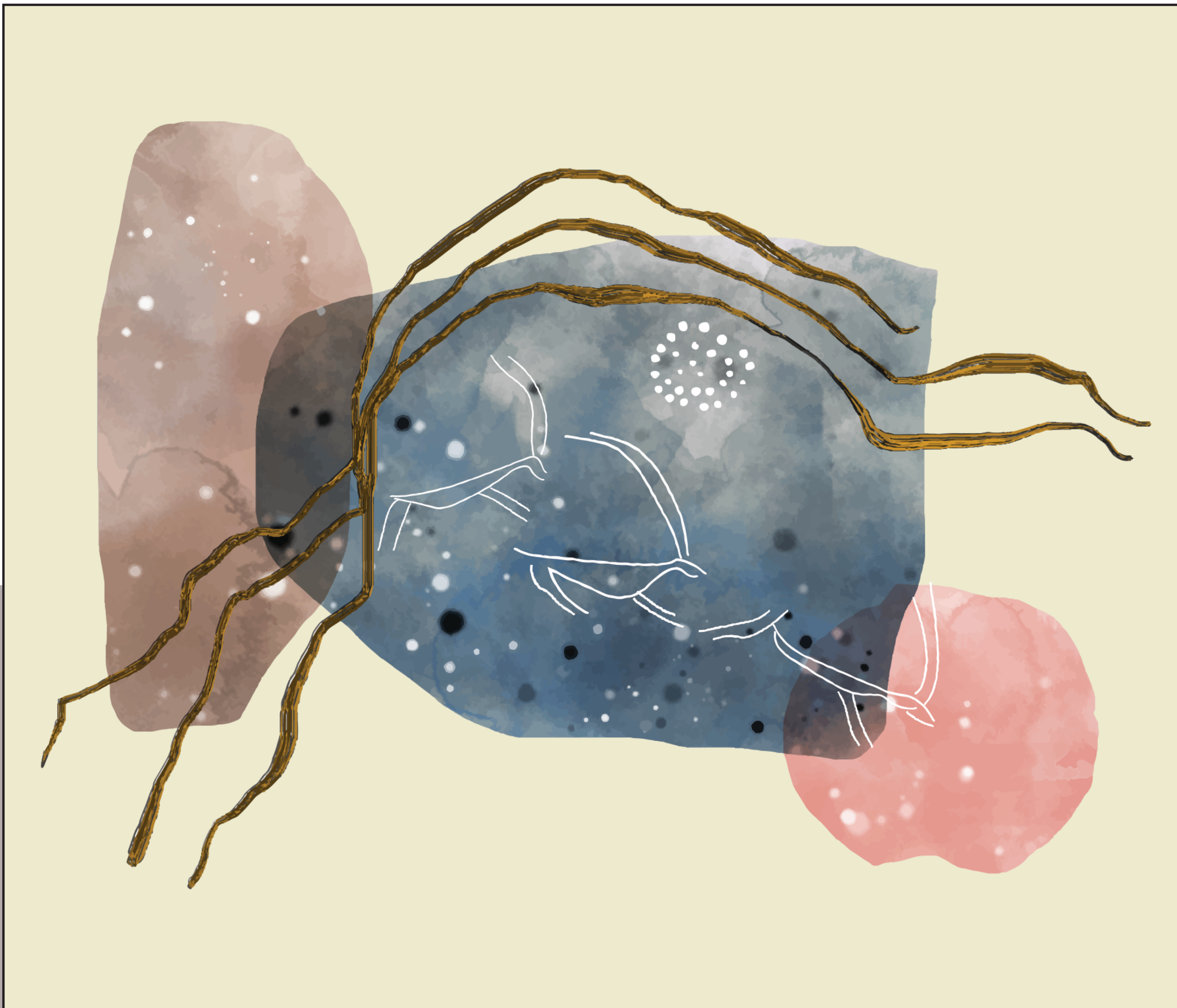
JOURNAL OF EASTERN MEDITERRANEAN ARCHAEOLOGY AND HERITAGE STUDIES

SPECIAL ISSUE



THE PENNSYLVANIA STATE UNIVERSITY PRESS

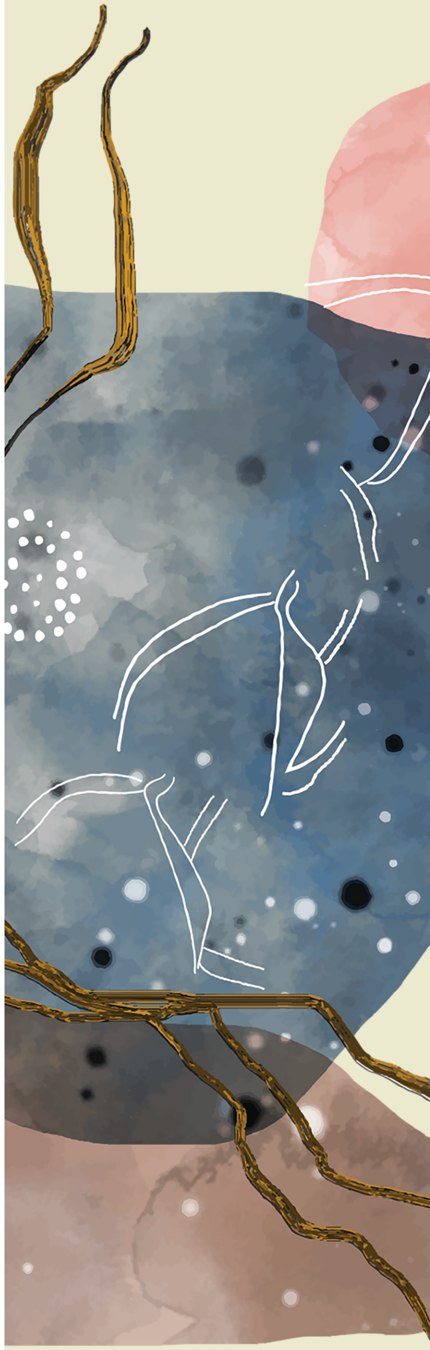
VOL. 13 NOS. 1-2 2025

JEMAHS

Front cover: Artwork inspired by the running deer motif from Asphendou Cave, Crete. (Created by Pighill Heritage Graphics, www.pighill.co.uk.)

JOURNAL OF EASTERN MEDITERRANEAN ARCHAEOLOGY AND HERITAGE STUDIES

VOL. 13 NOS. 1–2 2025



THE *JOURNAL OF EASTERN MEDITERRANEAN ARCHAEOLOGY AND HERITAGE STUDIES (JEMAHS)*
is a peer-reviewed journal published by the Pennsylvania State University Press. *JEMAHS* is devoted to traditional, anthropological, social, and applied archaeologies of the eastern Mediterranean, encompassing both prehistoric and historic periods. The journal's geographic range spans three continents and brings together, as no academic periodical has done before, the archaeologies of Greece and the Aegean, Anatolia, the Levant, Cyprus, Egypt, and North Africa.

As the journal will not be identified with any particular archaeological discipline, the editors invite articles from all varieties of professionals who work on the past cultures of the modern countries bordering the eastern Mediterranean Sea. Similarly, a broad range of topics will be covered including, but by no means limited to:

- Excavation and survey field results;
- Landscape archaeology and GIS;
- Underwater archaeology;
- Archaeological sciences and archaeometry;
- Material culture studies;
- Ethnoarchaeology;
- Social archaeology;
- Conservation and heritage studies;
- Cultural heritage management;
- Sustainable tourism development; and
- New technologies/virtual reality.

Appearing four times a year in February, May, August, and November, the journal will engage professionals and scholars of archaeology and heritage studies as well as non-practitioners and students, both graduate and undergraduate.

In addition to combining traditional and theoretical archaeological data and interpretation, the journal's articles may range from early prehistory to recent historical time periods. It also aims to publish accessible, jargon-free, readable, color-illustrated articles that will be informative for professional and non-professional readers. The journal does not publish unprovenanced artifacts purchased on the antiquities market or objects from private collections.

SUBMISSION INFORMATION
Digital submissions should be sent to: www.editorialmanager.com/*JEMAHS*. All correspondence should be sent to: Dr. Ann E. Killebrew (aek11@psu.edu). By submitting their work to *JEMAHS*, authors agree to editorial modifications of their manuscripts that are designed to help *JEMAHS* fulfill its mission.

Articles should be submitted as a MS Word file together with all illustrations (1200 dpi for black and white; 600 dpi for grayscale; and at least 300 dpi for color) referenced in the manuscript. Permissions to use photographs and copyrights for all illustrations are the responsibility of the authors and need to be included when the manuscript is submitted. (For more information regarding copyright issues for authors, go to: http://psupress.org/author/author_copyright.html). Papers should be limited to not more than 20–25 manuscript pages or ca. 6,000–7,000 words. Shorter papers are welcome, but authors wishing to submit a paper longer than 25 manuscript pages (including endnotes, references, and appendices) should consult with the editors in advance.

For complete author submission guidelines, please visit:
http://www.psupress.org/journals/jnls_JEMAHS.html

SUBSCRIPTION INFORMATION
The *Journal of Eastern Mediterranean Archaeology and Heritage Studies* is published quarterly by the Pennsylvania State University Press. Institutions are encouraged to subscribe to the online content through the Scholarly Publishing Collective (scholarlypublishingcollective@dukeupress.edu). Print copies can be added to an online subscription. Individuals may purchase temporary access directly through the Collective. For only print copies, or for individual subscriptions, please contact our subscription services through Johns Hopkins University Press (jrnlcirc@jh.edu, 1-800-548-1784 [outside USA and Canada: 410-516-6987]). Contact JHUP directly for back or single issue sales.

All correspondence or general inquiries should be addressed to Penn State University Press, journals@psu.edu.

The Pennsylvania State University Press is a member of the Association of University Presses.

MIDDLE PALEOLITHIC BEHAVIORAL INSIGHTS FROM THE STELIDA CHERT SOURCE, NAXOS (GREECE)

Tristan Carter

Daniel A. Contreras

Danica D. Mihailović

Theodora Moutsiou

Yorgan Pitt

Natasha Singh

Ciara Zogheib

ABSTRACT

This article provides the first detailed overview of Middle Paleolithic activity at the Naxian chert source of Stelida, based on an analysis of 780 artifacts collected from the 2013–2014 survey. While several Eurasian Middle Paleolithic lithic sources have been documented, the activity at most of these sites relates almost exclusively to resource extraction and the initial stages of tool production. The Middle Paleolithic material from Stelida reflects a wider range of hominin behavior, including not only evidence for various knapping traditions (not least Levallois and discoidal core technologies) but also two concentrations of target products, including retouched tool types. The article argues that this greater breadth of practice relates to Stelida's landscape affordances, namely the presence of springs and rock shelters that facilitated the establishment of seasonal camps, where those procuring chert likely engaged in food preparation, consumption, and tool maintenance.

KEYWORDS: Stelida, Naxos, chert source, Middle Paleolithic, landscape affordances, survey, hominin behavior

JOURNAL OF EASTERN MEDITERRANEAN ARCHAEOLOGY AND HERITAGE STUDIES, VOL. 13, NOS. 1–2, 2025

https://doi.org/10.5325/jeasmedarcherstu.13.1-2.0032

Introduction to Stelida and the Character of Its Middle Paleolithic Archaeology

Stelida, a 151 m double-peaked hill situated on the northwest coast of Naxos (Figs. 1–3) comprises a major chert source in a southern Aegean context, an uplifted outcrop of sediments silicified by hydrothermal alteration that overlay Miocene shales (Skarpelis et al. 2017: 823–26). The site was first recorded by French archaeologists in 1981, the masses of flaked chert surface artifacts initially, and tentatively, interpreted to be of Epi-Paleolithic or earlier Neolithic date (Sériadès 1983). Subsequent salvage excavations by the Cycladic Ephorate of Antiquities recovered stone tools whose character suggested an even earlier exploitation of the source, potentially extending back to the Middle Paleolithic (Legaki 2012, 2014). In 2013 The "Stelida Naxos Archaeological Project" (SNAP) was initiated to characterize and date the site, the first two years of fieldwork being dedicated to a pedestrian survey and a small-scale geological study (Skarpelis et al. 2017). Within the first season of fieldwalking it became apparent that Middle Paleolithic activity was indeed well-represented at Stelida, as evidenced by quantities of tools and knapping debris associated with Levallois traditions (Carter et al. 2014).

This article considers what the Middle Paleolithic survey material tells us concerning hominin behavior at the chert source and how the activities represented at

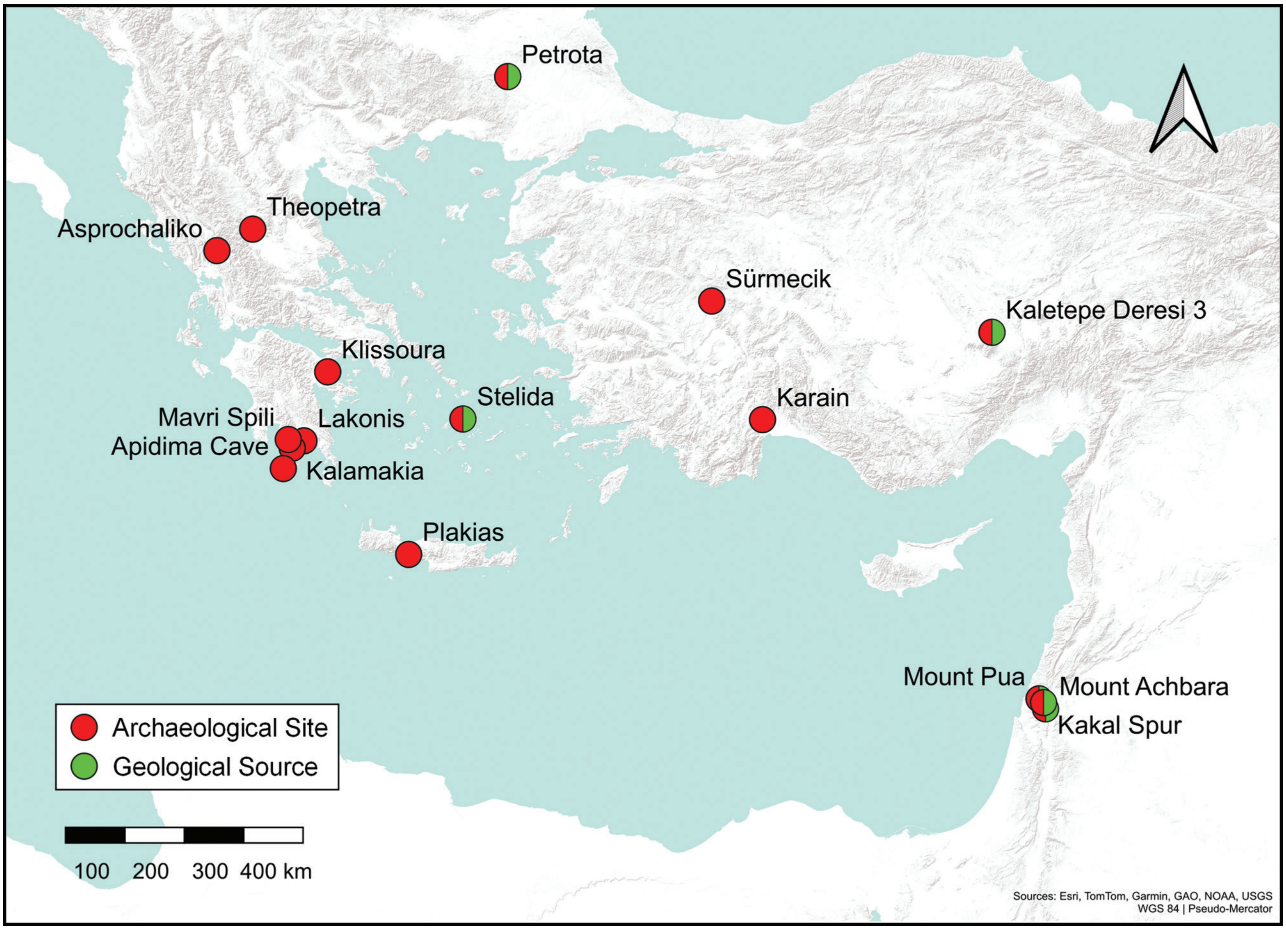


FIG. 1

Map showing the location of Stelida and other major sites discussed in the article. (Map by O. Crowdy; © SNAP.)

Stelida compare to other Eurasian resource extraction sites of the period. It is argued that the Stelida material reflects a wider array of cultural practices than one typically associated with Middle Paleolithic lithic sources, as the hominins that came to Stelida did not restrict themselves to just selecting chert and preparing cores for reduction as at occupation sites elsewhere, but also established temporary camps at two rock shelters. Such behavior is evidenced by concentrations of target products and modified tool types at these loci. The distinctiveness of Stelida's character as a Middle Paleolithic resource extraction site is explained through reference to the site's landscape affordances (see Tsakanikou 2020), with not only abundant toolmaking raw materials but also shelter and potable water, while the hilltop represented an attractive hunting stand, affording a significant vista over the immediate terrain and beyond. This combination of features undoubtedly influenced the continued return of earlier prehistoric populations to the hill, from at least 200,000 to 9,000 years ago.

Background

Above and beyond detailing the archaeology of Stelida, the larger project aim was to contribute to debates on the antiquity of island colonization in the Aegean and hominin behavior. Concerning the former matter, the received wisdom had long been that insular settlement—as opposed to seasonal visitation—was a

FIG. 2
The double-peaked hill, chert source and archaeological site of Stelida, northwest Naxos (Greece); from east, with Paros in the background. (Photo by D. Depnering; © SNAP.)

late affair throughout the Mediterranean, dating only as far back as the Neolithic, despite the surrounding continents of Eurasia and Africa being occupied from the Lower Paleolithic / Early Stone Age (Cherry 1981). Significantly, this pattern seemed to have global applicability (Gamble 1993), with one inference being that maritime activity was an index of behavioral modernity, that is, the origins of seafaring related to the appearance of *Homo sapiens* (see Stringer and Gamble 1993: 214).

This model was challenged by Strasser et al. (2010, 2011) who claimed to have found tools of Lower Paleolithic type eroding out of deposits at least 130,000 years old from Plakias on Crete. Given that Crete was insular throughout the Pleistocene/Paleolithic (e.g., Lykousis 2009) and that *Homo sapiens* were not believed to have arrived in the region until ~40,000 years ago (Douka et al. 2011), it theoretically followed that the Plakias tools had to have been made by pre-*sapiens* peoples who had reached the island by boat (Runnels et al. 2014). While these claims received considerable attention, and part served as the inspiration for SNAP (given the site's alleged pre-Neolithic date), they did not receive wholescale acceptance, with both the character of the finds and the larger thesis much contested (e.g., Ammerman 2014; Broodbank 2014; Galanidou 2014; Leppard 2015; Cherry and Leppard 2018).

Aware of the survey data's interpretative limits, in 2015 SNAP turned to excavation as a means of generating stratified cultural deposits that could be dated scientifically. This work had two main aims. Firstly, to relate the dated period(s) of resource extraction at Stelida to reconstructions of fluctuating Pleistocene sea-levels (Lykousis 2009) to determine if a journey to Naxos necessitated seafaring and/or occurred during those eras of sea-level lowstands that permitted terrestrial crossings from the neighboring continent(s). Secondly, it was hoped that the dated strata would produce hominin skeletal remains, and/or stone tool traditions deemed to be distinctive of a particular population in the region (see Darlas 2007; Douka et al. 2011), to see if Neanderthals and/or early *Homo sapiens* were responsible for the early—potentially maritime—activity at Stelida. Over the next five seasons, over 40 test-trenches were sunk on both sides of the hill, from upper flanks to the toe slopes, with the first fully excavated and studied sondage producing dates of ≥200,000 years old from its basal—and still artifact-bearing—stratum (Carter et al. 2019).

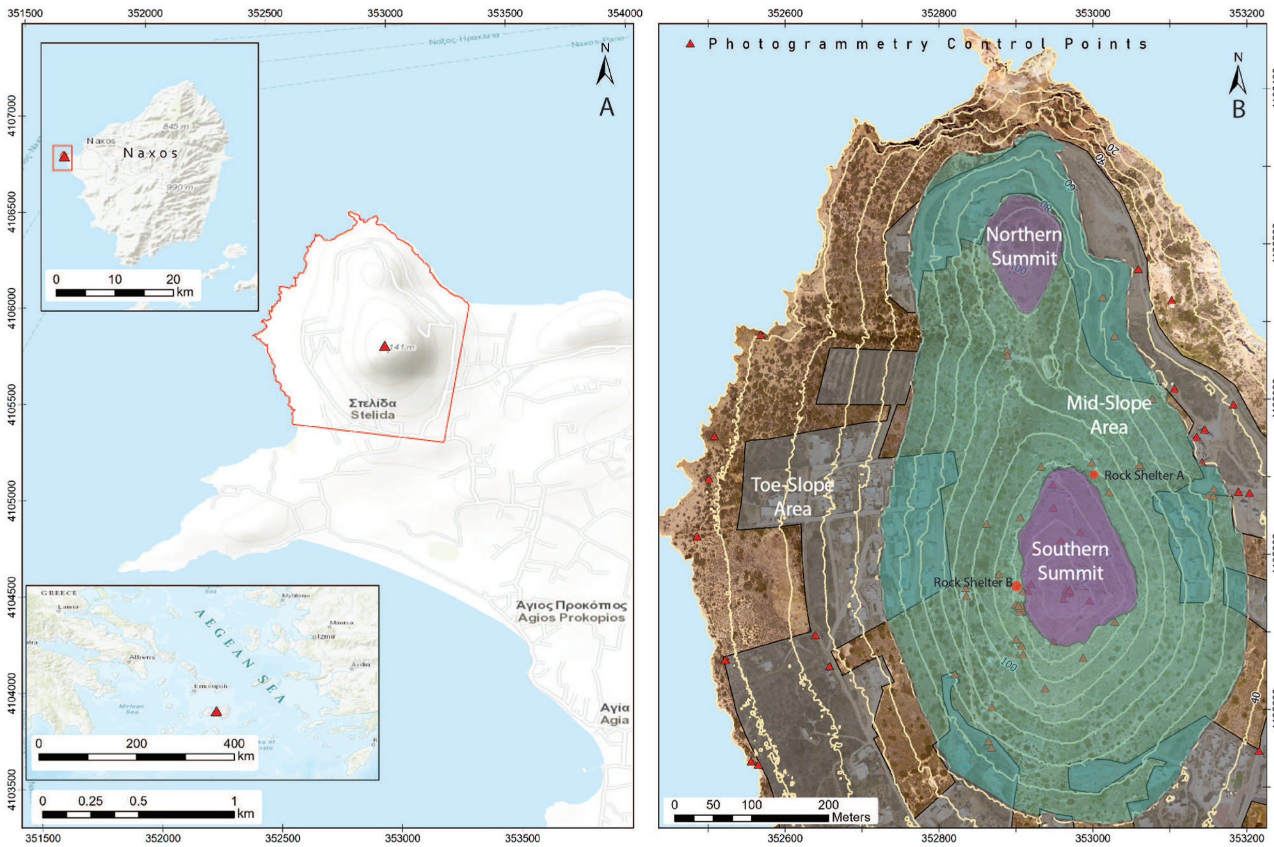


FIG. 3

(A) Location of Stelida on Naxos. (B) Orthomosaic of Stelida showing SNAP survey zones (North and South Summit, Mid-Slope, and Toe-Slope areas) and Rock Shelters A and B. (Maps by Y. Pitt; © SNAP.)

Since the publication of these early dates, the early Aegean seafaring debate has changed significantly, not least due to the publications of Ferentinos et al. (2023), and Harvati et al. (2019). The former paper represents the most recent paleogeographic reconstruction of the Aegean basin, whose bathymetric modeling led the authors to argue that the "Central Aegean Island Chain" (including Naxos) was in fact insular *throughout* the last 424,000 years (i.e., Marine Isotope Stage [MIS] 11 to MIS 5.5), thus suggesting that the Middle Pleistocene exploitation of Stelida necessitated hominins crossing open water, even if only a few kilometers. It should thus have followed that the ≥200,000-year-old dates from Stelida indirectly evidenced seafaring Archaic hominins in the Aegean. However, the second paper served to upend the received wisdom that the archaeological record of the Aegean prior to ~45,000 years ago related to Neanderthals, or earlier humans, with Harvati and co-authors demonstrating that *Homo sapiens* was present in the region at least 210,000 years ago, through their reanalysis of two skulls from Apidima Cave in the southern Peloponnese. Thus, we are currently at an impasse. While Stelida potentially provides us with indirect evidence for humanity's earliest maritime activity in the northern hemisphere (albeit much later than in the south [Gaffney 2021]), we do not know if this involved Neanderthals and/or *Homo sapiens*.

The aim of this article is not, however, to answer those arguments concerning the seafaring capabilities of hominins other than *sapiens*, but instead to present the first major study of the Middle Paleolithic finds from the survey. These data are then considered regarding their techno-typological characteristics and spatial distribution as a means of engaging with broader debates upon hominin behavior, as evidenced by Middle Pleistocene raw-material extraction sites throughout Eurasia. The article also details the first assemblage of this period from the central Aegean basin and considers its character in relation to Middle Paleolithic datasets from surrounding continental contexts.

Survey Methods and Detailing the Middle Paleolithic

To map the chert source and associated material culture we employed site-based intensive survey methods developed by Whitelaw (1991) at Kephala and Paoura on Keos and those of the Laconia Rural Sites Project (Cavanagh et al. 2005). These strategies were adapted to meet the challenges presented by the hyperabundance of archaeological material found on the surface of a quarry site. The chief goals of the survey were site delimitation, temporal diagnosis, and spatial differentiation. The SNAP survey employed a standardized method of transect walking to produce a broad-stroke quantification of artifact distribution across the study area (Phase 1), followed by targeted sampling of artifact-rich areas and/or those parts of the site deemed to have material of particular interest (Phase 2). Most of the artifacts came from surface collection units, supplemented by ~200 georeferenced "grab samples," that is, items believed to be of significance that did not fall on the transect lines, or within survey grids.

Phase 1 of the fieldwork was designed to provide a systematic sample of the survey area by fieldwalking linear transects across the site oriented to the cardinal directions and established in relationship to a site grid (Fig. 4). The grid was centered on a slightly displaced Greek army benchmark on Stelida's southern and highest peak, which also represents a major chert outcrop. Working in pairs, team members systematically documented artifact distribution through the collection of all material culture within a 1 m^2 dog-leash area at survey points established at 10 m intervals along these transects. The transect lines were established with tape and compass, while the collection points were mapped by recreation-grade GPS units and photographed. Recording sheets were used to document a suite of supplementary information to help us critically reflect on the integrity of these archaeological data, such as surface visibility / vegetation cover, angle of slope, and other features deemed to be significant. Transect lines were initially established at 40 m intervals, and in some cases leapfrogged out further to roughly locate the outer limits of those area(s) containing scatters of lithics. Transects were surveyed until either the fieldwalkers reached the coastlines that bordered Stelida's western and northern sides, or where the team members believed that they had moved beyond the limits of the archaeological site as defined by a series of at least five consecutive zero-values. The survey also had to navigate significant areas of modern development and disturbance in the form of hotels, private houses, tracks, and roadways; most of this land was not included in our transects (Fig. 4). In 2013 transects covered 19.8 ha of Stelida, with a further 22.7 ha surveyed in 2014, producing a total of 36.8 ha coverage by the end of the project. A total of 29 survey transect lines were walked covering most of the hill, ranging from 70–820 m in length, while a few lines were surveyed on the promontory due south to investigate an area of low-density artifacts.

Phase 2 of the survey employed a more targeted collection procedure dedicated to generating larger samples of potentially diagnostic artifacts, focusing on those areas deemed to be of particular interest based on the density and/or character of the lithic material found there (as determined by transect results or field observations). These study units were mainly in the range of 1 m^2–15 m^2, designed to compare the nature and date of activity at different parts of the site and to explore internal variability within these areas of interest (Fig. 4).

Over the two seasons, 61 of these grids were established. In most instances, the processing of these grids involved a systematic collection procedure, with the recovery of all surface material culture from at least one 1m^2 unit. Where 5 × 5 m grids were established, we systematically collected all artifacts from 1 m^2 collection units located in the four corners and center-point (Fig. 4), thus providing us with a 20% sample of the total area, with a 5% sample of those 10 × 10 m grids (with artifacts again from the four corners, and the central

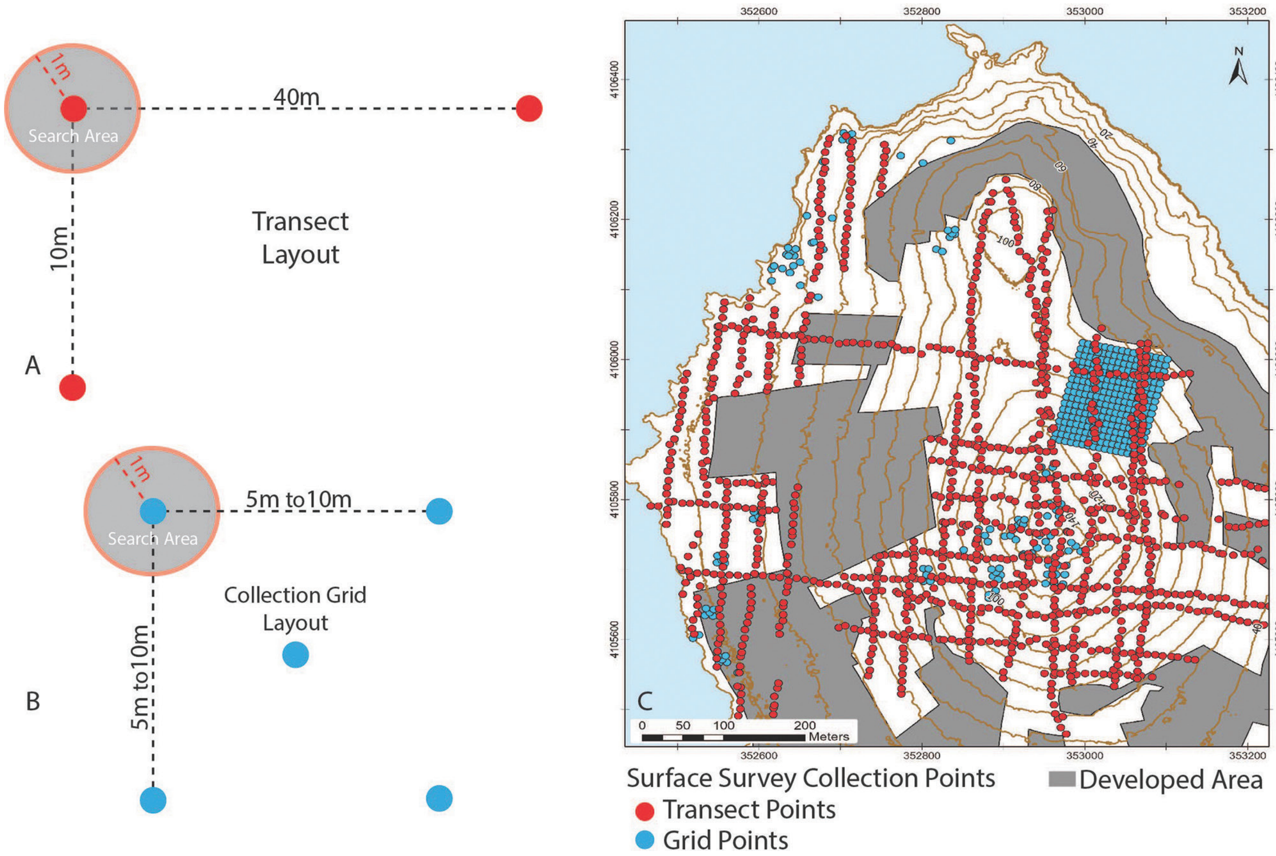


FIG. 4
(A) Layout of the survey collection transects; (B) layout of the survey collection grids; (C) area of Stelida surveyed in 2013–2014 showing location of transects and grid survey points. (Map by Y. Pitt; © SNAP.)

1 m² squares collected). A supplementary sample of technologically and/or chronologically diagnostic artifacts was then collected from the other grid squares; all quantified data discussed below derives exclusively from the systematically sampled units. A slightly different procedure was used in the singular case of survey grid 100–020, which measured 70 × 80 m across part of the eastern flank of Stelida in front of Rock Shelter A. Here, north–south transects were walked at 10 m intervals across the grid, with 1 m² collection units established at every 10 m.

Methodologically, the project employs three levels of analysis for the survey chipped stone, each producing quantitative and qualitative data of differing detail. *Level 1* simply involves counting and weighing the artifacts from each survey unit to detail artifact density across the site and to define archaeological "hot spots" (Carter et al. 2017: fig. 3). All the survey material was then subjected to a *Level 2* analysis, where each artifact is systematically detailed for its raw material type, cortical coverage, techno-typological attributes, and where possible its chrono-cultural assignment. Finally, in the *Level 3* analysis, those artifacts defined as chronologically diagnostic are recorded in greater detail: measurements, integrity, flake directionality, platform type, technical specificities, retouch form/location etc. The evidential basis of this article comprises most of the *Level 2* results (n=780), the remainder to be detailed in the final survey publication.

Surface material was assigned a date based on its direct techno-typological comparability to material from regional well-dated and period-specific stratigraphic excavations, which in this case study involved detailing artifacts whose mode of production and/or retouch is exclusively associated with Middle Paleolithic assemblages of the region. Such an approach, implicitly or explicitly, is well established in regional Paleolithic survey reports (e.g., Darlas 2018; Galanidou 2018; Tourloukis et al. 2016; Runnels 1988; van Andel and Runnels 2005), allowing over 200 Middle Paleolithic sites to have been documented throughout Greece (Elefanti and Marshall 2015; Tourloukis 2021: 67–70), with more recorded in nearby western Anatolia (Özçelik 2017, 2018; Taşkıran et al. 2021). For SNAP, the main scientifically dated reference assemblages for Middle Paleolithic comparanda comprise a handful of cave sites and rock shelters on continental Greece (see Fig. 1): Asprochaliko in Epirus (Huxtable et al. 1992), Lakonis, Kalamakia, and Mavri Spili in the Mani (Darlas 2007; Darlas and de Lumley 1999; Darlas and Psathi 2017; Garefalakis, Panagopoulou, and Harvati 2018; Panagopoulou et al. 2004), Theopetra in Thessaly (Facorellis et al. 2013; Karkanas et al. 2015; Panagopoulou 1999), Karain in the Antalya region of Mediterranean Turkey, and the open-air site of Kaletepe Deresi 3 in Cappadocia (Kartal 2012; Otte et al. 1995; Özçelik 2017; Slimak et al. 2008; Yaman 2016).

The logic of assigning 780 surface artifacts a Middle Paleolithic date lies not just in the comparison with excavated and dated comparanda from the larger region or in simply viewing Levallois products as a single-period phenomenon. Concerning the second point, it is now well established that functionally beneficial technologies, such as Levallois (Lycett and Eren 2013), are likely to be reinvented through time, what is referred to as convergent evolution (Groucutt 2020; O'Brien, Buchanan, and Eren 2018). One can thus point to Levallois assemblages of Holocene date (Scerri et al. 2021) as a cautionary tale against assuming that whenever one recovers such material—particularly in the case of surface finds or undated excavated material—it should be assigned to the Middle Paleolithic / Middle Stone Age. That said, we are not working in a vacuum at Stelida; indeed, there is over a century of scholarship dedicated to characterizing the lithic technology of the Cyclades within which to situate our finds (Bosanquet 1904; Carter 2008; Cherry and Torrence 1984; Kaczanowska and Kozlowski 2014, inter alia). Given that the Levallois products associated with Stelida have never been reported from any other prehistoric (Mesolithic–Late Bronze Age) or historic sites in the archipelago, a strong case can be made that in this region such material is far more likely to relate to the larger, rich Middle Paleolithic knapping tradition of continental Greece (Tourloukis and Harvati 2018: 53–55) and neighboring Anatolia (e.g., Karahan, Özçelik, and Taşkiran 2023). As detailed below, the project has also produced Levallois products from excavated contexts with appropriate scientific dates for the Middle Paleolithic.

The Stelida Raw Materials

The variability in the silicified sediments ("chert") at Stelida has long been acknowledged, with the geologist G. Roesler (1969) noting an array of colors, textures, and inclusions; the preferred raw material for toolmaking is described as a type of chert close to chalcedony (Sériadès 1983). In 2013 SNAP attempted to provide a more solid foundation to such claims through a combined petrographic and geochemical analysis of field samples (Skarpelis et al. 2017). A more comprehensive geological survey of the hillside was subsequently performed by Moutsiou and colleagues who located, mapped, and sampled the full diversity of raw materials documented during survey artifact study. Some 18 field samples were collected from georeferenced locations around and atop the hill, the raw materials then classified with reference to those macroscopic characteristics believed to be the most pertinent to the prehistoric toolmakers' decision-making processes: knapping quality, color, texture, and bandings/inclusions. This resulted in the definition of five raw material types: (a) banded (the chalcedony-like chert), (b) silicified sandstone, (c) granular, (d) rough banded, and (e) opaque. The survey also involved calculating the relative abundance of the different raw material types via drone (Pitt 2020) and on-the-ground mapping of outcrop surface areas. The aim of this work was also to shed light on Paleolithic behavior through diachronic and synchronic raw material exploitation traditions; the results of this study are detailed elsewhere (Moutsiou et al., forthcoming).

The Middle Paleolithic Material from the Stelida Survey

It is well documented that Stelida is a multiperiod raw material extraction and stone tool production site (Carter et al. 2014, 2016, 2017), with the more recent dating project evidencing the source's use from at least the Middle Paleolithic through to the Mesolithic (Carter et al. 2019; Taffin 2023; Taffin et al. 2024). Given that the surface material thus logically represents a palimpsest of Middle Pleistocene to Early Holocene activity, disentangling period-specific assemblages and loci of activity can be challenging. Moreover, most of the survey artifacts were in the form of unmodified flakes, chunks, shatter, and chips, which one might expect to find at a quarry site of any date. Chronologically diagnostic assemblages thus tend to be made up of tools sensu stricto, as well as those cores and technical pieces that can be assigned with confidence to period-specific knapping traditions. Only for the Mesolithic period was it possible to detail what were believed to be more holistic datasets, based on 25 collection units that contained only diagnostics of this period, where it seemed not unreasonable to suggest that the associated flaking debris was of the same date (Carter et al. 2016).

The Middle Paleolithic component of the Stelida survey material (Table 1; Figs. 5–6) is comprised of blanks, cores, and technical pieces that relate to two main knapping traditions: Levallois and discoidal core technologies and a separate group of material that was recorded generically as *Middle Paleolithic*, for reasons detailed below.

The Levallois knapping tradition constitutes a prepared-core technology (Figs. 7–8) for producing predetermined blanks with recognized traditions of flake, blade, and point manufacture (Boëda 1993, 1995; Bordes 1961). The tradition has received considerable attention as its "lengthy, multi-phase, and hierarchically organized process" (Eren and Lycett 2012) is viewed as reflecting cognitive and linguistic complexity (Bar-Yosef 2017; Schlanger 1996), and since it is associated with both Neanderthal and early modern human populations (Hublin et al. 2017). Of the Middle Paleolithic–type finds discussed in this article (see Table 1; Fig. 6), just under a third derived from Levallois knapping traditions (30.4%, n=237/780). Of course the frequencies reported here reflect which materials are considered diagnostic of the Middle Paleolithic at least as much as they do frequency of Middle Paleolithic in the entire (unknown) Middle Paleolithic assemblage. The Levallois assemblage relates to the production of flakes, blades, and points, in that order of importance, and includes predetermined nuclei for each reduction strategy (n=38, 8, and 1 respectively), together with associated technical pieces (part-cortical, initial shaping flakes) and target products (see Table 1; Fig. 9). Of the 174 Levallois flakes, just over a quarter were retouched (n=49, 28.2%), with the most common tool types being those with linear retouch (n=59), denticulates (n=41), and scrapers (n=25) (Figs. 10–13). The survey also recovered 8 Levallois blade cores (one modified into a combined tool) including both centripetal and recurrent nuclei, plus 14 end products, 10 of which were retouched, with 5 linear, 3 backed, and 1 notched piece (see Table 1; Fig. 10). There was also a single Levallois point core and one point (Figs. 11a, 12a).

The discoidal core knapping tradition is similarly defined as a predetermined technology, having a "volumetric conception" with two convex and asymmetrical flaking surfaces (Boëda 1993; Peresani 2003). This tradition is less well represented in the Stelida survey assemblage (contra an earlier, unquantified report [Carter et al. 2017: 80]), with only two cores (Figs. 8d, 14), and six noncortical (*déjeté*) flakes, comprising only 0.9% of the artifacts argued to be of Middle Paleolithic date (see Fig. 6). Two flakes derived from this tradition were retouched: one point and one with linear modification (see Fig. 10:8–9).

The final, and largest, group of material (n=536, 68.7%) was assigned a Middle Paleolithic date based on the blanks' general comparability to Levallois and/or discoidal core products in terms of thickness, platform shape, raw material, freshness and/or retouch type. In a similar vein, the 33 cores included in this dataset were multidirectional but undeveloped, making it impossible to associate them with a Levallois or discoidal tradition. We refer to this as *undifferentiated* Middle Paleolithic material (see Garefalakis, Panagopoulou, and Harvati 2018: 6, fig. 4) (see Table 1). This range and type of artifacts has also been recovered from stratified deposits (again, trenches DG-A/021, and SH/024) in direct association with "classic" / fully developed Middle Paleolithic material. As with

TABLE 1 THE TECHNO-TYPOLOGICAL STRUCTURE OF THE MIDDLE PALEOLITHIC STELIDA SURVEY ASSEMBLAGE

Tradition	Technology & blank	Total	No modif.	Backed	Notched	Denticulate	Linear	Scraper	Bec	Point	Combination	Biface	Burin
Levallois	Levallois F1	3	2			1							
Levallois	Levallois F2	8	2		1	1	2	1			1		
Levallois	Levallois F3	163	45		3	37	52	24		1	1		
Levallois	Levallois flake core	38	37								1		
Levallois	Levallois blade 1	0											
Levallois	Levallois blade 2	1				1							
Levallois	Levallois blade 3	13	4	3	1		5						
Levallois	Levallois blade core	8	7								1		
Levallois	Levallois point	1				1							
Levallois	Levallois point core	1	1										
Levallois	Levallois core prep. F1	1	1										
Levallois	Levallois core prep. F2	0											
Levallois	Levallois core prep. F3	0											
Discoidal	*Déjeté* F1	0											
Discoidal	*Déjeté* F2	0											
Discoidal	*Déjeté* F3	6	4				1			1			
Discoidal	*Déjeté* flake core	1	1										
Undiff.	MP F1	20	1	1	1	5	6	3			3		
Undiff.	MP F2	68	9		5	21	15	13	1		4		
Undiff.	MP F3	306	40		10	88	76	72	1	3	14	1	1
Undiff.	MP blade-like F1	2				1		1					
Undiff.	MP blade-like F2	10	2		1	4	1	2					
Undiff.	MP blade-like F3	48	2		2	12	16	10		2	4		

Tradition	Technology & blank	Total	No modif.	Backed	Notched	Denticulate	Linear	Scraper	Bec	Point	Combination	Biface	Burin
Undiff.	MP blade 1	2				1	1						
Undiff.	MP blade 2	11		5		3	2	1					
Undiff.	MP blade 3	29	4		3	10	7	2	1		2		
Undiff.	MP chunk 1	0											
Undiff.	MP chunk 2	2						2					
Undiff.	MP chunk 3	5	1			1		1			2		
Undiff.	MP flake core	31	30					1					
Undiff.	MP blade core	2	2										
Undiff.	MP core rejuvenation 1	0											
Undiff.	MP core rejuvenation 2	0											
Undiff.	MP core rejuvenation 3	0											
	TOTALS	**780**	**195**	**9**	**27**	**187**	**184**	**133**	**3**	**7**	**33**	**1**	**1**

Note: Numerical suffixes 1, 2, and 3 [flakes, blades, core rejuvenation] = blank has 80–100%, 5–79%, and <5% cortex on dorsal surface, respectively.

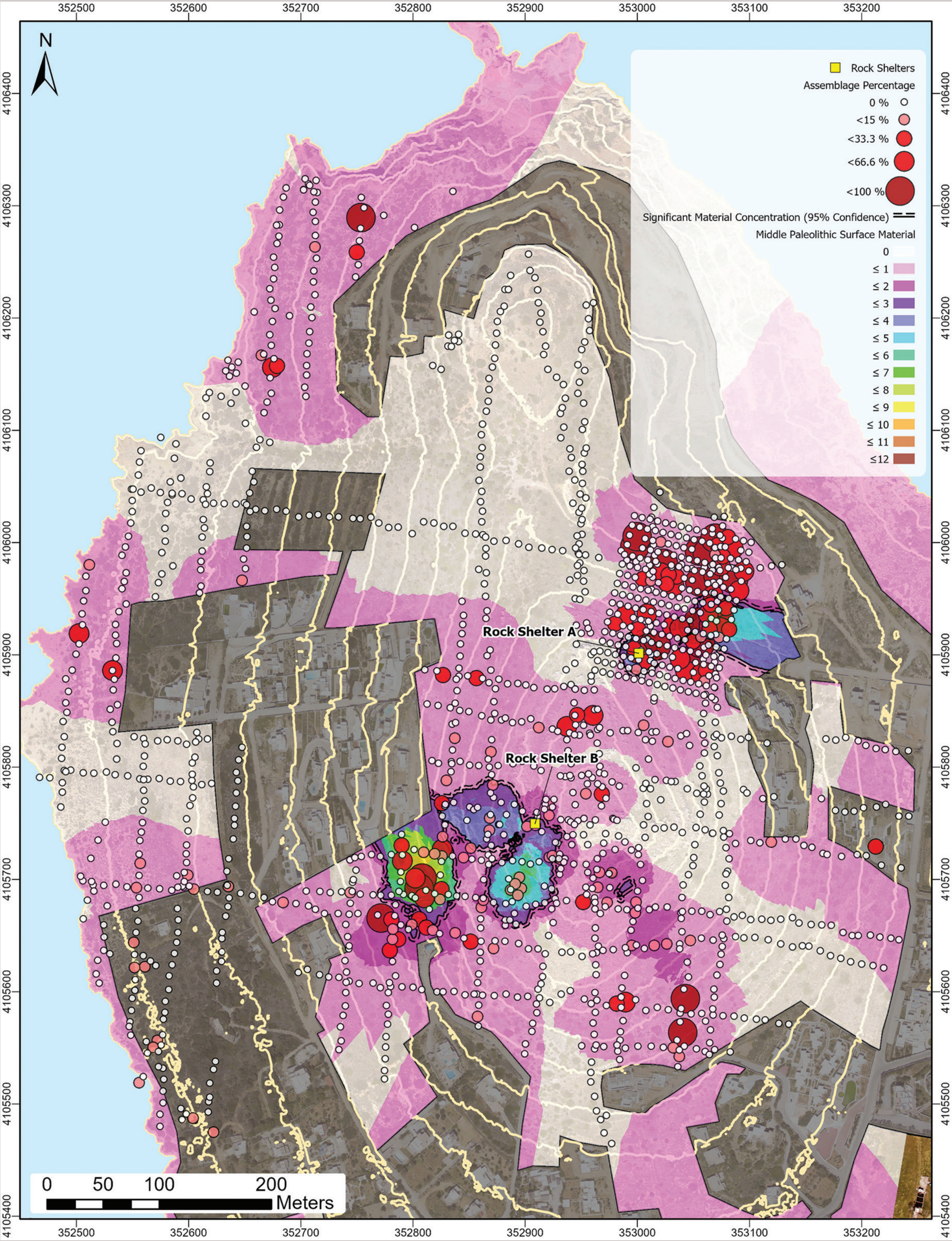


FIG. 5

Distribution of all Middle Paleolithic type finds and their respective assemblage percentage. (Map by Y. Pitt; © SNAP.)

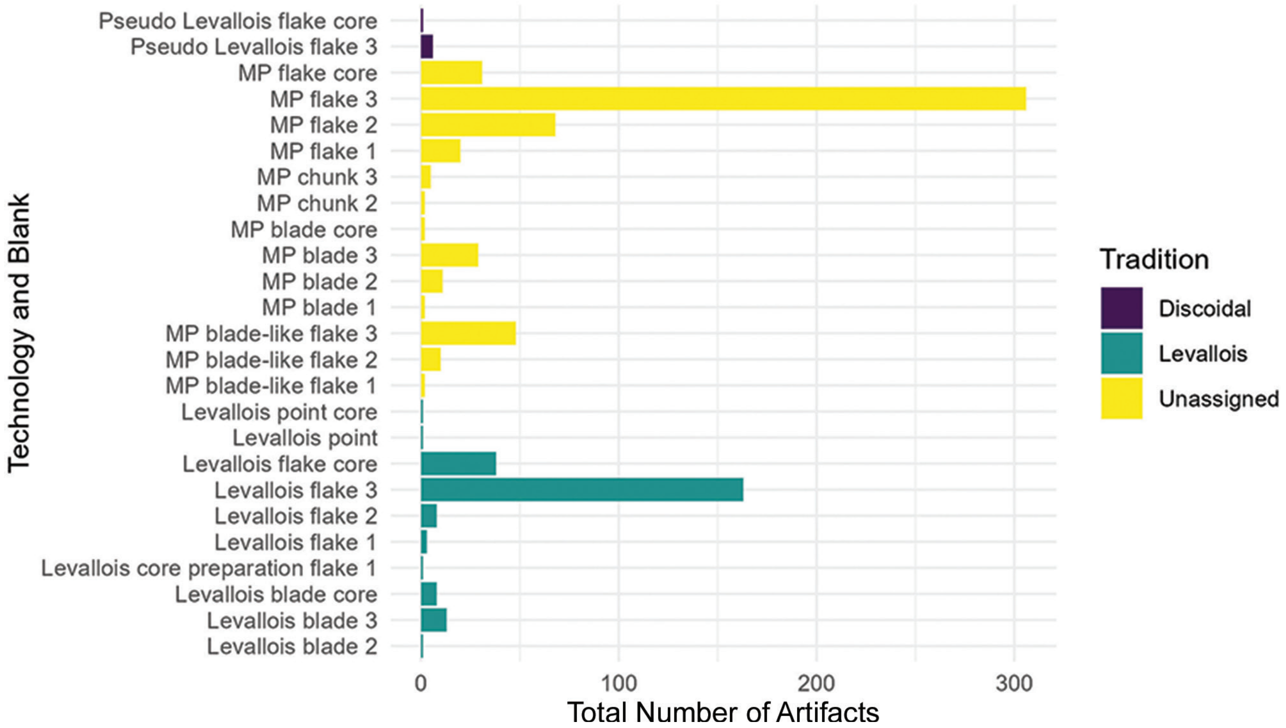


FIG. 6
Stelida survey Middle Paleolithic type finds by technology and blank. (Graph by C. Zogheib; © SNAP.)

the Levallois assemblage, most of this undifferentiated material derives from a predetermined flake core tradition, with 31 nuclei and 394 flakes (306 being noncortical), and with 344 of those flakes being formal, modified tools (87.3% of the total). There were also 60 blade-like flakes (12 part-cortical), most of which were retouched (n=56, 93.3%), 2 blade cores, and 42 blades, once again dominated by modified pieces (n=38, 90.5%).

If we treat the undifferentiated retouched material en masse, compared to the Levallois material (see Fig. 13; Table 1) it has a slightly larger array of tool types represented and a greater proportion of denticulates (27%, n=146), compared to those pieces with linear modification (23%, n=124) and scrapers (20%, n=108). Those tools not represented in the Levallois assemblage include three becs, a single example each of a biface and a burin. Five chunks are included in this dataset because they were retouched in a characteristic manner for the period, with four scrapers, two combined tools, and one denticulate.

Middle Paleolithic Stelida and Its Behavioral Implications

What do the survey assemblage structure, technical traditions, tool types, and their distribution tell us about Middle Paleolithic hominin behavior at Stelida? Perhaps unsurprisingly for a resource extraction site, there is clear evidence for core preparation, as evidenced by 81 predetermined flake, blade, and blade-like flake cores and a range of technical pieces such as *déjeté* flakes (see Table 1). The assemblage's relative lack of preparatory material relating to the earliest stages of raw material reduction is due to our inability to assign simple cortical blanks to a single period. Similarly, we cannot recognize the "fragments, chips, and debris" that one might recover from a secure Middle Paleolithic excavation deposit (e.g., Panagopoulou 1999: table 22.1; Panagopoulou et al. 2004: table 3; Sitlivy et al. 2007: 5–6, fig. 4). What is distinct about the Stelida assemblage (see Table 1) is that not only does it include developed Levallois and discoidal cores, but also significant quantities of target blanks and modified

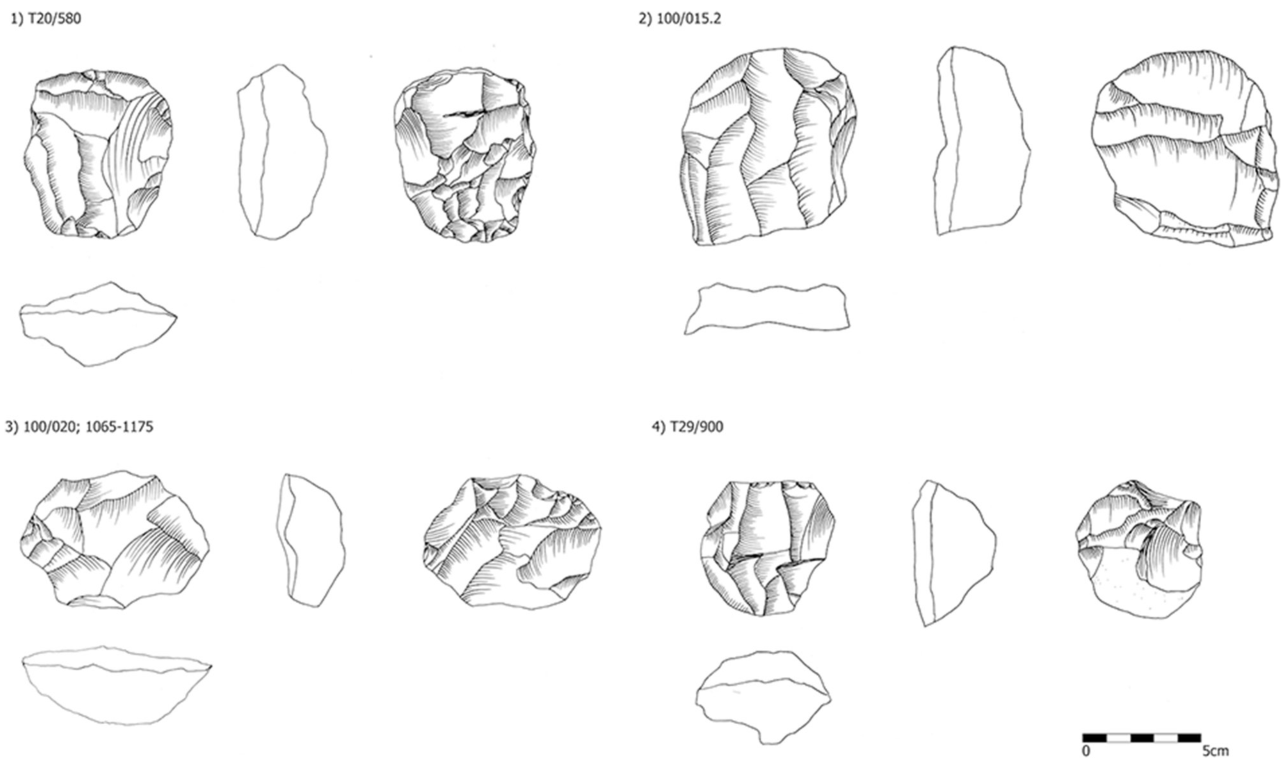


FIG. 7
Levallois cores from the Stelida survey. (Drawings by D. Mihailović; © SNAP.)

tools (n=585), that is, the end products that are typically underrepresented, if not entirely missing, from other Eurasian Middle Pleistocene resource extraction sites.

For example, the Lower Paleolithic (Late Acheulean–Early Mousterian) lithic assemblage from the flint source at Mount Pua, Israel, was dominated by Levallois cores and early-stage reduction blanks. Few tools were recovered (mainly "rejects owing to failure during manufacture"), and the excavators understood this to mean that most preformed implements had been taken away from the workshop (Barkai, Gopher, and La Porta 2002: 674). Finished tools were similarly rare at four other southern Levantine open-air Middle Paleolithic extraction sites (Sasa, Sede Ilan, and Site 164 in Israel, as well as WZM-2 on the Madaba Plateau, Jordan), suggesting similar hominin behavior (Gopher and Barkai 2014: 98; Bisson et al. 2014: 85). Much the same pattern is witnessed at several other Middle Paleolithic sources in Arabia (Groucutt et al. 2017: 60–61) and France (Bruxelles et al. 2010: 11; Dawson et al. 2012: 26–27), assemblages there dominated by early reduction sequence material (Levallois traditions) but with few target blanks and/or modified tools. Only at the flint sources at Petrota in northern Greece, as well as Mount Achbara and Kakal Spur (Kerem Ben Zimra) in Israel, is there reference to a greater level of tool production, though it is unclear whether this reflects on-site camping or the completion of implements to be transported elsewhere (Efstratiou and Ammerman 2004: 186–87; Finkel et al. 2018: table 1; Finkel, Gopher, and Agam 2020: 15).

The Stelida Middle Paleolithic survey assemblage (see Table 1) with its significant quantity of target-products and formal (retouched) tools represented is a surprising contrast. We suggest that this assemblage reflects a different suite of hominin behaviors related to the array of attractive resources the hill afforded to visiting populations. These include not just its toolmaking raw materials but also shelter, potable water (fundamentals to survival), and a viewshed over significant tracts of land (thus also provisioning them with a subsistence-related

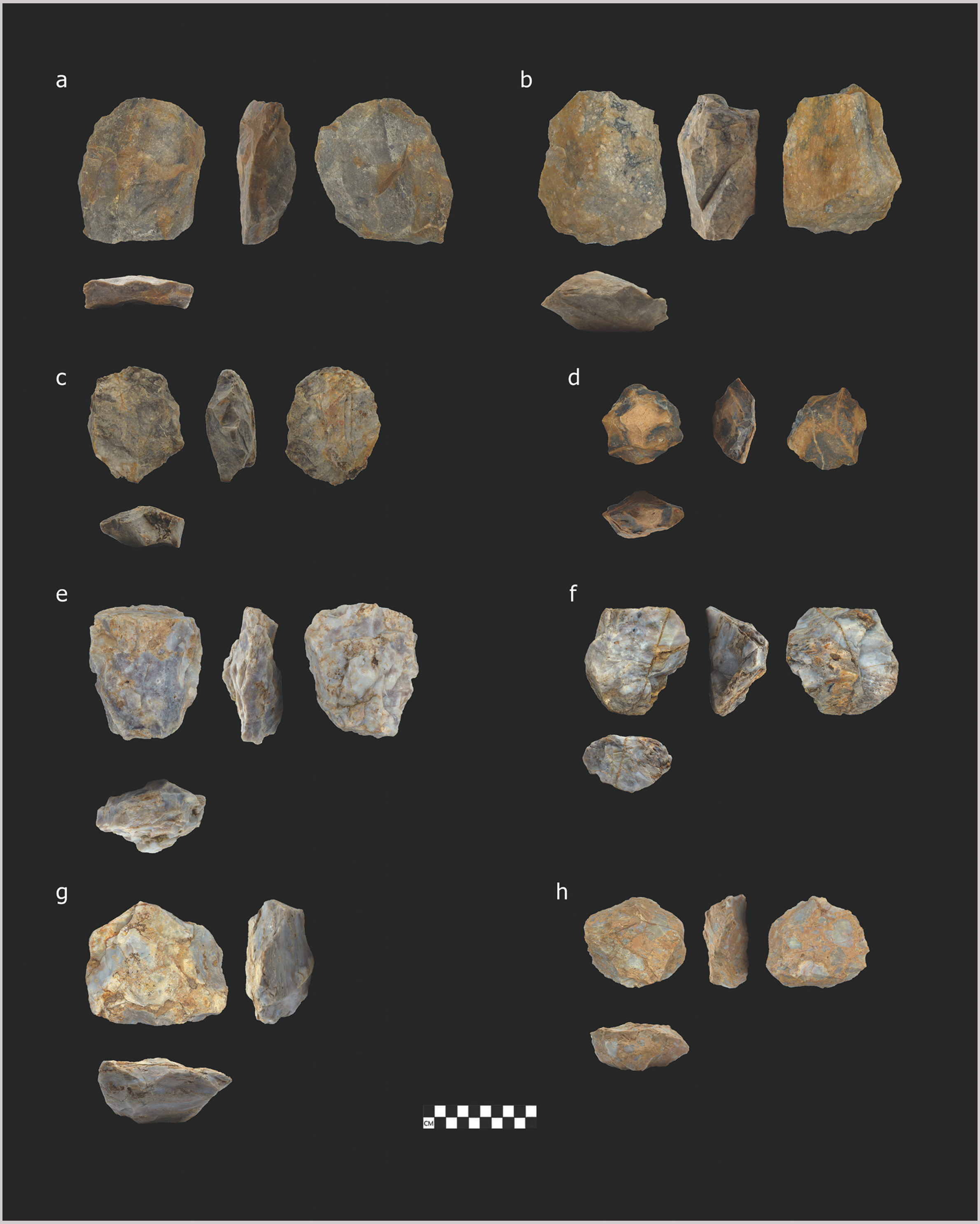


FIG. 8

Middle Paleolithic cores from the Stelida survey: (a–c) Levallois bidirectional recurrent; (d) discoidal; (e–f) Levallois bidirectional recurrent; (g) Levallois centripetal; (h) Levallois preferential. (Photos by S. Crewson; © SNAP.)

FIG. 9

Unmodified Levallois and discoidal core products from the Stelida survey: (a) Levallois elongated flake; (b–c) Levallois blades; (d–g) Levallois flakes; (h) pseudo-Levallois point; (i–m) Levallois flakes; (n) *déjeté* flake. (Photos by S. Crewson; © SNAP.)

hunting stand). The distribution of alleged Middle Paleolithic artifacts, not least the retouched tools (n=585), has two distinct clusters, both on the mid-slope on either side of the hill (see Fig. 5). The cluster on the eastern flanks of Stelida is located directly in front and downslope of a spring and a small rock shelter in a Type C chert outcrop (Rock Shelter A; Figs. 15–16). While the rock shelter is too small to have been used for even short-term habitation, the area around the water source has a gentle slope and would make for an attractive camp site. Subsequent excavations in this area (e.g., Trenches SH/024 and SH/042 [Carter and Athanasoulis 2021: fig. 10]) produced significant quantities of Middle Paleolithic artifacts (>800 from the former sondage), encompassing entire sequences of Levallois knapping traditions from massive flake cores to modified

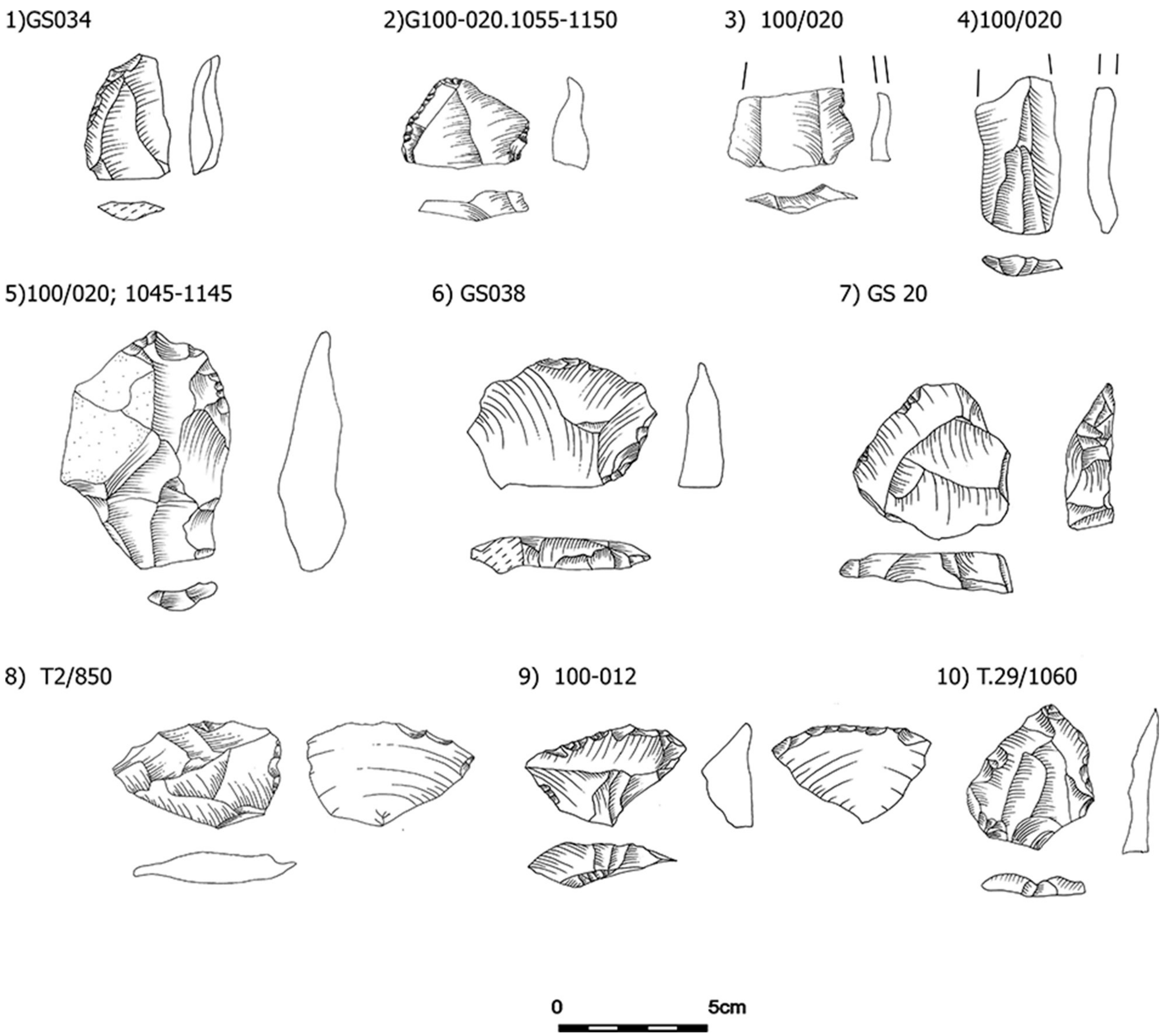


FIG. 10

Selection of Middle Paleolithic end products from the Stelida survey: (1) Levallois point; (2–3) Levallois flakes; (4) Levallois blade; (5) Levallois technical piece; (6–7) Levallois *débordant* flakes; (8–9) *déjeté* flakes; (10) pseudo-Levallois point. (Drawings by D. Mihailović; © SNAP.)

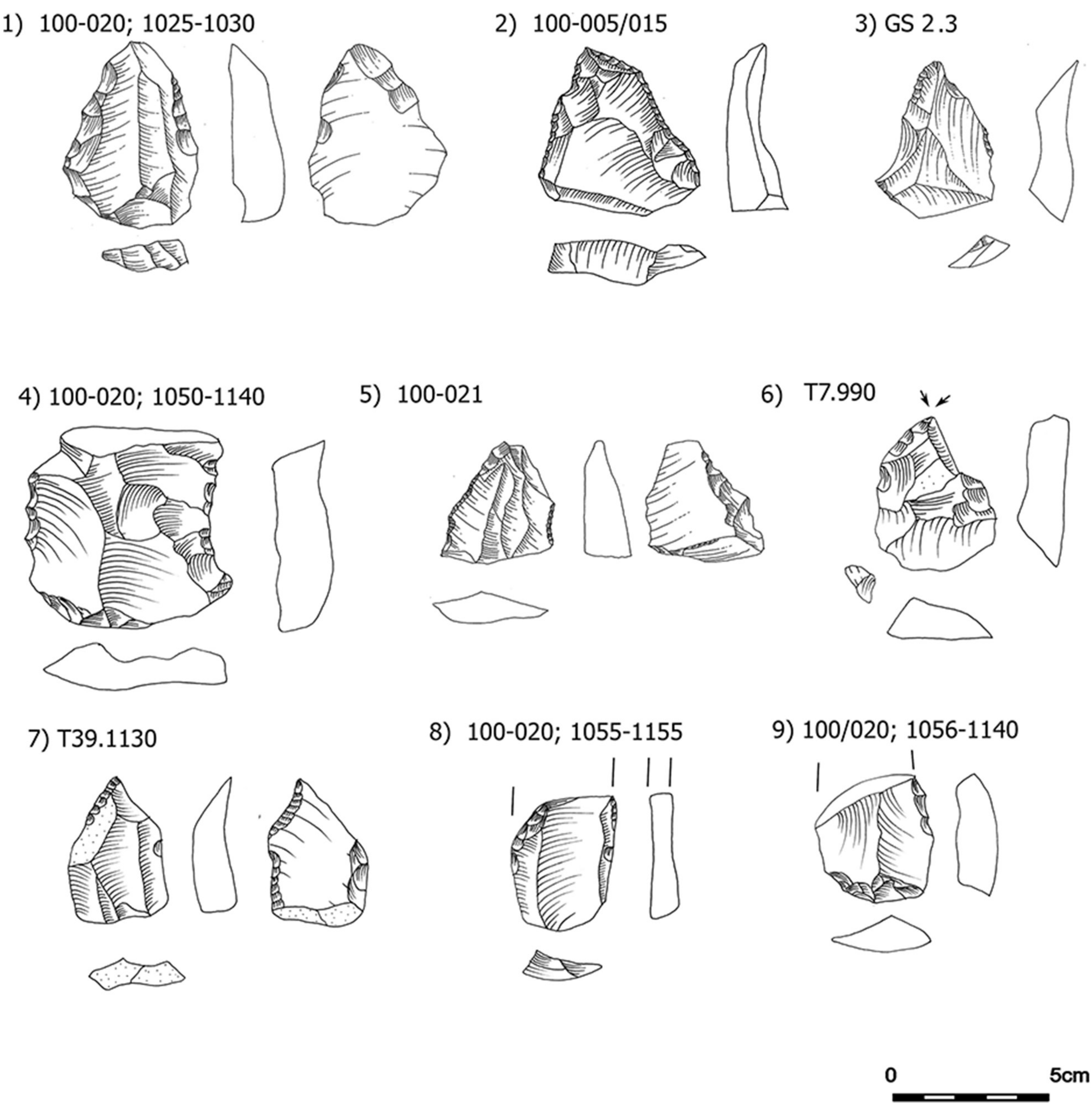


FIG. 11

Selection of retouched Middle Paleolithic end products from the Stelida survey: (1) Mousterian point; (2–3) pseudo-Levallois points; (4) concave scraper; (5) transverse scraper; (6) burin; (7) combined tool (piercer & denticulate); (8) Levallois flake with linear retouch; (9) flake with linear retouch. (Drawings by D. Mihailović; © SNAP.)

implements. The second cluster of Middle Paleolithic survey material was recorded from the western side of the hill, in front of a much larger rock shelter in a massive outcropping of Type A chert (Rock Shelter B; Figs. 15–16). The original overhang of Rock Shelter B has largely collapsed, and unlike Rock Shelter A this would have been large enough to provide shelter. Excavations in 2016–2018 directly in front of this locale (DG/018 and DG/028) also produced quantities of Middle Paleolithic-type finds (yet to be fully studied). Only ~85

FIG. 12
Selection of Middle Paleolithic end products from the Stelida survey: (a) Mousterian point; (b) inverse scraper; (c) convergent scraper; (d) concave scraper; (e) burin; (f) pseudo-Levallois point. (Photos by S. Crewson; © SNAP.)

m to the southwest is another spring easily accessible to anyone camping within or around Rock Shelter B.

These resources combine with the lithic assemblages to lead us to hypothesize that the Middle Paleolithic assemblages from these two areas represent the residue of the camps established at Stelida by those exploiting the chert sources rather than simply waste products from raw material procurement. We suggest the accumulation of denticulates, notched pieces, scrapers, and other tools at these loci (Fig. 16) likely relates to food preparation and consumption, together potentially with such activities as, among others, hide working and retooling. The one well-known Middle Paleolithic tool type that is poorly represented from our survey material are points, of which only seven were recovered, a mere 1.2% of the retouched assemblage (n=585). While this might relate to the knapping traditions being biased toward the production of other implements (the survey material only included one recognizable Levallois point core), we would also suggest that of all tool types, projectiles are the most likely to have been taken away and used in off-site hunting forays. Noteworthy in this regard is one of the survey's best examples of a Mousterian point from close to Rock Shelter A, with a thinned butt for hafting, but also with what appears to be impact damage on the ventral

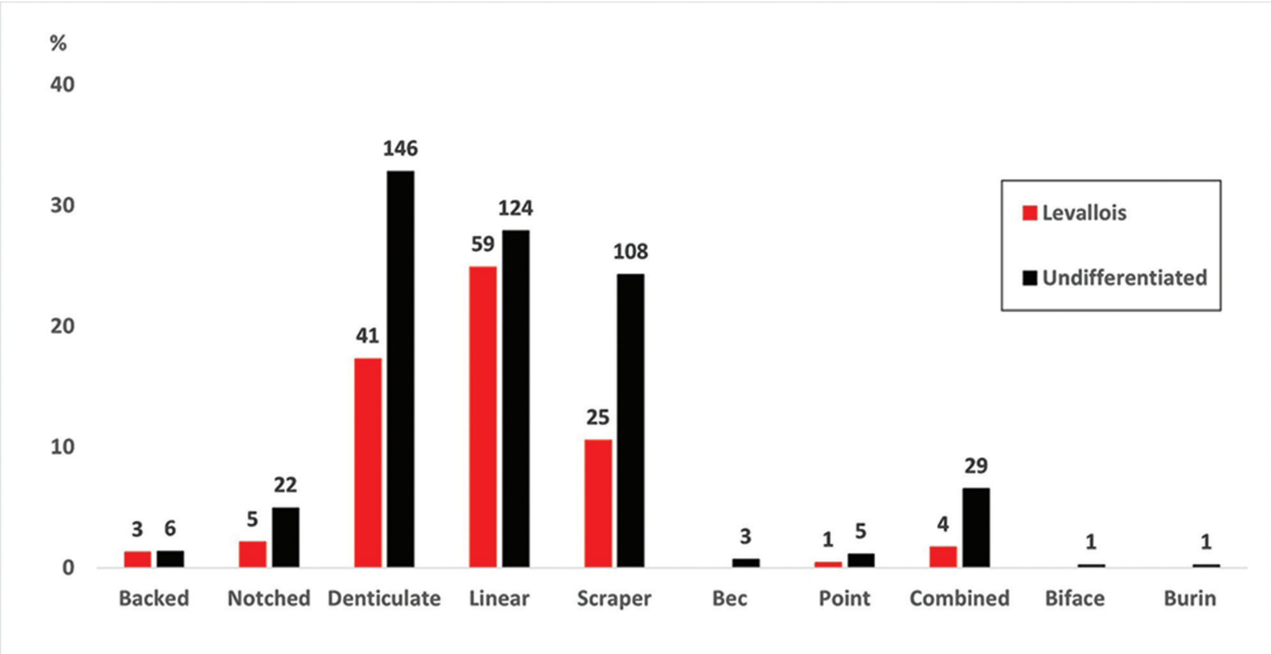


FIG. 13
Relative proportion of modified types within the Levallois (n=237) and undifferentiated (n=445) datasets. (Graph by T. Carter; © SNAP.)

surface of its tip (see Figs. 10a, 11a). This suggests that the point had been used, its presence back on the hill perhaps explained by it having been brought back to camp to be attached anew to a haft or embedded within the carcass of an animal that was carried to Stelida for consumption (see Boëda et al. 1999).

The possibility of camps notwithstanding, the Stelida Middle Paleolithic material relates primarily to early-stage knapping, with the bulk of core reduction and tool fashioning likely occurring off-site at longer-term habitations, which is a form of behavior evidenced at most excavated Middle Paleolithic sites in Greece (e.g., Panagopoulou 1999; Panagopoulou et al. 2004; Sitlivy et al. 2007) and neighboring Anatolia (e.g., Otte et al. 1995). However, we currently have no idea as to where these hominins exploiting the Stelida chert source were residing. While there are many caves on Naxos, few have been investigated archaeologically, the Late Neolithic occupation at Zas Cave remaining the earliest evidence for human activity at any of these loci (Zachos 1996). Open-air sites are notoriously unlikely to preserve and difficult to locate.

The Stelida Middle Paleolithic Chronology and Context

Providing the Stelida Middle Paleolithic material with a higher-resolution chronology is challenging. The Middle Paleolithic-type finds from Stelida were recovered from a palimpsest of material deposited over millennia, so the assemblage should not be considered directly comparable to excavated assemblages from excavations in the region, which generally aggregate material from much shorter periods of time. Moreover, we lack a local lithic typology-based chronology to refer to. While in other parts of Eurasia rich sets of scientific dates have allowed such developments (see Ashton and Scott 2016; Bar-Yosef and Meignen 2001; though see Mihailović and Bogićević 2016), in Greece there are only five well-dated Middle Paleolithic excavations to refer to (Tourloukis 2021: 67).

The co-occurrence of products from Levallois and discoidal prepared-core technologies at Stelida (from the survey, and Trenches SH/024 and SH/042) was to be expected considering Middle Paleolithic assemblage characteristics from Greece and Anatolia (see Fig. 1), as at Asprochaliko, Klissoura, Kalamakia (Darlas 2007: 352, 357, 361), Mavri Spilia (Garefalakis, Panagopoulou, and Harvati 2018: 6; Tourloukis et al. 2016: 8), Theopetra (Panagopoulou 1999: 256), Sürmecik (Taşkıran et al. 2021), the Karain Cave (Otte et al. 1995: 294), and Kaletepe Deresi 3 (Slimak et al. 2008: 104). The relative importance of these knapping traditions is, however, quite different among these sites, distinctions that may in some instances be chronologically significant (Tourloukis and Harvati 2018: 53). While the Stelida Middle Paleolithic survey material contains significant numbers of transverse-, inverse-, and end-scrapers (n=133 cumulatively), denticulated pieces are dominant (n=187); the same trend is seen in the Trench SH/024 and SH/042 assemblages. Previously, we noted this trend in tool types (Carter et al. 2014), suggesting that some of the Stelida assemblages might thus be broadly comparable to those from sites associated with the Denticulate Mousterian facies of the Mediterranean coast, which first appeared in Western Europe during Isotope Stages 7 and 5 (ca. 243–130 ka BP) but became more popular during Stage 3 at ca. 50–38 ka BP (Thiébaut 2010: 379, fig. 25). Given that the Denticulate Mousterian is largely restricted to sites in northern Iberia and southern France, we appreciate that this similarity is more likely functional than chrono-cultural.

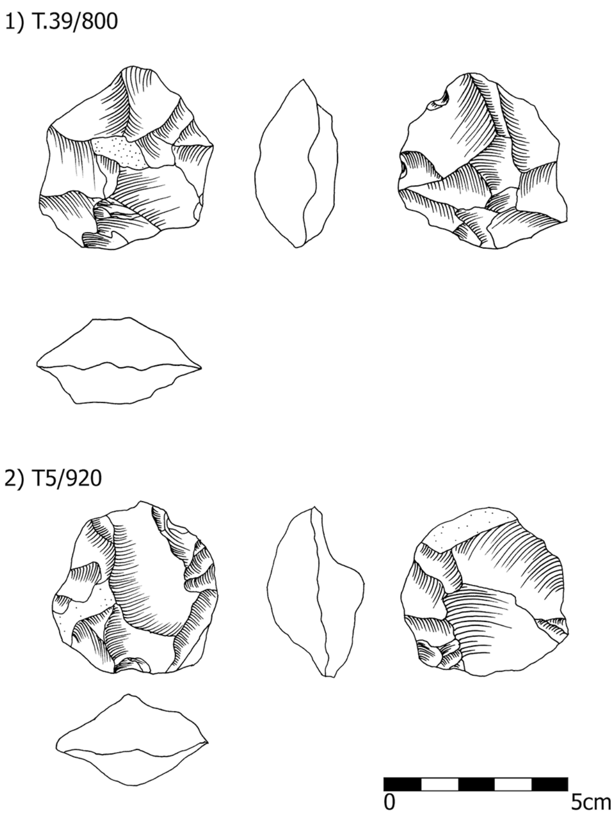


FIG. 14
Discoidal cores from the Stelida survey. (Drawings by D. Mihailović; © SNAP.)

FIG. 15
Left: Rock Shelter A; right: Rock Shelter B. (Photos by S. Crewson and D. Faulmann; © SNAP.)

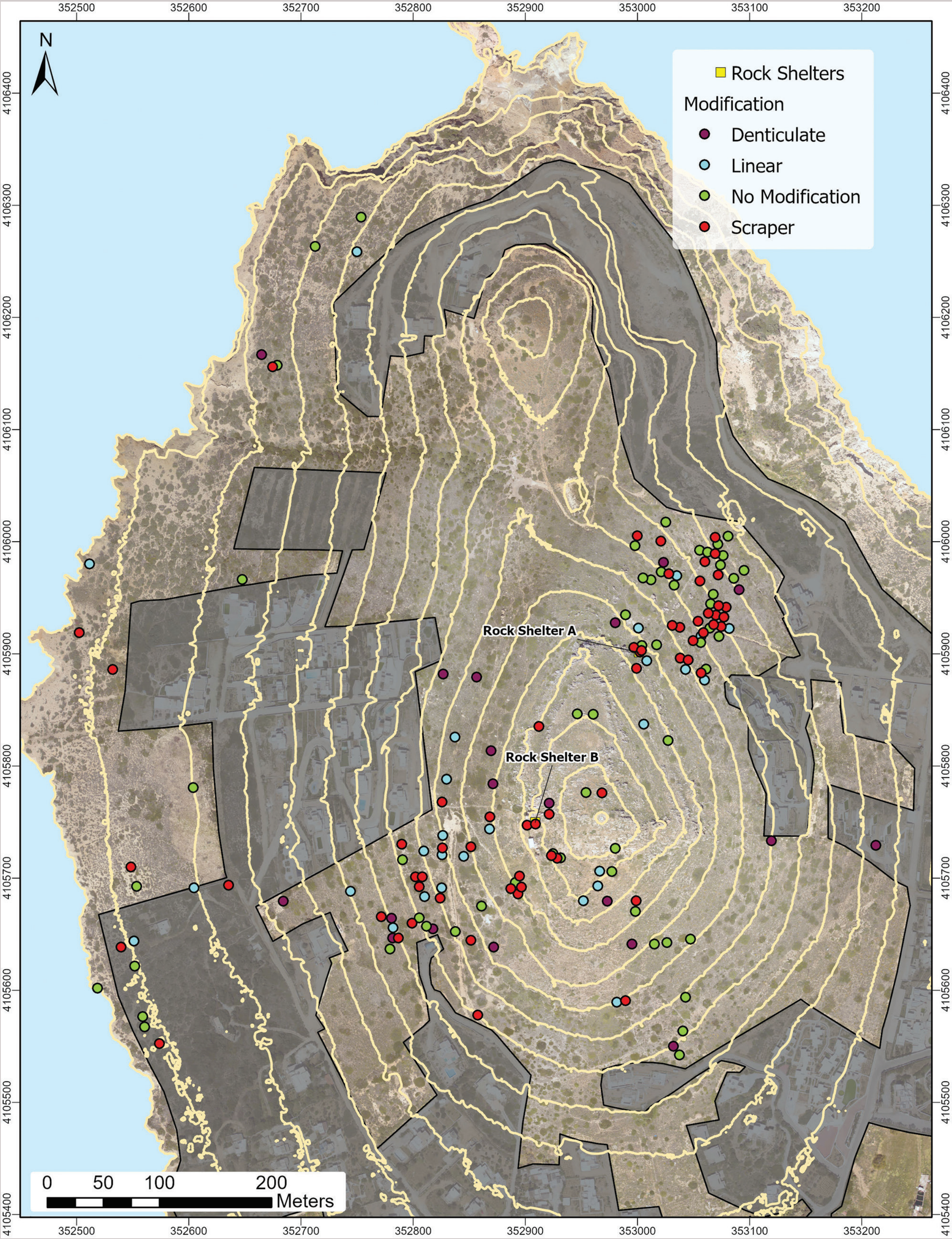


FIG. 16

Distribution of main Middle Paleolithic modified tool types from the survey of Stelida. (Map by Y. Pitt; © SNAP.)

We also previously suggested that the products of Levallois laminar traditions recovered by the survey—8 blade cores and 14 end products (see Figs. 8–9)—were chronologically diagnostic. It was noted how such material seemed to be characteristic of early Middle Paleolithic assemblages in Greece, such as Asprochaliko (see Fig. 1), and sites of the last interglacial in western Europe and around the Mediterranean, dating back to ca. 130–80 ka BP (Huxtable et al. 1992). To the east, Levallois blades are even older, a component of the Levantine early Mousterian, dated ca. 250–160 ka BP (Meignen 2007: 134–36). In hindsight, it seems more prudent to simply refer to this material as further evidence for Middle Paleolithic activity at Stelida, without trying to assign it to a specific chronological range, until such moment as we can publish such material from dated strata of the excavation.

In sum, the apparently Middle Paleolithic artifacts recovered from surface survey at Stelida, because they are part of a palimpsest of material that spans the Middle Paleolithic and more, might date to anywhere between ~250–40 kya.

The most robust chronologies for the Middle Paleolithic are of course founded on absolute dates generated from stratified excavations (e.g., Alex et al. 2019). At Stelida sediments from several trenches, either side of the hill, have been dated through both aliquot and single-grain optically stimulated luminescence methods (Taffin 2023; Taffin et al. 2024), these show that hominins were visiting the site from at least 200,000 years ago (Carter et al. 2019; Taffin et al. 2024). Unfortunately, these samples date secondary (colluvial) deposits (Holcomb 2020), whereby the Stelida dates are *termini ante quem* (TAQ). Rather than dating production of diagnostic lithics and providing a direct chronology of the Middle–Late Pleistocene archaeology, these TAQ dates mark the time of deposition of colluvial sediments, which might have included lithic artifacts already old at the time of deposition. The completely analyzed and published sequence (DG-A/001 [Carter et al. 2019]) includes Middle Paleolithic products from four different strata, with the earliest comprising three unmodified flakes of Levallois and pseudo-Levallois traditions from a deposit dated to 84 to 80 ka (Table 2). These would situate Stelida in the early Middle Paleolithic of Greece, as suggested previously with reference to our Levallois blade component

TABLE 2 MIDDLE PALEOLITHIC DIAGNOSTICS FROM STELIDA EXCAVATION TRENCH DG-A/001 BY STRATA

LU	Date (TAQ)	Artifacts
1	no date	A few Levallois cores & flakes; *déjeté* flake from discoidal core
2	12.5–12 ka	Nothing typical
3	16.5–15 ka	Levallois & pseudo-Levallois flakes, Mousterian point
4a–4b	17–16 ka	Nothing typical
5	21–20 ka	2 Levallois flakes/blade-like flakes, 1 possible Levallois flake
6	84–80 ka	3 unmodified flakes of Levallois & pseudo-Levallois traditions
7	233–217 ka	Nothing typical

Note: LU = lithostratigraphic unit [data from Taffin et al. 2024].

(Carter et al. 2014). Regrettably, even with a larger number of type finds the nature of colluvial deposits does not allow inference of diachronic trends in knapping traditions and/or tool types. Unfortunately, the largest assemblages of techno-typologically typical Middle Paleolithic artifacts from the excavation (e.g., from SH/024 with >800 pieces) come from strata that were redeposited either during the Holocene or around 30,000 years ago (Taffin 2023).

Conclusions

While most of the Stelida survey assemblage relates mainly to core preparation and initiation, with most targeted blanks being removed, modified, used, and discarded elsewhere, the recovery of numerous end products / retouched tools close to two rock shelters and springs suggests that some of the Stelida material represents the residue of campsites. Such a breadth of activity at Stelida appears to be different from most Middle Pleistocene Eurasian lithic procurement sites, where one tends to find only the debris from early-stage knapping.

Our behavioral interpretation draws upon the concept of *affordances* (after Chemero 2003; Gibson 1979), that is, the resources that an environment is perceived to make available to Middle Paleolithic populations (see Pope 2017). Such perceptions are experiential and sensorial, as well as historical, in that they depend not only on environmental conditions but also on knowledge and tradition that brought those exploiting the resources at Stelida back over generations and even millennia. A larger-scale affordance-based approach has been productively employed in a Greek Paleolithic context to model dispersal corridors and zones of occupation in the Early and Middle Pleistocene (Tsakanikou 2020; Tsakanikou and McNabb 2023).

The conjunction of knappable materials and potable water has long been appreciated as an affordance that influenced hominin behavior, including migration routes (Carotenuto et al. 2016) and attraction to certain resource extraction sites (Finkel and Barkai 2024). At Stelida we can also refer to the provision of shelter, not least regarding the large Rock Shelter B, while the hilltop comprises a desirable hunting stand location that affords clear views for kilometers in most directions (as detailed by a viewshed analysis [Carter et al. 2021: 83, fig. 15]). We argue that such affordances explain why the behavioral character of Middle Paleolithic activity at the site is different from those documented at most Eurasian resource extraction sites. As to which populations' behavior we are discussing, this remains currently impossible to say. While until recently the only human remains found in association with Levallois products in Greece were Neanderthals (Darlas 2007; Harvati, Panagopoulou, and Runnels 2009), the situation is now much more complex, with the presence of *Homo sapiens* in the region over 210,000 years ago (Harvati et al. 2019) and the fact that also early modern humans, as well as Neanderthals, were using certain forms of Levallois technologies (e.g., Groucutt et al. 2015; Hublin et al. 2017). Future excavation data from Stelida might be able to resolve this issue, should we recover hominin remains and/or genetic traces (see Brown and Barnes 2015) in deposits containing typical Middle Paleolithic lithics.

Concerning how we further develop the behavioral hypotheses outlined in this article, the next logical steps are threefold. Firstly, the raw material specifics of these artifacts need to be reported and the relationship between different chert types and knapping traditions considered behaviorally (Moutsiou et al., forthcoming). Secondly, the project needs to generate more detailed (Level 3) analyses of Middle Paleolithic-type finds from both survey and excavation, including not only the artifact metrics, but also the specificities of the Levallois core technologies, among other lines of inquiry. Finally, we need to see if Stelida's affordances—chert, shelter, and freshwater supplies—also encouraged a similarly broad range of activities being practiced on the hill by those earlier (Lower Paleolithic) and later populations (Upper Paleolithic–Mesolithic) who accessed the site.

Note

Acknowledgments: Permission for the survey and excavation was provided by the Greek Ministry of Culture and Sports, with the support of the Cycladic Ephorate of Antiquities and its directors during the time of our work P. Hatzidakis (2013–2014) and D. Athanasoulis (2015 onward) and their Naxian representative I. Legaki. Geological work was conducted with a permit from the Institute of Geology and Mineral Exploration (thanks to N. Carre). Our work was conducted under the aegis of the Canadian Institute in Greece, with support of then director D. Rupp, as well as J. Tomlinson, and B. Burke. The survey was funded by grants from the Institute for the Study of Aegean Prehistory, the National Geographic Society (Waitt Grant # W342-14), and the Arts Research Board of McMaster University. Thanks also to the support of J. Amelar, J. Burkey, M. Ford, R. Moir, K. Waffle, as well as M. Margaritis (then Mayor of Naxos), G. Tsolakis (then President of the Naxian Cultural Association), the guards of Naxos Museum, and our hard-working field teams. We also gratefully acknowledge the critical feedback provided by Metin Eren, and two other anonymous reviewers, which have hopefully improved the article; any errors remain ours alone.

References

Alex, B., D. Mihailović, S. Milošević, and E. Boaretto. 2019. Radiocarbon Chronology of Middle and Upper Paleolithic Sites in Serbia, Central Balkans. *Journal of Archaeological Science: Reports* 25:266–79.

Ammerman, A. J. 2014. Setting Our Sights on the Distant Horizon. *Eurasian Prehistory* 11:203–36.

Ashton, N., and B. Scott. 2016. The British Middle Palaeolithic. *Quaternary International* 411:62–76.

Bar-Yosef, O. 2017. Can Archaeology Tell Us about the Evolution of Cognition and Language? *Journal of Neurolinguistics* 43:222–27.

Bar-Yosef, O., and L. Meignen. 2001. The Chronology of the Levantine Middle Palaeolithic Period in Retrospect. *Bulletins et Mémoires de la Société d'Anthropologie de Paris* 13 (3–4):269–89. https://doi.org/10.4000/bmsap.6113.

Barkai, R., A. Gopher, and P. C. La Porta. 2002. Palaeolithic Landscape of Extraction: Flint Surface Quarries and Workshops at Mt Pua, Israel. *Antiquity* 76 (293):672–80.

Bisson, M. S., A. Nowell, C. Cordova, M. Poupart, and C. Ames. 2014. Dissecting Palimpsests in a Late Lower and Middle

Paleolithic Flint Acquisition Site on the Madaba Plateau, Jordan. *Quaternary International* 331:74–94.

Boëda, E. 1993. Le débitage discoïde et le débitage Levallois récurrent centripède. *Bulletin de la Société préhistorique française* 90:392–404.

———. 1995. Levallois: A Volumetric Construction, Methods, a Technique. In *The Definition and Interpretation of Levallois Technology*, ed. H. L. Dibble and O. Bar-Yosef, 41–68. Monographs in World Archaeology 23. Madison, WI: Prehistory Press.

TRISTAN CARTER is a professor in the Department of Anthropology, McMaster University, and (co-)director of the Stelida Naxos Archaeological Project since 2013. A Eurasian prehistorian who works primarily with lithic technology and obsidian sourcing to contribute to various debates, including hominin dispersals, Neolithization, the archaeology of social gathering, and more. He is also the director of the McMaster Archaeological XRF Laboratory [MAX Lab] and the Freston Archaeological Research Mission [FARM], excavating an Early Neolithic causewayed enclosure in England. (Department of Anthropology, McMaster University, 1280 Main Street West, Hamilton, ON, L8P 1G2, Canada; stringy@mcmaster.ca)

DANIEL A. CONTRERAS is an associate professor in the Department of Anthropology, University of Florida, and field director and geospatial analyst with SNAP since 2013. He pursues his research interests in long-term human–environment interactions in a variety of contexts, and in addition to his contributions to SNAP he co-directs the Chicama Environmental Archaeology Project [CHEAP] on the North Coast of Peru. (Department of Anthropology, University of Florida, Gainesville, FL 32611; daniel.contreras@ufl.edu)

DANICA D. MIHAILOVIĆ is a research assistant at the Institute of Archaeology, Belgrade, and PhD candidate in the Department of Archaeology, University of Belgrade, and the main early-prehistoric lithic specialist on SNAP since 2013. Her main research focus is on prehistoric economy and lithic traditions during early prehistory, with a particular interest in the eastern Mediterranean and the Balkans. She has been involved in various archaeological projects in Serbia, Greece, and Turkey, including the Balanica Cave, Radan chert source, and Vinča (Lower Paleolithic–Neolithic), as well as the UNESCO World Heritage site of Çatalhöyük, Turkey. (Institute of Archaeology, Kneza Mihaila 35/IV, Room 510, 11000 Belgrade, Serbia; danicamih@yahoo.com)

THEODORA MOUTSIOU is a researcher at the Archaeological Research Unit at the Department of History and Archaeology of the University of Cyprus, as well as Adjunct Senior Research Fellow at James Cook University of Australia and the Max Planck Institute for the Science of Human History in Germany. They have worked on SNAP since 2013 as a Paleolithic behavioral archaeologist. (Department of History and Archaeology, University of Cyprus, 12, Gladstonos Street, Nicosia 1095, Cyprus; tmouts01@ucy.ac.cy)

YORGAN PITT is a Geographic Information System Officer for the Province of Nova Scotia. They worked on SNAP between 2016 and 2018 as a project surveyor and GIS specialist, completing their MSc on *Interrogating Data-Integrity from Archaeological Surface Surveys Using Spatial Statistics and Geospatial Analysis* in 2020. (Government of Nova Scotia, 1723 Hollis St Fl 3, Halifax, Nova Scotia, Canada; yorganpitt@gmail.com)

NATASHA SINGH is a scientific assistant within the working group Early Prehistory and Quaternary Ecology in the Department of Geosciences at the University of Tübingen, Germany, having received their MSc in Archaeological Sciences and Human Evolution from the Institute for Archaeological Sciences, University of Tübingen in 2023, and a BSc (Hons) in Integrated Science from McMaster University, Canada, in 2020. They joined SNAP in 2019, working on raw material characterization and databasing. (The Department of Early Prehistory and Quaternary Ecology, Eberhard Karls Universität Tübingen, Schloß Hohentübingen, Burgsteige 11, 72070 Tübingen, Germany; natasha.singh@ifu.uni-tuebingen.de)

CIARA ZOGHEIB is a PhD student at the University of Toronto's Faculty of Information, having received her Master of Information degree from the same institution (2022), and her BSc (Hons) in Integrated Science from McMaster University (2020). She joined SNAP in 2019, working on database administration and data analysis. (Faculty of Information, University of Toronto, Claude T. Bissell Building, 140 St George St, Toronto, ON M5S 3G6, Canada; ciara.zogheib@mail.utoronto.ca)

Boëda, E., J. M. Geneste, C. Griggo, N. Mercier, S. Muhesen, J. L. Reyss, A. Taha, and H. Valladas. 1999. A Levallois Point Embedded in the Vertebra of a Wild Ass (*Equus africanus*): Hafting, Projectiles and Mousterian Hunting Weapons. *Antiquity* 73 (280):394–402.

Bordes, F. 1961. *Typologie du Paléolithique ancien et moyen*. Bordeaux: Delmas.

Bosanquet, R. C. 1904. The Obsidian Trade. In *Excavations at Phylakopi in Melos*, ed. T. D. Atkinson, R. C. Bosanquet, C. C. Edgar, A. J. Evans, D. G. Hogarth, D. Mackenzie, C. Smith, and F. B. Welch, 216–32. Society for the Promotion of Hellenic Studies, Supplementary Paper 4. London: Macmillan.

Broodbank, C. 2014. So . . . What? Does the Paradigm Currently Want to Budge So Much? *Journal of Mediterranean Archaeology* 27:267–72.

Brown, T. A., and I. M. Barnes. 2015. The Current and Future Applications of Ancient DNA in Quaternary Science. *Journal of Quaternary Science* 30:144–53.

Bruxelles, L., P. Chalard, R. Ciszak, S. Ducasse, and P. Guillermin. 2010. Prospection géoarchéologique et stratégies d'exploitation paléolithiques des silex bajociens du Haut-Quercy, France. In *Ancient Mines and Quarries: A Trans-Atlantic Perspective*, ed. M. Brewer-LaPorta, A. Burke, and D. Field, 1–12. Oxford: Oxbow.

Carotenuto, F., N. Tsikaridze, L. Rook, D. Lordkipanidze, L. Longo, S. Condemi, and P. Raia. 2016. Venturing Out Safely: The Biogeography of *Homo erectus* Dispersal out of Africa. *Journal of Human Evolution* 95:1–12.

Carter, T. 2008. The Consumption of Obsidian in the Early Bronze Age Cyclades. In *Horizons: A Colloquium on the Prehistory of the Cyclades*, ed. N. Brodie, J. Doole, G. Gavalas, and C. Renfrew, 225–35. Cambridge: McDonald Institute Monographs.

Carter, T., and D. Athanasoulis. 2021. Stelida Naxos Archaeological Project. *Mouseion: Journal of the Classical Association of Canada* 18:264–69.

Carter, T., D. A. Contreras, S. Doyle, D. D. Mihailović, T. Moutsiou, and N. Skarpelis. 2014. The Stélida Naxos Archaeological Project: New Data on the Mesolithic and Middle Palaeolithic Cyclades. *Antiquity Project Gallery* 88 (341). https://archive.antiquity.ac.uk/projgall/carter341.

Carter, T., D. A. Contreras, S. Doyle, D. D. Mihailović, and N. Skarpelis. 2016. Early Holocene Interaction in the Aegean Islands: Mesolithic Chert Exploitation at Stélida (Naxos, Greece) in Context. In *Géoarchéologie des îles de la Méditerranée*, ed. M. Ghilardi, 275–86. Paris: Éditions du CNRS.

Carter, T., D. A. Contreras, J. Holcomb, D. D. Mihailović, P. Karkanas, G. Guérin, N. Taffin, D. Athanasoulis, and C. Lahaye. 2019. Earliest Occupation of the Central Aegean (Naxos), Greece: Implications for Hominin and *Homo sapiens*' Behavior and Dispersals. *Science Advances* 5 (10):eaax0097. https://advances.sciencemag.org/content/5/10/eaax0997.

Carter, T., D. A. Contreras, J. Holcomb, D. D. Mihailović, N. Skarpelis, K. Campeau, T. Moutsiou, and D. Athanasoulis. 2017. The Stélida Naxos Archaeological Project: New Studies of an Early Prehistoric Chert Quarry in the Cyclades. In *From Maple to Olive: Proceedings of a Colloquium to Celebrate the 40th Anniversary of the Canadian Institute in Greece, Athens, 10–11 June 2016*, ed. D. W. Rupp and J. Tomlinson, 75–103. Publications of the Canadian Institute in Greece 10. Athens: Canadian Institute in Greece.

Carter, T., K. Mallinson, V. Mastrogiannopoulou, D. A. Contreras, C. Diffey, C. Lopez, M. N. Pareja, G. Tsartsidou, and D. Athanasoulis. 2021. A New Minoan-Type Peak Sanctuary on Stelida, Naxos. *Journal of Greek Archaeology* 6:60–100.

Cavanagh, W. G., C. Mee, and P. James. 2005. *The Laconia Rural Sites Project*. Annual of the British School at Athens, Supplementary Volume 36. London: British School at Athens.

Chemero, A. 2003. An Outline of a Theory of Affordances. *Ecological Psychology* 15:181–95.

Cherry, J. F. 1981. Pattern and Process in the Earliest Colonization of the Mediterranean Islands. *Proceedings of the Prehistoric Society* 47:41–68.

Cherry, J. F., and T. P. Leppard. 2018. Patterning and Its Causation in the Pre-Neolithic Colonization of the Mediterranean Islands (Late Pleistocene to Early Holocene). *Journal of Island and Coastal Archaeology* 13:191–205.

Cherry, J. F., and R. Torrence. 1984. The Typology and Chronology of Chipped Stone Assemblages in the Prehistoric Cyclades. In *The Prehistoric Cyclades*, ed. J. A. MacGillivray and R. L. N. Barber, 12–25. Edinburgh: University of Edinburgh Press.

Darlas, A. 2007. Le Moustérien de Grèce à la lumière des récentes recherches. *L'Anthropologie* 111:346–66.

———. 2018. *I Paleolithiki epohi sti Dytiki Ahaia*. Athens: Ephoreia Palaioanthropologias–Spelaiologias.

Darlas, A., and H. De Lumley. 1999. Palaeolithic Research in Kalamakia Cave, Areopolis, Peloponnese. In *The Palaeolithic Archaeology of Greece and Adjacent Areas: Proceedings of the ICOPAG Conference, Ioannina, September 1994*, ed. G. N. Bailey, E. Adam, E. Panagopoulou, C. Perlès, and K. Zachos, 293–302. British School at Athens Studies 3. London: British School at Athens.

Darlas, A., and E. Psathi. 2016. The Middle and Upper Paleolithic on the Western Coast of the Mani Peninsula (Southern Greece). In *Paleoanthropology of the Balkans and Anatolia: Human Evolution and Its Context*, ed. K. Harvati and M. Roksandic, 95–117. New York: Springer.

Dawson, M.-C., S. Bernard-Guelle, M. Rué, and P. Fernandes. 2012. New Data on the Exploitation of Flint Outcrops during the Middle Palaeolithic: The Mousterian Workshop of Chêne Vert at Dirac (Charente, France). *PALEO: Revue d'Archéologie Préhistorique* 23:55–84.

Douka, K., C. Perlès, H. Valladas, M. Vanhaeren, and R. E. M. Hedges. 2011. Franchthi Cave Revisited: The Age of the Aurignacian in South-Eastern Europe. *Antiquity* 85 (330):1131–50.

Efstratiou, N., and A. J. Ammerman. 2004. Survey in Aegean Thrace: Exploring the Landscape. In *Archaeological Field Survey in Cyprus: Past History, Future Potentials*, ed. M. Iacovou, 183–90. British School at Athens Studies 11. London: British School at Athens.

Elefanti, P., and G. Marshall. 2015. Late Pleistocene Hominin Adaptations in Greece. In *Settlement, Society and Cognition in Human Evolution: Landscapes in Mind*, ed. F. Coward, R. Hosfield, M. Pope, and F. Wenban-Smith, 189–213. Cambridge: Cambridge University Press.

Eren, M. I., and S. J. Lycett. 2012. Why Levallois? A Morphometric Comparison of Experimental "Preferential" Levallois Flakes versus Debitage Flakes. *PLoS ONE* 7 (1):e29273. https://doi.org/10.1371/journal.pone.0029273.

Facorellis, Y., P. Karkanas, T. Higham, F. Brock, M. Ntinou, and N. Kyparissi-Apostolika. 2013. Interpreting Radiocarbon Dates from the Paleolithic Layers of Theopetra Cave in Thessaly, Greece. *Radiocarbon* 55:1432–42.

Ferentinos, G., M. Gkioni, M. Prevenios, M. Geraga, and G. Papatheodorou. 2023. Archaic Hominins Maiden Voyage in the Mediterranean Sea. *Quaternary International* 646:11–21.

Finkel, M., and R. Barkai 2024. Quarries as Places of Significance in the Lower Paleolithic Holy Triad of Elephants, Water, and Stone. *Archaeologies* 20:147–76. https://doi.org/10.1007/s11759-024-09491-y.

Finkel, M., A. Gopher, and A. Agam. 2020. Excavating Tailing Piles at Kakal Spur (Kerem Ben Zimra) Locality in the Nahal Dishon Prehistoric Flint Extraction and Reduction Complex, Northern Galilee, Israel. *Archaeological Research in Asia* 23:100207.

Finkel, M., A. Gopher, E. Ben-Yosef, and R. Barkai 2018. A Middle Paleolithic and Neolithic/Chalcolithic Flint Extraction and Reduction Complex at Mt. Achbara, Eastern Galilee, Israel. *Archaeological Research in Asia* 16:14–33.

Gaffney, D. 2021. Pleistocene Water Crossings and Adaptive Flexibility within the *Homo* Genus. *Journal of Archaeological Research* 29:255–326.

Galanidou, N. 2014. Archaic Hominins on Crete: Fact or Fiction? *Journal of Mediterranean Archaeology* 27:260–67.

———. 2018. Parting the Waters: Middle Palaeolithic Archaeology in the Central Ionian Sea. *Journal of Greek Archaeology* 3:1–22.

Gamble, C. 1993. *Timewalkers: The Prehistory of Global Colonization*. Stroud, Gloucestershire, UK: Sutton.

Garefalakis, C., E. Panagopoulou, and K. Harvati. 2018. Late Pleistocene Neanderthal Occupation of Western Mani: The Evidence from the Middle Palaeolithic Assemblages of Mavri Spilia. *Quaternary International* 497:4–13.

Gibson, J. J. 1979. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Gopher, A., and R. Barkai. 2014. Middle Paleolithic Open-Air Industrial Areas in the Galilee, Israel: The Challenging Study of Flint Extraction and Reduction Complexes. *Quaternary International* 331:95–102.

Groucutt, H. S., ed. 2020. *Culture History and Convergent Evolution: Can We Detect Populations in Prehistory?* Cham, Switzerland: Springer.

Groucutt, H. S., E. M. Scerri, K. Amor, C. Shipton, R. P. Jennings, A. Parton, L. Clark-Balzan, A. Alsharekh, and M. D. Petraglia. 2017. Middle Palaeolithic Raw Material Procurement and Early Stage Reduction at Jubbah, Saudi Arabia. *Archaeological Research in Asia* 9:44–62.

Groucutt, H. S., E. M. Scerri, L. Lewis, L. Clark-Balzan, J. Blinkhorn, R. P. Jennings, A. Parton, and M. D. Petraglia. 2015. Stone Tool Assemblages and Models for the Dispersal of *Homo sapiens* out of Africa. *Quaternary International* 382:8–30.

Harvati, K., E. Panagopoulou, and C. Runnels. 2009. The Paleoanthropology of Greece. *Evolutionary Anthropology* 18:131–43.

Harvati, K., C. Röding, A. M. Bosman, F. A. Karakostis, R. Grün, C. Stringer, P. Karkanas, et al. 2019. Apidima Cave Fossils Provide Earliest Evidence of *Homo Sapiens* in Eurasia. *Nature* 571:500–504.

Holcomb, J. 2020. *Geoarchaeology of the Palaeolithic in the Aegean Basin, Greece: A Deposit-Centered Approach and Its Implications for the Study of Hominin Biogeography in the Pleistocene*. PhD diss., Boston University.

Hublin, J.-J., A. Ben-Ncer, S. E. Bailey, S. E. Freidline, S. Neubauer, M. M. Skinner, I. Bergmann, A. Le Cabec, S. Benazzi, K. Harvati, and P. Gunz. 2017. New Fossils from Jebel Irhoud, Morocco and the Pan-African Origin of *Homo sapiens*. *Nature* 546:289–92.

Huxtable, J., J. A. J. Gowlett, G. N. Bailey, P. L. Carter, and V. Papaconstantinou. 1992. Thermoluminescence Dates and a New Analysis of the Early Mousterian from Asprochaliko. *Current Anthropology* 33:109–14.

Kaczanowska, M., and J. K. Kozłowski. 2014. The Aegean Mesolithic: Material Culture, Chronology, and Networks of Contact. *Eurasian Prehistory* 11 (1–2):31–62.

Karahan, G., K. Özçelik, and H. Taşkiran 2023. Transformation and Sustainability within Levallois Reduction Strategy of Sürmecik, Western Anatolia/Aegean. *Lithic Technology*:1–19. (Online only at https://doi.org/10.1080/01977261.2023.2290321.)

Karkanas, P., D. White, C. S. Lane, C. Stringer, W. Davies, V. L. Cullen, V. C. Smith, M. Ntinou, Tsartsidou, and N. Kyparissi-Apostolika. 2015. Tephra Correlations and Climatic Events between the MIS6/5 Transition and the Beginning of MIS3 in Theopetra Cave, Central Greece. *Quaternary Science Reviews* 118:170–81.

Kartal, G. 2012. Karain B Gözü Orta Paleolitik Yontmataş alet tipolojisi. *Anadolu* 38:89–108. https://doi.org/10.1501/andl_0000000395.

Legaki, E. 2012. H Archaiologiki Erevna gia tin Pro-Neolithiki, Neolithiki kai Protokykladiki Naxo os Pronomiakos Mochlos Anaptyxis. *Naxiaka Grammata* 1:6–17.

———. 2014. Stelida: Mia Thesi—Kleidi gia Aparches tis Anthropinis Parousias sti Naxo kai to Aigaio en Genei. *Naxiaka Grammata* 3:7–15.

Leppard, T. P. 2015. Passive Dispersal versus Strategic Dispersal in Island Colonization by Hominins. *Current Anthropology* 56:590–95.

Lycett, S. J., and M. I. Eren. 2013. Levallois Economics: An Examination of "Waste" Production in Experimentally Produced Levallois Reduction Sequences. *Journal of Archaeological Science* 40 (5):2384–92.

Lykousis, V. 2009. Sea-Level Changes and Shelf Break Prograding Sequences during the Last 400 ka in the Aegean Margins: Subsidence Rates and Palaeogeographic Implications. *Continental Shelf Research* 29 (16):2037–44.

Meignen, L. 2007. Middle Paleolithic Blade Assemblages in the Near East: A Reassessment. In *Caucasus and the Initial Human Dispersals in the Old World*, ed. V. P. Lyubin, 133–48. St. Petersburg: Russian Academy of Sciences.

Mihailović, D., and K. Bogićević. 2016. Technological Changes and Population Movements in the Late Lower and Early Middle Paleolithic of the Central Balkans. In *Paleoanthropology of the Balkans and Anatolia: Human Evolution and Its Context*, ed. K. Harvati and M. Roksandic, 139–51. New York: Springer.

Moutsiou, T., A. Klein, T. Kinnaird, D. A. Contreras, D. D. Mihailović, N. Singh, D. Athanasoulis, and T. Carter. Forthcoming. Delineating Intra-Source Variability of a Chert Source: Assessing Palaeolithic and Mesolithic Raw Material Choices in the Aegean. *Journal of Archaeological Method and Theory*.

O'Brien, M. J., B. Buchanan, and M. I. Eren, eds. 2018. *Convergent Evolution in Stone-Tool Technology*. Cambridge: MIT Press.

Otte, M., I. Yalçinkaya, H. Taşkiran, J. K. Kozłowski, O. Bar-Yosef, and P. Noiret. 1995. The Anatolian Middle Paleolithic: New Research at Karain Cave. *Journal of Anthropological Research* 51:287–99.

Özçelik, K. 2017. Ege bölgesi'nde Neandertal insanin izleri. *Ankara Üniversitesi Dil ve Tarih-Coğrafya Fakültesi Dergisi* 57:524–37.

———. 2018. Vue générale du Paléolithique moyen de la Turquie. *Comptes Rendus Palevol* 17:107–19.

Panagopoulou, E. 1999. The Theopetra Middle Palaeolithic Assemblages: Their Relevance to the Middle Palaeolithic of Greece and Adjacent Areas. In *The Palaeolithic Archaeology of Greece and Adjacent Areas: Proceedings of the ICOPAG Conference, Ioannina, September 1994*, ed. G. N. Bailey, E. Adam, E. Panagopoulou, C. Perlès, and K. Zachos, 252–65. British School at Athens Studies 3. London: British School at Athens.

Panagopoulou, E., P. Karkanas, G. Tsartsidou, E. Kotjabopoulou, K. Harvati, and M. Ntinou. 2004. Late Pleistocene Archaeological and Fossil Human Evidence from Lakonis Cave, Southern Greece. *Journal of Field Archaeology* 29:323–49.

Peresani, M., ed. 2003. *Discoid Lithic Technology: Advances and Implications*. BAR International Series 1120. Oxford: Archaeopress.

Pitt, Y. 2020. *Interrogating Data-Integrity from Archaeological Surface Surveys Using Spatial Statistics and Geospatial Analysis*. MSc thesis, McMaster University.

Pope, M. 2017. Thresholds in Behaviour, Thresholds of Visibility: Landscape Processes, Asymmetries in Landscape Records and Niche Construction in the Formation of the Palaeolithic Record. In *Crossing the Human Threshold: Dynamic Transformation and Persistent Places during the Middle Pleistocene*, ed. M. Pope, J. McNabb, and C. Gamble, 24–39. Oxford: Routledge.

Roesler, G. 1969. *Stratigraphie und geologischer Bau der Halbinsel Stelida*. MSc thesis, Technische Universität Clausthal-Zellerfeld, Germany.

Runnels, C. 1988. A Prehistoric Survey of Thessaly: New Light on the Greek Middle Paleolithic. *Journal of Field Archaeology* 15:277–90.

Runnels, C., C. DiGregorio, K. W. Wegmann, S. F. Gallen, T. F. Strasser, and E. Panagopoulou. 2014. Lower Palaeolithic Artifacts from Plakias, Crete: Implications for Hominin Dispersals. *Eurasian Prehistory* 11:129–52.

Scerri, E. M. L., K. Niang, I. Candy, J. Blinkhorn, W. Mills, J. N. Cerasoni, M. D. Bateman, A. Crowther, and H. S. Groucutt. 2021. Continuity of the Middle Stone Age into the Holocene. *Scientific Reports* 11:70. https://doi.org/10.1038/s41598-020-79418-4.

Schlanger, N. 1996. Understanding Levallois: Lithic Technology and Cognitive Archaeology. *Cambridge Archaeological Journal* 6:231–54.

Sériadès, M. 1983. Un centre industriel préhistorique dans les Cyclades: Les ateliers de débitage du silex de Stélida (Naxos). In *Les Cyclades: Matériaux pour une étude de géographie historique*, ed. G. Rougement, 67–73. Lyon: Éditions du CNRS.

Sitlivy, V., K. Sobczyk, P. Karkanas, and M. Koumouzelis. 2007. Middle Paleolithic Lithic Assemblages of the Klissoura Cave, Peloponnesus, Greece: A Comparative Analysis. *Archaeology, Ethnology and Anthropology of Eurasia* 31:2–15.

Skarpelis, N., T. Carter, D. A. Contreras, and D. D. Mihailović. 2017. Characterization of the Siliceous Rocks at Stélida, an Early Prehistoric Lithic Quarry (Northwest Naxos, Greece), by Petrography and Geochemistry: A First Step towards Chert Sourcing. *Journal of Archaeological Science: Reports* 12:819–33.

Slimak, L., S. L. Kuhn, H. Roche, D. Mouralis, H. Buitenhuis, N. Balkan-Atlı, D. Binder, C. Kuzucuoğlu, and H. Guillou. 2008. Kaletepe Deresi 3 (Turkey): Archaeological Evidence for Early Human Settlement in Central Anatolia. *Journal of Human Evolution* 54:99–111.

Strasser, T., E. Panagopoulou, C. N. Runnels, P. M. Murray, N. Thompson, P. Karkanas, F. W. McCoy, and K. W. Wegmann. 2010. Stone Age Seafaring in the Mediterranean: Evidence from the Plakias Region for Lower Palaeolithic and Mesolithic Habitation of Crete. *Hesperia* 79:145–90.

Strasser, T. F., C. Runnels, K. Wegmann, E. Panagopoulou, F. Mccoy, C. Digregorio, P. Karkanes, and N. Thompson. 2011. Dating Palaeolithic Sites in Southwestern Crete, Greece. *Journal of Quaternary Science* 26:553–60.

Stringer, C., and C. Gamble 1993. *In Search of the Neanderthals: Solving the Puzzle of Human Origins*. London: Thames & Hudson.

Taffin, N. 2023. *Les occupations insulaires grecques au Paléolithique à la lumière de la géochronologie*. PhD diss., Université Bordeaux Montaigne.

Taffin, N., C. Lahaye, D. A. Contreras, J. Holcomb, D. D. Mihailović, P. Karkanas, G. Guérin, D. Athanasoulis, and T. Carter. 2024. Chronological and Post-Depositional Insights from

Single-Grain IRSL Dating of a Palaeolithic Sequence at Stelida, Naxos (Greece). *Journal of Archaeological Science: Reports* 59:104776.

Taşkıran, H., Y. Aydın, K. Özçelik, and E. Erbil. 2021. A New Discovery of Neanderthal Settlements in Turkey: Sürmecik Open-Air Campsite in Western Anatolia. *L'Anthropologie* 125:102838.

Thiébaut, C. 2010. Denticulate Mousterian: Myth or Reality? *Studia Archeologiczne* 41:345–85.

Tourloukis, V. 2021. Palaeolithic Archaeology: A Review of Recent Research. *Archaeological Reports* 67:61–79.

Tourloukis, V., and K. Harvati. 2018. The Palaeolithic Record of Greece: A Synthesis of the Evidence and a Research Agenda for the Future. *Quaternary International* 466:48–65.

Tourloukis, V., N. Thompson, C. Garefalakis, P. Karkanas, G. E. Konidaris, E. Panagopoulou, and K. Harvati. 2016. New Middle Palaeolithic Sites from the Mani Peninsula, Southern Greece. *Journal of Field Archaeology* 41:68–83.

Tsakanikou, P. 2020. *Hominin Movement and Occupation Spatial Patterns in Eastern and North-Eastern Mediterranean during the Lower Palaeolithic: The Aegean Perspective*. PhD diss., University of Southampton.

Tsakanikou, P., and J. McNabb. 2023. Refloating the Aegean Lost Dryland: An Affordance-Based GIS Approach to Explore the Interaction between Hominins and the Palaeolandscape. In *Modelling Human–Environment Interactions in and beyond Prehistoric Europe*, ed. S. Seuru and B. Albouy, 3–26. Cham: Springer International Publishing.

van Andel, T. H., and C. N. Runnels. 2005. Karstic Wetland Dwellers of Middle Palaeolithic Epirus, Greece. *Journal of Field Archaeology* 30:367–84.

Whitelaw, T. M. 1991. Investigations at the Neolithic Sites of Kephala and Paoura. In *Landscape Archaeology as Long-Term History: Northern Keos in the Cycladic Islands from Earliest Settlement until Modern Times*, ed. J. F. Cherry, J. L. Davis, and E. Mantzourani, 199–216. Monumenta Archaeologica 16. Los Angeles: UCLA Institute of Archaeology.

Yaman, I. A. 2016. Synthetic Stratigraphic Test of Paleolithic Industries in Turkey. *Journal of Anthropology and Archaeology* 4:21–57.

Zachos, K. L. 1996. The Zas Cave. In *Neolithic Culture in Greece*, ed. G. A. Papathanassopoulos, 88–89. Athens: N. P. Goulandris Foundation, Museum of Cycladic Art.