spread and accepted definition of *falaj* with their own, they render their argument of little relevance to broader debates concerning ancient irrigation. This is a great shame, since the region is undoubtedly critical in the development of the ancient *falaj* system.

In some other cases, the lack of referencing leads to incorrect statements. For example, the authors argue that the Iron Age settlement of Muweilah is associated with an Iron Age *falaj*. Fourteen years of excavation and survey at that site by this reviewer have yet to reveal any such evidence. Similarly, their statement that "no iron objects have been found so far" (291) does not accord with this reviewer's reports of evidence for the use of iron (P. Magee, *Arabian Archaeology and Epigraphy* 9 [1998] 112–17). Similarly, their statement that an Umm an-Nar grave has been excavated at Muweilah (229) is simply wrong.

At other points, the text seems to simply wander without any real purpose. In discussing the Neolithic period, they write:

> It resembled what the English very appropriately call "peerpolity" adjusting the latin expression primus inter pares "first among equals", to describe the crisis of Medieval royalty that compelled the Plantagenet King John "Landless" to sign the Magna Carta in 1214 AD. Recalling the legends written in those times, but still loved nowadays through endless re-visitations by Hollywood, it was all like Camelot, Arthur, the Round Table and the King to come. In the Assyrian myth on the origins of dynasties, one of the first kings is named Kullusina bêl: "they were all Lords" (64).

Better editing, proofreading, and a process of peer review may have helped Tosi and Cleuziou overcome these problems and turn their worthwhile and powerful ideas into an important scholarly document.

Despite these academic problems, the usefulness of the short essays on specific topics and the book's aesthetic appeal are undeniable. Hundreds of full-color images grace the volume, and David's carefully drawn line figures are particularly useful (even if some are mislabeled or misattributed). The production values and visual appeal of the book are excellent, and for that we should be grateful to the Ministry of Heritage and Culture in the Sultanate of Oman.

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IRAKLION ARCHÄOLOGISCHES MUSEUM: SAMMLUNG GIAMALAKIS, edited by *Walter Müller* and *Ingo Pini*, prepared by *Agnes Sakellariou* (*CMS* 3). 2 vols. Pp. xlvii + 708, numerous figs., color pls. 2. Philip von Zabern, Mainz 2007. €210. ISBN 978-3-8053-3533-1 (cloth).

The latest volume in the *CMS* series presents the Giamalakis Collection of Minoan sealstones now housed in the Heraklion Museum. Stylianos Giamalakis (1899–1962) received almost all his seals as payment from his patients, and this has meant that no seal has a sure provenance. Xenaki-Sakellariou (1922–1995) first published his collection in 1958 (*Les cachets minoens de la collection Giamalakis* [Paris]). It was a highly informative book, with digressions on iconography, shape, material, and technique sprinkled throughout the catalogue, which divided the material into the now-canonical four main periods: Prepalatial, Protopalatial, Neopalatial, and Postpalatial. All the seals, however, were illustrated in tiny 1:1 photographs (the few drawings were larger).

This latest *CMS* volume presents the Giamalakis Collection in its typical format: usually one seal per page, with (large) photographs of the face and the impression, a drawing of the impression, and a concise description of the seal and its iconography. A *Kommentar* assesses the quality of engraving. Comparanda and bibliography follow.

In the introduction, Pini discusses authenticity, provenance, iconography, style, technique, composition, and the few imports (1–9). Müller presents an exhaustive list of the materials (11–22) and a thorough discussion of the shapes and their stringholes (23–34), often complicated for the early material. Then follow the necessary concordances. Five indices close the introduction (stated provenance [in quotation marks], material, shape, motive, and suggested dates).

Pini says in the introduction, "Der Band enthält relativ wenige Highlights" (1), but he is being too reserved. Some pieces in the collection have been published several times, but they still deserve our attention: for example, number 2, a squatting ape of hippopotamus ivory with spirals and paisleys; number 31, a thin cylinder of cornelian with bands of beautifully engraved palmettes; number 234, a gold four-sided prism with neatly spaced hieroglyphs; and number 237, a four-sided prism of agate with hieroglyphs, a "gorgon" head (cf. no. 238), and neatly carved patterns.

A few other seals have not garnered the attention they deserve: number 17, a disc of hippopotamus ivory, carries an interlocking quadripartite design that looks Early Helladic, and the editors cite appropriate parallels (*CMS* 5, nos. 80, 97; 5, suppl. 1A, no. 381).

The main interest of the collection, however, is its large collection of early hardstone seals. Some are datable toward the end of the Protopalatial period (e.g., nos. 19–22, recumbent animals of cornelian and quartz; nos. 92–4, foliate-backs of cornelian; no. 101, a half-cylinder of agate with a design resembling axes on the face). But most of these are datable to the early Neopalatial period, and here the collection is rich. Four are of special interest: number 65, a box-shaped seal of cornelian engraved on two faces with an acrobat and an agrimi; number 140, a ringstone of chalcedony with a goat perched on a mountain peak; number 357, an amygdaloid of cornelian with a man holding a monkey on a leash; and number 377, a lentoid of cornelian with two monkeys flanking a kantharos.

There are other interesting seals as well. I mention here only four: number 100, a half-cylinder of gold foil over steatite with a pattern of Xs; number 239, an amygdaloid of cornelian with a figure in a skirt whose linear quality (wrongly called "Talismanic") reminds me of *CMS* 11, number 20, with a woman holding a papyrus stalk; and a pair of amygdaloids, numbers 372 and 382, whose material (agate) has similarly narrow and convoluted veining—might they be carved from the same stone?

A couple of seals in the collection are modern, and these prompt interesting questions. Number 285, a lentoid of clear

glass, carries an authentically carved Talismanic-style sepia—what was the purpose in producing this? And number 296, an amygdaloid of burnt cornelian with a Talismanic "bundle" on the obverse, has a modern Sangiorgi caprid on the reverse. The Sangiorgi Group was published by Betts ("Some Early Forgeries," in I. Pini, ed., *Studien zur minoischen und helladischen Glyptik. CMS* Beiheft 1 [Berlin 1981] 17–36), but he did not explain the purpose of the group. I have always associated it with the tourist trade, for its seals often crop up in souvenir stalls. But what is a Sangiorgi caprid doing on the back of a perfectly fine Minoan seal?

Two seals are highly important for the study of Minoan glyptic. Number 452, of steatite, is a member of the Mainland Popular Group (Late Helladic IIIA2–B), though *CMS* inexplicably characterizes it as Cut Style (a term usually reserved for hardstone seals and dating much earlier). A few Mainland Popular seals come, predictably, from the Mycenaean Armenoi cemetery (Late Minoan [LM] IIIA–B). The editors attribute number 476, a lentoid of steatite, to "dem Umfeld der 'Mainland Popular Group,'" (60), a subtlety that I do not understand—is it because the design is difficult to interpret? And number 422, a lentoid of limestone carrying a svelte caprid with simply dotted hooves, must belong to the Island Sanctuaries Group (LM IIIA2–B [early]), the last stylistic group of hardstone seals in the Aegean—I do not understand how the editors could have missed this. Most of the seals in the Island Sanctuaries Group come from the islands or the mainland. If this seal does come from Crete, it is the only example of the group to do so, although one seal and one ring belonging to the subgroup Rhodian Hunt impressed sealings at Knossos (*CMS* 2.8, nos. 188, 192) just before its final destruction and the concomitant end of hardstone seal engraving in the Aegean.

The *CMS* series has the habit of committing extremely few errors, so it is with some surprise that I note a typographical mistake: "Index VI: Motive" and "Index VII: Datierungsvorschläge" follow "Index III: Siegelformen" (44–7). I have one other cavil: the organizing principle of the catalogue seems primarily to be shape (though scarab no. 494 is surrounded by lentoids). The catalogue certainly is not organized chronologically, and this I fear will confuse many readers.

It is good, however, to have this collection finally published in the *CMS* format. *Les cachets minoens de la collection Giamalakis* was most useful but quirky.

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THE CHRYSOKAMINO METALLURGY WORKSHOP AND ITS TERRITORY, by *Philip P. Betancourt* (*Hesperia* Suppl. 36). Pp. 484, figs. 169. American School of Classical Studies at Athens, Princeton 2006. $65. ISBN 978-0-87661-536-2 (paper).

Given the importance of metallurgy in the development of complex societies during the Aegean Bronze Age, there has been surprisingly little attention paid to the location and excavation of sites that might provide evidence for metallurgical activities, particularly on Crete. All the more welcome, then, is this detailed publication and analysis of the Prepalatial metallurgical site of Chrysokamino near Kavousi in eastern Crete. Known for more than a century from the vitrified sherds and slag on the surface, the site has been variously dated from Early Minoan to Venetian and has figured in many accounts of the development of Cretan metallurgy. This volume provides, in two parts, the final report of investigations conducted from 1995 to 1997, including both the excavation of the metallurgical site and an archaeological survey of the immediate area that places the archaeological sites within a regional and chronological context. Only a brief summary of the nearby Late Minoan farmstead is included here (ch. 17); full results will be published in the future.

This volume begins with a description that includes the geology, climate, natural resources, and morphology of the area, important for understanding how the site fits into its environment. A detailed report on the excavation of the metallurgical site follows. Although deposition was not great on this windy and denuded hillside, the excavators found traces of a flimsy apsidal structure in addition to slag remains on the surface. Fortunately, a fragment of Early Minoan (EM) III–Middle Minoan (MM) IA Light-on-Dark Ware gives a clear date for the structure. Containing neither furnace nor hearth, this structure was not used for any metallurgical process or apparently for domestic activities such as cooking or storage. Organic residue analysis of the pottery suggests preparation of medicinal drinks involving wine and herbs. Outside the apsidal structure was a slag pile, consisting of fragments from the walls of furnaces and slag from the smelting of copper. Unstratified pottery found here ranges in date from Final Neolithic to EM III–MM IA, suggesting a longer usage for metalworking than for the apsidal building. The finds are presented in detail over the following chapters, including the objects relating to metallurgy. There is a wealth of information on ancient metallurgical techniques, and the reconstruction of the chimneys and pot bellows are of particular interest. Analysis of the copper prills and the vitrified fragments show that copper smelting took place on the site, but absence of evidence for mines or beneficiation (where stone is broken down and ores separated) indicates that the ore came from outside; lead isotope analysis suggests sources on Kythnos and at Laurion. Remains of the chimneys include botanical impressions of chaff and even an olive leaf, leading to the conclusion that smelting was seasonal, soon after the grain harvest in the fall. Harvest, however, is more likely to have occurred in early summer, a time that would also be in keeping with the strong winds needed for smelting. The final two chapters on the metallurgical site include an often argumentative history of early metallurgy, followed by a final discussion of the workshop and the smelting process. This discussion pulls together all the disparate scientific, historical, and archaeological evidence to reconstruct what actually happened at the site and to speculate on the nature of the authority that might have supported it. All the analyses on which the reconstructions are based are presented fully at the end of the volume as appendices, most of which are intended for specialists.

The second part of the volume reports on the surface survey of the Chrysokamino area, including a discussion of the earlier Kavousi survey and a report on what little is known about Edith Hall's 1910 excavation of the nearby burial cave.