004 Le collier de la dame de Chamblandes. *euroREA* 1:103-118.

Discusses the replication of a necklace found with a female burial in Switzerland and attributed to the 4th millennium BC. Materials included marble, brown coal, shell, and seeds.

Reese, David S.

1999 The Pierced Calcarene Disk. In *Faunal Extinction in an Island Society: Pygmy Hippopotamus Hunters of Cyprus*, by A.H. Simmons, p. 151f. Kluwer Academic/Plenum, New York.

Describes a neolithic stone disc, 105 mm in diameter, 7 mm thick, with a beveled 4.75-mm central perforation. Various uses have been suggested for such discs but the author suggests they

were platforms for stone and shell beadmaking, the central hole serving to hold the piece being worked.

Velsink, Jan G.

2011 Minoïsche en Myceense stenen mallen voor reliëfornamenten en cultusvoorwerpen.

Ph.D. dissertation. University of Amsterdam, Amsterdam.

<https://dare.uva.nl/search?identifier=3c38146f-27d7-42aa-bab9-61987fb3ef42>.

Thorough investigation of the stone molds used to produce small relief ornaments such as beads and pendants of sheet gold, glass, and faience during the Aegean Bronze Age (ca. 3000-1000 BCE). Lengthy English summary.

White, Randall and Christian Normand

2015 Early and Archaic Aurignacian Personal Ornaments from Isturitz Cave: Technological and Regional Perspectives. In *Aurignacian Genius: Art, Technology and Society of the First Modern Humans in Europe, Proceedings of the International Symposium, April 08-10 2013, New York University*, edited by in Randall White and Raphaëlle Bourrillon, pp. 138-164. P@lethnology 7.

Focuses on the techniques used for perforating teeth; the chronological variation in the selection of animal teeth (and one human tooth); the raw materials used for the beads and pendants (amber, ivory, talc, bone); data concerning local personal ornament production (or not); the exploitation of amber and its provenance; and the existence of abundant personal ornaments (pendant-anthropomorphic sculpture and shells) in the Archaic Aurignacian levels.