



HAL
open science

Beyond the Roman World: A Decorated Glass Plate in Sudanese Nubia

Francigny Vincent, Henry Cosmo Bishop Wright

► **To cite this version:**

Francigny Vincent, Henry Cosmo Bishop Wright. Beyond the Roman World: A Decorated Glass Plate in Sudanese Nubia. *Journal of Glass Studies*, 2022, 64, pp.59-73. halshs-03921414

HAL Id: halshs-03921414

<https://shs.hal.science/halshs-03921414>

Submitted on 3 Jan 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

JOURNAL
OF GLASS
STUDIES

Volume 64 • 2022

The Corning Museum of Glass
Corning, New York
14830-2253

Editor

Karol B. Wight

Assistant Editor

Katherine A. Larson

Managing Editor

Suzanne Abrams Rebillard

Designer

Jacolyn S. Saunders

Copyeditors

Gloria Antoni

Kerri Cox Sullivan

Proofreader

Kerri Cox Sullivan

Editorial Advisers

Anastasios Antonaras, *Greece (2024)*

Stefano Carboni, *Australia and Saudi Arabia (2022)*

Kelly A. Conway, *United States (2022)*

Laure Dussubieux, *United States (2022)*

Ian C. Freestone, *United Kingdom (2024)*

Sylvia Fünfschilling, *Switzerland (2022)*

Yael Gorin-Rosen, *Israel (2022)*

Dedo von Kerssenbrock-Krosigk, *Germany (2024)*

Jens Kröger, *Germany (2022)*

Dwight P. Lanmon, *United States (2024)*

Irena Lazar, *Slovenia (2022)*

Reino Liefkes, *United Kingdom (2022)*

Teresa Medici, *Italy (2022)*

Thilo Rehren, *Cyprus (2024)*

Cristina Tonini, *Italy (2022)*

Marco Verità, *Italy (2022)*

Audrey Whitty, *Ireland (2022)*

© 2022 BY THE CORNING MUSEUM OF GLASS
CORNING, NEW YORK 14830-2253

Standard Book Number 978-0-87290-230-5
ISSN 0075-4250
Library of Congress Control Number 59-12390

The paper used in this publication meets the requirements of the American National Standard for Permanence of Paper for Printed Library Materials Z39.48-1984.

Corning Museum Staff Advisers

William Gudenrath

Christopher L. Maxwell

Alexandra M. Ruggiero

Susie J. Silbert

Members of the Advisory Board serve for three-year terms. Term expiration dates are listed for each adviser.

The *Journal of Glass Studies* is published by The Corning Museum of Glass, Jeffrey W. Evenson, Chairman of the Board; Karol B. Wight, President and Executive Director; Marianne W. Young, Secretary.

One volume is issued each year. The Index to the *Journal of Glass Studies*, vols. 1-15, 1959-1973, is also available. Past volumes (Vol. 1, 1959-Vol. 63, 2021) are available by subscription on JSTOR.

Orders for the *Journal of Glass Studies* and other Museum publications can be placed with The Shops at The Corning Museum of Glass.

Online: <https://shops.cmog.org>
By mail: The Shops
Corning Museum of Glass
One Museum Way
Corning, New York 14830-2253
By phone: (800) 723-9156

JOURNAL OF GLASS STUDIES

Contents

Volume 64 • 2022

Gonca Dardeniz and Julian Henderson with Martin Roe <i>Primary Evidence for Glassmaking in Late Bronze Age Alalakh/Tell Atchana (Amuq Valley, Turkey)</i>	11
Brigitte Borell and Laure Dussubieux <i>Exceptional Potash Glass Artifacts Excavated at Tissamaharama (Sri Lanka)</i>	33
Vincent Francigny and Henry Cosmo Bishop-Wright <i>Beyond the Roman World: A Decorated Glass Plate in Sudanese Nubia</i>	59
Hedvika Sedláčková, Helena Svobodová, and Dana Rohanová <i>A Lost Fragment of a Cage Cup Discovered in Prague by a Lucky Coincidence</i>	75
Carol Meyer and Laure Dussubieux <i>Emerald Green Glass from Aqaba</i>	85
Jo Wheeler <i>The Bortolussi Manuscript: A Newly Discovered Late Sixteenth-Century Recipe Book in Florence</i>	105
Adéla Minaříková <i>Newly Discovered Iconographic Sources for Wheel-Engraved Glass by Caspar Lehmann</i>	129
Julie Bellemare <i>A New Palette: Reassessing the Development of Enamel Colors in Early Eighteenth-Century China</i>	147
Nikolina Topić <i>Glass Rosary Beads: Archaeological Research in the Dubrovnik Area</i>	169
Petr Nový <i>The Story of Jablonec Costume Jewelry</i>	189
Paolo Zecchin <i>Le cioche veneziane</i>	213
Alok Kumar Kanungo and Laure Dussubieux <i>Indigenous Glass Manufacture in India: An Ethnographic Approach</i>	225

Articles are arranged chronologically by historical period.

Notes

Tomasz Purowski <i>Glass Beadmaking Techniques from the Bronze Age Based on Finds from Poland</i>	249
Katherine A. Larson <i>A Glass Rod with a Pomegranate Finial at The Corning Museum of Glass</i>	253
Christopher S. Lightfoot <i>Roman Cameo Glass in the Collections of the Museum of Art, Bowdoin College</i>	256
José A. Retamosa, Darío Bernal-Casasola, Salvador Domínguez-Bella, Javier Martínez-López, José J. Díaz, and José A. Expósito <i>A Glass Portrait from a Late Roman Halientic Context in Baelo Claudia (Tarifa, Spain)</i>	260
Danièle Foy, Franck Gabayet, Alexia Lattard, and Florence Mocci <i>Pendentifs estampés de l'Antiquité tardive découverts en France</i>	265
Katja Broschat <i>A Glint of Light on Broken Glass: A "Hot" Repair on a Late Roman Cage Cup from Autun</i>	269
Tim Penn and Louise Blanke <i>A Mold-Blown Flask with Christian Symbols Found at Jarash, Jordan</i>	274
Renata Kucharczyk <i>A Lion and Vegetal Motif on an Early Islamic Scratch-Engraved Glass from Alexandria</i>	277
Rosa Barovier Mentasti and Cristina Tonini <i>A Venetian a rosette Saltcellar with Globular Feet</i>	282
Paolo Zecchin <i>Le fornaci muranesi dalla fine del Seicento all'inizio dell'Ottocento</i>	284
Linnea Seidling <i>Women in Glasshouses: Glass Factory Jobs for Women Through the Lens of Two Labor Surveys</i>	289
<i>The Corning Museum of Glass Awards Rakow Grants for 2022 to Six Projects</i>	292
Obituaries	
David G. Giles (1940–2022)	295
Gregory A. Merkel (1954–2022)	296
Information for Contributors	298

Beyond the Roman World: A Decorated Glass Plate in Sudanese Nubia

Vincent Francigny and Henry Cosmo Bishop-Wright

The Kingdom of Meroe occupied the area of modern Sudan and was contemporary with Ptolemaic and Roman Egypt. Its position on the periphery of the Hellenistic and Roman worlds granted it access to wide-ranging trade networks, and, as a result, imported glassware is a consistent feature of Meroitic archaeology. This paper presents a hitherto unpublished glass plate recovered from a Meroitic grave on Sai Island (about 1,000 km south of Alexandria). This exquisitely decorated object is identified as the most southerly example of Fremersdorf's so-called Lynceus Group of facet-cut glassware, popular in the third century CE and thought to have been produced in Cologne. The discussion contextualizes the Sai Plate within Meroitic studies and includes a detailed assessment of its date and origin. Based on a considered review of its stylistic and iconographic parallels, it is identified as a product of Fremersdorf's Cologne workshop and represents an extraordinary example of long-distance trade in luxury glassware.

SINCE THE EARLY twentieth-century inauguration of formal archaeology south of the First Cataract, imported vessel glass has been recovered in modest quantities from Meroitic contexts across Sudan. Hellenistic material is infrequent and consists of little more than a core-formed amphoriskos from Sedeinga,¹ and the well-known selection of cast bowls from the royal cemeteries at Gebel Barkal and Meroe (Fig. 1).² However, the discovery of glassblowing and the subsequent first-century CE mass-production of utilitarian forms resulted in increased exportation of vessels to the Kingdom of Meroe (270 BCE–340 CE). Thus, blown-glass containers of various forms have been recovered in relative proliferation from Meroitic mortuary sites.³ Such finds are concentrated in the north, between the Second Cataract and the Roman frontier at Maharraqa,⁴ but are also known around the capital Meroe and as far south as Abu Geili on the Blue Nile.⁵

A representative selection of glassware was recovered from the major Meroitic cemetery of Faras during the Oxford University excavations of 1910–1912.⁶ Of the 60 diagnostic vessels

from this site, plain unguentaria, aryballoi with faceted decoration, and mold-blown flagons with reeded handles are dominant (Fig. 2).⁷ Such forms are well attested on other Meroitic sites and are found throughout Roman Egypt, whence they were doubtless imported as receptacles for scented oils or powdered kohl.⁸ Whilst of great significance to the increasing scholarly interest in material connectivity, these utilitarian vessels are not unexpected from such a peripheral region of the Roman world. More surprising is the presence of luxury vessels: a late first-century CE “Almond Beaker” from Faras (Fig. 2D),⁹ head

1. Leclant 1971; Nenna 2010, 125, fig. 166.

2. Stern 1977, 1981.

3. For concise syntheses on imported glass from Meroitic contexts, see Hofmann 1978, 200–213; Gradel 2012, 114–119.

4. See, for example, Woolley and Randall-Maclver 1910, 37–39; Griffith 1924b, plates XXXI.Ia–IIIj.

5. Crawford and Addison 1951, 92 (O.C. 463).

6. Griffith 1924a, 1925.

7. For a summary of vessel glass from Meroitic Faras, see Bishop-Wright, forthcoming.

8. See, for example, Harden 1936, plates IX–XX; Bailey 2007, fig. 8.15–.19; Brun 2003b, figs. 5–8.

9. Griffith 1924b, plate LI.22.



FIG. 1. Map of Egypt and Sudan centered on the Nubian region. (Map: © V. Francigny)



FIG. 3. Mold-blown janiform flask from Sai Island Meroitic cemetery 8-B-52.B. H. 9.3 cm, Diam. (max.) 4.7 cm. SFDS - Sudan Nation Museum, Khartoum. (Photo: © V. Francigny)

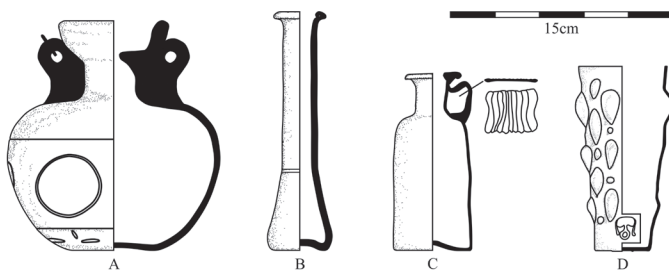


FIG. 2. Glass vessels from Faras Meroitic cemetery. (Drawing: © H. C. Bishop-Wright)

flasks of cobalt blue or opaque yellow from Gebel Adda and Sai (Fig. 3),¹⁰ marbled polychrome bottles from Berber and Meroe City,¹¹ and three spectacular cobalt-blue flutes with enameled figurative scenes from tombs at Sedeinga and Meroe.¹² In terms of morphology, execution, and style, however, the engraved glass

plate from Sai Island that is the subject of this paper is exceptional (Figs. 4–5).

10. Millet 1963, fig. 10.

11. Bashir 2013; Garstang, Sayce, and Griffith 1911, plate XXVII.3.

12. Leclant 1971, 254, plate XLVI; Leclant 1973; Brill 1991; Dunham 1957, fig. 83: 21-12-47c.



FIG. 4. Drawing of decorated plate from Sai Island Meroitic cemetery 8-B-5.A. Diam. 18.3 cm, Th. about 0.1 cm. (Drawing: © V. Francigny)

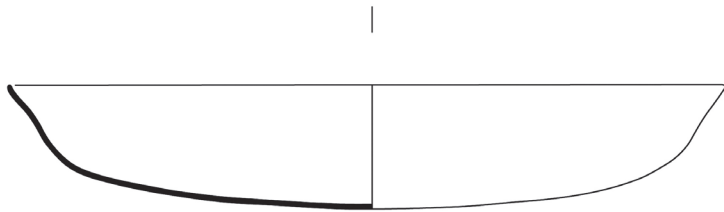


FIG. 5. Decorated plate from Sai Island Meroitic cemetery 8-B-5.A. Diam. 18.3 cm, Th. about 0.1 cm. SFDS-Sudan Nation Museum, Khartoum. (© V. Francigny)

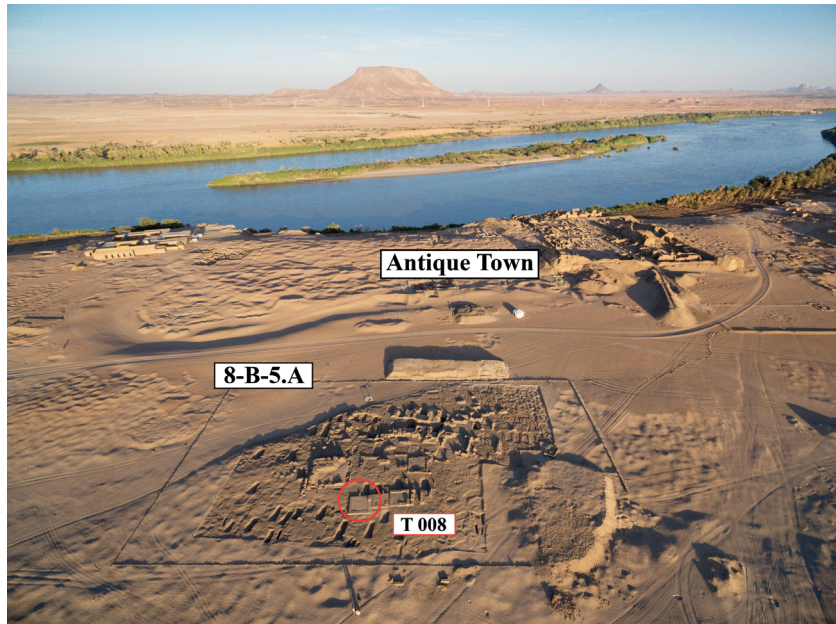


FIG. 6. Aerial view of the Meroitic cemetery 8-B-5.A at Sai Island.
(Photo: © V. Francigny)

CONTEXT OF FIND

After the defeat of Marcus Antonius and Cleopatra VII at the Battle of Actium in 31 BCE, Egypt became a Roman province with its southern frontier organized at Maharraga, about 125 km south of Aswan. The region directly beyond this frontier—“Lower Nubia”—then served as a buffer zone between the nascent Roman Empire to the north and the Kingdom of Meroe to the south. The relationship between these powers was initially turbulent and, in the 20s BCE, culminated in a short period of conflict between Egypt’s third prefect, Publius Petronius, and the Meroitic queen Amanirenas. This conflict was resolved in 21 BCE and, ignoring the disruptive actions of antagonistic desert tribes (Blemmyes and Nobades) who periodically attempted to settle the frontier region, resulted in sustained peace between Rome and Meroe. Consequently, the importance of Lower Nubia as a region of exchange increased: it mediated the long-distance trade of resources from sub-Saharan Africa (ebony, ivory, slaves, etc.), allowed the diffusion of

Roman material culture south, and, to a limited extent, facilitated Roman architectural and religious influence on the Meroitic kingdom. It is, therefore, common to find objects imported from the Roman Empire in Meroitic royal and elite graves, particularly those from the north of the kingdom (i.e., close to the border with Egypt) and around the capital, Meroe.¹³

At Sai, a large island of 11 by 4 km located south of the Second Cataract, a wealthy Meroitic community is known to have been buried near an antique town founded during the Egyptian New Kingdom colonial period (Fig. 6). Whilst the corresponding Meroitic settlement has yet to be located, the cemetery is related to a Meroitic temple that was in use at least as early as the first century CE.¹⁴ First discovered and explored by

13. See de Voogt, Francigny, and Baas 2017.

14. The first century CE is attested by a royal inscription from the king Natakamani and the candace Amanitore (Francigny 2011, 2015).

Francis Geus in 1996,¹⁵ the cemetery was named “8-B-5.A,” corresponding to Hinkel’s *The Archaeological Map of Sudan*.¹⁶

8-B-5.A consists of several rows of graves, some of which were covered by small, mudbrick pyramids. Such superstructures were commonly used by the Meroitic elite as diminutive imitations of the royal tombs at Meroe and Barkal, which, in turn, imitated Napatan (eighth–third century BCE) mortuary tradition.¹⁷ On the eastern face of these pyramids, a small chapel was usually erected to contain ceremonial artifacts dedicated to the cult of the dead: namely a funerary stela, in front of which an offering table was placed on a small pedestal. The burial chamber was located beneath the superstructure and was accessed by a descending slope or stairway cut into the soil. A mudbrick or stone wall was built at the base of this descent and could easily be deconstructed to facilitate the addition of further burials in the chamber. Such reuse was common in the Meroitic period, and graves sometimes housed the remains of family units over several generations. This practice problematizes the assessment of chronology, as assemblages are often disturbed by later burials.¹⁸ Further difficulties are presented by frequent plundering that, in some cases, occurred during the Meroitic period itself. Consequently, undisturbed burials are extremely rare in Meroitic archaeology and the dating of funerary deposits is seldom unambiguous.¹⁹

During the 1997 season at 8-B-5.A, a series of glass shards were recovered from grave T 008.²⁰ Prior to their reconstruction, these shards were identified as part of a cup, and a single fragment decorated with a fish was published in 1998 (Fig. 7).²¹ The death of Francis Geus in 2005 prevented further investigation and the mission at Sai was temporarily paused until 2009, when, after a five-year hiatus, excavation of 8-B-5.A resumed.²² It was only in 2017, however, that resources were sufficient to finish the work on the cemetery and examine the mission’s archives. This encouraged a reassessment of the 1997 glass fragments from T 008 that, in the interim



FIG. 7. Fragment of the plate from Sai Island showing a fish. (Photo: © Sai Mission)

period, had been restored in France and returned to the National Museum of Sudan.

The funerary deposit of T 008 had been disturbed by plunderers and only six objects were reliably associated with the glass plate. They were recovered from a thick layer of hardened soil composed of sand and debris that had formed after the door was damaged and the interior of the chamber exposed to air, wind, and possibly rain. In addition to the plate, the assemblage contained a bronze cosmetic stick, a bronze finger ring, a wooden kohl container decorated with ivory inlay, a diminutive three-footed bronze bowl engraved with a vine scroll (Fig. 8), and an intact aryballos and broken piri-form unguentarium of transparent colorless glass (Figs. 9–10).

15. Geus 1998.

16. Hinkel 1977.

17. Francigny 2014.

18. de Voogt and Francigny 2012.

19. Francigny and David 2013.

20. Formerly recorded as T 306.

21. Geus 1998, 102, plate XVIa.

22. Francigny 2009a, 2009b.



FIG. 8. *Three-footed bronze bowl from Sai Island Meroitic cemetery 8-B-5.A. SFDS - Sudan Nation Museum, Khartoum. (Photo: © R. David)*

Of the anthropological remains, little could be discerned, as the bodies had been rifled and removed from the burial chamber by plunderers. However, an inscribed stela from the funerary chapel had fallen into the grave's descent, where it was protected from surface erosion and was still legible when excavated. It was dedicated to the woman *Par[.] - qu-la* and dated on palaeographic grounds to the mid-third century CE.²³ Whilst *Par[.] - qu-la* had no title, she was related to three local officials and evidently belonged to an influential family. She may, therefore, have been the original owner of the glass plate.

The abundance of Roman material in T 008—the glassware and bronze bowl—is not an isolated phenomenon. Throughout Meroitic Sudan, mixed inventories of local and imported artifacts are commonly associated with Meroitic royal and elite burials. Indeed, other graves at Sai produced various imported glass vessels, intaglio seal rings, coins, and dice.²⁴ Excluding the glass vessels that arrived as containers for perfumed oils, these objects demonstrate a connection with the Roman world that extends beyond commercial exchange. They could only be acquired through long-distance trade, diplomatic gifts, or direct contact with Roman Egypt through pilgrimage or embassy. This encouraged their use as prestige goods that, for the elite, were vital tools with which to express status and wealth. In Meroitic contexts, therefore, imported objects gained an applied social



FIG. 9. *Glass aryballos from Sai Island Meroitic cemetery 8-B-5.A. SFDS - Sudan Nation Museum, Khartoum. (Photo: © R. David)*



FIG. 10. *Glass unguentarium from Sai Island Meroitic cemetery 8-B-5.A. (Current whereabouts unknown.) (Photo: © R. David)*

value that exceeded their purely economic worth. Coins, for example, were useless to the non-monetized Meroitic economy but, as demonstrated by evidence from Qasr Ibrim, were highly valued as religious offerings.²⁵ Counters and

23. Rilly 2008, 145.

24. In a grave dated from the second-third century CE; see Gradel 2007, 142, fig. 1.

25. Plumley 1975, 17.

dice, meanwhile, were used by the Meroitic elite to display their knowledge of the external world by engaging with Roman gaming.²⁶

DESCRIPTION

Having been restored with limited *lacunae*, the glass fragments from T 008 were shown to constitute a medium-size plate (183 mm in diameter) of thin (about 1 mm), transparent colorless glass containing numerous pinprick bubbles (see Figures 4–5).²⁷ It has oblique walls that are everted toward a ground rim, and a slightly convex base. Its inside face is undecorated, but the outside is subject to a variety of cut techniques used to create a composite scene.

The border was scratched freehand with a sharp point (burin) and consists of a vegetal garland composed of two opposite “running-dog” patterns. This design is reasonably homogenous, but some irregularities are observed on the left side where the artist ended his work. It is followed by four concentric circles that frame the *tondo* and were wheel-cut whilst the plate was rotated: the engraver started each cut from the bottom right, where a momentary loss of pressure on the wheel is indicated by short breaks in the circles. The main motif was completed by carving shallow facets into the surface of the glass with a round-tipped drill or wheel to create the approximate shape of the central figure, sea creatures, and column. These facets were polished and internal detail was scratched on freehand. Further facets are randomly scattered across the scene in clusters of two or three and, combined with curvilinear scratches, enhance the naturalism of the image.

The use of facets to compose the primary design of the Sai Plate negates the necessity of engraved outlines. Instead, the figurative elements are defined by the edge of the facet and are only legible when viewed from the uncut interior. From this side, the cuts create the impression of three-dimensionality, as if the image were carved in relief. Viewed from the exterior, however, the contours disappear and the image is flat and ill-defined. This technique corresponds to

the so-called Lynceus Group discussed by Fremersdorf and is returned to below.²⁸

The central design is a man leaning against a twisted column with his right foot and left arm, whilst glancing over his left shoulder and standing on a floor of six horizontal facets. He wears a tunic that is drawn in at the waist and terminates with a flared skirt decorated with circles and concentric lines. On his head is a peaked cap that shades his forehead and neck and, based on the parallel lines, has the appearance of wicker or straw. Vague marks over his feet may indicate that he also wears sandals. In his right hand, he holds a fishing rod attached to a line and baited hook. Below his left hand is a wicker basket or lidded creel suspended from his belt. He is surrounded by eight large swimming fish and a squid identifiable by two long feeding tentacles.²⁹ The latter demonstrates that a marine environment was intended.

Above the figure’s head, two pairs of uneven cut lines create a horizontal register that frames eight oval facets. The function of this design is uncertain: it may simply be a decorative border intended to orient the scene for the viewer.³⁰ Alternatively, it could represent an architectural feature designed to complement the column and suggest a built environment in which we might recognize a colonnade and central portico.³¹ If

26. See, for example, the remains of a *Duodecim Scripta* board and pieces found at the nearby site of Sedeinga and known as the southernmost evidence in the Roman world for this game; de Voogt, Francigny, and Baas 2017.

27. We note some yellowish tint, probably due to wear and light weathering.

28. Fremersdorf 1951, 1.

29. The morphology of the fish, particularly the short shape with a long continuous dorsal fin, could correspond to the sea bream—perhaps the famous *Orata* valued by the Romans.

30. For similar designs on cut-glass vessels that also belong to the Lynceus Group, see Fremersdorf 1951, 8, fig. 4.1, plate 7; Nenna 2003, 363, fig. 10; Brun 2003a, fig. 241.39. Registers of facets framed by cut lines are also relatively frequent on fourth-century CE flagons with abraded decoration; see Doppelfeld 1966, figs. 150–151; Harden and others 1968, 81, fig. 105; Stern 2001, 164.

31. Although belonging to the fourth century CE, a useful parallel is found on a cut-glass bowl depicting Constantine the Great published by Fremersdorf (1951, 24, plate 23.1).

so, the combination of urban and marine settings recalls a seaside resort such as Oplontis, where fishing may have been a leisure activity. Such an interpretation is harmonious with the well-dressed central figure casually posing in contrapposto and would have appealed to the elite audience for whom the plate was doubtless intended.

The use of fish and crustaceans as decorative motifs on Roman glassware is relatively well known and is particularly common on Egyptian vessels corresponding to another style of cut decoration: the so-called Contour Grooves Group.³² Fish also feature on a spectacular enameled bowl from a late first-century CE context at Berenike,³³ and various cut-glass fragments of the Lynceus Group excavated at Karanis or acquired in Egypt.³⁴ The main scene of the Sai Plate is, however, unique and may have been inspired by early Roman mosaics where similar images of fishermen feature in broader schemes of aquatic fauna or maritime mythology.³⁵ This link with mosaics strengthens the hypothesis that the subject matter of the plate was deliberately selected to encourage a connection with luxury living and, thus, appeal to its intended audience.

DATE AND PROVENANCE

In the early Roman period, raw glass made from sand and natron was produced in the Levant and Egypt, whence it was exported to

secondary workshops throughout the empire.³⁶ For the Kingdom of Meroe, the closest primary-glass workshops were located in the Nile Delta and Wadi Natrun, with Alexandria functioning as the major center of secondary production and trade.³⁷ Recent analysis based on hafnium isotopes has confirmed that antimony-decolorized glass, as opposed to Levantine manganese-decolorized glass, was produced in Egypt during the Roman period.³⁸ This is significant as it raises the possibility that high-quality vessels such as the Sai Plate were products of an Egyptian workshop that capitalized on the local availability of decolorized “raw” glass. It does not, however, preclude the possibility that the Sai Plate was produced outside of Egypt, particularly as no scientific analysis identifying the source of its primary glass has been performed.

Regarding the date, several chronological markers suggest that the plate was produced in the third century CE. This is recommended by the Meroitic inscription of the lady *Par[.]-qu-la* (see above, p. 64) and is substantiated by an assessment of the other objects from grave T 008. The transparent colorless glass of the unguentarium renders an early date unlikely, and its form corresponds to a mid-second-fourth century CE type (see Figure 10).³⁹ This is supported by the three-footed bronze bowl and the classic Egyptian aryballos (see Figures 8–9), both of which are well known from Lower Nubia and commonly appear in third-century CE contexts.⁴⁰ The date of the Sai Plate, therefore,

32. See Stern 2001, 136–137, 156–158; Nenna 2003, 361–363, figs. 6–8; Nenna 2007, 141–142; Rodziewicz 2005, 26, plate 8.171; Whitehouse 1997, 237, no. 401.

33. Nicholson and Price 2003, 390–391; Nicholson and Price 2007, 220–224.

34. Harden 1969, fig. 3.183, 312; Nenna 2003, 363–364, fig. 9; Whitehouse 1997, 245, no. 417.

35. Such representations of aquatic life shed light on various ecosystems and the dispersal of Greco-Roman myths and traditions far from Rome. In comparison with the Sai Plate, a detailed example of a squid can be seen on the floor of the *tepidarium* in Herculaneum. For scenes representing a fisherman holding a rod and a wicker creel, see the Roman mosaic from Cuicul at the Djemila museum in Algeria. For other fishing

scenes, see, for example, the collection of Roman marine mosaics recovered from the House of Dionysus and Ulysses at Dougga and currently on display at the Bardo Museum in Tunisia. See also Matteis 2004; Marzano 2018, 438.

36. Nenna 2008.

37. Jackson and others 2016; Nenna 2015.

38. Barfod and others 2020.

39. Hayes 1975, 137, no. 554-8; 141, no. 588; Arveiller-Dulong and Nenna 2005, 443, fig. 1242.

40. For a similar bronze bowl from Karanog, see O'Connor 1993, 159, no. 159; Wenig 1978, 261, no. 197; for Egyptian aryballoi, see Harden 1936, 252, 259–261, nos. 767–782; Fleming 1996, 24–25, fig. 23.



FIG. 11. Unrolled decoration of a Cologne glass beaker depicting Hypermnestra, Lynceus, and Pothos. Römisch-Germanisches Museum, Cologne. (Drawing: after Fremersdorf 1951, plate 2.1)

is relatively secure, but the question of origin is complicated by a detailed assessment of its decoration.

As stated above, the techniques used to decorate the Sai Plate correspond to a well-known collection of glass vessels named the Lynceus Group after a third-century CE engraved cup from Cologne depicting Hypermnestra, Lynceus, and Pothos (Fig. 11).⁴¹ Vessels of this group frequently bear mythical scenes annotated with Greek inscriptions,⁴² but their defining characteristic is the use of facets with scratched internal detail to create the shape of figures. This technique differentiates the group from other recognized schools of glass cutting that rely on engraved outlines to define their figures: namely, the aforementioned Contour Grooves Group and Harden's so-called Wint Hill Group.⁴³ Based on the concentration of third-century CE examples from Cologne, Fremersdorf asserted that the Lynceus Group was locally produced and likely the product of a single workshop.⁴⁴ This was disputed by Harden, who cited the Greek inscriptions as evidence against a Western provenance and, using fragmentary examples from Karanis, suggested Alexandrian production as early as the second century CE.⁴⁵ Subsequent research has uncovered examples as widely dispersed as Caerleon and Dura Europos,⁴⁶ hence multiple late second–third century CE workshops are now suggested.⁴⁷

An emblematic example of the Lynceus Group is a bowl found at Leuna near Leipzig that is now in the collection of the British Museum (Fig. 12).⁴⁸ It parallels the Sai Plate in its transparent colorless glass and the execution of its



FIG. 12. Decorated glass bowl found in Leuna, Germany. British Museum, London, 1868,0501.320. (Photo: © The Trustees of the British Museum)

decoration. This applies, particularly, to the skillful use of modular facets to depict the figure's limbs, and the engraved curvilinear lines that constitute their internal detail.

The running-dog pattern that decorates the Sai Plate is also attested in the Lynceus Group and is found on five vessels from Germany that

41. Fremersdorf 1951, no. 1, plates 1 and 2.1; also see Harden 1987, 198–199, no. 108; Nenna 2003, 364–366; Fünfschilling 2015, 92–95; Foy and others 2018, 110–111.

42. Fremersdorf 1951, plates 1, 3, 5.

43. Stern 2001, 136–167, 156–158; Harden 1960, 67.

44. Fremersdorf 1951, 23–25.

45. Harden 1969, 54n49.

46. Clairmont 1963, 57–59, no. 235; Boon 1968. For a useful, if incomplete, list of Lynceus Group vessels, see Meyer 1992, 23–24.

47. Nenna 2003, 366; Foy and others 2018, 348.

48. Museum entry S.320; see also Slade 1871, 57, figs. 74–75.



FIG. 13. Colorless glass bowl of the Cologne Lynceus Group with a double running-dog motif below the rim. (Current whereabouts unknown. Thought by Fremersdorf to have been burned at the end of World War II.) (Photo: after Fremersdorf 1951, plate 4.1)

are discussed by Fremersdorf as products of a Cologne workshop.⁴⁹ As on the Sai Plate, the execution of this motif is cursory and always produced freehand with a burin. One of these bowls even utilizes an identical register of two running-dog bands arranged in mirror image (Fig. 13).⁵⁰ In contrast, the motif is scarce on the Egyptian comparanda. Indeed, the only published example is roughly executed—hardly more than a chain of garlands—and belongs to a goblet from Douch (Kharga) identified by Nenna as an example of the “late” Lynceus Group and dated to the fourth century CE.⁵¹ The scarcity of this motif in Egypt, combined with its relative proliferation on the German vessels, suggests a connection between the Sai Plate and the Cologne workshop. This is supported by a detailed assessment of the central figure.

The skirt of the Sai fisherman, including its internal detail, is exactly paralleled on two cups from Cologne and a two-handled bottle found further south at Hohensülzen (see Figure 11).⁵² All three vessels belong to the Lynceus Group and the two cups also include the running-dog motif below their rims. Along with two further German glasses,⁵³ including the Leuna bowl, they exhibit the same characteristic treatment of their figures: the facets that constitute the limbs lack internal detail except for specific clusters of parallel scratches on the calf, thigh,

bicep, and forearm. This idiosyncrasy is evident on the Sai Plate, where internal detail is delineated by identical scratched lines. When these factors are considered holistically—the adherence to the Lynceus style, the running-dog motif, the skirt, the pattern of scratches on the limbs—the analogy between the Sai Plate and the German vessels cannot be ignored.

A further vessel from Cologne, likewise published by Fremersdorf and assigned to the Lynceus Group, must also be considered. It is a colorless glass bowl decorated with a central medallion containing a male bust in left profile surrounded by a ring of fruit baskets, grape bunches, a duck, and a fish (Fig. 14).⁵⁴ Of particular significance to the Sai Plate, the bust wears a peaked cap and holds what appears to be a fishing rod or a harpoon. It is reasonable to assume that an aquatic environment is intended and that the bust represents a fisherman. A second bowl, almost identical to this Cologne vessel, is published from Bakar (Croatia) and is decorated with a similar bust and border of marine creatures, including a squid.⁵⁵ Extraordinarily, the same profiled bust wearing a peaked hat and holding a fishing rod is found on two unprovenanced colorless glass bowls of the Contour Grooves Group.⁵⁶ Both vessels are dated to the late second–third centuries CE and have similar borders of sea creatures including fish and squid. Considering these four bowls, the image of a fisherman wearing a peaked hat and clutching a rod was evidently a stock motif of third-century CE figure-cut glassware. The Sai fisherman is clearly related to this motif, and it is significant that, of the four comparative vessels, the

49. Fremersdorf 1951, nos. 1, 3, 4, 5, 7, plates 1, 3, 4–5, 8.2/4, 9.4; Harden 1960, 46.

50. Fremersdorf 1951, no. 4, plates 4–5.

51. Nenna 2003, 365–366, fig. 12.

52. Fremersdorf 1951, nos. 1, 7, 12 = plates 1.3, 2.1, 7, 8.2.

53. Fremersdorf 1951, nos. 4–5, plates 2.2, 3, 4, 5.

54. Fremersdorf 1951, no. 21, fig. 6, plate 13.1.

55. Fremersdorf 1951, no. 22, plate 13.2.

56. Whitehouse 1997, 237, no. 401; Stern 2001, 156–158; Nenna 2003, 361–363, figs. 6–7.

two that are provenanced were found in western Europe and belong to the Lynceus Group. This observation, combined with the stylistic analogies with other German vessels of the Lynceus Group (see above), strongly suggests that the Sai Plate originated in Fremersdorf's Cologne workshop. It is, nevertheless, essential to survey comparanda from Egypt and Sudan before any conclusion is offered.

In Sudan, parallels from Meroitic contexts are indirect. Whilst engraving is relatively frequent on utilitarian forms and, in rare instances, tableware, it never exhibits the technical complexity of the Sai Plate.⁵⁷ Instead, it is restricted to simple wheel-cut bands, circles, and ovoid facets (compare Figure 2A): the only figurative glasses are the enameled vessels from Meroe and Sedeinga.⁵⁸ Morphological parallels are similarly vague, but a shallow bowl of colorless glass from Gabati and two colorless bowls with cut decoration from Sedeinga are tolerably close.⁵⁹

From Egypt, it is useful to consider a fragment of a colorless glass plate from Elephantine decorated with two incised fish within a wheel-cut *tondo*.⁶⁰ Although the fish are not cut in the Lynceus style, the iconography is relevant and may relate to a series of ceramic dishes decorated with painted fish and produced in connection with the annual Elephantine festival of inundation ("Somasia").⁶¹ An important example of these Elephantinian "Somasia vessels" is an unstratified ceramic plate painted with a single figure surrounded by fish.⁶² This scheme recalls the Sai Plate, but major differences forbid either a connection between the two vessels or the possibility that the Sai Plate was manufactured on Elephantine: the contrapposto of the Sai figure relies on classical—not Egyptian—tradition and the activity of fishing strongly recalls the aforementioned Roman mosaics and Cologne glasses. Furthermore, a marine environment, as opposed to a Nilotic scene, is indicated by the squid, and the general quality of the plate is indicative of a major glasshouse, not the Elephantine workshop.

Elsewhere in Egypt there is no direct comparandum but, as discussed, colorless glass vessels



FIG. 14. Colorless glass bowl of the Cologne Lynceus Group with a central bust wearing a peaked hat. Römisch-Germanisches Museum, Cologne. (Photo: after Fremersdorf 1951, fig. 6)

decorated with sea creatures are well known.⁶³ In addition, glassware attributed to the Lynceus Group is published from Berenike,⁶⁴ Douch (Kharga),⁶⁵ Karanis,⁶⁶ Maximianan,⁶⁷ and Quseir Al-Qadim,⁶⁸ and various facet-cut fragments in The Corning Museum of Glass are said to have been acquired in Egypt.⁶⁹ None of these Egyptian examples offer such close stylistic or iconographic parallels to the Sai Plate as the

57. For example, Woolley and Randall-MacIver 1910, plate 88; Leclant 1973, figs. 2–4; Cool 1996, 203–204, fig. 3.3.

58. Brill 1991; Berger-el Naggar and Drieux 1997, fig. 2.

59. Edwards 1998, 67, fig. 3.1; Cool 1996, 203–204, fig. 3.3.

60. Rodziewicz 2005, 26, plate 8.171.

61. Rodziewicz 2005, 65–66.

62. Rodziewicz 2005, 73, fig. 16.1.

63. Above, notes 32–34.

64. Nicholson 1998, 282–283, fig. 14-2.

65. Nenna 2003, 364–366, figs. 12–14.

66. Harden 1969, 54, fig. 3.

67. Brun 2003a, 517–518, fig. 241.36–41.

68. Meyer 1992, 22, plate 5.88.

69. Whitehouse 1997, 239–242, 245, nos. 404–406, 408, 416, 417.

vessels from Cologne. Nevertheless, the Quseir “Hero Cup” is significant as it depicts a central medallion containing a male bust in right profile wearing a peaked cap. Although fragmentary, this clearly corresponds to the “Fisherman Bust Bowls” discussed above and appears to represent a fifth example of the type. If so, its presence in Egypt supports the suggestion that this was a stock motif of third-century CE figure-cut glass and may have been utilized by multiple workshops.

The Egyptian examples of the Lynceus Group support the existence of a specialist workshop producing such vessels in Egypt from the late second century CE. Therefore, the current consensus that figure-cut glassware in the Lynceus style was a product of multiple glasshouses (likely Alexandria and Cologne) is not disputed.⁷⁰ For reasons of geography, it is tempting to assign the Sai Plate to a hypothetical Egyptian workshop. However, the analogy with multiple vessels from Europe, namely Cologne, is extremely convincing. For this reason, we propose that the Sai Plate was a German product and is an extraordinary example of long-distance trade in luxury glassware that, unusually for the Nile Valley, can be accurately dated from its archaeological context.

CONCLUSION

To its Meroitic owner, the Sai Plate was an object of great prestige that, with its unfamiliar sea creatures and exotically attired fisherman, offered a direct connection with the Roman world. The classical iconography implies that it was not originally intended for export outside of the Roman Empire. Nevertheless, through the mechanism of long-distance trade, it was deposited in an elite Meroitic grave on Sai Island over 4,000 km from its proposed point of production in Cologne. An alternative, “middle ground,” hypothesis might be that it was, in fact, an Alexandrian product and evidences a close professional connection with the master who produced the German vessels.⁷¹ However, this is conjectural and until further evidence from

Egypt emerges, we identify the Sai Plate as a product of Fremersdorf’s Cologne workshop. It is a remarkably well-preserved example of the Lynceus Group with a contextual date of about 250 CE. It demonstrates the wide dispersal of luxury figure-cut glassware and reminds us of the importance of material discovered beyond the Roman imperial frontiers.

Vincent Francigny
Chargé de Recherche
CNRS, UMR 8167, *Orient & Méditerranée*
Sorbonne Université
Paris, France
vincent.francigny@cnrs.fr

Henry Cosmo Bishop-Wright
Project Curator
Middle East Department
The British Museum
London, England
bishopwright.h@gmail.com

WORKS CITED

AIHV = Association Internationale pour l’Histoire du Verre

Arveiller-Dulong, Véronique, and Marie-Dominique Nenna. 2005. *Les verres du Musée du Louvre II: Vaisselle et contenants du I^{er} siècle au début du VII^e siècle après J.-C.* Paris: Musée du Louvre Éditions.

Bailey, Donald M. 2007. “The Glass Vessels.” In *The Roman Imperial Quarries: Survey and Excavations at Mons Porphyrites*, vol. 2, *The Excavations*, edited by D. Peacock and V. A. Maxfield, 233–266. London: Egypt Exploration Society.

70. Above, note 47.

71. Fleming, for example, sees in the Leuna bowl (Fig. 12) an early Egyptian (Alexandrian) production, around the second half of the second century CE, that preceded and influenced the cut and engraved glassware later produced in Cologne; see Fleming 1996, 35, fig. 39.

- Barfod, Gry, Ian Freestone, Charles Leshner, Achim Lichtenberger, and Rubina Raja. 2020. “‘Alexandrian’ Glass Confirmed by Hafnium Isotopes.” *Scientific Reports* 10. doi: 10.1038/s41598-020-68089-w.
- Bashir, Mahmoud Suleiman. 2013. “A Third Season of Rescue Excavations in the Meroitic Cemetery at Berber, October 2012.” *Sudan & Nubia* 17: 90–100.
- Berger-el Naggar, Catherine, and Monique Drieux. 1997. “Une nouvelle verrerie découverte en Nubie Soudanaise.” *Techne* 6: 19–21.
- Bishop-Wright, Henry Cosmo. Forthcoming. “Glass Vessels from the Meroitic Cemetery at Faras, Sudanese Nubia.” In *Annales du 22^e congrès de l’AIHV*.
- Boon, George C. 1968. “A Roman Figure-Cut Vessel from Caerleon.” *Journal of Glass Studies* 10: 80–84. <https://www.jstor.org/stable/24182794>.
- Brill, Robert H. 1991. “Scientific Investigations of Some Glasses from Sedeinga.” *Journal of Glass Studies* 33: 11–28. <https://www.jstor.org/stable/24190823>.
- Brun, Jean-Pierre. 2003a. “Les objets en verre.” In *La route de Myos Hormos: L’armée Romaine dans le désert Oriental d’Égypte*, edited by H. Cuvigny, 515–537. Cairo: Institut Français d’Archéologie Orientale.
- . 2003b. “Le verre dans le désert oriental d’Égypte: Contextes datés.” In Foy and Nenna 2003, 377–387.
- Clairmont, Christoph W. 1963. *The Excavations at Dura Europos*, Final Report 4, Part 5: *The Glass Vessels*. New Haven: Dura-Europos Publications.
- Cool, Hilary E. M. 1996. “Sedeinga and the Glass Vessels of the Kingdom of Meroe.” *Annales du 13^e congrès de l’AIHV, Pays-Bas, 28 août–1 septembre 1995*, edited by Annet van Wiecken, 201–212. Lochem: AIHV.
- Crawford, Osbert Guy Stanhope, and Frank Addison. 1951. *Abu Geili. Text and Plates*. London: Oxford University Press.
- De Matteis, Lorella. 2004. *Mosaici di Cos: Dagli scavi delle Missioni Italiane e Tedesche, 1900–1945*. Athens: Scuola Archaeologica Italiana di Atene.
- de Voogt, Alex, and Vincent Francigny. 2012. “Opening a Grave in Antiquity: Formation and Interpretation in the Kingdom of Meroe.” *Journal of African Archaeology* 10, no. 1: 59–70.
- de Voogt, Alex, Vincent Francigny, and Peter Baas. 2017. “Meroitic Graves with Roman Games: Elites Moving the Borders of Play.” *Zeitschrift der Deutschen Morgenländischen Gesellschaft* 167, no. 1: 22–33.
- Doppelfeld, Otto. 1966. *Römisches und fränkisches Glas in Köln*. Cologne: Greven.
- Dunham, Dows. 1957. *Royal Tombs at Meroë and Barkal: The Royal Cemeteries of Kush*, vol. 4. Boston: Museum of Fine Arts.
- Edwards, David N. 1998. *Gabati: A Meroitic, Post-Meroitic, and Medieval Cemetery in Central Sudan*, vol. 1. Sudan Archaeological Research Society Publication Number 3. Oxford: Archaeopress.
- Fleming, Stuart J. 1996. “Early Imperial Roman Glass at the University of Pennsylvania Museum.” *Expedition Magazine* 38, no. 2: 13–37.
- Foy, Danièle, and others. 2018. *Verres incolores de l’Antiquité romaine en Gaule et aux marges de la Gaule: Typologie et analyses*. Oxford: Archeopress.
- Foy, Danièle, and Marie-Dominique Nenna. 2003. *Échanges et commerce du verre dans le monde antique: Actes du colloque de l’Association Française pour l’Archéologie du Verre, Aix-en-Provence et Marseille, 7–9 juin 2001*. Monographies instrumentum 24. Montagnac: Mergoïl.
- Francigny, Vincent. 2009a. “The Meroitic Necropolises of Sai Island: First Season at the Cemetery 8-B-5.A.” *Sudan & Nubia* 13: 92–99.
- . 2009b. “The Meroitic Necropolises of Sai Island: Second Season at the Cemetery 8-B-5.A.” *Sudan & Nubia* 14: 56–61.
- . 2011. “Le prince Arakakhataror.” In *La pioche et la plume: Hommages archéologiques à Patrice Lenoble*, edited by Vincent Rondot, Frédéric Alpi, and François Villeneuve, 403–411. Paris: Presses de l’Université de Paris Sorbonne.

- . 2014. “An Elite Meroitic Cemetery at Sai Island.” In *The Fourth Cataract and Beyond*, edited by Julie R. Anderson and Derek A. Welsby, 797–803. Leuven: Peeters.
- . 2015. “The Meroitic Temple at Sai Island.” In *The Kushite World: Proceedings of the Eleventh International Conference of Meroitic Studies*, edited by Michael Zach, 201–211. Vienna: University of Vienna.
- Francigny, Vincent, and Romain David. 2013. “Dating Funerary Material in the Meroitic Kingdom.” *Der Antike Sudan* 24: 61–65.
- Fremersdorf, Fritz. 1951. *Figürlich geschliffene Gläser: Eine Kölner Werkstatt des 3. Jahrhunderts*. Berlin: de Gruyter.
- Fünfschilling, Sylvia. 2015. *Die römischen Gläser aus Augst und Kaiseraugst: Text und Formenkatalog*. Augst: Augusta Raurica.
- Garstang, John, Archibald H. Sayce, and Francis Llewellyn Griffith. 1911. *Meroë. The City of the Ethiopians*. Oxford: Clarendon Press.
- Geus, Francis. 1998. “Sai 1996–1997.” *Archéologie du Nil Moyen* 8: 85–126.
- Gradel, Coralie. 2007. “Deux monnaies découvertes à Sai (Soudan).” *Cahiers de Recherche de l’Institut de Papyrologie et d’Égyptologie de Lille* 26: 141–150.
- . 2012. “Les verres d’époque Hellénistique et Romaine.” In *Annales du 18^e congrès de l’AIHV, Thessaloniki, 21–25 septembre 2009*, edited by Despina Ignatiadou and Anastassios Antonaras, 114–119. Thessaloniki: AIHV.
- Griffith, Francis Llewellyn. 1924a. “Oxford Excavations in Nubia (*continued*).” *University Annals of Archaeology and Anthropology* 11, no. 3: 115–125.
- . 1924b. “Oxford Excavations in Nubia (*continued*—with Plates XIV–LXXII).” *University Annals of Archaeology and Anthropology* 11, no. 4: 141–180.
- . 1925. “Oxford Excavations in Nubia (*continued*)—with Plates XX–XXVII.” *University Annals of Archaeology and Anthropology* 12, no. 3: 57–172.
- Harden, Donald Benjamin. 1936. *Roman Glass from Karanis*. Ann Harbor: University of Michigan Press.
- . 1960. “The Wint Hill Hunting Bowl and Related Glass.” *Journal of Glass Studies* 2: 44–81. <https://www.jstor.org/stable/24188128>.
- . 1969. “Ancient Glass, II: Roman.” *Archaeological Journal* 126, no. 1: 44–77.
- . 1987. *Glass of the Caesars*. Milan: Olivetti.
- Harden, Donald Benjamin, Kenneth S. Painter, Ralph H. Pinder-Wilson, and Hugh Tait. 1968. *Masterpieces of Glass*. London: British Museum Press.
- Hayes, John W. 1975. *Roman and Pre-Roman Glass in the Royal Ontario Museum*. Toronto: Royal Ontario Museum.
- Hinkel, Friedrich W. 1977. *The Archaeological Map of Sudan: A Guide to Its Use and Explanation of Its Principles*. Berlin: Akademie Verlag.
- Hofmann, Inge. 1978. *Beiträge zur meroitischen Chronologie*. St Augustin bei Bonn: Anthropos-Institut.
- Jackson, Caroline, Sarah Paynter, Marie-Dominique Nenna, and Patrick Degryse. 2016. “Glassmaking Using Natron from El-Barnugi (Egypt); Pliny and the Roman Glass Industry.” *Archaeological and Anthropological Sciences* 10: 1179–1191.
- Leclant, Jean. 1971. “Fouilles et travaux en Égypte et au Soudan, 1969–1970.” *Orientalia* 40, no. 2: 224–266.
- . 1973. “Glass from the Meroitic Necropolis of Sedeinga (Sudanese Nubia).” *Journal of Glass Studies* 15: 52–68. <https://www.jstor.org/stable/24188144>.
- Marzano, Annalisa. 2018. “Fish and Fishing in the Roman World.” *Journal of Maritime Archaeology* 13: 437–447. doi: 10.1007/s11457-018-9195-1.
- Meyer, Carol. 1992. *Glass from Quseir al-Qadim and the Indian Ocean Trade*. Studies in Ancient Oriental Civilization 53. Chicago: Oriental Institute of the University of Chicago.

- Millet, Nicolas Byram. 1963. "Gebel Adda Preliminary Report for 1963." *Journal of the American Research Center in Egypt* 2: 147–165.
- Nenna, Marie-Dominique. 2003. "Verres gravés d'Égypte du 1^{er} au 5^{ème} siècle ap. J.-C." In Foy and Nenna 2003, 359–375.
- . 2007. "Production et commerce du verre à l'époque impériale: Nouvelles découvertes et problématiques." *Facta: A Journal of Roman Material Culture Studies* 1: 126–147.
- . 2008. "Nouveaux acquis sur le commerce du verre antique entre Orient et Occident." *Journal of Swiss Archaeology and Art History* 65: 61–66.
- . 2010. "Les vases en verre." In *Méroé, un empire sur le Nil*, edited by Michel Baud with the collaboration of Aminata Sackho-Auttissier and Sophie Labbé Toutée, 124–127. Milan: Officina Libraria; Paris: Musée du Louvre éditions.
- . 2015. "Primary Glass Workshops in Graeco-Roman Egypt: Preliminary Report on the Excavations of the Site of Beni Salama, Wadi Natrun (2003, 2005–9)." In *Glass of the Roman World*, edited by Justine Bayley, Ian Freestone, and Caroline Jackson, 1–22. Oxford: Oxbow Books.
- Nicholson, Paul T. 1998. "The Glass." In *Berenike 1996: Report of the 1996 Excavations at Berenike (Egyptian Red Sea Coast) and the Survey of the Eastern Desert*, edited by S. E. Sidebotham and W. Z. Wendrich, 279–288. CNWS Publications Special Series 4. Leiden: University of Leiden.
- Nicholson, Paul T., and Jennifer Price. 2003. "Glass from the Port of Berenike, Red Sea Coast, Egypt." In Foy and Nenna 2003, 390–391.
- Nicholson, Paul T., and Jennifer Price. 2007. "Glass Fish Vessel." In *Berenike 1999–2000: Report on the Excavations at Berenike including Excavations in Wadi Kalalat and Siket and the Survey of the Mons Smaragrus Region*, edited by Steven E. Sidebotham and Willemina Z. Wendrich, 220–224. Los Angeles: Cotsen Institute of Archaeology Press.
- O'Connor, David. 1993. *Ancient Nubia: Egypt's Rival in Africa*. Philadelphia: The University Museum, University of Pennsylvania.
- Plumley, Jack Martin. 1975. "Qasr Ibrim 1974." *Journal of Egyptian Archaeology* 61: 5–27.
- Rilly, Claude. 2008. "Les textes méroïtiques de l'île de Sai." *Kush* 19: 139–177.
- Rodziewicz, Mięczysła D. 2005. *Early Roman Industries on Elephantine*. Elephantine 27. Mainz: von Zabern.
- Slade, Felix. 1871. *Catalogue of the Collection of Glass Formed by Felix Slade*. London: Wertheimer Lea and Co.
- Stern, E. Marianne. 1977. "A Glass Bowl of Isings' Form 2 from the Tomb of an Ethiopian Candace." *Oudheidkundige Mededelingen van het Rijksmuseum van Oudheden te Leiden* 58: 63–72.
- . 1981. "Hellenistic Glass from Kush (Modern Sudan)." In *Annales du 8^e congrès de l'AIHV, Londres-Liverpool, 18–25 septembre 1979*, edited by Joseph Philippe, 35–59. Liège: Édition du Centre de Publications de l'AIHV.
- . 2001. *Roman, Byzantine, and Early Medieval Glass, 10 BCE–700 CE: Ernesto Wolf Collection*. Ostfildern-Ruit: Hatje Cantz.
- Wenig, Steffen. 1978. *Africa in Antiquity: The Arts of Ancient Nubia and the Sudan; The Catalogue*. New York: The Brooklyn Museum.
- Whitehouse, David. 1997. *Roman Glass in The Corning Museum of Glass*, vol. 1. Corning, NY: The Corning Museum of Glass.
- Woolley, Leonard, and David Randall-MacIver. 1910. *Karanòg, the Romano-Nubian Cemetery*. Philadelphia: The University Museum, University of Pennsylvania.