

buried were adolescent and adult males. The high percentage of men buried in Tomb 387 is not surprising in light of the large number of bronze weapons (83 preserved) found among the grave goods. In terms of ascertaining the racial composition of these individuals, the morphometry of crania appears to produce imprecise results. Hopefully, as the amount of DNA analysis on ancient populations in the eastern Mediterranean region increases, these older studies will be rendered moot.

The concluding chapter (pp. 222–28) offers a useful summary but falls short on analysis. Missing is a consideration of the ancient textual data (i.e., Ugaritic) with a bearing on Canaanite conceptions of death and the after-life. Absent also is the pertinent theory, largely generated by ethnographic study, which can occasionally breathe life into the archaeology of death. On both scores, the author need not have looked any further than *Dan I* and David Ilan's interpretation of the Middle Bronze Age tombs at Tel Dan (pp. 251–58). To sum up: *Dan II* rewards the reader with a fine catalog of Late Bronze Age II grave goods, especially imported Mycenaean pottery, but does little to enhance one's understanding of how this assemblage functioned in its social and conceptual settings.

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***Limestone Statuettes of Cypriote Type Found in the Aegean: Provenance Studies*, by Nota Kourou, Vassos Karageorghis, Yannis Maniatis, Kyriaki Polikreti, Yannis Bassiakos, and Costa Xenophontos. Nicosia: A. G. Leventis Foundation, 2002. xiv + 118 pp., 13 figures, 19 plates, 4 tables. Paper. Cyp £12.00.**

Excavations in sanctuaries throughout the Aegean, as well as in Egypt and the Syro-Palestinian coast, have brought to light a significant number of limestone statu-

ettes of Cypriote type. Stylistically, they range from purely Cypriote to a mixed style that includes Ionian and/or Egyptianizing elements. Were all of these statuettes produced on Cyprus and then exported abroad? Were there regional centers of production outside the island supplying Cypriote-type statuettes to patrons of sanctuaries in the Aegean and eastern Mediterranean? Or is it possible that the raw material was exported and then worked by itinerant Cypriote sculptors or local sculptors working under Cypriote artistic influence abroad? In the absence of scientific studies that might clarify these questions, scholars have understandably been forced to focus on styles and iconography or simple macroscopic analysis when weighing in on one side or the other of this debate. At the Second International Conference of Cypriote Studies (Brussels-Liège, 1993), Vassos Karageorghis announced plans for collaboration with the National Center for Scientific Research 'Demokritos' in Athens to investigate the origins of these statuettes (Karageorghis 1994: 11). The volume presently under review represents the results of this collaboration; a summary of the research was published a year earlier (Karageorghis et al. 2001). In light of the present state of affairs, this interdisciplinary team of archaeologists and archaeometrists should be commended at the outset for carrying out the first systematic physicochemical program of research in search of more definitive answers to questions that have puzzled students of Cypriote sculpture for well over a century.

After a brief preface by Karageorghis, Part I presents an overview of the problem. For the purposes of the study, Cypriote-type statuettes found abroad were separated into three distinct classes: Aegean, Cypriote (which includes the Syro-Palestinian coast), and Naucratis. The authors begin by isolating several aspects fundamental to the study of these statuettes including material, size, date and distribution, style, and typology. Some general comments are necessary here since the points raised are central to the current discourse.

1. *Materials*: Aside from a few isolated examples made from other types of stones, the statuettes are made of a soft, whitish limestone that occurs with little variation in the regions in question.¹ This fundamental consistency, as understood from simple macroscopic examination, has made specific sourcing difficult and thus confounded the question of provenance. It is generally recognized that in

¹Other stones include sandstone and a material variously referred to as alabaster/gypsum. The term *alabaster*, which has traditionally been applied to a small number of statuettes from Naucratis, was recently questioned in favor of *gypsum* (Jenkins 2001: 165–66, citing a personal communication with A. Middleton of the Department of Scientific Research in the British Museum). The authors note this reference and its conclusions (p. 3) but use both terms in their study (e.g., pp. 7, 9). It is hoped that this question will be taken up in subsequent physicochemical analyses so that a more clear distinction can be drawn.

Cyprus the richest sources for limestone suitable for sculpting are found in the eastern part of the island in the vicinity of modern Dhali and Athienou.

2. *Scale*: Cypriote statuettes found abroad, with few exceptions, usually average less than 20 cm in height. Larger statues were apparently reserved for the Cypriote sanctuaries. The issue of size is of course significant to provenance questions, since the portability of these statuettes lends weight to the theory of simple exportation from the island.

3. *Date and Distribution*: In general, dates for Cypriote sculpture derive from the archaeological contexts of Cypriote statuettes found in sanctuaries outside the island, notably on Samos and Rhodes. The majority from the Aegean and Egypt date from the last quarter of the seventh century B.C. to the early sixth century; however, statuettes of the same types found in Cyprus and along the Syro-Palestinian coast are well attested in the second half of the sixth century B.C. Among the many sites in the Aegean and central Mediterranean (i.e., the authors' Aegean class) that have produced Cypriote statuettes, the largest assemblages come from the islands of Rhodes (especially Lindos, Camiros, Vroulia; over 400 examples) and Samos (the Heraion; 104). Statuettes have also been found at Cnidos (30+) and Miletus (45+); some scattered finds have appeared in the central Aegean (Delos) and as far west as Siris in southern Italy. The inclusion within this class of the exceptional head of Herakles now in the National Museum (Athens) and said to be from Lycia (p. 6) is perhaps misleading; the larger scale, typology, and later date seem to eliminate it from the classification system used in this study. Syro-Palestinian sites, which are included in the Cypriote class, rarely produce more than five examples; Sidon and Amrit are notable exceptions with 38 and 449 statuettes, respectively. The authors are correct in pointing out the rather sporadic nature of examples found at many Syro-Palestinian sites. However, the range of types and the total number of examples from the region (especially the impressive corpus of 449 from Amrit, the most recorded from any non-Cypriote site) challenges the validity of simply absorbing them within the Cypriote class, in spite of the brief justification offered on p. 6. With reference to the Egyptian examples (i.e., Naucratis class), the site of Naucratis has produced almost 60 examples; sporadic finds have been found at other sites.

4. *Style*: The division into three classes is based primarily on their provenance, but the authors do attempt to characterize the stylistic traits of each. This sometimes leads to oversimplifications regarding the exclusiveness of one stylistic trait over another. Thus, while the Aegean class may be characterized as mixing "numerous elements of Greek art on an otherwise Cypriote type of figure" (p. 8), the alabaster statuettes of the Naucratis class "offer a stronger mix of Cypriote and Greek elements than the Aegean class" (p. 9). The difficulty in distinguishing pure stylistic differences among the classes highlights a major problem in the current research.

5. *Type*: In a catalog that occupies almost one-third of the text, the authors provide a new typological study of the statuettes. With the exception of the Master of Lion figures (Type I, A2; regarding its cult associations, one can now add to the bibliography the important discussion in Nick 2001) and the enthroned figure with a ram's head or the horns of a ram (Types II, A2, II, A3; "Zeus Ammon"), divinities are not well attested. The majority are votaries including Greek kouroi (Type I, A1) and korai (Type I, C1), male and female musicians, as well as a host of animals, birds, and monsters. Also included in the catalog is a list of known statuettes with inscriptions. To my knowledge, this is the first systematic collection of this important body of evidence.

In the second half of the volume, the authors turn their focus to the Aegean class. Part II outlines the techniques and methodology, sampling (both of quarries and statuettes), as well as the results of the physicochemical investigations. Samples were analyzed using optical microscopy (OM) and electron paramagnetic resonance spectroscopy (EPR). While OM is useful for determining the basic characteristics of the samples (texture, color, inclusions), EPR spectroscopy has been successfully applied to measure the concentration levels of various chemical components in marble and limestone (pp. 36–37). The isolation and recognition of these components help reconstruct the conditions present at the time of formation and thus provide geological "fingerprints" useful for determining origins. Based on current theories regarding the origins of the Aegean class, the authors sampled quarries from Cyprus, Samos, Rhodes, and Egypt. Quarries were chosen based on geological data, evidence of ancient and/or modern quarrying, as well as the macroscopic characteristics and the relative suitability of the stone for sculpting. The catalog of archaeological samples includes 14 statuettes from the Heraion on Samos, 22 statuettes from Rhodes (18 from Lindos and 4 from Vroulia), and 3 from Cyprus.² For comparisons, samples were also taken from nonsculptural monuments at Samos (a votive column and five architectural pieces), as well as from a false door from Saqqara in the National Museum, Copenhagen. The catalog entries provide basic information regarding the type, state of preservation, and evidence of paint, as well as bibliographical references.

Microscopic examination of the archaeological samples reveals a basic consistency in the texture (often porous and chalky with large amounts of nanofossils) and color (from creamy white to light buff-yellowish) of the limestone used

²Note that the introduction to the catalog refers to a total of 15 statuettes from Samos (Vathy Museum) and a total of 19 from Rhodes (National Museum, Copenhagen). The authors note that two of the samples (LI-15 and LI-16) from Rhodes could not be used due to their size (p. 57). LI-18, which was also excluded from the analysis, presumably fell into the same category—thus the total of 19. One of the Cypriote samples (NC-3) was also discarded for technical reasons (p. 57).

in the production of the statuettes. Table 2 provides a useful summary of these characteristics.³ The archaeological samples demonstrate characteristics that are most closely related to those from Cypriote quarries. Notable exceptions include the nonsculptural samples from Samos (SA-11, SA-16-20), the Egyptian figurine (SA-15; published here for the first time), and one statuette (SA-12).

EPR spectroscopy was then utilized to provide typical chemical spectra based on set parameters for samples collected from each of the quarries (tables 3 and 4).⁴ Based on these spectra, quarry separation plots were devised for each of the sources tested (Cyprus, Samos, Egypt A, and Egypt B). In the case of Cyprus, samples were also taken from a dozen large (and thus presumably produced locally) archaic statues to insure the integrity of that databank. The Rhodian databank was discarded based on the fragmentation and poor quality of the limestone (pp. 43-44). By isolating the differences in peak intensities along a vertical and horizontal axis of each spectrum, ellipses were drawn to enclose the majority of samples from each location (figs. 7-12).

The resulting ellipses define a parameter field for each quarry against which the properties of archaeological samples of unknown origin can be plotted in order to test their origin. As might be expected, the two Cypriote examples fell within the Cyprus field and prove their Cypriote origin (fig. 10). With the exception of seven samples, all of the Samian statuettes fell within, or adjacent to, the Cyprus field, indicating a Cypriote origin (figs 11, 12). Significantly, samples that one would assume were produced from local sources (e.g., the architectural pieces SA-16-20 and the votive column SA-11) fell within the Samos field. The Egyptian figurine (SA-15) seems to have been made either of Samian or Egyptian limestone, but not Cypriote. With reference to the Rhodian samples, all but one (VR-3) fell directly within the Cyprus field (fig. 13); VR-3 fell slightly out of the field although in the same quarter. Thus, based on the physicochemical analyses, the authors conclude that all of the statuettes of Cypriote type examined were made from Cypriote limestone.

The conclusions are followed by an up-to-date bibliography, a concordance of the archaeological samples listing relevant museum inventory numbers, a serviceable index, and plates. In general the plates are satisfactory and sometimes excellent, although several are rather washed out (e.g., pls. I:1, II:1) and are better consulted in other publi-

³The key indicates that asterisks denote artifacts examined microscopically; they in fact designate four samples (from the Cairo and Miletus museums) that were examined with only the magnifying lens in situ (p. 57).

⁴Fig. 6 highlights three peaks labeled $g = 2.0036$, $g = 2.0052$, and $g = 2.0057$. Based on the discussion found in the text (pp. 62, 66) and parameters set out in tables 3 and 4 (pp. 63, 65), I assume that the third peak in fig. 6 is mislabeled and should read $g = 2.0058$.

cations.⁵ I did note several typographical errors, yet these do not impede the reader to any great extent. In a study such as this, discussions are unavoidably tedious at times and the casual reader may find portions of the text quite cumbersome. Thus we learn that the familiar Cypriote limestone is more properly described as a "planktonic foraminiferal micritic packstone" (p. 59; fortunately we are also told that the term *chalk* will suffice!). That said, I found that the archaeometric jargon was kept to a reasonable level and that the authors succeeded, for the most part, in explicating the rather complex scientific processes.

In the case of Cypriote statuettes found on Samos and Rhodes, the Cypriote origin seems confirmed. This does not completely rule out the possibility that a regional production center existed outside the island, since the samples were confined to only a few groups. It is regrettable, as the authors themselves admit, that more samples were not included in the study (e.g., the comments on pp. 35, 73). A larger number of samples from the Aegean (e.g., Camiros on Rhodes or Cnidos), Egypt (Naucratis), or the eastern Mediterranean (e.g., Sidon or Amrit; however, see the reference to an unpublished study by C. Xenophon on the statuettes from Amrit on p. 39) would have provided a greater representation of the distribution and typology of the corpus. Even so, important steps have been taken, and the implications of this study will shape all subsequent work in the field. To offer just one example: Greek inscriptions on Cypriote statuettes found abroad have traditionally been used to evidence production centers in the Aegean or at the Greek emporium of Naucratis, since this practice is in direct contrast to the use of Cypriote syllabary on statuettes from Cyprus (p. 28). However, according to the analysis presented here, two Rhodian statuettes included in the study (LI-6 and VR-2), inscribed in Greek and Phoenician, respectively, both originated in Cyprus. Disregarding the rather impractical view that Cypriote limestone was exported by itinerant craftsmen abroad, one must acknowledge the likelihood, as the authors suggest, that at least some Cypriote statuettes were produced and exported to fill the demand of local Greek markets in the Aegean and eastern Mediterranean (p. 75).

On a final note, because I am not an expert in the analytical techniques applied to this study, we anxiously await specialist reviews from other academic journals such as *Archaeometry* or the *Journal of Archaeological Science* that will undoubtedly raise more direct questions regarding the methodology and analysis (e.g., the reliability of corrections to undersized samples as listed in table 4 and plotted in figs. 11, 13). In the end, however, the singular importance of this research cannot be overstated,

⁵Pl. I:4 (cat. no. SA-8) is mislabeled as "beardless." It is correctly described as bearded in the discussion of Type I, A1, on p. 11 although, curiously, it is not listed under that catalog as one of the samples of the type analyzed even though it appears in the results.

and the authors have set a new standard for approaching the provenance questions of Cypriote statuary.

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***Umm el-Jimal: A Frontier Town and Its Landscape in Northern Jordan, Volume 1: Fieldwork 1972–1981*, by Bert de Vries. Journal of Roman Archaeology, Supplementary Series Number 26. Portsmouth, RI: Journal of Roman Archaeology, 1998. 248 pp., 159 figures, 17 tables. Cloth. \$89.50.**

According to the author (p. 9), this is the first of several projected volumes that will report on nine seasons of multidisciplinary fieldwork undertaken at Umm el-Jimal and its vicinity, in northern Jordan. Bert de Vries directed the Umm el-Jimal Project (UJP) in each of its field seasons, which took place between 1972 and 1994; he also served as project architect, and his skills and intimate knowledge of this fascinating site are evident throughout the volume. As part of a prestigious series, *Umm el-Jimal 1* is user-friendly and marked by clarity of vision, organization, and accessibility. The technical reports and general conclu-

sions proffered here in five major subdivisions (introduction, surface and aerial studies, excavation stratigraphy, material remains, and historical conclusions) will be useful to a wide audience.

From the outset, de Vries claims that the town of Umm el-Jimal deserves the “best” rating in two categories—i.e., it is the “best preserved among dozens of similar Byzantine sites” in the region, and (as a standing town) it is the “best preserved example of late-antique (4th–9th c.) rural domestic architecture in the E. Mediterranean” (p. 10). As noted by de Veaux and Parker (p. 154), most of what today’s visitor to Umm el-Jimal (whose ancient name is still unknown) sees dates from the Late Byzantine and Early Islamic periods. But a ruined Early and Late Roman village is located just to the southeast of this remarkably preserved late-antique town. This combination makes Jimal a veritable laboratory for all kinds of historical and environmental research. De Vries and the UJP staff should be commended for selecting this site, sticking with their research, and reducing years of fieldwork and analysis to print. The site merits attention, and this new series will place a wealth of data into the hands of students and other excavators.

In the “preface and acknowledgments,” de Vries does more than offer a perfunctory list of sponsors, contributors, and participants. He makes it clear that the Umm el-Jimal Project succeeded through the efforts of many participants (professionals, students, and local laborers)—from Jordan, the USA, and elsewhere. From beginning to end, de Vries “strategized” and directed the research team from his office at Calvin College, and such institutional support is certainly an important part of this success story. The enthusiastic participation of Sally de Vries is also acknowledged.

The first volume includes contributions by B. de Vries and eight other writers, but a substantial part of the volume (5 out of 14 chapters) was written by S. T. Parker. In fact, the de Vries-Parker partnership illustrates a healthy symbiosis in the archaeological realm; these two worked together and enriched each other’s research over the years, through their long-term and understandable obsessions with Umm el-Jimal and al-Lajjun (focal point of the Limes Arabicus Project), respectively.

Chapter 2, a summary of “history of research” at the site and in the region, identifies the great advance made by the most recent Umm el-Jimal Project (1972–1994). Though an early (1905) expedition from Princeton University began to map the site, UJP completed this work and conducted the vital stratigraphic excavation (following the Boraas method used at Hesban) that placed the town-site in its Late Byzantine–Early Islamic context. Though Jimal’s Nabataean links have been substantially weakened, the interest in the southern Hauran’s later history has increased, partly through UJP’s work at this site. In a candid and refreshing manner, De Vries and C. J. Lenz discuss modifications to the standard ceramic periodization (with particular reference to the Early Islamic period), developed largely by Lapp and Sauer. Such explicit

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