spread and accepted definition of *fulaj* 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 *fulaj* system.

In some other cases, the lack of referencing leads to in-
correct statements. For example, the authors argue that the
Iron Age settlement of Muweilah is associated with an Iron
Age *fulaj*. Fourteen years of excavation and survey at that site
by this reviewer have yet to reveal any such evidence. Simi-
larly, 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
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 “peep-
policy” 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 bē: “they were all Lords” (64).

Better editing, proofreading, and a process of peer review
may have helped Tosi and Cleuziou overcome these prob-
lems 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 vol-
ume, 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 excel-
lent, and for that we should be grateful to the Ministry of
Heritage and Culture in the Sultanate of Oman.

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Irkàkion Archäologisches Museum: Sammlung
Giamalakis, edited by Walter Müller and Ingo Pini,
xvii + 708, numerous figs., color pls. 2. Philip von
1 (cloth).

The latest volume in the CMS series presents the Giamalaki-
s Collection of Minoan sealstones now housed in the Her-
aklion 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-Sake-
llariou (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-canoni-
cal 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, prov-
eance, 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 stringhinges (23–34), often complicated for the early
material. Then follow the necessary concordances. Five indi-
ces close the introduction (stated provenance [in quotation
marks], material, shape, motif, 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
palettes; number 51, a thin cylinder of cornelian with bands
of beautifully engraved palmettes; number 254, a gold four-
sided prism with neatly spaced hieroglyphs; and number 257,
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 de-
serve: 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 to
the end of the Protopalatial period (e.g., nos. 19–22, recum-
bent 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 amygdalo-
ïd 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 “Talismar-
ica”) 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 con-
voluted 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 sepul—
what was the purpose in producing this? And number 296, an
amphoradale of burnt cornelian with a Talismanic "bundle"
on the obverse, has a modern Sangiorgi caprid on the
verse. The Sangiorgi Group was published by Betts ("Some
Early Forgeries," in F. Fini, 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 Main-
land 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 Myce-
naean Armenian cemetery (Late Minoan LM IIIA-B). The
editors attribute number 476, a lentoid of steatite, to "dem
Umfeld der Mainland Popular Group." (66), a statement that
I do not understand—is it because the design is difficult to
interpret? And number 422, a lentoid of limestone carry-
ing a vult caprid with simply dotted hooves, must belong
to the Island Sanctuaries Group (LM IIIB2-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 hard-
stone seal engraving in the Aegean.

The CMS series has the habit of committing extremely few
effects, so it is with some surprise that I note a typogra-
phical mistake: "Index VI: Motive" and "Index VII: Datierungs-
vorschläge" 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 sur-
rounded 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 pub-
lished in the CMS format. Les cachets minoens de la collection
Gianalikis was most useful but quirky.

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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 metallog-
urgical activities, particularly on Crete. All the more welcome,
then, is this detailed publication and analysis of the Perpalai-
thal metallurgical site of Chrysokamino near Kavousi in east-
ern Crete. Known for more than a century from the vitrified
sherd 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 vol-
ume 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 met-
allurgical 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 remnants 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 smelt-
ing 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 partic-
ular 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, histori-
ical, and archaeological evidence to reconstruct what actu-
ally 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 sur-
vey 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.