






## Project Gallery

# Faith embodied: a tattooed individual from medieval Ghazali

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Post-excavation analysis of individual Ghz-1-002, an adult probable male interred in a medieval cemetery at Ghazali, Sudan, identified tattoos on the right foot. Visualisation under different spectrums of light allowed a reconstruction of the marks, which are only the second instance of tattooing identified from medieval Nubia.

Keywords: Africa, Nubia, medieval, monasticism, tattoos, DStretch

## Introduction

Makurian Ghazali, located in the Bayuda Desert of Sudan, was occupied from *c.* AD 680–1275. The dominant feature of Ghazali is a walled monastery with two churches and communal living facilities (e.g. refectory, dormitory) (Obłuski 2019: 64–69). Near the monastery are a lay settlement, iron-smelting facilities and four cemeteries (Figure 1). Cemetery 2, south of the monastery, was used by the monastic community, while cemetery 3 abuts the lay settlement and was seemingly used by this community. Use of cemetery 4 remains unclear. Cemetery 1, west of the monastery, was possibly used for *ad sanctos* burials—burials near locales of religious importance (Ciesielska *et al.* 2018; Obłuski 2018, 2019; Stark & Ciesielska 2018).

Excavations at Ghazali were initially undertaken in the 1950s (Shinnie & Chittick 1961) and subsequently between 2012 and 2017 by the Polish Centre of Mediterranean Archaeology, University of Warsaw (PCMA UW), under the Ghazali Archaeological Site Presentation Project (GASP), directed by Artur Obłuski, and in collaboration with the National Corporation for Antiquities and Museums (NCAM) of Sudan and the Qatar-Sudan Archaeological Project (QSAP Mission No. 36) (Obłuski 2018, 2019). Human remains from Ghazali were excavated, curated and studied with the permission and collaboration of NCAM and descendant communities.

## Methods

In 2023, during an examination of the partially naturally mummified remains of Ghz-1-002, an area of darker discolouration was observed on the dorsal surface of the right foot,

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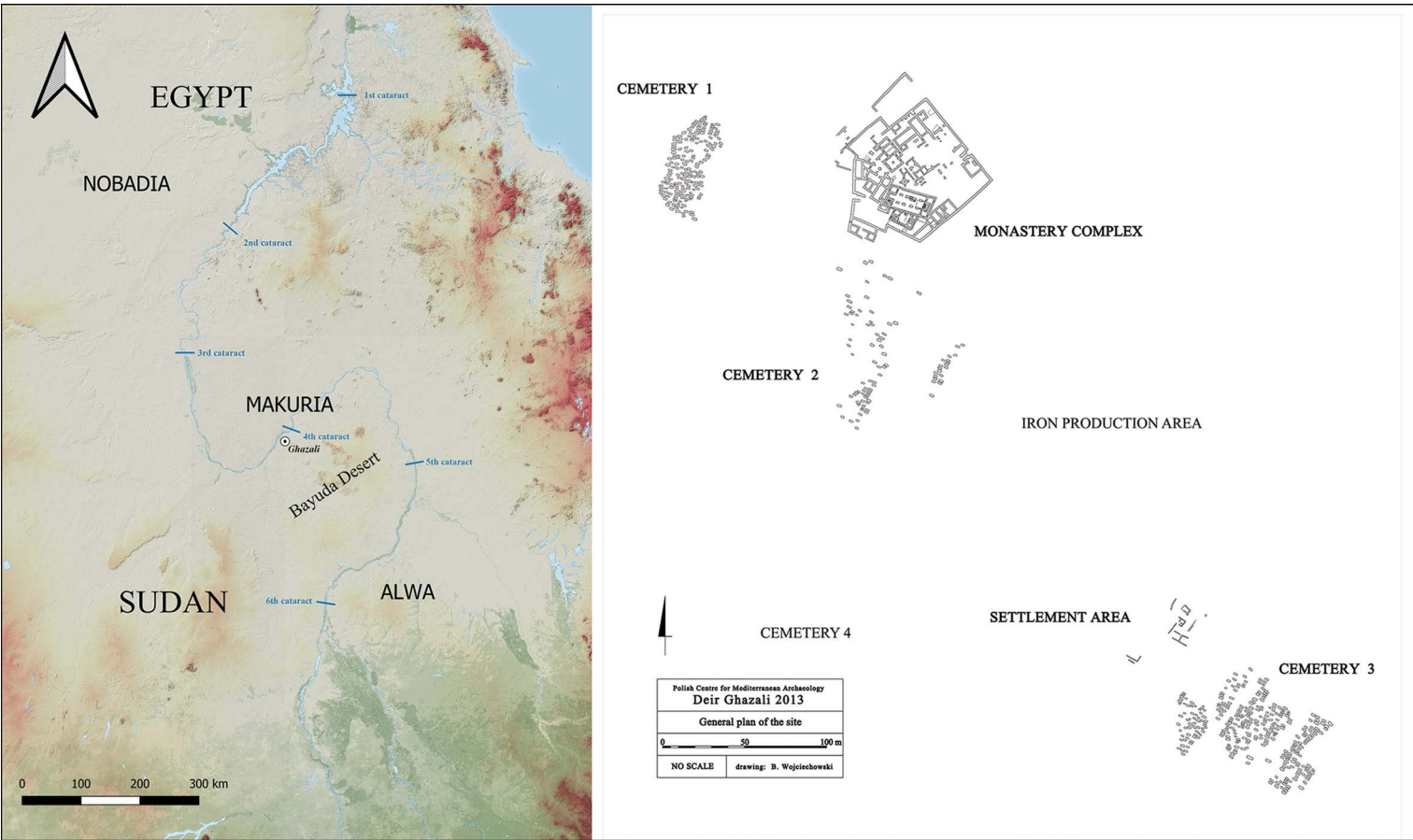


Figure 1. Location of Ghazali within Sudan (left) and plan of site features (right) (figure by A. Chlebowski, B. Wojciechowski & R. Stark).

inconsistent with the appearance of desiccated skin or a textile imprint. A full conversion camera (Canon T7i, 18–55mm lens) was used to capture full-spectrum (ultraviolet to infra-red) and visible light images of the foot with a visible bypass filter (75nm range). Image data were decorrelated to distinguish different colours algorithmically in DStretch (Harman 2008). Image post-processing in ImageJ/Fiji with a DStretch plugin broadly followed DStretch Tattoo Protocol (Göldner & Deter-Wolf 2023) for images taken in the visible light spectrum (Figure 2A–D). The YXX channel was used in full-spectrum image analysis (Figure 2E–H), as previously tested for multispectral imaging by the first author. DStretch-enhanced images revealed a series of tattoos.

## Results

Individual Ghz-1-002 was interred in cemetery 1 within a north-west to south-east aligned stone box-grave. The body had been wrapped in a shroud and buried in an extended supine position with the head to the west, right hand along the femur and left hand on the pelvis (Figure 3). Macromorphological pelvic and cranial features (Nikita 2017) identify Ghz-1-002 as a 35–50-year-old probable male. Bone collagen radiocarbon dating returned a date range of cal AD 667–774 (95.4% confidence, Sample ID: OxA-39905).

The identified tattoos cover a total area of 16 × 26mm and, in alignment with symbols at Ghazali (Ochała 2023) and elsewhere (Klauser 1954; Jakobielski 1991; Garipzanov 2018), comprise three signs: the Greek letters chi (X) and rho (P) superimposed (a ‘Christogram’), accompanied by alpha (A) and omega ( $\Omega$  or  $\omega$ ) with a bearer-perspective orientation (Figure 4). In Christian symbolism the alpha and omega formulaically flank the Christogram. Stylistically atypical, the layout and appearance of the tattoo may reflect artistic and regional variation, such as examples found elsewhere in medieval Nubia and Christendom (Bisconti 2000; Garipzanov 2018). The appearance of the proposed omega—whether rendered as  $\Omega$  or the more contextually appropriate  $\omega$ —requires further consideration as the symbols appear somewhat different in visible (Figure 2D) and full spectrum light (Figure 2H). Underlying hard and soft tissue architecture could have contributed to this variation, in addition to decreasing visible detail in two-dimensional documentation and a loss of definition as pigments diffused during life and subsequent desiccation processes. The detail quality is further dependent on tattooing technology.

## Discussion

Tattooing has a long history in the Nile Valley, with tattoos identified on around 45 mummified individuals in ancient Nubia and Egypt, spanning from at least *c.* 3100 BC–AD 74. These are primarily dots and lines, and all but four are on female bodies (Vila 1967; Armelagos 1969; Tassie 2003; Renaut 2020). The tattoo grouping on the foot of Ghz-1-002 marks only the second instance of tattooing from medieval Nubia. The first example, a monogram of Archangel Michael (MIXAHA), was identified on the thigh of a 20–35-year-old female at Site 3-J-23 in the Fourth Cataract region (Vandenbeusch & Antoine 2015). Tattooing was also embraced elsewhere in North Africa, notably in Morocco and Ethiopia. Historical research in these regions, although limited, indicates enduring traditions today with parallels seen throughout the Nile Valley (Belhassen 1976: 61; Johnson 2009).

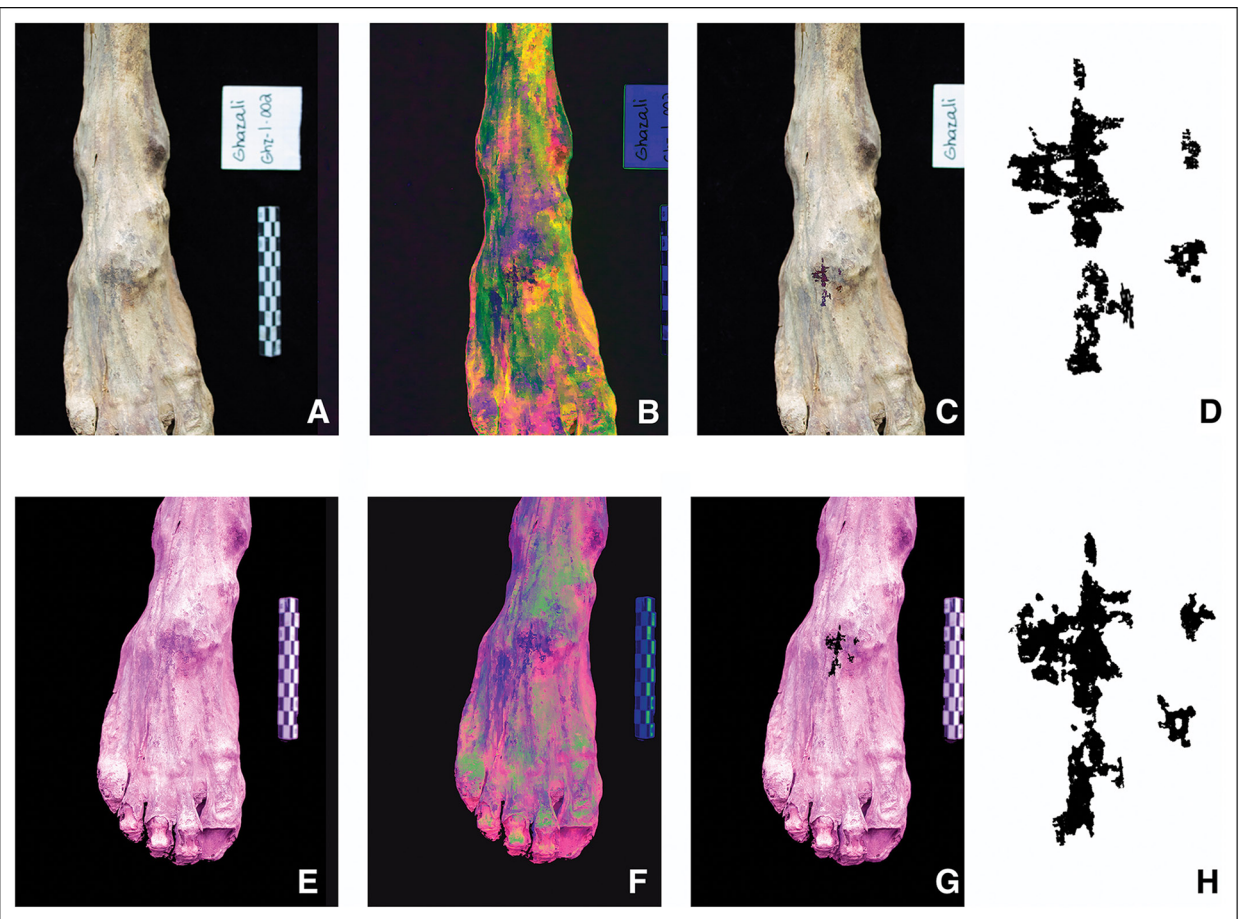


Figure 2. Tattooing on the right foot of Ghz-1-002. Visible light photographs: A) original; B) DStretch (YBK channel) enhanced; C) pigmented pixels enhanced; D) pigmented pixels isolated. Full-spectrum photographs: E) original; F) DStretch (YXX channel) enhanced; G) pigmented pixels enhanced; H) pigmented pixels isolated (photographs by K.A. Guilbault).

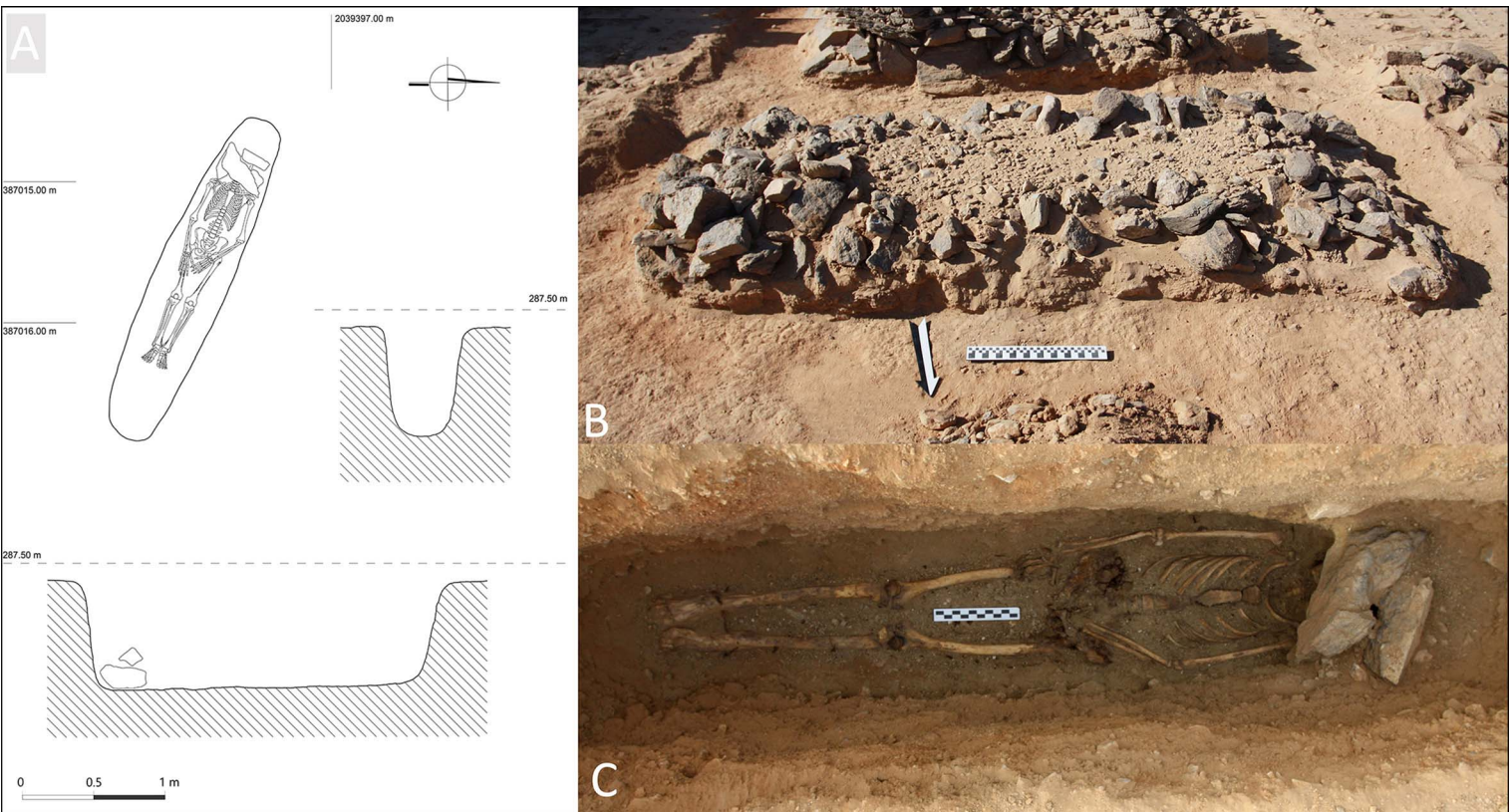


Figure 3. Burial of individual Ghz-1-002: A) burial dimensions; B) box-grave superstructure; C) the burial in situ (figure by J. Ciesielska).

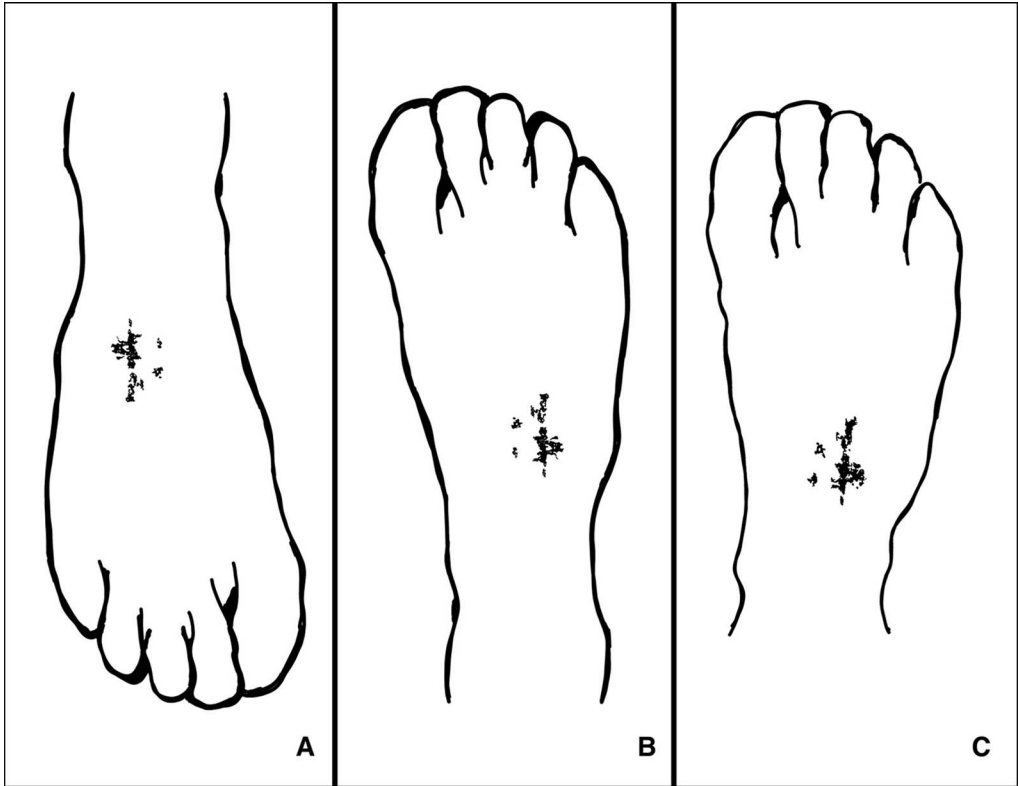


Figure 4. Illustrations of tattooing on the right foot of Ghz-1-002 rendered from visible light photographs in standard anatomical (A) and inverted (B) positions and from full-spectrum photographs (C, inverted) (figure by K.A. Guilbault).

The tattoos and the interment of Ghz-1-002 in cemetery 1 further suggest this cemetery may have included burials of religiously devout individuals who wished to be interred *ad sanctos* (Johnson 2010; Wiśniewski 2018:83–100), particularly given the development of cemetery 1 in proximity to the monastery at Ghazali despite the existence of an adjacent cemetery (cemetery 3). There is presently no clear evidence that Ghazali was a pilgrimage site, but it is possible, given the well-established case for pilgrimage at nearby Banganarti (Zurawski 2014; Łajtar 2020). The location of the tattoo may have been chosen as a private sign of faith, as it was designed to be viewed by the bearer and could be covered easily. A connection with pilgrimage and travel by foot as a devotional act is also possible.

Notwithstanding multifold possible rationales—including alignment with the crucifixion wounds of Christ—tattoo placement appears meaningful and intentional, supporting the tattoos as an embodiment of Christian faith (Sofaer 2006). It is hoped that additional research will provide further insights.

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